

English Language Learners in Dental Hygiene Courses:
How Best Practices Might Improve Success
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A Seminar Paper

Presented to

The Graduate Faculty

University of Wisconsin-Platteville

In Partial Fulfillment of the

Requirement for the Degree

Master of Science

in

Education-

Adult Education

Approved by Ann Krebs Byrne

/Ann Krebs Byrne/	August 7, 2018
Signature of Instructor	Date Approved

I would like to express gratitude to Professor Ann Krebs Byrne, my graduate advisor, for her guidance and encouragement in this project. I would also like to offer thanks to my classmates and colleagues in the Dental Hygiene Program who provided support. Finally, I wish to thank my family for their support and encouragement throughout my study.

TABLE OF CONTENTS

	PAGE
TITLE PAGE	1
ABSTRACT	2
 CHAPTER	
I. INTRODUCTION	3
Background	
Statement of the Problem	
Significance of the Study	
Purpose of the Study	
Definitions of Terms	
Delimitations of Research	
Method of Approach	
 II. REVIEW OF LITERATURE	 6
How a First Language is Acquired	
Second Language Acquisition	
How Cultural Sensitivity Facilitates Learning	
Faculty Training and Support	
Non-language Barriers to Learning	
How Best Practices Might Improve Success	
Summary	
 III. CONCLUSIONS AND RECOMMENDATIONS	 37
 IV. REFERENCES	 46

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2018

Abstract

Nationwide, recent graduates of the dental hygiene program who were English Language Learners (ELLs) had less success with the National Board Dental Hygiene Exam. The vocabulary and concepts covered in this comprehensive exam are difficult for any student. Additional challenges exist for students when English is not their primary language. The exam is not offered in alternative languages, so students must complete the test in English. At Madison Area Technical College in Madison, WI, USA (Madison College), graduates of the dental hygiene program who are ELLs have had much lower initial and subsequent pass rates than their peers. With the current shortages in both quantity and diversity in the profession of dental hygiene, there is a need for new embedded strategies to be employed in dental hygiene courses to help ELL students acquire mastery of the vocabulary and concepts in order to pass their board exams and become competent health care providers. There are specific best practices that might be helpful in increasing the success of ELLs on licensing exams and those best practices are identified in this paper.

Keywords: English language learners, dental hygiene, vocabulary, language acquisition

According to The National Clearinghouse for English Language Acquisition and Language Instructional Educational Programs (as cited in Mulready-Shick, 2013), by the year 2025 more English language learners will be native-born than foreign born, and one of every four elementary and secondary students will be an English language learner. Dental hygiene program instructors will need to serve this changing population by increasing language and vocabulary instruction in order to educate these students.

Statement of the Problem

English language learners who have completed dental hygiene academic programs have difficulty passing the National Board Dental Hygiene Exam because they may not have the vocabulary knowledge or the language proficiency necessary to properly understand and answer the questions. In order to have the credentials to enter the work force, and thereby help the dental industry to be effective in treating the increasingly diverse population, a student must pass this national exam. ELL dental hygiene students who have completed the program but are not able to pass the written test cannot become licensed dental hygienists and use their education to benefit an increasingly diverse population in the United States.

Significance of the Study

The United States Census Bureau predicted a 25% growth in the population of native and foreign-born persons of Hispanic and/or two or more race origin from 2015-2060 (U.S. Census Bureau, 2014). That means there will be an increase of English language learners seeking care at dental offices. If there are dental hygienists who speak multiple languages, those hygienists will be able to communicate more effectively with a broader patient population.

According to the Bureau of Labor Statistics (2017), the projected growth of dental hygiene jobs from 2016 to 2026 is 20%, which is a larger projection of growth than the average for all occupations. Dental hygiene program instructors need to educate an increasing number of dental hygiene students to fill this need. According to Brown (as cited in Hansen & Beaver, 2012), many ELL students were proficient in basic English communication, but the medical and nursing terminology used in some career preparation programs provided a greater challenge. If vocabulary could be taught more effectively, there might be a larger percentage of ELL students who graduate and pass the National Board Dental Hygiene Exam. Effective vocabulary instruction and effective learning strategies might assist more students to be successful in their programs which would allow them to graduate, pass their board exams, and become employed professionals to serve the increasing ELL population.

Purpose of the Study

The purpose for this study is to identify the areas that need improvement in the dental hygiene curriculum in order to help a greater percentage of students successfully pass their board exams. This information might be generalizable and applicable for other faculty and researchers because the process of acquiring English and learning vocabulary does not change from one field of study to another. English language learners who receive vocabulary instruction and language support might perform better in program courses and achieve better outcomes on board exams.

Definition of Terms

National Board Dental Hygiene Exam: A standardized examination to evaluate the preparedness of dental hygiene students for work in the field (American Dental Association, Joint Commission on National Dental Examination, 2017).

English Language Learners (ELLs): Students who are unable to communicate fluently or learn effectively in English and who typically require specialized or modified instruction in both the English language and in their academic courses (Hidden curriculum, 2014).

Monoculture: The prevailing culture in the educational institution based on its geographical location (Ramos, 2017).

Sheltered Instruction: Instruction that is provided in English but taught in a way to make it understandable to ELL students. The goal is to learn content while promoting language development (Wagner & King, 2012).

Delimitations of Research

Research for this project was limited to peer-reviewed articles with a publication date of 2010 or later. The search tools that were used were the University of Wisconsin Platteville Karrmann Library and Madison Area Technical College Library.

Method of Approach

A review of best practices for education of English language learners was conducted. The review of research was to explore learning strategies that would create higher success rates on ELL dental hygiene student testing on the National Dental Hygiene Board Exam. Specific search terms were used to find research in the areas of ELL and testing on the National Dental Hygiene Board Exam. Data regarding testing on the National Dental Hygiene Board Exam specific to ELLs was not found. Learning strategies specific to ELL dental hygiene students was not found. As a result, the reviews in this paper pertain to all ELL students in all classrooms. The findings were summarized and synthesized in Chapter 2 of this paper. Conclusions and recommendations are appropriate for any classroom, including dental hygiene, and are appropriate for all students. Conclusions and recommendations are included in Chapter 3.

Chapter Two: Review of Related Literature

Faculty throughout the United States are finding themselves in the position of needing to teach highly complex academic content to English language learners. Many faculty members are not adequately prepared with the skills necessary to properly teach these learners (O'Brien, 2011). This chapter will cover many of the unique issues faced by ELLs, along with areas in which faculty lack the appropriate knowledge in order to help them learn. These topics will include the knowledge of how language is acquired, the types of language that ELLs need to know for academic learning, the cultural sensitivity necessary for learning, challenges to learning faced by the ELL, and the best practices for teaching ELLs in adult occupational program courses.

How a First Language is Acquired

Acquiring a first language is part of a natural process. It is important for teachers to know how this process works in order to understand how best to serve students and support language development throughout the childhood years. First language acquisition is similar in the early stages for children throughout the world. During the first three years, language development in a child follows a predictable pattern or sequence. The pattern, to some extent, is related to cognitive development. Early on, children have little control over their vocalization. Sounds they make are those such as crying when hungry or cooing when satisfied. Although they have no control over their vocalizations, they are able to hear subtle differences in the sounds of human language (Eimas, Siqueland, Jusczyk, & Vigorito as cited in Lightbown & Spada, 2015).

By the age of one, babies understand a number of frequently repeated words, and can produce one or two words that can be recognized. As they grow, they begin to say more single words, and

by the time they are two years old they can put two words together. This word order is reflective of the language they are hearing. Children eventually progress to sentences, and, by age four, can ask questions, report events, give commands and create stories using correct word order. The basic structure of the languages they have heard spoken in their early years has been mastered, and they continue to acquire several vocabulary words each day. Acquiring additional language and developing the ability to use language at this point comes mainly in the social environment through interaction in different situations and with different persons (Lightbown & Spada, 2015).

Exposure to comprehensible input (language) in the child's environment leads to the acquisition of an increasing body of words and sentence structures, but what pushes the child to continue to develop complex grammatical language? Children are born with an ability to discover the rules of the language to which they are exposed. They have an innate mechanism that allows them to develop language and grammar. This is the result of countless hours of exposure to comprehensible input through social interaction and the environment (Chomsky as cited in Lightbown & Spada, 2015).

As the child learns to read, they begin an understanding of the form of language. In the early school years, the development of language involves an amazing growth of vocabulary. Children enter school with the understanding of hundreds of words. Dependent on how much a child reads, their vocabulary can grow by several hundred to more than a thousand words a year (Nagy, Herman, & Anderson as cited in Lightbown & Spada, 2015). Vocabulary that is necessary for success in school can be taught, however a significant portion is learned through reading for both academics and for pleasure. Reading academic materials is an integral part of

growing academic vocabulary, since the words in non-fiction texts might be less likely to occur in novels or fictional stories (Gardner as cited in Lightbown & Spada, 2015).

During the school years, children also learn the ways of using language that are appropriate or typical for a particular setting. They learn how written language differs from spoken, how language used on the playground is different from what is used in the classroom, and how the language of a science report is different from an English composition. Some children have even more to learn if they arrive at school speaking a different dialect than is used in the school, or if they arrive speaking a different language altogether (Piper as cited in Lightbown & Spada, 2015).

Second Language Acquisition

Second language acquisition, for young children, is usually accomplished in the same way as a first language. Adults who are learning a second language will also acquire the language in the same way, but there are differences that are present in the characteristics and the learning environment of the adult second language learner that make it a slightly different process. The adults possess the characteristics of cognitive maturity, metalinguistic awareness and world knowledge that are not present in a child. Although these are good characteristics, and they assist the adult learner to solve problems and engage in discussions, they can actually interfere in the acquisition process of a subsequent language. It has been suggested that older learners depend on their problem solving and metalinguistic skills when learning second or subsequent languages because their previous learning might aid and might also impede the innate language acquisition process they used as young children (Lightbown & Spada, 2015).

Adults learning a second language also do not have the learning conditions that are often provided for children. These conditions include: freedom to be silent and listen, unawareness of

sounding silly or childlike, ample time to process, and opportunities to receive regular feedback in grammar, pronunciation, meaning, word choice, and politeness (Lightbown & Spada, 2015). The absence of these learning conditions might compound the challenge of mastering a second language for adults.

Adult language learners are expected to speak from the beginning as they begin lessons, whereas children begin as silent listeners. Adult language learners are more likely to feel anxious about making mistakes or sounding foolish when speaking a new language, whereas children do not generally worry about these issues. The adults do not have the freedom of time available for exclusive contact with proficient speakers of their new language, and generally rely on classroom peers and contacts they make in the community for modeling. Adult language acquirers do not usually receive corrective feedback in the classroom about grammar or pronunciation because listeners usually overlook these mistakes as they look for the meaning of the communication (Lightbown & Spada, 2015).

The process of acquiring a language cannot be rushed and takes a considerable amount of time to become proficient. For the teacher of the ELL, it is important to realize that there are two types of language skill sets. The first is BICS, Basic Interpersonal Communication Skills. This is the language fluency necessary to carry on a casual conversation. The second is CALP, Cognitive Academic Language Proficiency. This is the language ability necessary to learn and do well in the educational environment. Studies have shown that it takes much longer to develop CALP than it does to develop BICS (Cummins as cited in Brown, 2012). The results of studies generally showed that for elementary school children to learn a second language, it takes three to five years to develop proficiency in conversation, and four to seven years to develop proficiency in academic English language skills (Hakuta, Butler, & Witt as cited in Brown, 2012). A student

may casually converse well in English but may not do well in academics due to the increased language demand that academic English requires.

How does this research pertain to our adult students who acquire a second language to use in the academic setting? In order to compare the speed of language acquisition between BICS and CALP in a meaningful way, one needs to look at adults who get daily exposure to a particular language. In the U.S. Foreign Service, where adults needed to learn a new language to function and work in a specific country, the government provided intensive classroom-based language instruction. It should be noted that these were workers whose job was to learn languages and work in different countries. These workers also were likely to have above-normal levels of language acquisition aptitude. U.S. foreign service workers who acquired languages that were easier for native English speakers such as Spanish, Dutch or French became proficient in 24 weeks, or after 720 hours of classroom instruction. This level of language skill allowed the workers to speak fluently with accurate grammar, or to use BICS. It did not include the ability to discuss abstract concepts or comprehend difficult texts-CALP (Omaggio-Hadley, as cited in Brown, 2012).

Another comparison can be found in the case of persons who learned a language while living in the country where the language was spoken. This is perhaps a better example being that these persons were typical language learners and not particularly gifted with higher linguistic abilities. According to Dewey and Clifford (as cited in Brown & Larson-Hall, 2012), missionaries who were immersed in a culture and were likely to speak and communicate in a new language became proficient in 18 to 24 months. This amount of time was considerably longer than the foreign service workers, however these missionaries were immersed in the language and not in an

intensive classroom-based program, and their linguistic aptitude had more variation. The level of language learned in this study was of the conversational level, or BICS.

Although the adult ELL student may be proficient in conversational skills when they present in the classroom, it cannot be assumed that they have the second language skills necessary for academic learning. Academic language often is abstract, and most textbooks may be written beyond the language capacity of the ELL student, even though they are observed conversing fluently amongst their peers. In addition, some cultural knowledge might be needed by the ELL to fully comprehend what is being conveyed by the teacher. Issues related to culture are examined below.

How Cultural Sensitivity Facilitates Learning

Imagine an English-speaking student in Moscow in a Russian math classroom. The student speaks conversational Russian after completing a high school language course, so one can imagine the student would be able to understand most of the class and take notes to review uncertainties later. The instructor begins class talking about the topic of the day, Maslenitsa. The student is not familiar with this word and tries putting it in a translator but gets no result. The teacher is talking about mass quantities, large numbers, and how to write an appropriate equation. Since the important terms regarding this lesson were never taught in the high school Russian course, the student quickly becomes frustrated and feels foolish to ask questions. The student disengages from the lesson but hopes to understand the next lesson. By approaching this class with cultural sensitivity, the teacher could have begun the lesson with writing Maslenitsa on the board and explained that it is a festival in Russia that celebrates the end of winter. He could explain the tradition of making blini (Russian pancakes) that are quite large in diameter and are consumed in mass quantities during the weeklong celebration, and how the lesson will

synthesize the data of pancakes and festival attendees. By preceding the lesson with this cultural information, the teacher would acknowledge that not everyone in the class was familiar with the festival and would share the cultural information to help students understand the lesson.

Instructor awareness of students' culture is necessary in the learning process. Immigrant students have their own cultural identity and attempt to learn in another culture. They might not possess the cultural knowledge that their teacher and classmates assume they know. When an instructor learns about a student's culture that is different than the instructor's, a student might feel more understood, more welcomed, and more able to share the challenges of learning in a classroom where the prominent language is not the student's own first language. In a study done by Gardner (as cited in Olson, 2012) with ELL nursing students, panel discussions were held in which ELL students presented information on their native country's health care system. The same study looked at workshops on how teachers engaged students in lectures and discussions as bridges to success, by bringing in cultural knowledge. The results showed that "increased faculty cultural competence resulted in increased student success because students felt more connected" (p. 29).

For ELL students to learn in their second language, the teacher must be aware of how information is being presented and must realize the possibility that ELLs may disengage if they do not understand certain cultural references. Sensitivity to the fact that the ELL student has their own background and culture helps the teacher and all students in the class engage in a more productive and equitable learning environment. More information on cultural issues will be discussed later in Chapter 2 of this paper.

Faculty Training and Support

In order for ELL students to improve learning in the classroom, faculty members need appropriate skills and training in how to best meet their needs. While there is an increase in the number of ELL students, preparation for faculty members to meet the needs of ELLs is still inadequate (O'Brien, 2011). Faculty who serve ELLs need to understand how language is acquired and how faculty members can support the learning of their ELL students.

Unique learning needs and challenges of ELLs.

Educators need to be aware of the unique and special learning needs of the ELLs in their classrooms. Many challenges face the ELL in the learning process, and the teacher can help facilitate learning by being aware and able to adapt to those specific needs.

As was discussed earlier in Chapter 2, the process needed to acquire a language cannot be rushed and takes a considerable amount of time in which to become proficient. In order for the ELL to learn in the academic setting, they need to develop the language skills known as CALP (Cummins as cited in Brown & Larson-Hall, 2012). Educators should not assume that because a student can communicate with peers in casual conversation using a non-primary language that he/she can also understand difficult academic content in that language. If appropriate supports are not provided, ELLs might struggle unnecessarily in their academic courses.

Each ELL has a unique cultural background that is different than the culture of their academic peers. Classroom teachers should honor the culture of their students while providing assistance to help the ELL orient to the culture of the classroom discussions. Specific classroom strategies can be used to help the ELL feel comfortable and included. Strategies for best practices will be

discussed later in Chapter 2. Language and culture are heavily interwoven. A classroom in which there are multilingual students might be a challenge for the teacher as well as the other students. Being able to incorporate a student's first language into the instruction might help that student learn vocabulary and content in a more productive and less stressful environment. Primary language support can be provided to introduce and clarify concepts encountered in the English classroom (Wagner & King, 2012).

To address the unique learning needs of ELLs, faculty need specific training to use alternate or additional teaching methods that include cultural awareness support, instead of using the same methods for all students (Mulready-Schick, 2013). Faculty members who use the same methods for ELLs and native English speakers might not be aware that educational methods and practices vary among world cultures. Faculty members might also need an increased awareness of the degree of challenge faced by ELLs in the American classroom.

Many faculty members do not have insight into the unique learning needs of immigrants. Olson (2012) showed that instructors viewed all students' needs as the same, had a low level of cultural awareness, and identified no differences between ELL and non-ELL students. Teaching methods described in the study were universal, regardless of student ethnicity or ELL status.

Olson's work focused on nursing students and uncovered four significant challenges facing the ELL nursing student in the academic setting that included

- language proficiency,
- cultural competencies,
- academic proficiency, and

- personal concerns (Olson, 2012).

Each of these challenges are explained below.

Deficiency in English language skills were reported, both in reading speed and comprehension. The use of a translator took additional time during reading to translate from English to the native language. Fear of not being understood led to self-consciousness among ELL learners, and retreat from speaking in class, which included hesitation to ask questions of the instructor (Sanner as cited in Olson, 2012). Written work brought on struggles with use of technical vocabulary, composition of nursing documents, and creation of patient care plans. ELLs were also afraid to make errors in patient treatment due to lack of English skills (Donnelly, McKiel, and Hwang, as cited in Olson, 2012). To achieve proficiency in academic language involves a long process, and the language necessary for academic learning is much different than that needed for conversational skills. This study showed the lack of confidence ELL nursing students had in treating patients due to limited language proficiency.

Personal cultures, values, and beliefs are brought to the classroom with all students, including the ELL student. In the U.S., traditional nursing programs are focused on White, Anglo-Saxon culture and Western medicine. Teaching methods tend to be somewhat inflexible, leading to conflicts between the students' culture and that of the culture in the classroom (Yoder as cited in Olson, 2012). If the ELL student does not feel that the classroom is culturally inclusive, he/she may have trouble learning due to fear of sounding less competent than his/her peers. Some cultural attitudes which include regard for instructors as unquestionable authorities may prevent students from asking questions about presented material, thereby causing a learning barrier (Bosher & Smalkoski as cited in Olson, 2012).

Test taking can be an obstacle for ELL students, especially if the test consists of multiple choice questions. These questions require reading comprehension and language proficiency, and often include technical terms used in health care. If students translate the question into their own language, develop an answer and translate back, they might find that it is difficult to complete the entire test and they may find that they have wrongly translated words and missed important grammar cues. Questions that include gender roles can be culture-specific. In order to answer correctly, the ELL might need to answer in the cultural context of the instruction and not from his/her own cultural perspective (Lujan as cited in Olson, 2012).

Feelings of loneliness and alienation as barriers to success were reoccurring themes in literature (Gardner as cited in Olson, 2012). Having no or few peers from the same culture can bring social isolation. Having preferences for different social/cultural activities and experiencing language differences contribute to this issue. ELL students were separated from family members and friends who remained in the home country, which led to absence of support (Pearson as cited in Olson, 2012). Loneliness was also compounded when the ELL student was excluded from study groups formed by native-born students in the course. Financial issues also were a concern for immigrant students who worked to support family in their native country. Employment while being a student negatively impacted a student's academic performance (Pearson as cited in Olson, 2012).

Strategies for success for each of these four possible obstacles included language skill improvement, increased awareness for faculty about the importance of multi-cultural familiarity, instruction of test taking skills and assisting ELLs with the formation of peer relationships.

Language skill improvement was successful when ELL students formed study groups with native speakers (Brown, as cited in Olson, 2012). Native speakers provided clarification and explanations of terms and text during study group sessions. Another strategy that improved language skills for ELLs was to use role-play scenarios to understand both verbal and non-verbal communication during communication exercises (Rogan, San Miguel, Brown, & Kilstoff as cited in Olson, 2012). This strategy helped build vocabulary and use of language. Use of these strategies helped build bridges to success in the language area.

Strategies to increase cultural awareness and knowledge in faculty were necessary to create success for the ELL student. In one study, increased cultural awareness for faculty resulted from student-led panel discussions that presented information on their native countries views on family, education and health. Workshops on cultural awareness with a focus to engage students were also part of the study. Faculty, in response to the workshops, showed an increase in knowledge, sensitivity, support, and cultural awareness (Pearson, as cited in Olson, 2012).

To assist ELL students' success in test taking, specifically multiple-choice tests, skill development was helpful (Bosher & Bowles, as cited in Olson, 2012). Students' test scores increased, and test-taking stress decreased when students took sample or mock exams. Practice on an exam without the fear of a poor grade, or the stress of time, might give the ELL student a chance to process the format of the exam and better understand the content and vocabulary. Discussion of the components of a multiple-choice exam and teaching test-taking strategies improved success. Another strategy was for faculty to write test items in short sentences, which stated information in a direct manner and included the use of carefully selected words. This linguistic modification was found to be helpful for ELL nursing students on multiple-choice tests (Bosher & Bowles, as cited in Olson, 2012).

Personal concerns of loneliness and isolation were bridged by positive peer relationships with students from a similar culture, which provided students with support and comfort. Shared cultural values, experiences, and languages were bonds that provided strength and social support which led to academic success (Moceri, as cited in Olson, 2012). Peers took on the roles of family, while family was in the home country. Personal determination to succeed was also a common theme among ELL nursing students who found self-motivation to be a positive force in obtaining their academic goal. Personal desire to reach professional goals and a desire to elevate one's earning potential were motivation for success (Moceri as cited in Olson, 2012).

Teacher as learner.

Another author who thought educators were unprepared to address the complex needs of ELLs was de Oliveira (2011) who stated that educators needed to see themselves in the role of their students. Many teachers viewed mainstream United States culture and monolinguals as the norm and perhaps even as the ideal. They were unprepared to teach English to those with linguistic or cultural diversity. Teachers who engaged in language experiences themselves better understood what it was like to be a language learner. Author de Oliveira explained that teachers engaged in a math simulation activity in Portuguese had the goal to increase teachers' awareness of how learners felt when they were immersed in a language they did not understand.

The simulation activity used in this research was a math mini-lesson. The instructor spoke only in Portuguese to the English speakers. Participants reported feeling frustrated, overwhelmed, lost, confused, stupid and discouraged (Hansen-Thomas as cited in de Oliveira, 2011) when spoken to in a language they did not understand. When the English-speaking teacher was put in the same situation as that of an ELL student, the teacher gained insight into the experience of the ELL student who was studying an academic subject while acquiring a new

language. Instructions in this first phase of the study were given without any ELL teaching support strategies.

In the second phase of this activity, instructions were given using ELL teaching strategies including the use of clearer enunciation and intonation, the use of gestures and visual aids and the use of simpler sentence structures. The process of using these scaffolds or supports is called making content “comprehensible.” Participants reported feeling less frustrated and more confident, experienced better processing during the activity, and had better understanding at the conclusion of the mini-lesson. They also reported a better understanding of what ELLs experienced in the classroom (Hansen-Thomas as cited in de Oliveira, 2011).

For ELLs to learn effectively, there needs to be increased awareness and empathy on the part of their instructors regarding what the ELL experiences in the classroom when ELL support strategies are not used. Appropriate teacher preparation needs to include experience with effective teaching strategies, knowledge of the differences between academic and conversational language, and raised awareness about the importance of being a welcoming and supportive instructor (Lucas, Villegas, & Freedson-Gonzalez as cited in de Oliveira, 2011).

Vocabulary instruction.

While language acquisition is a natural process, vocabulary needs to be intentionally taught. Vocabulary instruction for the ELL was a primary concern to educators because ELLs needed to learn a large amount of vocabulary in a short time compared to the native speaker (Rossiter, Abbott, & Kushnir, 2016). Without the necessary vocabulary knowledge, the ELL might have difficulty in learning content in academic courses. This may lead to difficulty passing required examinations for graduation and gainful employment.

The number of times an ELL needed exposure to a vocabulary word in order to learn meaning was eight to 10 (Schmitt as cited in Rossiter et al., 2016). The repetition of the vocabulary word needed to be spaced out to help with retention. Repetition and retention were further accomplished through frequently seeing the vocabulary in context. Increased exposure to vocabulary words in context might help the ELL to learn meaning and ultimately comprehend text.

In conjunction with reading, bilingual dictionaries were helpful for students to learn vocabulary at all proficiency levels (Nation as cited in Rossiter et al., 2016). Dictionaries can be used in hard copy form or can be accessed through smart phones. Allowing students to use bilingual dictionaries in class and group work may help ELLs learn vocabulary and be more prepared to accomplish academic goals. As students encounter unfamiliar words, they can use the bilingual dictionary for clarification. When working in a group, all members can benefit from using this strategy. Best practice strategies for students' use of bilingual dictionaries will be discussed later in Chapter 2.

A study conducted at the University Putra Malaysia with ELLs showed that popular strategies for learning vocabulary were reading, referencing a dictionary, use of media, and daily speaking practice (Asgari & Mustapha, 2011). Learning vocabulary from reading allowed students to help determine meaning through context. In the Malaysian educational system teachers used English newspapers to improve vocabulary skills. The English dictionary was used to give information on usage in various contexts. Movies, internet sites, and television programs were among tools used by Malaysian students to learn vocabulary. Asgari and Mustapha (2011) stated that due to accessibility, highly developed technology had become a large part of the vocabulary and second language acquisition process in Malaysia. The

researchers found that insufficient vocabulary learning led to difficulties in second language proficiency.

When looking at the research on the importance of vocabulary instruction and the actual practice of teaching, there was a significant gap. A study was done on the practices, beliefs, and vocabulary knowledge of ESL instructors. It compared the gaps between effective strategies identified in research and current teaching practices. As noted earlier in this paper, native speakers learn language naturally over many years while second language learners have a limited time in which to acquire a new language and learn a large amount of vocabulary. For that reason, explicit vocabulary instruction needs to be an intentional practice for all educators at all educational levels. As has been discussed previously in this paper, students may be fluent communicators with their peers, yet may be missing important vocabulary meaning that is needed for academic learning. Nation (as cited in Rossiter et al., 2016) noted that “research shows explicit vocabulary learning to be very effective” (p. 3). The discrepancies identified in this study showed that knowledge of evidence-based best practices in teaching vocabulary would benefit ELL teachers in ELL classrooms and benefit the ELLs (Rossiter et al., 2016). A summary of best practices for vocabulary instruction can be found later in Chapter 2 of this paper.

Inadequate instruction affects workforce diversity.

The issue of inadequate vocabulary instruction for ELLs in academic programs for dental hygiene and other health care fields may directly affect the diversity of those working in health care. Because of increasing diversity in the U. S. population, health care professionals are serving increasing numbers of patients who are culturally diverse and speak little or no English. Health care professionals must understand how culture plays a role in a patient’s perception of

their health care needs. Multicultural health care workers who can speak the patients' first language can provide care that is comprehensible to the patient, resulting in better patient compliance and outcomes (Moceri as cited in Olson, 2012). If instructors in health care academic programs are not able to adequately educate ELLs to be successful in educational programs and become licensed professionals, then the programs will not be able to supply the workforce with the diversity that is so important.

Mulready-Shick (2013) explored the experience of English language learners in nursing program classrooms. The nursing field called for greater diversity in its workforce, yet the author of this study stated that educators might have viewed minority students as marginal learners in nursing programs. Some educators might have ethnocentric mindsets which can affect the learning environment. Despite this, most students made progress through the students' own time and effort spent in the learning process. In the Mulready-Shick (2013) study, some ELL students were initially involved in merely listening to others with English skills and did not participate in discussions with peers. As the students became more confident and participated in the discussions, they progressed successfully through the nursing program. In addition, building inclusive practices in teaching such as slowing down while speaking helped to create equitable communication between both native English speakers and ELL students. When educators used monolingual and monocultural practices in teaching, the instructor quickly moved from one topic to another topic, without providing the necessary opportunities and support for the ELLs. This practice reduced ELL participation and increased shyness and anxiety. Teacher perception of student learning capability was skewed. Students were more likely to participate in the learning process when activities were intentionally scaffolded and structured so that ELLs could more actively participate. More active participation in class activities allowed for more practice using

English in occupation-specific contexts and provided better retention of occupation-specific vocabulary (Gapper, as cited in Mulready-Shick, 2013).

Non-language Barriers to Learning

The process of acquiring a second language and learning the vocabulary necessary to be successful in the academic setting takes time. A lack of language proficiency can be a barrier to learning for the ELL, but this is not the only barrier. In addition to language challenges, a barrier to these students was their perception of the field they wished to study. The purpose of the study done by Sandino and Rowe (2014) was to determine the perceptions of barriers by ELLs and to consider the facilitators who influenced a students' decision to enter the dental hygiene profession. The researchers found that a lack of similar role models and cost factors were barriers to ELLs entering health care.

Students from underrepresented racial and ethnic groups comprised 19.9% of students enrolled in dental hygiene programs in the United States in 2010 (American Dental Association, 2011). In contrast, those dental hygienists employed in the United States in 2010 identifying themselves as members of underrepresented groups was 13.2% (United States Department of Labor, 2018), and the underrepresented racial and ethnic population of the United States in 2010 was just over 33% (United States Census Bureau, 2014). This highlights the low percentage of employed dental hygiene professionals who were available as role models and mentors to students considering the profession. Greater ethnic diversity is needed in the workforce to develop role models to attract diverse students to the dental hygiene profession. If the ELL student is not successful in the academic setting, this impacts the diversity in the workforce. The result will remain cyclical until the dental hygiene profession becomes more diverse.

Sandino and Rowe (2014) showed that costs related to the dental hygiene program were factors that influenced interest in the program. Students' financial commitment might include tuition, living expenses, books, and supplies. Most dental hygiene programs were full-time commitments of an eight-hour day, five days a week. More than one-third of students in the study stated they worked on weekends and evenings to pay related expenses. This time needed to work took away academic study time and may have impacted the students' academic performance (Sandino & Rowe, 2014). ELL students who do not have the financial means to pay for academic programs and who need to work to support their families and fund their education may perceive this as a significant barrier to learning and, ultimately, success to become a licensed professional.

Students overcame these barriers by identifying funding sources and by receiving emotional support from family and friends. Funding of education costs was obtained mainly through student loans and financial aid (67%). Some students received family support (46%) and utilized personal savings (32%). One-third of the students worked outside classroom hours to pay educational costs, which may have impacted the students' academic achievement due to reduced study time (Sandino & Rowe, 2014).

ELL students are needed in the health care field to become confident professionals who can relate to bilingual patients linguistically and culturally. Barriers to learning and entrance to dental hygiene and other health care fields need to be removed in order to serve an increasingly diverse population. After the ELL student is enrolled in their occupational programs, facilitation of proper vocabulary and language acquisition support may enable them to become successful.

How Best Practices Might Improve Success

As mentioned previously, ELLs need faculty guidance and support to develop academic vocabulary and language skills, feel culturally accepted and included in the American classroom, and decrease feelings of isolation and loneliness. Faculty can use numerous strategies to facilitate learning for ELLs in the classroom. Strategies to accomplish this can be grouped into categories of best practices in teaching English language learners.

Meaningful vocabulary building.

ELLs need to be provided with instruction in meaningful vocabulary building. Before ELLs can correctly use new vocabulary words, they must hear and see the words many times in comprehensible ways within context. Using examples and visuals helps the ELL to understand word meaning. Some teachers provide vocabulary instruction in the classroom, but there is little consistency across courses. The ELL vocabulary learning process is most effective when teachers share, across all disciplines, strategies they use in their individual classrooms. When strategies are coordinated across all classrooms, including the ESL classroom and the general education classroom, the ELLs become familiar with what is expected. ELL students become more confident in completing classroom activities and tasks and are more likely to participate in vocabulary-building activities (Wagner & King, 2012).

ELLs need explicit instruction in new vocabulary. This instruction should always include classroom dialogue using everyday and academic language. Defining words through multiple examples in context is essential, versus looking up dictionary definitions for words in isolation. The introduction of new words into everyday language helps to connect new learning to prior knowledge. As vocabulary words are seen and heard in comprehensible context multiple times

within the classroom, the student will gain a receptive understanding of the words. Students need multiple exposures (receptive language) to new words before new vocabulary can naturally be used in expressive language. Eventually, students should use the new vocabulary in speaking and writing activities or assignments. This practice will help the ELL to integrate the vocabulary words in context and to use the new vocabulary appropriately in verbal and written expression (Wagner & King, 2012).

A specific strategy that can be used for understanding vocabulary in academic texts would be to have the student draw a concept map using the vocabulary word. The concept map could be completed by using various textbooks that provide clear definitions and examples of the word in context (Wagner & King, 2012). This strategy is helpful for both ELLs and all students when introducing new vocabulary that may be occupation-specific or technical in nature.

Another strategy to build vocabulary and language knowledge in context is to incorporate listening, speaking, reading and writing (Wagner & King, 2012) into classroom activities. Classroom activities can be planned and implemented to use these skills when learning about new concepts. When planning a lesson, the teacher should think about what they expect of the ELL and all students in regard to the topic. For example, what vocabulary is necessary to comprehend the lesson, what texts will the students need to read and what spoken language and listening skills will be needed? Specific language objectives can be written in addition to content objectives. Language objectives will help the educator focus on students' academic language development, which helps the ELL and all students be successful in the academic environment.

Activating prior knowledge.

Another best practice is activating and connecting students' prior knowledge to current lessons. Accessing previous knowledge and experiences helps students learn information of increasing complexity along with helping students increase comprehension of unfamiliar text (Wagner & King, 2012). Active classroom discussions that are scaffolded should be part of learning activities. By asking open-ended questions, the teacher encourages interaction amongst students in the class. This interaction can involve the entire class with dialogue between students and teacher, or it can be interaction among groups of students. Both English proficient students and ELLs will share their knowledge, which may include cultural experiences. This will allow the teacher to be aware of and incorporate students' prior knowledge and experiences when moving forward with new information. As the lesson progresses, the teacher can ask more narrowly focused questions and have students explain their answers and opinions. This dialogue will help ELLs to understand the new information since their English proficient classmates often use both academic language and social language when expressing thoughts. The dialogue will also help the English-proficient student to be aware of the cultural differences the ELL brings to the classroom. The teacher can take this information to lead into and connect with new ideas in the lesson (Wagner & King, 2012).

A specific strategy that can be used is to plan an activity that would provide background knowledge to fill gaps in students' knowledge and experiences, and to prepare students for upcoming lessons. An example would be to show the class a video containing information about the topic being discussed. In order to provide background knowledge, the video would be presented at the beginning of the class period. The students relate to the information they previously learned with new information that is introduced later in the class. This provides all

students common background information that can then be connected with new information. A field trip in the beginning of an instructional unit can serve the same purpose. A field trip can provide common background information that can then be linked with new information they will hear and see later in the classroom (Wagner & King, 2012).

Group interaction.

Structuring student interaction to allow for peer dialogue is another best practice. Students benefit from learning through group interaction. Sharing thoughts and problem-solving through learner-centered classroom talk engages all students, promoting meaningful dialogue and learning. The academic development of ELLs (and all students) increases when students have purposeful interactions with peers (Wagner & King, 2012).

When teaching in a culturally-diverse classroom, a good activity to encourage interaction that will help ELLs (and all students) process information is an activity called “think-pair-share” (Robertson as cited in Wagner & King, 2012). The instructor asks a subject-related question. The students are given time to think and process the question on their own. This allows the ELL time to develop the language necessary to communicate a response. Students then share thoughts with a partner and get feedback on their conclusions. The student pair can then share thinking and problem solving before presenting their thoughts to the whole class. This strategy should help ELLs and all students feel more confident in participating. They do not have to come up with a quick answer but have time to process the question and determine a response. The learning that takes place includes discovering both the answer and the way to convey it to the class. This structured student interaction allows ELLs and all students to share experiences, culture, and world views to enhance academic learning and language (Wagner & King, 2012).

As mentioned previously in this chapter, alienation and loneliness are common themes amongst ELLs, and are perceived as barriers to success in the academic classroom (Gardner as cited in Olson, 2012). There are a number of strategies that involve group interaction to help the ELL become an integral member of the classroom and the peer social group. A strategy that will help the ELL feel more connected to peers is to pair the student with a classroom mentor. This mentor should be a bilingual peer who can help the ELL student become familiar with and learn to negotiate the school, classroom, culture and learning challenges. These peers might establish a connection that will enable the ELL to become comfortable and confident in the new environment. The relationship will also allow the mentor to develop knowledge about the ELL and the experiences he or she brings to the classroom (Wagner & King, 2012).

The isolation an ELL feels when entering a classroom can certainly be brought on by a lack of language skills and knowledge of cultural nuances but may also include feelings of being a student in the minority. The student may wonder about classmates' perception of their diversity. One would hope that there are not feelings of superiority or inferiority between races, but ethnocentrism can create an uncomfortable learning environment. A learning strategy to help build understanding among classmates is a small group instructional activity known as the Jigsaw Activity (first developed in the early 1970's by Elliot Aronson). The teacher assigns a topic in the textbook to individual students. The student reads and learns the information and becomes the expert in that topic. Each student then presents what they know to a group of classmates or to the whole class. This activity helps students see each other as resources on a specific topic and equalizes their status amongst each other (Wagner & King, 2012). This activity helps the ELL, and all learners, feel like an integral part of the classroom, and develops connections between peers.

Group interaction allows students to learn from one another. ELLs can be helped with language skills by working in a group with a bilingual English-proficient classmate. The bilingual classmate can begin a discussion in the ELLs native language to help with content and general lesson information before discussion in English begins. This grouping can help to strengthen vocabulary and content for the ELL in the English learning classroom by using the native language to support instruction in English (Wagner & King, 2012).

Comprehensible instruction.

Another best practice is making sure academic content instruction is comprehensible. Collaboration between instructors of language, general education, and content areas is necessary in planning and developing instruction for the ELL. Discussions are held to share teaching and classroom strategies that can be used in all disciplines to make instruction similar and more comprehensible for the ELL (Wagner & King, 2012).

Content area teachers know the challenge in teaching subject matter to all students. How to make content area instruction comprehensible to the ELL is something the content area teacher may not have learned. It is important to the ELLs' language and academic development that they not be denied access to comprehensible instruction in the content area. Appropriate instructional supports need to be used to make new information comprehensible (Wagner & King, 2012)

Sheltered instruction can be used to make content area instruction comprehensible to ELLs at all levels, and in any subject. The goal is learning academic content and promoting language development. According to Wagner and King (2012), when using sheltered instruction to help make content area instruction comprehensible, teachers can use four common classroom practices.

Use big ideas, themes and topics.

By introducing a statement related to the learning objective of the lesson, students have a starting point from which to learn. It becomes a topic of discussion, questions and group interaction that leads to content comprehension. By gathering information from students' feedback, the teacher can further clarify the topic as the lesson proceeds (Wagner & King, 2012).

Provide vocabulary-building activities.

Certain vocabulary words can be chosen that are integral to the lesson. Students can use bilingual dictionaries to discover meaning in context. The vocabulary words can then become part of a group dialogue, and eventually be used in developing sentences pertaining to the lesson. Students can use graphic organizers or templates to write vocabulary and meanings, draw pictures, or devise mnemonics for learning and remembering new vocabulary (Wagner & King, 2012).

Activate prior knowledge.

From the big idea statement and the vocabulary words, students can discuss what they know about the subject from prior experiences or classroom topics. These discussions will enable the teacher to see what the students already know and will help determine the direction of the lesson. Videos on the topic can help to activate prior knowledge and make inferences on the subject (Wagner & King, 2012).

Plan and implement student interaction.

The information provided by the first three practices can be incorporated into small group discussions, learning activities, or presentations. Students learn from interaction with classmates, both in language and lesson objective. Sharing amongst peers is a classroom activity that allows participation by all students. The ELL will benefit from interactions within a small group and interaction with individual classmates, rather than having to speak as an individual to the whole class (Wagner & King, 2012).

Strategies that can be used in sheltered instruction to aid in lesson comprehension include the use of scaffolds such as visuals, demonstrations, and hands-on examples. One example of a visual instructional aid that is useful for ELLs (and all students) is the graphic organizer. Concepts, facts, and terms are clearly organized and displayed in graphs, charts, or templates instead of being embedded in text. Information can be inserted by either the instructor or the students (with coaching from the instructor). The process of filling in a graphic organization chart can help the ELL to learn concepts and vocabulary words and relate new words to concepts in the learning module. Instructors can develop specific organizers to cover different concepts or ideas. Instructors should give directions on how to complete the graphic organizer such as referring to the textbook. Students can eventually develop their own graphic organizers to help themselves in the learning process (Wagner & King, 2012).

Comprehensible instruction: the older learner.

For the older learner seeking higher education, there might be important skills and concepts that they did not acquire from previous schooling. These students may come into the classroom with fluent social language skills. This fluency, as was discussed previously, is known as BICS.

Many times, it is assumed that the student can function well in the academic setting since they are socially adept, making friends, and becoming familiar with a new culture. When these students are required to use academic texts, and function in the academic higher education classroom, they may struggle (Wagner & King, 2012). Most of the previous best practices can be used with multi-age ELLs and other learners. For the older learner seeking higher education it may be beneficial to also look at additional best practices for comprehensible instruction. Although these practices are described in Wagner & King (2012) as best practices for older struggling ELLs, they may also be helpful for any ELL who may be struggling with learning and using an academic textbook.

In higher education, textbooks are the mainstay of many classrooms due to the large amount of content needed in many subjects. For students who struggle with academic language, discussed previously in this paper (CALP), strategies can be used to help learn academic content from textbooks. The traditional approach to learning in the classroom is to read the chapter, answer the study questions and check the answers (Wagner & King, 2012). A strategy called “teaching the text backwards” was suggested by Jameson (as cited in Wagner & King, 2012). In this reverse approach, the study questions and concluding paragraph are looked at first. The teacher then designs the lesson based on the relevant information needed to understand the chapter. Subsequently, the class discusses each chapter heading before exploring the text to help students predict what will be discussed. After these activities, the students can begin reading the text in sections, and the teacher can accompany each section with questions or activities for comprehension.

Another best practice for higher education learners is teaching text structure. Older ELLs and other learners who struggle with academic education often have not learned or do not understand

how academic textbooks are organized. They may have difficulty reading charts and maps and finding information in the text (Wagner & King, 2012). Some of the strategies to help these students learn about text structure include

- Review with students the components of the textbook such as table of contents, prologue, index, chapter headings and glossary. This strategy helps students feel comfortable with the use of textbooks and helps develop knowledge of each area as it reflects coverage of material (Wagner & King, 2012).
- Have students look up words or concepts in the index, and record information found in the associated text in a graphic organizer. Students can organize by subject, page number, associated words and general concept idea. This allows students to begin to organize parts of the textbook and discover how to find related information (Wagner & King, 2012).
- Have students read the chapter title and the subsequent headings. Discuss what may be found in the text based on this information alone. This helps the student learn how to find appropriate information in each chapter (Wagner & King, 2012).
- Form small groups and have students predict the information in a passage by looking at the heading. After the discussion, have the group look at the study questions to see if they correctly predicted the chapter information. This helps the student see how the content is important, and how reading the passage can help in learning the information (Wagner & King, 2012).
- Be aware that students may need to be taught vocabulary words that are used in the classroom when referring to textbooks. Words such as summarize, skim, refer to, main

ideas, look up and locate will need to be explained or modeled so students can be effective in using the textbook (Wagner & King, 2012).

- Be aware that students may also need to be taught the language and meaning of academic skills such as compare and contrast, draw conclusions, make inferences, predict, organize and analyze. Prompts can be provided so students can learn the language needed to express complex thoughts and then instructors can provide opportunities to practice this academic language with peers in class (Wagner & King, 2012).

The use of graphic organizers as a scaffolding tool was suggested previously when sheltered instruction was discussed. This is also a useful strategy to help the older ELL learn to successfully navigate a textbook. A graphic organizer may help the student understand the relationship between concepts in the text. The visuals used in graphic organizers help students to organize facts and ideas that may be difficult to learn, since they are embedded within highly complex text. The organizer helps the student to identify them and focus on them. The chart or graph can help the ELL learn vocabulary and see the relationship of the word to the concepts in the text. Teachers can devise organizers around a big idea or topic, or students can be given assignments to devise their own big ideas based on the instructions given in class (Wagner & King, 2012).

When graphic organizers are used in class, it is helpful to model how to write information in the organizer, and how to refer to the textbook to find additional information. The more continuity used in the organizer, the better for the student. The ELL and all students may be more successful if they are familiar with the use of the organizer and how it is arranged. This information can be shared with other teachers who encounter the same students. This will create

a more comfortable learning experience for the student who will know what to expect (Wagner & King, 2012).

Educators have a great responsibility to provide meaningful and comprehensible education to all students. The ELL has specific challenges in the English education system that can be addressed with proper knowledge and use of appropriate teaching methods that benefit all learners. It is imperative that educators have the training and skills required to help these students, and that they implement the strategies necessary to help these students achieve their goals.

Summary

Acquisition of a second language is a long process. For students who study and learn in a language other than their native language, the educational process and attainment of the goal of employment can be difficult. Faculty who are teaching content courses need adequate training and support to provide a classroom environment that promotes learning for all students. Specific training may be required to give faculty the knowledge and expertise to teach to the specific learning needs of ELLs.

Implementation of strategies and best practices that make concepts comprehensible and include specific activities to increase vocabulary knowledge will help ELLs to become more confident in understanding text and testing questions. This increased ability might transfer to higher passing rates for ELLs in occupational licensing exams. By altering instruction to help the learning and language skills of ELLs, we can possibly increase their presence in the workforce and better serve the diverse population and their needs.

Chapter Three: Conclusions and Recommendations

In summary, based on the existing literature, English language learners are better able to develop the necessary academic skills when given access to proper instruction and learning strategies. The research into proper instruction and learning strategies may contribute to the field of dental hygiene by helping ELLs attain the academic education necessary to become competent providers of dental hygiene services. Providing proper instruction and using best practice learning strategies may help ELLs be better prepared academically to complete higher education, and in the case of dental hygiene, increase the diversity in the field for better patient relations and care.

There is a 25% predicted growth of U.S. native and foreign-born persons of Hispanic and/or two or more race origins from 2015-2060 (U.S. Census Bureau, 2014). An increase of diversity in the population equates to the need for an increase of diversity in health care service providers to better serve this population. ELL students may not be getting adequate instruction in the educational system to become prepared to fill this need. Areas in which the ELL may need more preparation include academic language acquisition, vocabulary instruction, and cultural familiarity.

Language acquisition is a long process. For ELLs to be proficient in the second language that they use in the educational process, they need more than Basic Interpersonal Communication Skills (BICS). Cognitive Academic Language Proficiency (CALP) is necessary to learn and do well in the educational environment. To acquire this language ability takes much longer, since it is used to learn and understand academic instruction and content (Cummins as cited in Brown, 2012). Teachers need to be aware of the instructional needs of ELL students, and the time and effort needed to become familiar and confident in academic language.

Teachers need adequate training in methods to teach ELLs, and in many instances, this is not being provided in enough depth (O'Brien, 2011). Knowledge in how language is acquired, and of the type of language required for academic success can help the teacher support the ELL as well as adjust lessons to help with language skills. ELLs have unique learning needs that encompass language, culture and academic skill development. Teaching comprehensible instruction to the ELL is essential and may not be something in which the classroom instructor has experience. Strategies for successful instruction need to include language skill improvement, increased cultural awareness of faculty, improvement in test taking and academic proficiency skills, and promotion of positive peer relationships (Olson, 2012).

Vocabulary help and instruction in new terms is necessary. Vocabulary needs to be explicitly taught using textbook activities, classroom dialogue and bilingual dictionaries. Continual repetition is important. ELLs need to learn a significant amount of vocabulary in a short time (Rossiter et al., 2016). In health care programs many terms are technical, and understanding is essential for the student to be successful and progress to graduation and employment. If students are not learning the necessary vocabulary terms and content they may not be able to successfully pass a required exam for licensure or employment. The lack of diverse students entering the work force may influence the effect of care to diverse populations.

Strategies for learning vocabulary include the use of listening, reading, writing and daily speaking practice. Learning vocabulary in context may help students determine word meaning. Due to accessibility, technology such as smart phones and videos can be used as part of the vocabulary and second language learning process. Bilingual dictionaries are easily accessible to students during class and group work through applications on tablets or smart phones. Active classroom discussion on lesson topics can be a valuable learning activity utilizing both listening

and speaking skills. Written activities or assignments such as concept maps or graphic organizers can help students with vocabulary meaning and learning how words fit into textbook content (Wagner & King, 2012).

The proper education of the ELL student may play a role in the future diversity of the health care field. Students who have a similar role model in a specific occupation may be more likely to increase their interest in that field. If that profession has a low percentage of workers from diverse backgrounds, there might be a lower percentage of diverse students interested in that occupation. The same concept may follow in the educational program. If there is an underrepresentation of diverse faculty, there may be a lower application rate by students of diverse backgrounds. In order to increase the diversity in the health occupations there needs to be an increase in students graduating in those programs. ELL students need proper education and language skills to complete academic programs and enter the workforce. By altering instruction to help the learning and language skills of ELLs, we can possibly increase the ELLs presence in the workforce and better serve the diverse population, focusing on their specific cultural needs and beliefs.

Cultural sensitivity is an essential component in the classroom. It allows the ELL to become familiar with the climate of the English classroom and allows the English teacher and students to gain knowledge in the culture and traditions of the ELL. Shared experiences between faculty and students can help all students understand classroom discussions and feel valued for their contribution to the learning environment. Students who do not feel connected to, or who are confused by the classroom discussion may isolate themselves (Gardner as cited in Olson, 2012). Learning cannot take place if a student is not actively involved in the class. Group activities that allow for peer dialogue and shared learning experiences are beneficial to all students. Purposeful

interaction with peers can help all students with classroom inclusion and academic development (Wagner & King, 2012).

Based on these conclusions, recommendations to help ELL students improve success in academics in order to gain future employment in their chosen occupations follow:

1. Compare data. Instructors and administrators should collect and compare success rates of ELLs and other students to be aware if there is a disparity between the two groups. Additional research into the ELL students' academic progress in dental hygiene programs is needed. Data to determine the ELL pass rate in licensing exams versus the English proficient student would be beneficial in determining what, if any, specific steps need to be taken in programs serving these diverse learners. A knowledge of this data, along with instituting best practices may help supply the workforce with more diverse health care workers to better serve diverse patient populations.
2. Teach vocabulary explicitly. An increase in diverse student graduates in health care fields is necessary to serve an increasing diverse U.S. population. Health care workers who can speak the patients' language can provide care that is comprehensible to the patient, resulting in better patient compliance and outcomes. Students must receive proper educational instruction in vocabulary and learning strategies in order to graduate and pass licensing exams to serve the changing population. Appropriate faculty training in language acquisition and learning strategies is a necessary step to achieve this result.
3. Assist ELLs with academic language. ELL students may appear English language proficient when they enter the classroom and speak fluently with classmates and peers. The difference between fluency in conversation and the understanding of academic

language is often not known by faculty. The time necessary to develop academic language skills is an extended process. Due to the long process of CALP (Cognitive Academic Language Proficiency), students in higher education, including those who will need to take licensing exams in order to obtain employment, need proper academic instruction in vocabulary and language skills. Classroom teachers should use techniques and activities to help ELLs understand vocabulary and language in context. Classroom activities such as graphic organizers to organize text and vocabulary, and peer dialogue to reinforce meaning in context may help the ELL understand the content and questions that are referenced in textbooks and asked on exams. Repetition of these activities in the classroom will help the ELL develop the knowledge and skill necessary to understand the content of academic text.

4. Train all faculty in effective strategies and scaffolding methods. Faculty who teach content courses may not have been trained in the proper teaching techniques for ELLs. Programs that educate faculty in appropriate instructional activities and best practices may be helpful. Training in the education of ELLs should be a part of every educational institution, whether it be formal courses, continuing education offerings, or sharing strategies amongst faculty. A useful activity is putting the teacher in a mock learning situation that shows them how the ELL feels in a second language classroom. Developing an activity in a language that is not well spoken by the teacher puts them through the experience that some of their students may have. Sensitivity of the teacher is increased by going through a practice scenario. This develops an awareness and compassion for the level of difficulty the ELL experiences.

5. Incorporate classroom group interaction to help all students. Sharing thoughts and problem solving through a learner-centered classroom engages students. Group activities structured to help with vocabulary and learning content can be a positive strategy. Allowing students to practice vocabulary by having dialogue with peers can help create confidence in language skills.

Specific instruction to dental hygiene students should include dental terms related to clinical practice. Use of strategies such as graphic organizers may help students visually learn technical terms. Classroom activities such as dental-specific videos or mouth models may be beneficial for hands-on group learning. Bilingual students who have more familiarity with terms, or whom have had dental experience may be good mentors and group facilitators.

Study groups containing a mix of ELLs and native English speakers are helpful in learning language. Group learning can be enhanced by role-play activities and dialogue using new vocabulary words. By providing activities to student groups that include new vocabulary terms and concepts, learning is enhanced through peer activity. When students are allowed to work with and learn from one another in small groups it may become less stressful and more productive. Students gain confidence and view their peers as equals when they share learning experiences.

6. Introduce helpful tools. A dental hygiene specific learning tool that can help with occupational vocabulary and concepts is the Dental Hygiene Deck, by Ebix/A.D.A.M. This product incorporates flash cards with dental terms and concepts. One side of the card is formatted with a question, and a detailed comprehensive answer and topic review is on the back. Students can quiz one another, or an activity can be done in the

classroom where groups can compete. All these activities of learning help the ELL see language used in different scenarios and in dialogue with classmates.

7. Acknowledge and celebrate that students in a classroom have different cultural backgrounds and experiences. Classroom teachers should honor the culture of their students while helping the ELL become familiar with the culture of the classroom and discussion topics. Classroom strategies should be used to help the ELL feel comfortable and included. By using strategies of inclusion, the ELL may have a greater chance of learning success and decreased feelings of loneliness and isolation. Group and peer activities are very useful in providing a welcoming classroom atmosphere to all students.

An activity that can be used in the dental hygiene program, and in all programs, is to have each student write a short autobiography at the beginning of the semester. This information can be shared with the class or can be specifically for the teacher. The knowledge gained from learning about an individual's background can help the teacher incorporate classroom strategies that can help all learners and can be built on prior experiences. It will also enable the teacher to be an advocate for each student as they begin their academics.

8. Access the students' prior knowledge. Students learn more effectively when they build upon prior knowledge. Using previous knowledge and experiences helps the ELL and all students learn continuing complex information. These prior knowledge experiences can help students with comprehension of unfamiliar text and content and allows application to new concepts. Using open ended questions, and having students work

with peers allows them to share and learn from the knowledge and experiences of others.

9. Standardize practices across the institution. Teachers in all disciplines should share strategies to provide comprehensible instruction. Providing instruction that includes introducing the topic, building vocabulary, activating prior knowledge and implementing student interaction can be shared across all classes. The ELL and all students benefit when teachers are knowledgeable about scaffolding techniques that can be used in classrooms. Using familiar tools helps the learner feel confident and supported while progressing in the academic environment.
10. Use the strengths of older ELLs to maximize learning. The older ELL may need additional strategies to compensate for skills and concepts that are missing from prior educational experience. It is helpful to remember that students may come into the classroom with fluent social language skills (BICS). Many times, the student will not function well in the academic setting due to lack of academic language skills (CALP). When these students are required to use academic texts and function in a higher education classroom, they may struggle. Teaching about textbook organization and vocabulary used in academic texts is often necessary as a first step to the students' higher education goals. Time taken at the beginning of the class session to discuss the upcoming lesson and reading assignments, while looking through the text, can help to bring questions and explanations forward that may help all students.

By recognizing students' specific needs, and utilizing proper instruction in the teaching of ELLs, they may be more likely to be successful in higher education and enter the workforce. This will ultimately provide more diversity in health and other occupations. These students can

become mentors for students following in their path. The effect will cycle back to an increase of applicants, then graduates, and ultimately an increased diversity in the profession. In order to attract more diversity into health care and other professions, instructors need to use best practices that will foster success for ELLs and all students.

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