Running Head: Technology in the EFL and ESL Classroom

The Value of Technology in the EFL and ESL Classroom: Using the Smartpen to

Enhance the Productivity and Effectiveness of ESL Instruction

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Abstract

As the world becomes increasingly diverse, teachers are challenged to effectively teach students new languages. Especially in China, where the government mandated that each individual must learn the English language, educators wonder how to most successfully meet the needs of students. With more than 165 million students learning English, China remains the largest market for language study. This essay attempts to explore how a specific learning technology can promote the effectiveness of ESL and EFL instruction. Livescribe, a company motivated to enhance the productivity of learning, created the Smartpen Pulse. This computer-like pen, which is full of technical features, can create a more productive educational system throughout China. Not only does the pen digitize and store handwriting, it can later transfer the data to a computer for permanent storage. It also acts as a translator and dictionary for each student. Its display allows for one line text and graphics to appear to the student. Combining the smartpen with existing textbooks, learning activities become more interactive and meaningful. The smartpen adequately aligns with learning theory in relation to use of a student's first language, explicit instruction of rudimentary concepts, and social interaction. As far as learning environment is concerned, the pen promotes differentiated activities where students are encouraged to take an active role in their learning. Accounting for curriculum and instructional strategies, the device presents all components of language with production and receptive tasks. Finally, formative assessment and accurate interpretation of a student's competencies can be understood easily and accurately. As educators, we must provide all students with the highest expectations, best learning environment and most quality resources possible. For this reason, the pen should be used in the United States. The pen allows teachers to implement more empirically validated learning systems in the classroom, increasing the amount of learning for any student.

Imagine stepping into a world where everyone around you speaks a language you cannot understand. Not only do you hear rapid speech and people laughing, unfamiliar symbols and letters surround you. You interpret next to nothing. All the while, teachers and classmates look to you for signs of understanding. Not only are you expected to understand what is being said, but you are called to simultaneously interpret difficult content. Anxiety takes over and all you can do is remain silent. You want to learn. You have to learn. You hope that with time you will understand this foreign language and the material the teacher presents. How will you be able to get good grades when you can't even understand your own teacher and there is no resource or modifications to help you in the process?

Unfortunately, many students encounter this discouraging environment when learning a new language. About 10 million 5-17 year olds in the United States speak a language other than English in their homes (Garcia, 2005). As our world becomes increasingly diverse, so too does the population of our schools, especially in the United States. Each year, more than 90% of recent immigrants enter the United States from countries where English is not spoken. At the same time, the limited English proficient (LEP) student population grew 138% from the 1989-1990 school year through 2004-2005 (Tamara, Villegas, & Freedson-Gonzalez, 2008).

On a more global scale, learning English is at the forefront of schooling throughout China. The country has mandated that every student learn English, as government officials believe bilingualism yields productivity (Ashmore & Xianhua, 2003). It is often difficult for these students to learn English as teachers lack necessary preparation and resources. Additionally, many teachers in China are not native English speakers.

The Chinese educational curriculum presents unique educational objectives, materials, and procedures from which the United States could learn. While the classroom situation is

slightly different between China and the United States, the main educational objective remains the same: instructors wonder how to most effectively teach the English language to non-native speakers (Ashmore & Xianhua, 2003). The number of students with limited proficiency continues to grow exponentially but unfortunately, their level of academic achievement lags far behind their language-majority peers.

Educators must maximize understanding of difficult content for students who are learning a brand new language. Today, when the government mandates accountability, the lack of success in educating linguistically and culturally diverse students is especially problematic (Echevarria, Vogt & Short, 2008). Instead of just focusing on the educational systems laid into place in the United States, much can be understood by comparing our programs to those throughout China. After considering the Chinese educational methods, it will be easier to recommend ways to improve the teaching practices, the learning environment, and curriculum with technology so as to produce the most effective language-learning program.

*Description of the Chinese System*

With more than 165 million students learning English, China remains the largest market for language study (Ashmore & Xianhua, 2003). The educational system is very traditional with one teacher and many students in each classroom. Unfortunately, students have not produced the results hoped for, and like the United States, the government stepped in to watch over the educational system. The Ministry of Education (a central government agency that is responsible for the language education system) has urged China to reform and improve the educational system (Ministry of Education, 2006).

Throughout the country, Chinese students wear uniforms and classrooms average about fifty students. Learners sit in neat rows and 2 children often share one desk. While the students are incredibly well behaved and disciplined, lessons are somewhat dry resulting in a class filled with uninterested, disconnected students. The attached lesson plan (figure 1.1) widely used

throughout the country hints at the uninteresting activities presented to students (Ashmore & Xianhua, 2003).

Currently, most curriculum and activities come straight from a textbook. One very popular program consists of eight different student books, 16 audiocassettes and a teacher's text. In one description of the program, Ashmore & Xianhua (2003) prove the dependence on workbooks stating, "there is one set for each semester, texts are labeled 3A for fall semester and 3B for spring semester. The 8x11 softbound students book's contents are termed modules, each module contains units. Each unit contains similar, yet varied sections" (p. 21).  Teachers rarely stray from this system.

Unfortunately, students receive no supplementary materials. Regardless of ability level, activities remain uniform and undifferentiated. The goal of instruction is quick completion of each book. Consequently, as soon as a class has finished one section, regardless of whether or not students master material, teachers introduce the next workbook. Unfortunately, as Ashmore and Xianhua (2003) commented, "the texts are lacking in the use of children's literature, video, small grouping, student-generated topics phonemic awareness and writing" (p. 24). There is very little focus on important language production and retention skills: phonemes, text comprehension, and vocabulary are not deemed important.

At the same time, authentic assessment is not used. Not only does an exam control the school a student attends, it also determines a student's eligibility for advanced training (Ashmore & Zianhua, 2003). Completely absent from assessment of student ability are formative measures including classroom observation, anecdotal notes, miscue analysis, and story retelling.

Both the United States and China find themselves in a tumultuous time where modification of EFL and ESL instruction is vital. World wide, schools are not meeting the challenge of educating students learning another language.

Luckily, as our world advances, so too does technology. It is important for teachers to consider how technology can compliment instruction and improve shortcomings. In China, the Livescribe Smartpen Pulse will increase the effectiveness of the current EFL curriculum.  Instead

of totally removing the workbooks teachers and students are already comfortable using, the smartpen can combine with the resources already available. This supports research showing that when improvement approaches enhance and expand a current instructional strategy instead of, radically altering it, the effort proves more successful (Gersten and Jimenez, 1994). The supplement of this technology will allow the learning environment to shift to better match the needs of students

*Description of Livescribe Smartpen*

In 2007, a company named Livescribe designed a pen called the Livescribe Pulse Smartpen. Unlike traditional pens, the smartpen acts as a small tablet computer full of technical features for student use. Operating in conjunction with a specific paper-based notebook, or workbook, the pen benefits an English Language Learner as it acts as a personalized tutor for each student (Livescribe, 2007).

The pen digitizes and stores handwriting that can later transfer to a computer for permanent storage. Additionally, a microphone is built into the pen with an audio recorder making playback and recording possible right through the pen. Its display allows for one line text and graphics, in any language, to appear to the student. The pen is completely portable as it runs off of battery, and its charge lasts for several days of typical use. Please see Appendix 2.1 for a photograph of the pen.

A tool like this provides such benefit in the educational setting, especially for a student learning another language. To begin with, the laborious process of note taking is made easy with the Smartpen. Because the pen can record what a teacher says while the student is writing, there is a recorded audio synchronization to the information that the student has written (Livescribe, 2007). After a student takes notes, he/she can tap on the page and hear exactly what the

instructor was saying at that time during class. This is especially important for ESL students who may need extra repetitions from the instructor, or extra work on proper pronunciation. The smartpen also acts as a reference tool and language assistant for an ELL. Pronunciation is made easy for a student with the audio to text conversion. A student can tap on a word and hear exactly what it sounds like when said aloud. Because you can record yourself saying a word and have the computer compare what you said to how the word should actually sound, the pen allows for personal pronunciation practice. Unlike many digital voice recordings, the pen does not change pitch when the rate is slowed down and no distortion of pronunciation occurs (Livescribe, 2007).

Containing a dictionary, the smartpen can give the translation into another language with a simple tap on the word. Paired with an interactive workbook, students are able to take a hands-on approach to learning another language; students take part in a number of activities that fall loosely under the categories of matching, multiple choice and fill in the blank (Nunan, 2005). Please see Appendix 3.1 for examples of a worksheet that corresponds with the pen.

Instead of having to wait days after handing in a homework assignment to receive any feedback, the smartpen allows for immediate, corrective feedback. A student can hear in the headphones whether or not he/she has made a correct response to a question in the workbook right away. Homework can be scored almost immediately with increased accuracy while saving teachers time to focus on creating meaningful lessons and activities for students.

The pen can be transported easily from classroom to home allowing a student to learn English at any time in any setting. Additionally, having the pen at home is important for students who are surrounded by a language other than English. With the pen, a teacher has running assessments of a student's strengths and weaknesses because each pen tracks student responses.

At about $150 each, the pen is well worth the expense as its educational value is priceless for a student learning the English language (Livescribe, 2007).

*Position Statement*

In my opinion, the smartpen technology will enhance the productivity and effectiveness of EFL instruction throughout China. Combining the smartpen with existing textbooks provides promise for the current system of instruction. Learning activities will become more interactive and meaningful, and as a result, students will become more engaged and interested in learning. As educators, it is our duty to provide all students with the highest expectations, best learning environment and most quality resources possible. The pen allows teachers to implement more empirically validated learning systems in the classroom, increasing the amount of learning for any student. The smartpen aligns perfectly with educational theories and psychology principles pertaining to a learner and learning, the learning environment, curriculum, and finally assessment. As Zhao & Lai (2008) reflected, "technology, especially modern communication technology, holds great potential for significantly improving second language learning" (p. 167). I believe the Livescribe smartpen provides adaptive modifications that will optimize the English language learning process.

<div align="center">Learners and Learning</div>

*Definition of EFL and ESL*

In order to fully understand my recommendation for students, it is vital to distinguish the difference between a culturally diverse student and one that is an English Language Learner (ELL). While a culturally diverse learner is exposed to a culture and langue other than English in

his/her home and daily interactions, an ELL is a subgroup of these students whose English

Language proficiency prevents them from accessing, and processing grade-level material in

English (Gottlieb, 2006). This proficiency is representative of an individual's competence or

ability to use the language. Not all culturally diverse students are ELL in that they may be fluent

in English as well as their first language. English as a Second Language (ESLs) are students who

know a language other than English as their first language. Oftentimes, ELL and ESL are used

interchangeably.

In the case of the Chinese students learning English, they would be deemed English as a

Foreign Language (EFL) because they are learning English in a country where English is not the

national language. Instead, it is considered a foreign language (Lightbown & Spada, 2006).

*Individual Differences*

Both EFL and ESL students face inordinate challenges for which teachers must account.

All learners come into the classroom with their own individual strengths, competencies and

learning styles. For this reason, ELLs must be understood as a heterogeneous group (Tamara,

Villegas, & Freedson-Gonzales, 2008). Because each person has different previous educational

experiences, environmental factors and cultural values, it is important for teachers to

acknowledge each student as an individual (Coelho, 1994; Finocchiaro, 1964).

Students also differ in their willingness to communicate and take risks. When students are

first learning a new language, some may enter a silent period, or time in which they are

absorbing more than they produce verbally (Coehlo, 1994). While he/she may appear passive,

the student is really learning valuable information about the language and culture in general. The

pen allows for a less intimidating environment for the often self-conscious learner. In China,

students do not speak freely and teachers are at the center of classrooms. The smartpen aligns

with the culture of the classroom but also provides students with an opportunity to work on their oral skills individually. In order for the maximum amount of learning to occur, teachers must not only acknowledge differences between students but also account for them in instruction

The smartpen makes this much easier for an instructor. Because the pen can keep track of a student's responses and errors, it creates tasks and asks questions that align with the specific needs of each individual student. Vygotsky's learning theory, specifically the Zone of Proximal Development, or the difference between what the student has already mastered and what they can do only with guidance, is taken into account with the smartpen (Collier & Thomas, 2004). The smartpen creates activities based on the skills and abilities of each student that fit into the ZPD of the student.

*Determinants of Learning Success*

One thing that helps determine the success of the language learner is the amount of time the student is exposed to academic language outside of the school (Corson, 2001). Additionally, a student's fluency develops more quickly when a student has a myriad of opportunities and tasks to engage with a language (Swain, 2005). The smartpen promotes language learning as the pen asks a variety of questions, and brings English into the home of a student even if his/her parents do not know the language.

At the same time, in order for meaningful learning to occur, a student must have comprehensible input (Echevarria et al., 2008). This is especially vital for ESL and EFL students. Krashen's input hypothesis states that in order for a student to understand content, an ELL must understand the conveyed message. Because students are placed in a context-reduced classroom, language is more purely academic (Baker, 2001). In order to proficiently work in this environment, students must understand the language of instruction. The smartpen aids with this

understanding. Because students can quickly translate words into a language they know, input becomes much more comprehensible and difficult content is more easily understood. Higher order cognitive processes necessary in context reduced academic environments are only possible when students gain meaning from the language. According to Nation (2001), a learner must be familiar with 95% of the input vocabulary for content to be comprehensible. Additionally, for unassisted reading, learners need to know about 98% of the words in the text. For this reason, the smartpen becomes a valuable resource for ELLs.

*Using a Prior Understandings*

In addition to having comprehensible input, learning occurs when a teacher engages a student's prior understandings (Garcia, 2008). Because students learning English have a fundamental understanding of their first language (L1), they often have a solid understanding of a grammatical structure and language system. This knowledge can be channeled into the English language with the smartpen. From the constructivist perspective, students learn best when they are able to build upon prior knowledge and interact with new ideas (Genesee & Upshur, 2006). As Garcia (2008) states, new learning "involves students building upon and reorganizing prior knowledge in interaction with new ideas and experiences" (p. 263). A student's first language is a critical component of their prior knowledge and teachers can program the pen with the first language of the student.

When a teacher acknowledges a student's first language, they create a more flexible learner. With the smartpen, students are given opportunities to compare vocabulary in both languages as well as grammatical structures. Because the pen has an electronic translator they can quickly and accurately compare their own language to English. This encourages students to understand universalities between the languages. The pen also increases metalinguistic

awareness (or the ability to think about one's own thinking) for the student (Cummins, 2008).

*Back to the Basics*

Additionally, a student makes new understandings only when he/she has a foundation upon which to build (Garcia, 2008). For ELLs, it is very important that time is spent establishing a solid knowledge of fundamental skills such as vocabulary and grammatical systems. Many ELLs do not receive basic language instruction because more attention is placed on content objectives. With the smart pen, the natural progression from the more basic literacy skills can be acknowledged without losing valuable content information. In fact, a student can learn more when they have mastered the rudimentary skills and vocabulary necessary to understanding the content of a lesson. There is a natural progression in language, and the smartpen allows for students to learn topics in a productive sequence.

The smartpen is a perfect tool for a student's individualized support especially since it provides immediate feedback. When using the pen, a student is given both positive and negative feedback so they understand what areas they need to improve upon. As Zhao & Lai (2008) stated, "corrective feedback (offered immediately from the smartpen) is a necessary condition for second language acquisition" (p. 173). This is especially important because oftentimes a teacher will avoid correcting a student's vocabulary or grammar in fear of being rude (Lightbown & Spada, 2006). While not every single mistake should be acknowledged, the smartpen creates a non-threatening environment where students can receive feedback so they know what they need to improve upon.

*Interaction with Others*

Social interaction also encourages learning for ELL students (Lightbown & Spada, 2006). According to the interaction hypothesis, conversation practice is essential when learning a new

language. At the same time, students should be given multiple exposures of a word and vocabulary in order to understand how to use the word (Gottlieb, 2006). With the smartpen, students are able to develop their vocabulary so they can more appropriately use it in conversation with peers. A teacher could use the smartpen as an opportunity for students to practice their language before having one on one conversation. The smartpen encourages verbal interaction amongst students as they develop a confidence speaking in their new language.

Learning Environment

Just as important as the individual differences and complexities of cognitive learning for an ESL student, the environment of the classroom and school influences the amount of English language learning that occurs for each student. Because ESL and EFL students are unfamiliar with the content they are learning, it becomes particularly important to create a non-threatening environment where learners can use their L1, where they are active in learning, and where they are called upon to use a variety of cognitive skills. Clearly, doing all of this can be overwhelming for an instructor, but with the aid of the smartpen creating this productive learning environment is simplified.

*Differentiated Activities*

Throughout China, students learn English completely out of a workbook. Teachers do not consider the individual needs, learning styles and backgrounds of students, as each student is given the exact same workbook and assignment. Little is done to differentiate material or to give students opportunities to become actively involved with learning. Without the smartpen, when students in China complete their assignments, there is no way to tell what the student needs to work on.

Ideally, instruction throughout the country will move away from workbook-centered tasks, while adhering to the needs of textbook manufactures, and teachers. By combining a smartpen with the textbook, learning becomes more individualized and interactive for each EFL student. Students can engage with the material, and even become excited about what they are doing. This allows for a more productive, but still culturally appropriate, learning environment. In a country where exam success is valued over communicative ability, the smartpen can increase the efficiency of English language instruction by creating an environment that promotes language learning (Ashmore & Xianhua, 2003).

*Non-threatening*

At the heart of learning lies a non-threatening environment where students feel comfortable taking risks. When students are first learning a new language, they often feel anxious especially when it is likely that they will make pronunciation and grammatical errors (Tamara, Villegas, & Freedson-Gonzalez, 2008). As Krashen identified (1982), this anxiety can be very detrimental to learning. For, if students do not feel comfortable their affective filter will prevent themselves from interacting with the material and they will simply be withdrawn form interaction and learning (Tamara et al., 2008). The smartpen helps encourages active practice and helps to eradicate this "filter."

When students are given opportunities to practice the language skills they are learning, they will feel more confident with their understandings and taking chances (Zhao & Lai, 2008). The smartpen provides students with time to communicate and practice an environment that is free from harsh judgment. With the smartpen, students can complete daily tasks and assignments and nobody else in the classroom knows if they are right or wrong. When students are apprehensive about making mistakes, this tool relieves some unwanted pressure.

Utilizing a student's first language in the classroom is another way for students to feel comfortable. In relation to the connection between a student's first and second language abilities, it has been said that, success in the first language is the strongest predictor of achievement in the second language (Collier & Thomas, 2004). With the smartpen, students can more easily access the similarities between two different languages.

For this reason, bilingualism becomes one of the goals of the smartpen, creating a less threatening environment for students. The Thresholds Theory states that we are able to store more than one language, but in order to understand difficult content material, students must have a quality understanding of the language the teacher uses (Cummins, 2008; Baker, 2001). A tool like the pen gives students an opportunity to make the language of instruction comprehensible by quickly accessing the meaning of words in a student's first language: it allows students to use two languages instead of just one. This theory also deems that balanced bilinguals may actually have abilities over monolinguals (Baker, 2001).

*Use of Native Language*

Students who have a strong conceptual development in their first language only need to learn the new labels for the concepts they already understand. Students who lack a foundation need to learn literacy and content simultaneously (Collier & Thomas, 2004). The smartpen isolates skills, while incorporating both languages so that students can have success in both content and language. When learners feel as though they can use their first language, they will realize that their native language can support their new learning (Baker, 2001). Students will feel as though their culture is valued since the use of their first language is encouraged. Related to research by Dalton (2008), students using the pen in the Chinese classroom will not have to

"choose between one language or another…instead they can mix languages or offer a translation" (p. 157). This can help aid in increasing an individual's vocabulary.

Instead of creating a submersion type of learning environment where students are thrown into a classroom and expected to learn with no native language support and no understanding of what the teacher says, students are encouraged to study the language of input (Corson, 2001). The smartpen creates an environment where a student's first language is used as a tool in English language learning, proving the importance of a learner centered environment (Dewey, 1943).

When students are connected to material and the learning process, they develop a much deeper understanding of material. As Nation (2001) stated, "students should be immersed in words by rich language environments that focus on words and draw student's attention to the learning of words" (p. 113).  With the smartpen, students are surrounded by vocabulary in a personalized way as they can add to the dictionary in their pen.

*Active Involvement*

The pen upholds social-constructivist theory of learning which states that learning is a sort of problem solving activity where students must be actively engaged with the material. One of the fathers of education, Dewey (1943) stated, "that we learn from experience, and from books or the saying from others only as they are related to experience, are not mere phrases" (p. 12). Instead of passively absorbing the information, and regurgitating it on a test, students using the pen are able to use their knowledge to answer questions and complete tasks (Anderson, Grant & Speck, 2008). Experimenting with the information, the student will gain a more complete conceptual understanding. At the same time, the pen creates a Constructivist classroom where students actively participate with material and where the student assumes more responsibility over his or her own learning.

The smartpen encourages higher-order thinking skills absent in classrooms with only straight lecture (Anderson, Grant, & Speck, 2008). Instead of totally eliminating the culture of the Chinese classroom, one where direct instruction is the primary means of teaching, the smartpen allows more constructivist activities to take place along with the more traditional type of environment.

*Interest and Motivation*

When a student is active in their learning environment, their interest increases. Teachers must strive to motivate students to be excited learners. For children who struggle or have been turned off by the more traditional learning activities, the smartpen can create an environment where learning is fun. Technologies make learning more fun by placing control over learning in the hands of a student (Nation, 2001). In one study by Cummins (2008), technology proved to increase student engagement with literacy. Students worked independently and completed activities at home as well as at school with an increased enjoyment of learning. The pen would have this same effect in classrooms throughout China.

Once again, the idea of differentiation within the classroom must be identified. Because differences in proficiency, learning styles and cognitive development can affect the motivation of a learner, the most effective language-learning program should respond to individual differences. When students can modify the difficulty of material and the pace at which information is given, they will have more success learning new content (Zhao & Lai, 2008 from Parker). The pen allows for differences to not only be acknowledged but also accounted for in instruction, creating a more appropriate learning environment for each student.

*Teaching a Variety of Skills*

In addition to the variety of abilities in a classroom, many different skills should be taught and utilized. Sociocultural theory argues that tasks that require communication are essential for learning another language. Not only does the pen encourage students to use their oral language skills, it promotes higher-level cognitive processes because they are mediated by language (Zhao & Lai, 2008). When learning a new language, teachers must craft activities where students use both receptive and productive skills (Nation, 2001). Some examples of receptive skills include, recognizing a word when it is heard, knowing the concept behind a word, and recognizing word cards. These skills often get more practice than the more difficult productive skills. The smartpen creates tasks of both nature.

When students are quizzed on words, a very specific repetition pattern is enacted so that students can remember the words for usage in the more difficult productive assignments. Because one meeting with a word is not sufficient for memorization, spaced repetition becomes essential. When words are presented to students at increasingly larger intervals, the possibility of remembering the word for a longer time increases (Livescribe, 2007). This can be done with the aid of the smartpen computer as it is easier for technology to keep track of which words were presented to a student and when. As a result, the pen provides an environment where students can fluently access new words and vocabulary.

Clearly, a welcoming learning environment is essential to learning. This environment is established when a teacher allows for a student to use his/her L1, creates connections between content and the student's life, provides students with an active roll in learning, and creates tasks that encourage a variety of skills. All of these things can be done more easily with the smartpen.

Curriculum and Instructional Strategies:

The classroom environment a teacher establishes helps determine the instructional strategies and curricular activities that take place within the classroom. Students who are ESL and EFL do not have a firm grasp of the English language. While teachers have learning goals associated with language including pronunciation, vocabulary, and grammatical constructions, it is also important to consider the subject matter knowledge that students need to learn. Because students access the curriculum through language, they must gain a sound understanding of its features (Tamara et al., 2008). Students can only succeed in a formal setting if they can understand and formulate thoughts in the majority language: in this case, English. For Chinese EFL students, the main objective becomes learning a second language.

*Learning Language Components*

At the heart of curriculum for both EFL and ESL students are all things related to the English language. As Finocchairo noted (1964), "Language" is defined as "the series of sounds, usually strung together in groups, which convey meaning to listeners. It is the system of arbitrary, vocal symbols which permit all people in a given culture … to communicate or interact" (p. 8). Because each language system operates with its own rules, they must be explicitly taught to new learners. At the same time, the most quality instruction focuses on meaning, language and usage (Cummins, 2008).

When learning English, students should be presented with specific information on morphology (the forms of words), syntax (the order or sequence of words), and phonemic systems (the sound system) (Finocchiaro, 1964). All of these are important when learning how the English language system works. For Chinese students unfamiliar with a language that does not have characters, teachers will need to explicitly present letters of the alphabet along with their corresponding sound. In relation to reading, the National Literacy Panel on language-

Minority Children and Youth discovered that language learners need direct instruction on phonemic awareness, phonics, fluency, vocabulary, and text comprehension in order to understand what they read (Echevarria, Vogt & Short, 1998).

At the same time, none of these skills should be taught in isolation.  While students are learning language skills, they should practice their oral language. The smartpen makes this much more feasible for instructors. By relating new material to a student's first language, the pen helps students gain achievement in English literacy by crafting individualized activities. The pen creates opportunities for students to practice their understanding of syntax, grammar, pronunciation, reading, semantics and vocabulary. The National reading panel identified four different methods that are related to success with the English language: phonemic awareness, phonics, fluency, vocabulary and text comprehension (Ashmore & Xianhua, 2003). The developers of the smartpen made sure that students are given tasks that relate to all four of these different frames.

*Vocabulary*

The smartpen also accounts for vocabulary development that needs to occur for English language learners. Because there is more than one type of vocabulary, it is important for a teacher to acknowledge the differences. In the English language, there are high frequency words, which account for about 80% of running words, Academic words (9%), technical words (5%) and low frequency words (5%) (Nation, 2001). At the same time, language can be used for a variety of functions. Because these functions are not purely academic, learners must have exposure to social language: salutations, apologies, complaints and requests (Gottlieb, 2006). While it takes about one to three years to develop conversational fluency, the language critical for educational and academic success takes about four to seven years because of its complexity

(Collier & Thomas, 2004). It has been said that the most productive teachers are those that provide individualized support for this type of language (Tamara, Villegas, & Freedson-Gonzalez, 2008).

When the smartpen was created, this was taken into consideration. Engineers made sure to include words used most frequently. Additionally, the smartpen introduces students to words of both social and academic orientation (Gottlieb, 2006). Because there is a difference between social language and academic language (which drives curriculum and instruction), students must develop proficiency in both arenas. The smartpen becomes the perfect vocabulary instruction tool as it generates vocabulary related to a students needs and abilities, and also includes a dictionary allowing students to quickly identify the meaning of an unfamiliar word.

Research proves that students who have access to a dictionary when learning a new language learn more words than students who have no access to a dictionary. Additionally, students with the linguistic resource also score higher on comprehension measures (Nation, 2001).

*Appropriate for Students*

In relation to vocabulary, teachers must make sure that their instructional language matches the needs of students for learning to occur. If content is new and unfamiliar, students will only understand the material when language is simplified. At the same time, when the content is familiar to a student, the teacher can introduce more complex and new terminology without hindering a student's understanding of content (Coehlo, 1994).

Clearly, teachers must match their expectations to the abilities of their students. In order to do this, a teacher must know the knowledge and competencies that the student has in order to design an appropriate curriculum (Nieto & Bode, 2008). When a teacher understands his/her

students, materials and assignments can be modified so that student frustration will decrease while motivation increases (Tamara et al., 2008). At the same time, instruction becomes more authentic, individualized and adaptive.

This may mean incorporating graphic organizers, visual supports, and real-life objects like the smartpen (Gottlieb, 2006). The smartpen allows for a quick and easy resource for understanding the English language especially for students whose parents know little to no English. When words are put into connection with a student's L1, students can relate to the curriculum. This is so important because, language minority children have a hard time relating to a curriculum filled with foreign concepts (Coelho, 1994). Despite the large class size in China, the technology allows for more one on one opportunity for students. When students are given more individualized, direct instruction from a teacher, their chance of finding success increases (Nation, 2001).

*Scaffolding Made Easy*

In reality, the pen allows for teachers to easily scaffold their students. As social-constructivist perspective states, students and teachers are co-learners. When literacy is taught with computer technology, classrooms become interactive, exciting, and busy (Dalton, 2008). Calling on students to reflect on their learning increases their metacognitive skills and abilities. Consequently, while students are learning English, they are also learning how to think about their own thinking, a valuable skill to use in all academic settings. With the smartpen, scaffolded learning environments are created where, as Dalton (2008) put it best, "supports are adjusted in relation to a student's needs and preferences, including students for whom English is their second language" (p. 155). As students become more proficient, their reliance on the pen can decrease in order to develop the highest amount of English language competence possible.

Dalton (2008) identified the importance of scaffolding: to create the perfect "balance of challenge and support for each student" (p. 156). I believe the pen helps achieve this balance.

*Challenge*

Teachers can also challenge students by introducing instructional activities that call for both receptive and productive language skills (Nation, 2001). Communication should be thought through both written and spoken language (Finocchiaro, 1964). As instructors, it is important to differentiate and attend to all four different frames of language skills (reading, listening, speaking and writing). Oftentimes, classrooms are more heavily reliant on receptive skills as most communication comes directly from the teacher. By itself, the "Go For It" textbook currently used in China is heavily reliant on receptive skills and students lack the practice and focus necessary for production skills (speaking and writing). By combining the pen with the workbook, students have a chance to engage in productive literacy skills, creating a deeper knowledge of material.

The pen is a quality instructional strategy that presents curriculum material to students in the most productive of ways. With digital environments, speaking and listening play an even more important role (Dalton, 2008). The smartpen calls on these two skills simultaneously to help bridge the first and second language. Consequently, the student constantly practices more than one literacy skill at a time. The pen also allows students to read and follow along with printed text, as the writing is read aloud. The voice from the pen provides a model of pronunciation, intonation and expression from which a student can seek to emulate. Students with a lower ability can put an accurate pronunciation of a word to its textual from. Dalton (2008) concluded that technology, like the smartpen will, "help students link words that they have heard, but did not recognize, to the printed words. For others, the read aloud will allow

them to process text more quickly" making material accessible and comprehensible for all people (p. 161).

Students learning the English language have a wide range of curricular concepts to learn. English syntax, semantics, morphology, phonology, intonation, lexicon, and pronunciation are just a few of the facets of an EFL/ESL's curriculum. At the same time, instructors must teach students how to use the language with both production and receptive skills. The smartpen is a perfect tool that enables teachers to use the most productive instructional strategies so that students can most effectively learn the English language.

<div align="center">Assessment</div>

For educators, assessment is one aspect of teaching that must be implemented to allow for the most meaningful learning to occur for a student. Large-scale assessment is stressed throughout China and how you perform on a test is of utmost importance. In reality, assessment helps drive instruction and curriculum for educators.

*Necessary for Teachers*

The assessment process is so vital to EFL instruction Gottlieb (2003) deemed it the, "centerpiece in the education of linguistically and culturally diverse students" (p. 1). Through assessments, a teacher can gauge his/her ability as a teacher as they reveal how much our students have learned or achieved (Finocchiaro, 1964). At the same time, assessments help reveal what a student already knows so that future instruction can fall into the ZPD of that individual. When a teacher takes time to assess his/her students, valuable inferences can be made about learning and instructional processes. As Gottlieb (2003) stated, "as educators we are constantly challenged to make informed decisions about or students; to do so, we plan, gather, and analyze information...so that the results are meaningful to teaching and learning" (p. 1).

At the same time, testing allows teachers to set realistic standards of achievement. By interpreting a student's results, we can judge whether standards have been set too high or too low (Finocchairo, 1964). If a teacher implements a new teaching strategy, assessing student understating can reveal its effectiveness.

*Informative for Students*

In addition to providing valuable information for the instructor, assessment should inform the student. Students should be given quick feedback about what they have missed and why. So often, teachers ask students to complete an assignment and by the time the student gets it back, they have moved on to another topic so they miss the opportunity to learn from their mistakes. Students should be able to evaluate how they are doing on classroom activities so as to understand areas in need of improvement.

Unfortunately, formal, written examinations are not always so informative for students. Because they often contain cultural bias, it is difficult to assess an ELL student in a fair, relevant and comprehensive manner (Gottlieb, 2003). For ESL students, it is often difficult to separate a student's language ability from content knowledge. On a test, a student may not be able to communicate their response even if they understand the concept being tested. Additionally, in a formal classroom setting with traditional assessment methods, students often want to hide what they do not know in order to get the best grade on an exam, which is totally counterproductive for a teacher.

*Benefit of the Smartpen*

With the smartpen, many of these concerts can be alleviated. To begin with, the smartpen helps to separate content knowledge from assessment of second language reading and writing skills (Dalton, 2008). Because the pen creates a less intimidating environment, students can take

risks as they are less afraid of making mistakes and teachers gain a better understanding of what needs to be reinforced.

When using the pen, students are given automatic and immediate feedback to their responses because student work can be immediately graded. Additionally, the pen has the capacity to produce worksheets and tasks that align with the needs and abilities recorded from continuous assessment (Livescribe, 2007). Technology provides instant and individualized feedback in ways that may not even be possible for human beings (Zhao & Lai, 2008; Dalton, 2008). The pen provides information for each student on things like pronunciation and intonation of words. A teacher can only attend to one student at a time. Having the pen in the Chinese classroom is like having a private tutor for each student.

*Understanding Student Process Skills*

While formative assessment is so valuable for teachers and students, it is a very time consuming and difficult process that teachers occasionally fail to implement. Oftentimes, examinations are set up with lower level questions that do not reveal a student's thinking process but instead the outcome skills of pure recall. The smartpen keeps track of a student's responses so that the complex interrelationships (including the contexts within which errors occur) that are the basis for inferences about the learning process are more easily observed Genesee & Upsphur, 2006). As a result, the time consuming process of understanding a student's thinking can occur. The smartpen creates a way for the feedback from learning activities to be channeled into adaptation of instruction.

*Accurate Testing*

Not only are students continually being assessed informally and formally, they are being assessed with increased accuracy so results become even more meaningful for instructors.

Because the pen has a small computer in it, student responses can be stored perfectly accurately and then analyzed (Zhao & Lai, 2008). Because assessing language learners involves documenting both content knowledge and language proficiency, the assessment process is extremely complex for instructors without the pen.  As mentioned previously, language is made up of four different domains: listening, speaking, reading and writing. Assessing each of these areas is usually daunting, but the smartpen designs tasks and assessments that relate explicitly to each of these. As a result, a student's ability is made more easily evident.

As educators, it is our responsibility to expect the most of our students and to accurately assess their abilities and learning style through careful observations (Nieto & Bode, 2008). Assessment can provide equitable access to education for all and the smartpen allows for continuous, accurate and timely assessment that benefits the student and teacher (Gottlieb, 2006).

*Questions and Implications for Future Practice*

Clearly, the smartpen has the potential to greatly improve the educational system for teachers and students learning a new language. While encouraging interactive, individualized learning for each student, the pen helps create activities that match the ability level of each learner. The result: a more challenged and motivated student. Quality instructional practices based off of empirical learning theories are not only applicable for schools throughout China, but also in the United States- where immigration continues to rise. In the next decade, the population of immigrants is said to increase by 11 to 15 million. In my opinion, the smartpen would be a productive tool in any country or setting where students are learning a new language.

As a teacher, I will better meet the needs and abilities of my students with the aid of this technology. As our world and classrooms become more diverse, it is even more difficult to have an understanding of all the languages our students speak. With the pen, students are able to relate

the instruction and language from the teacher to their first language. Consequently, this tool promotes understanding of a new language, and it helps to create a more globalized, cultured society. As schools become increasingly diverse, students and teachers must continue to promote multilingualism.

Even when recent educational policies and standards have begun to dictate curriculum and instructional activities, I adamantly believe the smartpen can increase productivity within the classroom in an interesting way. Teachers instructing students who do not know English may feel unwanted pressure from increased accountability to the state, but the smartpen will help relieve some of the stress of properly educating these students as it makes building a productive and supportive educational environment easier.

I do realize, however, that as with all technology, limitations exist. Because technology is only as productive as those in operation, teachers and students must take time to learn exactly how to operate the pen. I also worry that teachers and students may become overly reliant on this interactive tool. Teachers must realize that they need to continue to design activities, to observe and to assess their students even if the pen is used in the classroom. The smartpen is merely a beneficial supplement to instruction.  At the same time, students must not become overly reliant on the pen and forget how to work in a more traditional classroom setting, as they will not always need to use the pen. The goal of instruction is still to create independent learners who are self-sufficient without the aid of the pen.

In the future, I hope to see the pen working independently from the workbook for ESL and EFL students. This would be one way to ensure that teachers still take an active roll in educating students. At the same time, teachers could continue to use their most quality instructional materials in conjunction with the pen, creating wonderful activities for the student.

I am also concerned that tools like the smartpen will only be used in wealthy school districts. Resources, especially fancy technologies, have the potential to further stratify wealthy districts from those who do not have large financial resources. It is saddening that oftentimes school districts that need quality materials the most are those who are left without the resources. Hopefully, as more and more information becomes available for educators about the smartpen, their availability will increase at all educational institutions. Information really is key and as more people learn about the pen, hopefully more people will ask for their availability within school districts even if it means writing a grant to receive funding for the tools.

Because technologies like the smartpen are relatively new, there have not been many studies testing how diverse students learn in digital environments. I will continue to obtain the results of longitudinal research on tools like the pen.

As I move ahead in my professional career, I am confident that no matter where I teach, I will design the most productive environment for my students. When technology is combined with my instruction, I will create a place where learning theories directly influence my curriculum and instructional strategies and where I am constantly assessing my own effectiveness as an educator. I am confident that with a tool like this, I will become an even stronger, more effective educator who is ready to tackle any challenge of education and inspired to motivate all students to work their hardest to learn the English language.

Appendix

Figure 1.1:

in the public schools.
glish lessons in the public schools are structured
uniform. The *PEP English Teacher's Manual Book 1*
1), which is based on the MOE's 2001 *Basic Require-*
*s for Primary English Teaching (Experimental Version)*
Appendix C for a complete translation), offers the
wing English lesson design:

Warm-up/Revision
Sing an English song learned in a previous lesson;
   students act while singing.
Teacher and students (standing up) exchange greetings.
Review English words by listening and recitation.
Presentation
Demonstration: The teacher takes out an empty bag
   and says the words, *pen, ruler, eraser,* and *pencil.*
   She puts the object in the bag and asks, "Where's
   my pencil?" Then, looking into the bag and tak-
   ing it out, she says, "Here it is!" The teacher re-
   peats the demonstration with other objects.
Imitation: The teacher asks the students, "Where is
   your pencil?" The students show their pencils and
   answer, "Here it is." Repetition with other objects
   occurs, including body parts.
Practice
Let's chant: Students listen to the audiotape and clap
   hands to the rhythm. Students chant in two groups,
   that is, Group A asks, "Where is your nose?" Group
   B points and answers, "Here it is." The groups ex-
   change roles; volunteer pairs come to the front and
   perform the dialog; and the teacher verbally rewards
   the best pairs.

listen to the sentences and circle the relevant pic-
   tures.
4. Assessment
   Students do exercises in the activity book. For ex-
   ample, students find the hidden body parts in the
   picture and work in groups, saying, "This is . . ."
   and "Look at the ..." to show the body parts found:
   foot, head, face, nose, mouth, ear, eye, arm, finger,
   leg, body, hand.
   The teacher encourages peer assessment in groups.
5. Additional activities
   Listen to the text recording and read text.
   Read and act.

(Ashmore & Xianhua 2003)

Figure 2.1:



(Livescribe, 2007)

Figure 3.1:

**5** **Complete the conversation. Use the words in the box.**

| | | | |
|---|---|---|---|
| five-thirty | today | love | when |
| can ✔ | the day after tomorrow | my | lesson |

A: _____Can_____ you study with me?
        (1)

B: I'd _____ to. _____?
        (2)              (3)

A: What are you doing _____?
                      (4)

B: I have a piano _____ today. What are you doing tomorrow?
                  (5)

A: I have to visit _____ grandmother tomorrow.
                  (6)

B: Oh, no! Well, what are you doing _____?
                                    (7)

A: The day after tomorrow is good. Can you come at _____?
                                                    (8)

B: Sure!

**6** **Read about Meimei and Judy. Then read the statements and (circle) True or False.**

Meimei is having a party Saturday night. She has to shop and clean the house. She is shopping for the food on saturday morning. Her friends like hamburgers and ice cream. In the afternoon, she's cleaning the living room and kitchen. She wants to go to the movies at 3:00, but she has to babysit her brother from 2:00 to 4:00. At 6:00 she's eating dinner and the party is at 7:00.

Judy is coming to the party. She wants to help Meimei on Saturday, but she can't. She has a soccer game in the morning. And in the afternoon, she's going to her uncle's house. She's coming to the party at 8:00.

| | | |
|---|---|---|
| **1.** Meimei has to study for a test. | True | (False) |
| **2.** Judy has a soccer game Saturday morning. | True | False |
| **3.** Meimei can go to the movies Saturday afternoon. | True | False |
| **4.** Meimei's friends don't like hamburgers. | True | False |
| **5.** Judy can help Meimei Saturday afternoon. | True | False |
| **6.** Judy is coming to the party at 7:00. | True | False |

**18** **UNIT 5 • Can you come to my party?**

(Nunan, 2005)

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