

## Discipline-Specific Academic Language Development for Freshman International Students

Wei Zhang<sup>1</sup>

### Abstract

---

The globalization of higher education has brought unprecedented impact to the global economy. It has also presented opportunities and challenges to administrators and educators in universities and colleges to provide a quality education to international students on their campuses. This paper describes a prototype of a credit-bearing bridge program for discipline-specific academic language development for freshman international students in a Mid-western university traditionally serving regional residents in the United States. It begins with an overview of the bridge program, followed by a detailed description of the curriculum design, faculty training, and learning community of the program as well as the implementation of each of the three components in the program.

---

**Keywords:** curriculum design, academic language development, international students, higher education

### 1. Introduction

The globalization of higher education has brought unprecedented impact to the global economy with a strong resonance to universities and colleges in many countries. According to *Open Doors 2013: Report on International Educational Exchange* (Institute of International Education, Inc., 2013), the number of international students studying in higher education institutes in the United States reached a record high of 819,644 in the 2012-2013 academic year, an increase of 55,000 students, compared to the 2011-2012 academic year.

---

<sup>1</sup> The University of Akron, Akron, Ohio, Room 352, Olin Hall, The University of Akron, Akron, Ohio 44325, USA. E-mail: [wz23@uakron.edu](mailto:wz23@uakron.edu), Tel: 330-972-5216, Fax: 330-972-8817

These international students and their families supported 313,000 jobs and contributed \$24 billion to the U.S. economy, making higher education one of the top service sector exports with a steady trade surplus for the country (NAFSA). Accompanying this gain in economy are opportunities and challenges presented to administrators and educators in universities and colleges across the country to provide a quality education for this increasingly integral body of students. This paper describes a prototype of a credit-bearing bridge program for freshman international students in a Mid-western university traditionally serving regional residents in the United States. The main section of the paper begins with an overview of the bridge program, followed by a detailed description of the curriculum design, faculty training, and learning community of the program as well as the implementation of each of the three components in the program.

## **2. Program Overview**

The bridge program described in this paper emphasizes discipline-specific academic language development for freshman international students admitted into undergraduate programs from high schools abroad directly or from intensive English programs affiliated to universities. It aims to assist freshman international students to have a smooth transition into a college career with academic success and personal growth to ensure retention and graduation. It has three interdependent components: a credit-bearing curriculum that is an integral part of the general education curriculum, a faculty that engage themselves in the teaching, assessment, and continuing development of the program, and a learning community that collaborates within and outside of the university campus to contribute to the personal growth and academic success of the students served by this bridge program.

The design of the bridge program takes into account that academic programs for international students need to prepare them for the challenges of language and culture, the most daunting of all challenges that international students face. The majority of international students currently studying in the United States come from countries where English is not the medium of instruction at schools.

As shown by the data from *Open Doors 2013: Report on International Educational Exchange* (Institute of International Education, Inc., 2013), the top ten leading countries of origin of international students to the United States, in descending order, are China (28.7%), India (11.8%), South Korea (8.6%), Saudi Arabia (5.4%), Canada (3.3%), Taiwan (2.7%), Japan (2.4%), Vietnam (2.0%), Mexico (1.7%), and Turkey (1.4%), with English spoken only in Canada and India. Among these countries, China, Saudi Arabia, Canada, Vietnam, and Mexico, all non-English speaking except for Canada, saw an increase of international students to the United States in the 2012-2013 academic year over the 2011-2012 academic year, with China sending 235,597 students to the United States, up 21.4%. Other countries that were sending 20% or more students to the United States in the 2012-2013 academic year as compared to the previous academic year are Kuwait (up 37.4%), Saudi Arabia (up 30.5%), Iran (up 25.2%), and Brazil (up 20.4%), all of which are non-English-speaking. In addition, the demographics of international students are undergoing a categorical change with more international students entering undergraduate programs than before. While graduate international students still took up 42% of the total international student population in the 2012-2013 academic year, up 3.6% from the 2011-2012 academic year, there was an increase of 11.1% of undergraduate international students, accounting for 37% of the total international student population. Besides, a potential body of international students to enter undergraduate programs is the international students studying in intensive English programs. They accounted for 5.1% of the total international student population, also up 6%. As a result, many universities experienced an influx of undergraduate international students. To assist these students to transit into undergraduate program has thus been put on the agenda of many universities.

The design of the bridge program also takes into account that academic language, especially discipline-specific academic language, the language used in specific disciplines and professions, is generally lacking in freshman international students. In spite that academic programs in higher education all require evidence of English proficiency in the form of test scores such as the TOEFL (Test of English as a Foreign Language) and IELTS (International English Language Testing System), or by the completion of English language study in intensive English language programs affiliated to a university, international students are not necessarily prepared to meet the language demand and challenges in the college classroom due to the different development trajectories of academic language and social language.

Cummins (1984) theorized social language as Basic Interpersonal Communicative Skills (BICS) and academic language as Cognitive/Academic Language Proficiency (CALP). Social language is the less formal oral and written language for everyday interpersonal communication; academic language is the more formal oral and written language used in the school or work settings, such as the language for information seeking, classifying, comparing, ordering, analyzing, inferring, justifying, persuading, synthesizing, evaluating, and problem solving (O'Malley & Valdez-Pierce, 1996). Research on language and literacy development has consistently shown that academic language takes a considerably longer time to develop than social language (e.g., Baker, 2007; Cummins, 1984; Haynes, 2007; Lucas, Villegas, & Freedson-Gonzalez, 2008; Thomas & Collier, 1997; Zwiers, 2008). In particular, discipline-specific academic language, the decontextualized oral and written language used within a specific discipline or profession with specialized vocabulary, syntax, and discourse patterns is lacking even among native-speaking students. It differs greatly from the "more interactive and interpersonal language" in everyday social interaction (Fang & Schleppegrell, 2008b, p. 20).

For instance, scientific language is "simultaneously technical, abstract, dense, and tightly knit" (p. 20), which contrasts sharply with the language used in history textbooks where "different patterns of text ...respond to different functional purposes: to chronicle or retell events, to describe, or to present explanations or debates" (Fang & Schleppegrell, 2008a, p. 40). Being able to recognize and utilize the specific linguistic features of the oral and written language used in a specific content area has proven to be an effective and efficient approach to content literacy (e.g., de Oliveira, 2010; Schleppegrell & de Oliveira, 2006; Lucas et al., 2008). Therefore, discipline-specific academic languages should be taught explicitly to international students, whose pre-college education is most likely to be conducted in languages other than English. Considering that discipline-specific academic language is rarely taught by content instructors (Short, 2002) and content instructors are usually not trained to teach it (Schleppegrell, 2004), the success of academic programs for international students, to a great extent, hinges upon a trained faculty who are adept at adapting their instruction to meet the language and content needs of international students while at the same time improving teaching effectiveness and efficiency to all students.

### 3. Curriculum Design

The curriculum of the bridge program consists of four courses: language and American culture, Presentation and Group Communication Skills, Critical Reading in Subject Areas, and Critical Writing in Subject Areas. These courses will provide ample opportunities for academic language development, both oral and written, in the subject area.

*Language and American Culture* focuses on oral and written English development in which students explore deep-culture topics within the context of American culture in meaningful oral and written discussions. According to the iceberg culture model proposed by Hall (1976), deep-culture concepts are the implicit values and thought patterns of a culture analogous to the nine-tenths of an iceberg submerged under the water. In the American context, relevant topics can be the multicultural nature of American society, the perception of self and the individual, Americans' orientation to time, culture shock and cultural adaptation, qualities of a competent intercultural communicator, the role of religion in American culture, intercultural differences in listening, and the American family. These deep-culture concepts are less explicit or tangible than the surface-culture concepts often taught in English lessons, such as holidays, cooking, fine arts, music, dance, and literature. A course on *Language and American Culture* thus will provide a platform for international students to develop the vocabulary and discourse strategies to engage themselves in the discussion of abstract concepts and gain a deeper understanding of the unique characteristic of American culture. Students will also compare the American culture with their own to gain a critical understanding on why and how cultures differ with an emphasis on cultural patterns, beliefs, values, norms, and social practices.

*Presentation and Group Communication Skills* emphasizes listening and speaking skills, presentation strategies, leadership, and the process of communication among individuals and within small groups. Working in pairs or small groups and presenting projects are assigned in many university courses, but international students might not have prior experience or opportunities to develop the linguistic and interpersonal skills necessary to complete these tasks successfully, which could be due to the difference in the educational systems in their home countries or constrained by the large class size commonly found in the countries of origin of many international students, such as China and India.

In this class, students work individually and in small groups with different people to define, research, analyze, and propose feasible courses of action for academic projects commonly assigned to undergraduate students in various subjects. This course could be offered with 2 credit classroom interaction and 1 credit individual tutoring.

*Critical Reading in Subject Areas* and *Critical Writing in Subject Areas* are designed for academic literacy development in the subject area. Critical thinking skills, defined by the Association of American Colleges and Universities (AACU) as “a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion”, is usually taught in college freshman composition classes, but such a one-size-fits-all approach might be not sufficient. The necessity to initiate institutional support to international student to develop discipline-specific reading and writing skills has long been noticed and voiced (e.g., Janopoulos, 1995; Wambach, 1998), but has gained a renewed interest with the recent increase of international students on university campus.

Anderson, Evans, and Hartshorn (2014) conducted a national questionnaire survey of university faculties on their reading and writing expectations of matriculated university students in more than 30 universities with a high percentage of international students in five of the most popular university majors for international students, including Biology, Business, Computer Science, Engineering, and Psychology. The results revealed that listening and reading were perceived by university faculty to be the most important language skills and greater exposure to discipline-specific reading and writing is necessary in reading and writing instructions to meet the challenges identified by the university faculty surveyed. Similar results and suggestions have been found in other institutional surveys, where journal articles and textbooks within a specific discipline are identified as the major reading assignments, and research paper the most common writing assignment across all disciplines with discipline-specific variations (e.g., Keogh, 2014; Webster, 2014). For instance, lab research reports are also commonly assigned to science and engineering majors and business Emails to business majors. Informed by these research findings, *Critical Reading in Subject Areas* and *Critical Writing in Subject Areas* are specifically included in the curriculum of the bridge program to prepare international student to meet the discipline-specific reading and writing challenges.

A functional approach in teaching content literacy under the framework of Systemic Functional Linguistics (SFL) guides the design of the courses in the bridge program. Systemic Functional Linguistics was originally proposed by M.A.K. Halliday to decipher text complexity in different disciplines and has been applied to content-specific academic language teaching and learning in all levels of schooling (e.g., de Oliveira, 2010; Fang & Schleppegrell, 2008a, 2008b; Schleppegrell, 2004; Schleppegrell & Colombi, 2002; Schleppegrell & de Oliveira, 2006). This approach emphasizes the distinct linguistic features in academic language development, including discipline-specific vocabularies or terminologies, and more importantly, the discourse features in a discipline. For instance, scientific language has the following features, all of which pose consideration challenge to students:

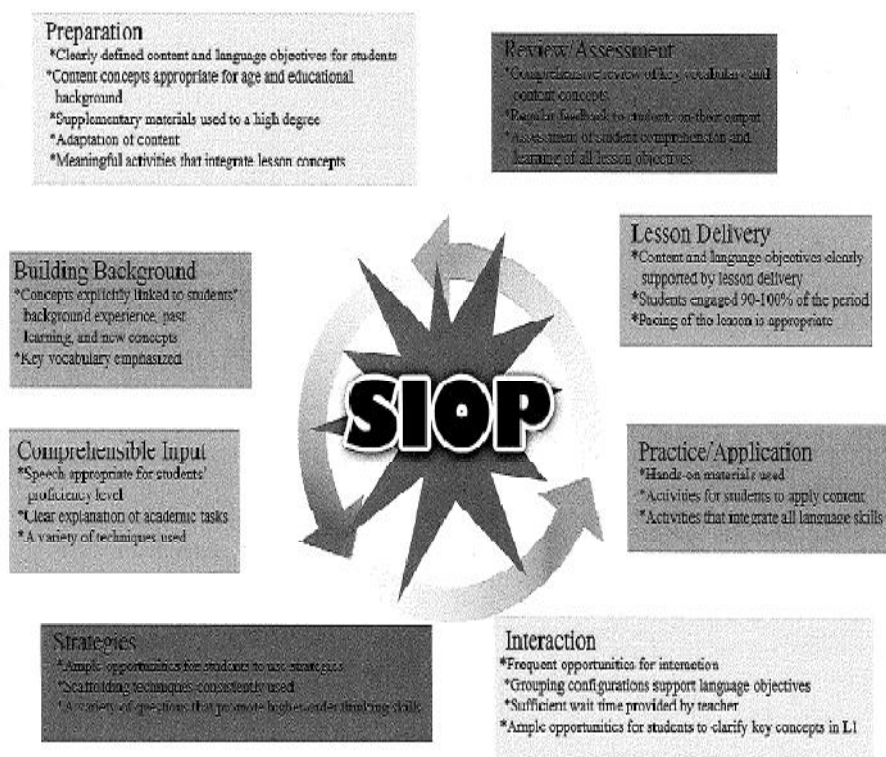
1. Technical terms and their definitions: Technical terms occur throughout science textbooks and typically some are set in bold and defined, but some may appear without a definition or the definition may be difficult to find. Moreover, definitions may contain complex language that ELLs may not understand.
2. Conjunctions with specific roles: Conjunctions (e.g. *or*) may have multiple, targeted roles in science and all may occur within a few paragraphs. The conjunction *or*, for instance, can introduce an explanation or paraphrase (e.g. "When they leave or visit another flower") and a more abstract or technical term (e.g. "They grow to become adult, or mature, plants")
3. Everyday questions and words with specialized meanings: Paragraphs in science text often begin with colloquial, informal questions but continue to provide the answer with highly technical language. Words with specialized meaning in science may appear repeatedly and confuse ELLs who may know only the everyday meaning of the word.
4. Noun groups presented in a zig-zag structure: Several noun group structures tend to appear in science text – head only, pronouns, nouns with pre or post modifiers and nouns with both pre and post modifiers. Zig-zag structuring involves the introduction of a nominal group in one sentence and the tracking of these nominal groups in other sentences, creating a zig-zag movement. Lexical content is accumulated through these complex and expanded noun groups, creating high lexical density. (de Oliveira, 2010, p.147)

These linguistic features constitute the linguistic complexity found in all texts within a discipline, such as textbooks or scholarly articles.

A good reader and writer is sensitive or subconsciously know these linguistic features, similar to one's implicit knowledge of his or her native language, but these linguistic features need to be taught explicitly to second language learners and struggling native-speaking students with relatively low literacy skills. Being able to recognize and identify the linguistic features embedded in the texts of various subjects is essential for an instructor in course planning, content selection, and course delivery. It will also help students to become a competent reader and writer, which is undoubtedly pivotal for academic achievement.

The delivery of the courses in the bridge program will adopt an integrated and contextualized approach to the teaching of multiple skills (Brown, 2007; Inkel, 2006) Sheltered Instruction Observation Protocol (SIOP) model. Each course has its own emphasis on one or two of the four skills, but will also integrate other language skills. For instance, the focus skill areas in *Language and Culture* are listening and speaking, but reading and writing are not excluded. Students will present their individual and group projects, which also involve writing short, reflective academic papers under the guidance of the instructor. The actual classroom instruction will be conducted using the SIOP model. This model is a systematic synthesis of the best practice in teaching language in content areas with a firm grounding in second language acquisition theories, language teaching techniques, and language teaching methods. It has eight components and 30 features to guide the preparation, delivery, and assessment of each lesson as summarized in Figure I below. It is thus far the only research-based empirical data validated model that has been proven to be effective in concurrently teaching grade-level academic content and explicit academic language (Echevarria, Richards-Tutor, Canges, & Francis, 2011; Short, Echevarria, & Richards-Tutor, 2011; Short, Fidelman, & Louguit, 2012). It has been widely adopted in the teaching of content to English language learners in K-12 settings. While largely untested at the college level, its proven effectiveness holds promise for academic programs to meet the academic literacy needs of international students in the freshman classroom.



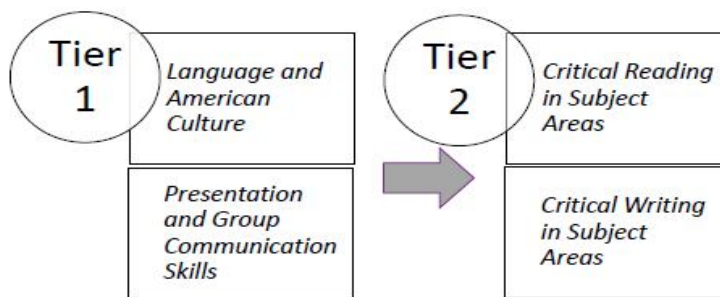


**Figure 1: SIOP Components and Features**

#### 4. Curriculum Implementation

The curriculum of the bridge program is to be incorporated into the general education curriculum. All courses in the bridge program can be considered equivalent to a number of courses commonly found in the general education curriculum in four-year universities, such as *Introduction to Public Speaking*, *Introduction to Human Communication*, and others. However, the curriculum of the bridge program is more than its equivalent in the General Education Curriculum. It is designed especially for the non-native speaking international students to equip them with the language and knowledge necessary for academic success. Not only is the goal of these courses two-folded, both content knowledge development and language skills development instead of only the former, these courses will also be delivered using the SIOP model with instructional modifications that have been proven to be efficient in content instruction for second language learners.

In addition, the four courses in the bridge program have a built-in sequence to ensure a gradual development of content literacy. As shown Figure II below, the Tier 1 courses, *Language and American Culture* and *Presentation and Group Communication Skills*, should be taken before the Tier 2 courses, *Critical Reading in Subject Areas* and *Critical Writing in Subject Areas*. The Tier 1 courses can be taken by in-coming freshman international students directly admitted into undergraduate programs in a university and students at the higher levels at the intensive language program affiliated to the university. They can be offered in the summer to jump start the general education requirements or at the beginning semester of an academic year. The Tier 2 courses are to be taken either concurrently with or after the Tier 1 courses during the initial two semesters of international students' undergraduate study. Since undergraduate international students holding an F-1 student visa are required to take at least 12 credit hours each semester except in the summer, the built-in sequence of the courses in the bridge program enables specialized instruction for international students without separating them from the greater learning community of a university, contributing to an optimal learning environment for them.



**Figure II: Two-Tiered Implementation of the Curriculum**

## 5. Faculty Training

A team of qualified and dedicated faculty and a supportive learning community are instrumental to the successful delivery of academic programs. The faculty teaching the bridge program should be specialized in the subject area, such as communication, public speaking, or reading and writing instruction. They should also advocate for English language learners, recognize the value of having a diverse student body, and have a strong sense of responsibility. They will participate in professional development training in Systemic Functional Linguistics and the SIOP model to best implement the curriculum of the bridge program.

They will participate in meetings designated for teaching strategy development and be assessed in multiple venues. They will invite their supervisor to visit their class at least twice a year and a peer at least once a year in which they will be assessed by the classroom observation protocol in the SIOP model that evaluates a class in eight components and 30 features. They will document their teaching plans and be evaluated by students in course evaluation. To ensure fairness, student course evaluation should be read with reference to student achievement.

Faculty in the bridge program will also be involved in the daily functions of the program. In particular, they will be involved in continuing review of the curriculum and course material development. For instance, it would be very beneficial to students to have the terminologies in the textbooks of the general education subjects. Faculty in the program can collaborate to create multi-lingual dictionaries, online vocabulary quizzes, or portable electronic device applications in lieu of selecting discipline-specific reading materials in their courses.

## **6. Learning Community**

The third component of the bridge program is to build a supportive learning community through partnership and collaboration with existing programs and units on a university campus and entities outside of campus. All community-based activities and programs should be designed based on the principle of mutual benefit where learning and growth take place bi-directionally rather than uni-directionally for international students and the community partners. For instance, in partnership with the foreign language program, a *Two-Way Communication Program* can be introduced for a native-English speaking student speaker learning a foreign language, such as Chinese and Arabic, to meet a Chinese or Arabic-speaking student in the bridge program to converse exclusively in one of the two languages at a time, alternating between English and the other language. Besides, involving international students in community service through service learning programs or in volunteering activities connects international students with the greater community where their contribution is valued. These programs provide an inherently authentic language environment for international students to use the English language in natural, meaningful social interactions, contributing to the acculturation and linguistic immersion of the international students.

More importantly, the reciprocal nature of these programs builds up international students' self-confidence and instills a sense of belonging as a constructive member in a community.

## 7. Conclusion

The changing demography of international students studying in higher education institutes in the United States has prompted the development of academic programs to serve this increasingly integral body of students at the linguistic, academic, and cultural levels. The credit-bearing bridge program for discipline-specific academic language development for freshman international students presented in this paper is an institutional effort to meet the linguistic, academic, and cultural challenges these students encounter as freshman students. Such programs provide a gateway to retention and graduation of these students and strengthen the competitiveness and attractiveness of a university to the international educational market. As an emerging independent academic program, it holds a great prospect of becoming an integral sector in the general education curriculum and awaits implementation to inform its further development.

## References

- Anderson, N. J., Evans, N. W., & Hartshorn, K. J. (2014). Reading and writing expectations of matriculated university students [Presentation handouts]. Retrieved April 23, 2014, from <http://precis.preciscentral.com/utills/ip/ShowSummary.asp?AbstractId=2533&Presenter=>
- Association of American Colleges and Universities. Critical thinking value rubric. Retrieved April 22, 2014, from <http://www.aacu.org/value/rubrics/pdf/CriticalThinking.pdf>
- Baker, C. (1993). *Foundations of bilingual education and bilingualism*. Clevedon, England: Multilingual Matters.
- Cummins, J. (1984). Wanted: A theoretical framework for relating language proficiency to academic achievement among bilingual students, in C. Rivera (Ed.), *Language proficiency and academic achievement*, pp. 2-19. Clevedon, England: Multilingual Matters.
- de Oliveira, L. C. (2010). Enhancing content instruction for ELLs: Learning about language in science. In D. Sunal, C. Sunal, M. Mantero, & E. Wright (Eds.), *Teaching science with Hispanic ELLs in K-16 classrooms* (pp. 135-150). Charlotte, NC: Information Age.
- Echevarria, J., Richards-Tutor, C., Canges, R., & Francis, D. (2011). Using the SIOP Model to promote the acquisition of language and science concepts with English learners. *Bilingual Research Journal*, 34, 334-351.

- Fang, Z., & Schleppegrell, M. J. (2008a). Interpretation and reasoning in history: Beyond text structures. In Z. Fang & M. J. Schleppegrell (Eds.), *Reading in secondary content areas: A language-based pedagogy* (pp. 39-63). Ann Arbor, Michigan: University of Michigan Press.
- Fang, Z. & Schleppegrell, M. J. (2008b). Technicality and reasoning in science: Beyond vocabulary. In Z. Fang and M. J. Schleppegrell (Eds.), *Reading in secondary content areas: A language-based Pedagogy* (pp. 18-38). Ann Arbor, Michigan: University of Michigan Press.
- Hall, E.T. (1976). *Beyond culture*. New York: Anchor Books.
- Haynes, J. (2007). *Getting started with English language learners: How educators can meet the challenge*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Institute of International Education, Inc. (2013). *Open Doors 2013: Report on international educational exchange*. Washington, D.C.: Author.
- Janopoulos, M. (1995). Writing across curriculum, writing proficiency exams, and the NNS college students. *Journal of Second Language Writing*, 4(1), 43-50.
- Keogh, R. (2014). *Academic challenges: The international student point of view* [Presentation handouts]. Retrieved April 23, 2014, from [http://precis.preciscentral.com/utills/ip/ShowSummary.asp?AbstractId=2533&Presenter=Lucas, T., Villegas, A. M., & Freedson-Gonzalez, M. \(2008\). Linguistically responsive teacher education: Preparing classroom teachers to teach English language learners. \*Journal of Teacher Education\*, 59\(4\), 361-373.](http://precis.preciscentral.com/utills/ip/ShowSummary.asp?AbstractId=2533&Presenter=Lucas,T.,Villegas,A.M.,&Freedson-Gonzalez,M.(2008).Linguisticallyresponsiveclassroomteachereducation:PreparingclassroomteacherstoteachEnglishlanguagelearners.JournalofTeacherEducation,59(4),361-373.)
- NAFSA (National Association of Foreign Student Advisers). *International Data & Statistics*. Retrieved April 10, 2014, from [http://www.nafsa.org/Explore\\_International\\_Education/Impact/Data\\_And\\_Statistics/The\\_International\\_Student\\_Economic\\_Value\\_Tool/](http://www.nafsa.org/Explore_International_Education/Impact/Data_And_Statistics/The_International_Student_Economic_Value_Tool/)
- O'Malley, J. M. & Valdez-Pierce, L. (1996). *Authentic assessment for English language learners: Practical approaches for teachers*. Old Tappan, NJ: Pearson Education, Addison-Wesley.
- Schleppegrell, M. J. (2004). *The language of schooling: A functional linguistic perspective*. Mahwah, New Jersey: Lawrence Erlbaum Associates, Publishers.
- Schleppegrell, M. J., & Colombi, M. C. (Eds.). (2002). *Developing advanced literacy in first and second languages*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Schleppegrell, M. J., & de Oliveira, L. C. (2006). An integrated language and content approach for history teachers. *Journal of English for Academic Purposes*, 5(4), 254-268.
- Short, D. J. (2002). Language learning in a sheltered social studies class, *TESOL Journal*, 11, 18-28.
- Short, D. J., Echevarria, J., & Richards-Tutor, C. (2011). Research on academic literacy development in sheltered instruction classrooms. *Language Teaching Research*, 15(3), 363-380.
- Short, D. J., Fidelman, C. G., & Louguit, M. (2012). Developing academic language in English language learners through Sheltered Instruction. *TESOL Quarterly*, 48(2), 334-361.
- Thomas, W.P., & Collier, V.P. (1997). *School effectiveness for language minority students*. Washington, DC: National Clearinghouse for English Language Acquisition (NCELA).

- Wambach, C. A. (1998). Reading and writing expectations at a research university. *Journal of Developmental Education*, 22(2), 22-25.
- Webster, E., (2014). What do students need? MSU faculty perspectives [Presentation handouts]. Retrieved April 23, 2014, from <http://precis.preciscentral.com/utills/ip/ShowSummary.asp?AbstractId=2533&Presenter=>
- Zwiers, J. (2008). *Building academic language: Essential practices for content classrooms Grades 5-12*. San Francisco, CA: Jossey-Bass.