

## **College-level Sheltered Instruction: Revisiting the Issue of Effectiveness**

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*Abstract: Finding an effective instruction mode for ESL students in the US educational system has not been an easy task. The country's secondary and tertiary institutions continue to struggle to meet the needs of their large non-native student populations. The article revisits the debate whether sheltered instruction is an effective model to follow. In our study, a sheltered section of a college-level reading class was more effective in improving students' reading abilities compared to mainstream sections where the international students were mixed with native speakers.*

*Keywords: sheltered instruction, mainstreaming, ESL reading, ESL accommodation, college ESL instruction*

### **Introduction**

Recent years have seen unprecedented demand for US higher education, and the number of international students has been steadily growing. These students' experiences can be very rewarding, but they are not free from problems. Multiple studies have been done to identify international students' difficulties in achieving their goals in American universities and to propose efficient solutions aiming to make their lives and academic careers easier and more satisfying.

One of the vitally important academic skills necessary for academic performance and success is reading. To ensure maximum effectiveness of L2 reading instruction, researchers suggested such techniques and strategies, as "large recognition vocabulary" (Nation, 2002), "good command of syntax" (Shiotsu, 2010), "ACTIVE reading" (Anderson, 1999), recognizing "multiple complexities in L2 reading" (Koda, 2004), and extensive reading (Day & Bamford, 2002; Mason & Krashen, 1997). Additionally, some emphasized knowledge-based competencies as fundamentally important to the comprehension of texts thus bringing in extra-linguistic information as a requirement for reading success (Galloway & Lesaux, 2015; Hirsch, 2003; Rupley & Slough, 2010). The importance of background knowledge and building appropriate content schemata (knowledge about the subject) and formal schemata (knowledge about typical discourse and textual organization) has also been proven a factor in reading comprehension (Anderson & Pearson, 1988; Carrell, 1987; Cook, 1997; Rumelhart, 1980; Rupley & Slough, 2010).

The question which types of classes benefit non-native English speakers (NNESs) has received attention as well and continues to be a controversial subject. Recently there has been a movement toward mainstreaming NNESs. It is supported in part by the shift toward accepting translanguaging and acceptance of different "Englishes." Another reason for promoting

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mainstreaming is the “effective teacher” research (e.g., Loeb, Soland & Fox, 2014) that argues that the most important factor in students’ success is having a high-quality teacher, and as long as that condition is met, it does not make a lot of difference what instructional model is followed.

The proponents of the sheltered model argue that it is an efficient way to meet students’ needs and can and should be utilized. Our project revisits the issue of the effectiveness of sheltered instruction and demonstrates that in some cases, separate classes remain a useful option for institutions that are looking to accommodate the specific needs of NNEs. This is an important issue because it connects to university planning, programs, and policies as numbers of international and minority students continue to grow.

### **The History of the Debate on Sheltered Instruction**

Called at one point “the most influential instructional innovation in the field of U.S. bilingual education ...” (Faltis, 1997, p. 136), sheltered instruction (SI) has been the term used to describe content area instruction for limited English proficiency students. The concept was introduced by Steve Krashen in the 1980s, and sheltered instruction was viewed as “a bridge between instruction in the first language and the mainstream” (Krashen, 1996, p. 56). It has been praised as being student-centered since it aims to help students set their own goals for literacy learning and to monitor their own progress in achieving these goals. SI has also been described as “a culturally responsive approach to teaching English language learners” because instruction is adjusted and adapted to meet the needs of the students (Abadiano & Turner, 2002).

In the SI model, English language learners (ELLs) are placed in those classes together and do not compete academically with native speakers (NESs) while they are taught content material. To ensure their mastery of the subjects and acquisition of academic English, in sheltered English classes, the variety of teaching methods employed includes: (1) extralinguistic cues (visuals, props); (2) linguistic modifications (pauses, repetition); (3) interactive lectures; (4) cooperative learning strategies; (5) focus on central concepts rather than on details; and (6) development of reading strategies (mapping). English instruction is the key element in those classes with their focus on academic language as well as key content vocabulary, judicious use of ELLs’ first language as a tool to provide comprehensibility, use of hands-on activities, and explicit teaching and implementation of learning strategies, as well as incorporating students’ background knowledge into classroom lessons and use of critical thinking (Hansen-Thomas, 2008).

In sheltered subject-matter instruction, the class is usually taught by a content instructor sensitized to the students’ language needs and abilities and familiar with the elements of the language acquisition process; alternately, that the instructor may be a language teacher with subject matter knowledge (Gaffield-Vile, 1996). In order to meet the desired effect, the instruction has to be adapted to the students’ level of proficiency in the language; content, however, is not supposed to be watered down, and should include the same components as in a regular subject course (Dueñas, 2003).

The majority of available literature discusses sheltered courses at the secondary school level since that is where the model is most commonly employed. A substantial number of studies focus on the Sheltered Instruction Observation Protocol (SIOP) as a measure of how well the courses meet the requirements of a well-designed sheltered course since sheltered instruction is not merely segregating NNEs from NESs, but should be adapted to meet the needs of the NNEs in order to be effective. These studies showed that students in SI classes performed better than in other settings (Echevarria, Short, & Powers, 2006; Echevarria, Vogt & Short, 2004; Guarino et al.,

2001; Short, Echevarría & Richards-Tutor, 2011; Short, Fidelman & Louguit, 2012). It was also found effective in improving English language learner students' academic abilities (Egginton, Egginton & Zeichner, 2010) and in the teaching of reading (Blackwell, 2012).

Besides improved comprehensibility of material, a strong argument in favor of “sheltering” the ELLs is the imperative of providing a comfortable learning environment free from judgment and embarrassment. The link between a supportive setting and student engagement, subsequently leading to academic success, has long been recognized in psychology and education. Naturally, the relationship between emotional well-being and academic progress holds for ELL student populations as well, and socioaffective aspects have been proven to impact ELLs' academic achievement (Doherty & Hilberg, 2007; Garza & Crawford, 2005; LeClair et al., 2009; Pappamihel, 2001; Short, 2002). Sheltered classes have been shown to supply such atmosphere and a much higher comfort level for English language learners (Curtin, 2005).

Scholars have claimed (focusing on K-12 education) that current research points to sheltered instruction as “one of the most successful approaches to building English and content area competencies among ELLs” (Abadiano & Turner, 2002). They have confirmed that “sheltered English programs have proven successful in the development of academic competence in LEP students because such programs concentrate on the simultaneous development of content-area and ESL proficiency” (Freeman & Freeman, 1988, p. 4) and that this methodology “is needed to help increase these students' English language and literacy development” (Driscoll, 2011).

Considering the described studies, it appears that sheltered instruction can both improve the learners' English and achieve content-area objectives, and can be beneficial to culturally and linguistically diverse students with different language abilities if implemented correctly.

### *Criticism of the Sheltered Model*

Almost as soon as the reports of the effectiveness of sheltered instruction surfaced, the criticisms started appearing in the literature as well. Sobul (1995), for example, expressed concern that in sheltered classes, as they were practically implemented in schools, the content was, in fact, “watered down” (p. 3). Besides simplified content matter, researchers also point out the danger of simplifying challenging language and fear that it may reduce the students' prospects of developing advanced language skills (while still failing to ensure good content knowledge) (Bunch et al., 2001; Fillmore & Snow, 2000; Gersten & Baker, 2000). Another area of concern has been socialization since ELLs under the sheltered model are separated from their native English-speaking classmates (Bunch et al., 2001, p.28).

More recently, Goldenberg (2013), has called attention to the fact that “even the most popular sheltered model in existence... —the Sheltered Instruction Observation Protocol (SIOP)—has yet to demonstrate more than a very modest effect on student learning” (p.7). He points out that some of the studies showing stronger positive effects of SI are flawed and highlights the need to rigorously investigate the precise effects of each of the SI strategies (language and content integration, use of hands-on activities, pictures, and diagrams, building on student background and experiences, providing opportunities and time for discussion and language use, etc.) on the increase in students' proficiency in academic English.

Inconsistency in application of sheltered methodology together with the great amount of variability in programs, students, teachers, and research and assessment methods (Hakuta & August, 1997) may contribute to the acknowledged problems. Additionally, the difficulty in ensuring that the classes are taught by teachers who are qualified and knowledgeable both in

content material and ESL methodology is also quite real (Bunch et al, 2001; Echevarria et al., 2004). This makes it difficult to ensure that the instruction was conducted according to the guidelines and utilized the strategies that make the model helpful to the students.

### *Mainstreaming ELLs*

Clearly, sheltered instruction is not without problems, and there has been a movement toward mainstreaming NNEs because of the view that remedial/developmental track is a trap for students and does not serve their interests. For example, Callahan, Wilkinson, and Muller (2010) found that only the students who most closely fit the ELL profile (recent immigrant, relatively low English proficiency) experienced small positive outcomes while the others experienced negative effects. Similarly, a study by the Tomás Rivera Policy Institute of the University of Southern California (Flores et al., 2009) discovered that many students at Los Angeles Unified School District placed into English language classes had high chances of poor performance and dropping out. The sooner students were switched to mainstream classes, the study concluded, the more they excelled. Although the studies did not determine the causes of the problems, the findings are troubling and put the practice of separating ELLs from native English speakers into question.

However, many researchers feel that mainstream placement does not always meet the needs of the ELL students. Harklau's classic longitudinal study of L2 high school students (1994), addressed strengths and weaknesses of both ESL and mainstream placement. While acknowledging the ESL classes' shortcomings, she emphasized the serious problems of unscaffolded mainstreaming and, essentially, called for implementing strategies we have been discussing as sheltered instruction.

The point of view that methodological differences between sheltered and mainstream approaches are irrelevant as long as the students are taught by an "effective teacher" is also disputed. The approach is supported by Loeb, Soland, and Fox (2014) who state that "finding a better teacher for English learners is at least as much if not more a question of finding an effective teacher, as it is a question of finding a teacher who specializes in English learners" (p.13). Still, the issue is not without controversy, at least because of the imprecise nature of the term "effective teacher." August and Hakuta (1997) addressed the vague nature of what is considered "effective" instruction and rebutted the view that bilingual education was unnecessary and ELLs could do well without it. Lucas, Hanze, and Donato (1990) also claimed that expert mainstream teachers are not necessarily effective in working with language-minority students. Besides, a closer look at the study by Loeb, Soland, and Fox (2014), reveals that speaking the students' first language or having bilingual certification did, in fact, boost the teachers' effectiveness with ELLs.

Recognizing the complexity of the issue, Bunch et al. (2001) caution against overly enthusiastic eagerness to mainstream all ELLs: "contrary to the claims of several recent political movements in the United States, these issues do not disappear simply by moving ELLs out of sheltered instruction and placing them in mainstream classes. The language and content demands of grade-level courses are often beyond the skills of even advanced ELLs, leading students to become frustrated and overwhelmed" (p.29). This warning is echoed by Abadiano and Turner (2002) who caution that transitioning ELLs from the bilingual to the all-English program makes them vulnerable to academic underachievement, and by Gutierrez, Baquedano-Lopez, and Asato (2000) who argue forcefully against eliminating bilingual programs and insisting on English-only instruction for all ELLs.

Therefore, it is fair to say that the issue remains controversial: mainstreaming the students has been proven to have its own problems, and the sheltered model might still be considered beneficial at least under certain conditions.

### *College-level Sheltered Instruction*

The practice of sheltered courses on the tertiary level for is well established in college composition. The possible reason for that is the fact that NNES students stand out so strongly among their NES peers that ignoring them and their substantial differences has been impossible. In the 1990s, several programmatic studies appeared that established that L2 writing was "strategically, rhetorically, and linguistically" unlike L1 writing (Silva, 1993, p.669) and argued that mainstreaming ESL students, counter to a common perception, did not lead to easier and faster acquisition of academic English (Hirsch, 1996).

A foundational work by Silva (1994) discussed the options of mandatory placement of ESL students into freshman composition classes at most universities as part of general education requirements and described mainstreaming international students as "the sink or swim option." It voiced the opinion that sheltered classes taught by an instructor with ESL training or the cross-cultural composition model are much better choices (Silva, 1994, p. 38-40). The fact that many institutions did not provide the ESL students with sheltered composition options was criticized by Braine (1996) who argued that "except for insufficient enrollment there is no other reason not to offer ESL classes" (1996, pp. 102-103). Braine (1996) demonstrated that the ESL students not only preferred to enroll in ESL classes, but also performed better on the exit exams if they received instruction under the sheltered model; this study also highlighted the high rate of withdrawal of ESL students from mainstream classes.

Emphasizing the disadvantages of mainstreaming NNEs, Silva (1994) asserted that "mainstreamed ESL writers could be put at a severe disadvantage; their differences might be seen and treated as intellectual deficiencies. This, in turn, could result in resentment, alienation, loss of self-confidence, poor grades, and, ultimately, academic failure" (p.39). Hirsch (1996) similarly wrote that the assumption that ESL students are going to be better off in mainstream sections is not supported by the observations of what actually happened in the classrooms. The lack of understanding and sensitivity to their NNEs peers on behalf of the NES students and lack of training in ESL methodology on behalf of the professors are among the main causes of problems.

Outside of the field of college composition, the sheltered model in post-secondary education remains rare. However, there are several reports, among them a large, successful, multi-year project at the University of Ottawa where second-language students studied content material in under the sheltered and, later, adjunct models. The experiment started with 45 undergrads being taught a psychology course in a second language using sheltered techniques to ensure their attainment of the content and gains in second language acquisition. It was found that sheltered-class students learned the subject matter as well as regular students and demonstrated gains in second-language acquisition, as well (Edwards et al., 1984). A follow-up study also found that the experimental subjects both successfully mastered the psychology subject matter and had measurable improvements in the second-language proficiency (Hauptman, Wesche & Ready, 1988).

An important factor pointed out as one of the reasons for the success of the U of Ottawa experiment was the effort to increase comprehensibility of instruction. Some of the accommodations spontaneously assumed by the U of Ottawa content-area faculty working in the

sheltered classes were discourse adjustments "from enunciation to word choice to clause length (shorter) and pause length (longer)" and supporting pedagogical behavior, such as more complete blackboard notes (Burger, Weinberg & Wesche, 2013, p. 29-30). Such accommodation appeared to aid the L2 students who demonstrated both the content mastery and improved language skills.

Another report comes from a sheltered class at the University of Kent where a sociology course was developed to bridge the perceived gap between the standard EAP course and the regular first-year undergraduate courses. The content was equivalent to a mainstream sociology class, but provisions were made to help the non-native students cope with language difficulties (Gaffield-Vile, 1996). The author claimed that the experiment was successful and the students both gained knowledge in sociology and developed their academic language and study skills although she did not provide a clear description of how that success was traced and measured.

A forceful argument in favor of implementing sheltered instruction on the college level is presented in the work of Friedenberg (2002). She brings the issue of fairness into the debate and criticizes the accepted practice of requiring higher education students to demonstrate English proficiency on standardized tests before having an opportunity to pursue a degree in the United States. She suggests abandoning that practice as unfair to language-minority and international students and argues for employing sheltering techniques, including translating portions of lectures into the languages of non-native students and hiring bilingual teaching assistants. She proposes that such instruction should also be reinforced by English for Academic Purposes closely coordinated with the academic classes (rather than currently prevalent intensive English programs), and robust student support services. The author claims that with proper application and good coordination between targeted recruitment, language assessment, supported academic instruction, EAP instruction, counseling and support services, and culturally and linguistically appropriate placement services, the model will lead to the international students' placement in credit-bearing classes, their higher motivation and better academic outcomes (Friedenberg, 2002).

Friedenberg & Schneider (2008) report on another successful project involving sheltered instruction of sociology at the tertiary level in which native English speakers and international students were each taught a complex theoretical lesson using mainstream vs. sheltered techniques. The researchers felt that the results from the sheltered section surpassed those from the mainstream control and suggested that programs might consider abandoning the common U.S. practice of preventing international students from taking credit-bearing courses before "passing" the TOEFL because doing so is unnecessary if content instructors used sheltered methodology.

The main reason for lack of sheltered courses available to L2 students is often not the problem of effectiveness but the additional work and expenses: they require that "a new program component be created and administered and that present staff be reoriented or new staff hired—assuming that qualified individuals are available on campus or in the community" (Silva, 1994, p.40). Too often, this hampers support for the programs that are proven to be beneficial to students. One of the examples of lack of funding resulting in elimination of special accommodation for non-native speakers is the University of Ottawa where the sheltered and adjunct courses in English as a Second Language and French as a Second Language were cut for budgetary reasons:

As budgets faced even greater compression in the early 90s and average class sizes continued to grow, the University's decade and a half experiment ... gradually came to an end in spite of the program's pedagogical success, a committed core of instructional and administrative supporters, research contributions, insights into academic language

proficiency and development, and the program's influence on language education elsewhere. (Burger, Weinberg & Wesche, 2013, p. 31)

As a result, the students were left without the scaffolding they needed as the "professors naturally lectured to the native speaker audience, no longer adapting their discourse to accommodate L2 learners" (Burger, Weinberg & Wesche, 2013, p. 30).

Unfortunately, the situation is not much better today than in the past, as the availability of specialized classes for second-language students is limited by "budgetary and other administrative and contractual issues" (Mount, 2014, p. 37) and by the conviction that once the students are admitted, they are similar to native speakers and do not require special scaffolding. However, consequences of abolishing sheltered and adjunct courses and leaving the NNEs without the necessary accommodations are quite serious. In contrast with belief that passing the TOEFL test or completing an intensive English program sequence guarantees the students' ability to study on a par with native speakers, research (Ostler, 1980; Smoke, 1988) has shown that the majority of L2 college students still cannot compete in mainstream classes even after a successful completion of an ESL program. They are insecure about their oral and written English skills, have difficulty reading textbooks, and struggle with tests. These findings are to be expected given that academic language proficiency (unlike basic daily English) in a second language requires five to seven years to develop (Cummins, 1980, 1981; Cummins & Swain, 1986; Collier & Thomas, 1989), so the expectation for a one- or two-year program to be sufficient is unrealistic.

Since very few sources report on experiments involving sheltered instruction on the tertiary level, a study that would replicate earlier research or address the issue from a new angle can be beneficial for better understanding of pluses and minuses of the model under discussion. In this respect, our project can be valuable as it adds to this under-researched topic. Far from claiming that the model analyzed in the article will work in all US institutions of higher learning, we hope to continue the scholarly dialogue about the best methods to work with NNEs in our colleges and universities.

## **Effectiveness of a Sheltered Reading Class**

### *Institution Background*

Saginaw Valley State University (SVSU) is a HLC-accredited, mid-sized public university located in Saginaw, MI which offers 90 programs of study. It is one of many US universities with a substantial number of international students. Since 1980, when the first two students from Japan attended SVSU for two weeks, the international enrollment continuously grew to well over 700 students currently.

To be admitted to SVSU, international students need to demonstrate appropriate English proficiency level, and the university accepts either a TOEFL score of at least 500 (paper based) or 61 (internet based), or a band score of 5.5 on IELTS. For those who do not meet these requirements, are not yet prepared to enter mainstream university classes, and wish to improve their language skills, the university put into service an intensive English Language Program (ELP) that provides English as a Second Language instruction. Those who successfully complete this 3-tier (5-semester maximum) program can matriculate into the university classes.

The ELP implements "bridge" courses that are equivalent to the non-credit developmental English reading and writing courses. Additionally, to support the graduates of the ELP, the English

department put into practice sheltered sections of reading and freshman composition classes. Those who need help after completing the ELP can get tutoring at the Center for Academic Achievement, the Writing Center, and recently an arrangement was made that they can receive tutoring services at the ELP tutoring lab whether or not they are currently enrolled in the ELP. Therefore, it is fair to say that the university has implemented the necessary framework to meet the needs of its international population and provide the necessary support to those who require it. The potential for problems arises if the students matriculate from the ELP before their skills develop enough for success in the mainstream classes or if those skills develop asymmetrically which results in a situation when, for example, the students' reading and writing are advanced but listening and speaking are lagging behind or vice versa.

In that case, sheltered instruction remains a good option for students who have trouble fulfilling the requirements of academic classes because of underdeveloped language skills. Since SVSU international students come largely from two linguistic groups (Arabic and Chinese), most of the time the sheltered sections are comprised of people who share the first language and therefore can translate for each other if the need arises. Those whose language skills are stronger help the ones who have trouble understanding explanations and directions. In addition, having the same national and linguistic background helps in forming improvised learning communities where the students discuss their tasks together free from a feeling of inadequacy and without fear of judgment.

### *Sheltered Reading and Composition Classes for International Students*

To meet the university's General Education requirements, students need to take a developmental reading class, College Reading and Learning (Engl103) and a writing class, Composition I (Engl111). For several years, the administration allowed an arrangement whereby the international students had an option to enroll in sheltered sections of those classes.

In the catalog, a few sections of Engl103 and Engl111 are reserved for that group only, self-registration is not allowed, and the international students register for them with the help of academic advisors. The sections closely follow the outcomes and objectives of "regular" sections of those courses, but do so with certain accommodations. They are taught by instructors experienced in working with NNESs who may use different textbooks and adjust the pedagogy to address the specific needs of the students. It is important to note that not all international students at SVSU enroll in the sheltered sections of the classes under discussion. They always have the option to take mainstream classes and study together with native speakers. Sometimes even if they would have preferred to be in a sheltered class, they are unable to do so because of the seat availability or because of a scheduling conflict.

The vital question that arises is which of the arrangements is better for NNESs? The answer is important for our university and may be of interest to other institutions of higher education that admit substantial numbers of international students of varying proficiency levels. Our study addresses the question of effectiveness by comparing the outcomes displayed by the NNES students in sheltered vs. mainstream reading classes.

### *The Method*

This project was made possible by the decision to apply standardized testing to the reading classes. In the Winter semester of 2014, the Reading and Study Strategies Committee decided to utilize the



Accuplacer standardized reading test at the beginning and the end of the semester in all of the reading classes for diagnostic purposes. That presented an opportunity to compare the learning outcomes demonstrated by the ESL students who took the course in a sheltered section versus the students who studied together with native speakers in mainstream classes. Accuplacer is helpful for diagnostics because it breaks up the reading score into five sub-sections, such as main idea, supporting details, sentence relationship, inference, and author's purpose / rhetorical strategies.

The sheltered section consisted of 14 students. Thirteen of them were from China or Saudi Arabia. One student from Brazil differed from the rest of the group since he had spent several years in an American high school as an exchange student and therefore his education included some time when English was the language of instruction. Consequently, his reading proficiency was substantially higher than that of the rest of the class. The majority of the group was, however, typical SVSU international students who had gone through the university's intensive English program. The group, as is often the case with ESL classes, had a great variety of ability and proficiency levels. Many of those students exhibited very low English development and, specifically, low reading fluency and comprehension.

Sheltered Engl 103 used a textbook geared toward ESL students at community colleges and other higher education institutions of similar level. The vocabulary textbook was also designed with NNEs in mind and focused on the vocabulary from the Academic Word List. The third text that was used contained samples from college-level textbooks in a variety of subjects. The sheltered section addressed the issues the NNEs were having with academic reading: limited vocabulary, lack of background knowledge, and unfamiliarity with cultural information that is assumed by college textbooks.

The study also includes the information on the 24 students who were enrolled in several mainstream sections of Engl103. Most of them came from the same countries, namely China and Saudi Arabia, and had taken classes in the English Language Program. While taking Engl 103, they were a minority in their sections and were taught together with and in the same way as the native speakers, completing the same assignments, and participating in the same activities. The mainstream sections of Engl103 used reading textbooks commonly employed in college-level developmental classes for native speakers and focused on reading practice and reading strategies. They also dedicated a considerable amount of time to study strategies, often a high priority in developmental classes.

To answer our research question, the Accuplacer scores from the first week of class and the last week of the semester were compiled, averages were calculated, and the outcomes were compared.

### *Results and Discussion*

Tables 1 and 2 summarize the results of the study. First, they include the average scores the students received on Accuplacer in the sub-areas of Main Idea (MI), Supporting Details (SD), Sentence Relationships (SR), Inference (I), Author's Purpose or Rhetorical Strategies (AP) and the aggregate total score (Total).

To get a better perspective on the dynamics of the changes, we normalized the scores in relation to the maximum possible value on that test. Knowing that the highest score the students could receive on Accuplacer in each of the sub-areas was 15 and the maximum possible overall score was 75, we looked at how high (or low) they scored in relation to that maximum number and calculated the percentage that the averages represented. For example, the average score of 5.57 is

37% of the maximum possible score of 15, and the overall score of 36.24 is 35% of the highest possible ranking of 75. Tables 1 and 2 provide the information on the change between the initial and final testing in the two respective groups as related to the maximum possible outcome.

The tables also include the results of the t-test performed on the data to check whether the students' progress (or lack thereof) in each of the sub-areas of the test was statistically significant.

**TABLE 1. Accuplacer Results in Sheltered Reading Section**

	MI score	% of max. score (15)	SD score	% of 15	SR score	% of 15	I score	% of 15	AP score	% of 15	Total	% of max. score (75)
First week of class	5.57	37%	6.43	43%	5.43	36%	2.71	18%	4.29	29%	24.43	33%
Last week of class	5.29	35%	6.21	41%	6.93	46%	3.93	26%	4.36	29%	26.71	36%
Change	-0.29	-2%	-0.21	-2%	1.5	10%	1.21	8%	0.07	0%	2.29	3%
t-test	0.723		0.854		0.009		0.112		0.944		0.310	

**TABLE 2: Accuplacer Results in Mainstreamed Reading Sections**

	MI score	% of 15	SD score	% of 15	SR score	% of 15	I score	% of 15	AP score	% of 15	Total	% of 75
First week of class	3.33	22%	3.21	21%	3.46	23%	2.63	18%	2.08	14%	14.71	20%
Last week of class	2.5	17%	3.08	20%	3.63	24%	2.29	15%	1.75	12%	13.25	18%
Change	-0.83	-5%	-0.13	-1%	0.17	1%	-0.33	-3%	-0.33	-2%	-1.46	-2%
t-test	0.081		0.789		0.714		0.584		0.457		0.346	

As can be seen in Table 1, the students in the sheltered section showed slight decreases in main idea and supporting details scores from the first test administration to the second one. At the same time, it demonstrates that there are gains in the areas of sentence relations, inference, and purpose or rhetorical strategies. The normalized scores demonstrated a 2% decrease in identifying main ideas of the reading passages and in understanding supporting details, and their understanding of the author's purpose almost did not change, but their sentence relationship score increased by 10% and inference by 8%. At the end of the semester, the aggregate score averaged for the group slightly increased as well: by 2.19 points or by 3%.

In the mainstream sections, there was a slight increase in the score in on sentence relations, but the averages in other areas went down, and as a result, the average overall scores also declined. The international students who were studying together with the native speakers improved in sentence relationships by 1% while slightly lowering the results in all other sub-areas. The average overall scores for those who studied in the mainstreamed students went down by 1.46 points or by 2%.

The t-test showed that, for the most part, the numbers were not statistically significant. The only area, where the p-value was  $<.05$ , was the increase in sentence relations understanding in the sheltered sections students. Still, we believe the trends show that the sheltered section provided an advantage to the international students who were placed in it over the mainstreamed students.

Focusing on the comparison of the groups we were working with, we decided to test whether the differences in performance could be attributed to the placement of the students into either sheltered or non-sheltered sections. So, we compared the differences between the initial and final overall results between groups and performed a t-test in each of the areas assessing whether the variations were statistically significant and could, therefore, have been caused by the difference in being assigned to either ESL-only or mainstream sections (Table 3).

**Table 3: Difference in Average Scores between Groups**

	MI	SD	SR	I	AP	Total
Sheltered section difference	-0.29	-0.21	1.5	1.21	0.07	2.29
Mainstream difference	-0.83	-0.13	0.17	-0.33	-0.33	-1.46
t-test	0.28	0.47	<b>0.03</b>	<b>0.05</b>	0.36	0.08

The results show that the placement into a sheltered or non-sheltered section appears to be significant at least for the outcomes in sentence relationships and inference.

Working with the numbers, we noticed that in the sheltered class, the students whose scores declined or did not change started at a higher than average level. Those who started lower, were more likely to improve by the end of semester. To test this observation, we checked statistical significance of the results for the students whose initial totals were lower than average. With the median of the scores of all the students in the study, both sheltered and mainstream, at 15 and the mean at 18.3, we checked the results of only those who had 18 or lower on the initial test (Table 4).

**Table 4: Difference between Groups for Lower-scoring Students**

	MI	SD	SR	I	AP	Total
Sheltered difference	2	2.2	1	0.8	-0.2	5.8
Mainstream difference	-0.6	0.05	0.2	-0.4	-0.1	-0.85
t-test	<b>0.02</b>	0.1	0.165	0.086	0.439	<b>0.014</b>

The trends seen before are evident while comparing the results of the lower-scoring students. Those who studied under sheltered conditions, showed gains, while those who were mainstreamed ended the semester with scores lower than in the beginning. While most numbers are still inconclusive, the p-value for the difference between the groups in the sub-area of Main

Idea and in the Total score appears to be statistically significant. These results prompt us to suggest that the sheltered section was more beneficial and more appropriate for the lower-level students than the mainstream placement.

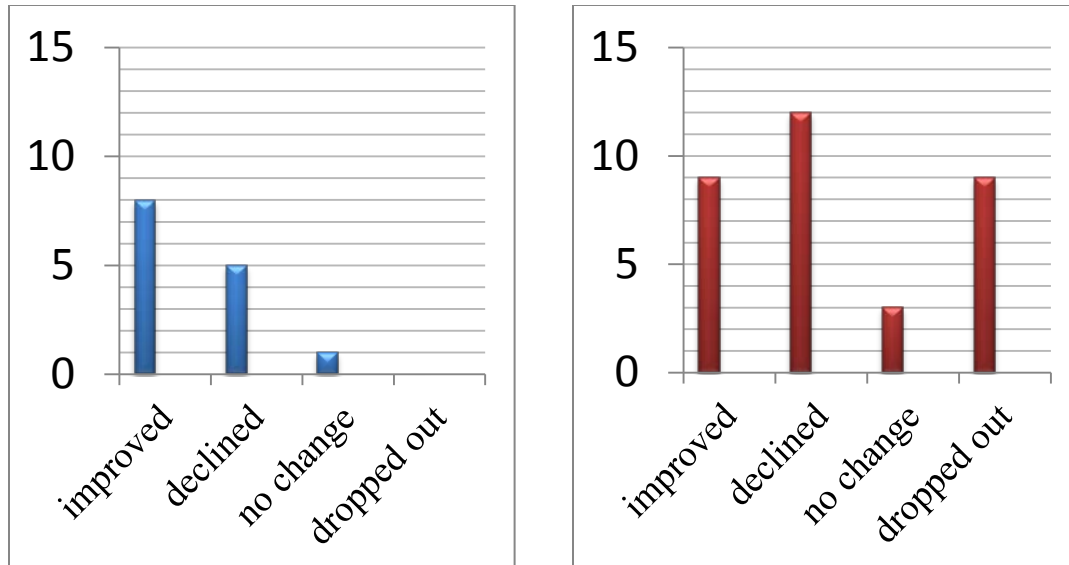
Our inability to demonstrate statistical significance on most of the features was not totally unexpected. The deviations between the scores of individual students in different sub-areas of the test were large. It is important to remember, though, that class averages may not be very helpful in understanding the language learning dynamics, and can even be misleading since they obscure particular learners' skills evolution.

Understanding that individual second language development is complex and non-linear is gaining acceptance in the research community. Following the lead of psychologists and cognitive scientists, such as Molenaar and van Gelder, second language acquisition specialists adapted Dynamic Systems Theory (DST) to their studies (e.g., De Bot, 2008; Ellis, 2008; Larsen-Freeman, 1997, 2014; Larsen-Freeman & Cameron, 2008a, 2008b). The body of literature that applies DST to group data in language learning is increasing since there is a growing realization that we cannot argue from groups to individuals except under very strict conditions. D. Larson-Freeman, for example, maintains that methods that work well for linear systems analysis do not apply well to language acquisition and that language students in their unique learning environments on their unique paths of progress are better understood as parts of 'complex systems'. For those systems, she affirms, "...computing the average behavior does not tell us much about the behavior of the components or agents that comprise the system" and "a model based on samples of individuals does not automatically generalize to a model of individual progress" (Larsen-Freeman, 2014 p.17). Therefore, it is important to look at individual students' progress as well as the overall averages.

Keeping that point of view in mind, we shifted our attention from calculating averages to tracing how many students demonstrated improvement, big or small, and how many failed to advance in their reading ability.

When we checked for that, we saw that in the sheltered section more students improved their reading than in the mainstream sections. Eight out of 14 students, or 57%, showed gains in overall scores, one student (7%) did not change and five (36%) declined. At the same time, in mainstream sections, only 9 out of 24 students (37.5%) showed gains, 3 did not change (12.5%), and 12 (or 50%) scored lower. Additionally, nine international students in mainstream reading classes who took the test at the beginning of the semester did not take it the second time, at the end. That tells us that they most likely dropped the class. Since all of those cases occurred in mainstream sections of Engl 103, and none happened in the sheltered section, it may support the view that the sheltered section served NNEs better (Figure 1).

### **Figure 1: Sheltered vs. Mainstream Improvement**



After an analysis of the improvement dynamics of the contrasted groups, it seems reasonable to assert that the sheltered placement resulted in a higher rate of reading progress compared to mainstreaming. The students were much more likely to increase their reading scores on Accuplacer if they were taught in the specialized section and less likely to drop the class. Therefore, we conclude that the sheltered section was more beneficial to NNEs than mainstream. It appears to serve the needs of the L2 readers better, especially if their initial reading level is lower than average.

### *The Difference in Pedagogy*

It is difficult to establish with certainty what contributed to the difference in improvement outcomes of the groups we are discussing because we were unable to interview the instructors of the mainstream sections. However, we can still identify the strategies that were employed in the sheltered section and construe their effect on the students.

One of the differences between the sections was the fact that the sheltered class was taught by a TESOL trained professional who was better prepared to design the course in order to achieve the required outcomes. The instructor who was trained in second language acquisition possessed the knowledge to anticipate the difficulties the students were likely to have with word identification, reading fluency, collocations and vocabulary knowledge, syntactic awareness, and the application of reading comprehension skills. Utilizing the methodologies designed specifically for teaching English as a second language, such as explicit instruction and reading scaffolding, improved the chance that the class material was going to be attained.

The sheltered section also offered more linguistic modification for the students. Burger, Weinberg, and Wesche (2013) drew attention to the troubling reluctance of some subject-matter professors to acknowledge the presence of L2 speakers after their university discontinued offering sheltered courses (p.34). They reported that even the same faculty who used to make discourse adjustments while teaching sheltered sections, stopped doing that when the L2 students became a minority in their classes and lectured to the native speaker audience disregarding the needs of the NNEs (Burger, Weinberg & Wesche, 2013, p. 29-30). It is safe to assume that the faculty in the mainstream sections of Engl 103 spoke in a manner natural for a conversation among native

speakers since NESs constituted a majority in their classes. Because of that, the international student minority was, at least at times, unable to understand what was being said.

Another significant difference was the use of ESL-specific textbooks. The textbooks utilized in the sheltered section were designed specifically by TESOL specialists with NNEs in mind. The texts were shorter and easier, which contributed to comprehensibility. It is safe to say that the textbooks used in mainstream section were too challenging to the NNEs students both in length and complexity of texts and assignments. They included references to concepts unfamiliar to the international students and discussed problems they did not necessarily connect with, a situation which may lead to students' frustration and disengagement.

The vocabulary that was the focus of the sheltered class was different from the vocabulary targeted in mainstream sections. It consisted of words from the Academic Word List (AWL) and thus included vocabulary that was more frequent and commonly used than the vocabulary studied in the other sections. Besides, the words were presented to the students as the words that would be useful to them in their academic careers and would be encountered in the various classes they would take at the university. One might argue that it contributed to students' motivation to learn them unlike the vocabulary in the regular section that was infrequent and might have prompted the students' questions whether it was worth the effort.

The class put a very heavy emphasis on activating background knowledge and building schemata. To allow the students to utilize the knowledge they already possessed, the class allowed judicious use of their native languages, such as looking up information before reading a new passage or clarifying difficult issues discussed in some of the readings. In addition to that, the instructor made sure the culture-specific concepts were addressed and explained before the students would proceed with the readings. This aspect seems to be very important in the differentiation between the two instructional models (sheltered and mainstream): the information shared by American students does not need and, naturally, does not receive much explanation in the native speaker groups. However, it might be completely unfamiliar to the international students and hinder their understanding of the reading material even if both the lower-level reading skills and higher-order reading strategies were present.

One of the ways to activate existing knowledge and to build schemata that was used in the sheltered section was the use of visuals. Employment of images has been suggested for use with younger English language learners, but it might be helpful even to college students when an image illustrates a complex situation or an unfamiliar phenomenon. Benefitting from the availability of a classroom with a "smart podium", texts and discussions were often supplemented by images related to the topics of readings. We believe that the efforts to enlarge the students' background knowledge on the topics commonly encountered in American classrooms could have been a contributory factor in the increase of Accuplacer score in inference sub-area.

It is also important to stress that the sheltered section provided a safe learning environment to the students who might have felt inadequate and overwhelmed in the sections comprised of native speakers. A student in a non-sheltered section overwhelmed by the task well above his or her ability, without support, and embarrassed to admit it to the teacher is much more likely to lose motivation and give up trying or to resort to cheating than those who are "in the same boat together." Because of the educational traditions in their home countries, many of our students do not admit that they are having trouble completing the assignments and do not ask for help even when they need it. In this situation, the support of classmates and the atmosphere of solidarity are invaluable and make sheltered sections attractive to the students and beneficial for their progress.

## Conclusion

The results of the study demonstrate that the NNESs fared better when placed in a specialized section of Engl 103 compared to being taught together with native speakers. Their dropout rate was lower and their improvement in reading skills was slightly higher in several areas.

While it is unlikely that mainstreamed students who showed lower scores on the exit tests actually lost some of their reading ability during the course of the semester, the results are impossible to dismiss. It is quite plausible that the decrease in the scores was caused by lack of motivation. Still, even if that is the case, it would constitute a serious problem for a successful program and would need to be addressed since motivation is a vital ingredient of learning success. The failure of a large number of students in mainstream sections to improve deserves attention, and pedagogy should be re-evaluated and adjusted to ensure more opportunities for progress.

We would like to reiterate that the main argument for providing NNESs with sheltered options continues to be the imperative of comprehensibility of instruction. Despite all the criticisms of the theory of comprehensible input being necessary and sufficient for language development and arguments that it is not *sufficient*, no researchers or practitioners have challenged the fact that it is *necessary*. If the students do not understand instructors' explanations, cannot comprehend the textbook readings, and do not grasp the content being taught, they cannot learn.

It appears that the sheltered section of Engl 103 in our study offered more of the necessary scaffolding thereby permitting the students to progress more than in the mainstream classes. Discourse adjustments employed by the instructor, ESL-specific textbooks, focus on AWL vocabulary, activating existing knowledge and building up encyclopedic knowledge necessary to understand the texts used in American textbooks contributed to comprehensibility of instruction and allowed the students placed in the sheltered section to improve their reading more than their peers who did not receive those accommodations in the mainstream sections.

Besides, the sheltered section provided a comfortable learning atmosphere which might have improved the students' motivation and helped them benefit from instruction even more. In the mainstream sections, international students might have been embarrassed to participate in group discussions or to ask the teacher for clarification even when it was needed. In the sheltered section they were involved in cooperative learning activities and were often supporting each other and serving as peer tutors.

We believe, therefore, that sheltered sections of developmental reading at our university are not only acceptable but also beneficial for NNESs. Given the vital role of reading proficiency for students' progress at the university, these results are important and deserve attention. If the sheltered option is helpful to the students, our faculty and administration would want to keep it as one of the choices available to them.

## Limitations of the Study and Future Research

The study's merit is limited by the relatively low number of subjects (n=38). Therefore, we suggest these results become a basis for continuing the discussion about the effectiveness of sheltered reading classes. We want to encourage researchers to attempt replicating this experiment on a larger scale and a longer time frame and see if similar effects can be observed. We hope that this study could serve to stimulate further debate on more effectively addressing the reading challenges of the NNES population at the university level. Whether mainstream classes, scaffolded

mainstreamed classes, or separate scaffolded reading classes at the university level yield a clear distinction in the academic achievement of second language readers deserves to be verified.

We are also aware that the use of Accuplacer test might raise doubt. The opinions on the dependability of Accuplacer results even in the native speaker population are varied, and we are aware that the test was not geared toward non-native readers. It is possible to justify its use with the international students by the fact that they were taking mainstream credit-bearing university classes and, therefore, were subject to the same standards as the other students in the course, including testing instruments. Still, we recognize the possible shortcomings of the testing tool and acknowledge that it might be beneficial to apply a different test, one that is adapted to the specifics of non-native readers, to increase reliability of testing. We also admit that the five domains of reading that Accuplacer checked (main idea, supporting details, inference, author's purpose or rhetorical strategies) may or may not be the right ones to check. Therefore, we would welcome the use of other testing instruments in replication studies.

It might also be helpful to recreate the study and control for additional variables that could have an effect on the class outcome. For example, the fact that mainstream sections were taught by different faculty and used a range of textbooks may have contributed to variability in instruction. It could be interesting to compare students who have come through the university's intensive English program before matriculating to those who were admitted straight into credit-bearing classes. Whether students had English as a medium of instruction at any time in their secondary education could be an important factor to consider. Another variable to check could be the initial reading level at the start of the class: it is possible that the higher reading proficiency allowed the students to improve more, and those who started too low were unable to benefit from instruction. This is only a suggestion at this time, however, and should be tested.

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