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Enhancing the Learning and Retention of Biblical Languages for Adult Students

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Abstract. *Finding ways to reduce students' anxiety and maximize the value of learning Greek and Hebrew is a continual challenge for biblical language teachers. Some language teachers use technology tools such as web sites or CDs with audio lessons to improve the experience. Though these tools are helpful, this paper explores the value gained from understanding first how students learn and then how technology tools best support that learning. Developments in cognitive psychology and neuroscience offer many insights concerning adult learning and retention. After a presentation of key insights, several ideas are suggested for enhancing the learning and retention experience of biblical language students.*

Introduction

Most of the students who begin my Introduction to New Testament Greek course are experiencing a great deal of trepidation. They are usually in their mid 30s–50s, and because of aging brains, as they put it, they believe that learning Greek and retaining vocabulary and paradigms will be very difficult. I have taught Greek for 16 years and have done several things to improve the learning experience for these anxious students. Most recently I added a class Web site and course CD. However, contrary to hopeful expectations, the students' learning did not significantly improve. I begin this paper by describing the use of technology and the discovery of its limitations for enhancing the learning experience. Following this I present insights gained from developments in cognitive psychology and neuroscience concerning adult learning and retention, and I examine the relationship of the insights to the use of technology in the classroom. In the final section, using these insights I suggest some ways to create a more productive and less anxious experience for adult students in a biblical language course.

Using Technology

Several years ago when technology came along I thought I had found the mother lode for lessening students' anxiety and enhancing their learning and retention. I developed a CD for the course in Greek. The CD contained audio-PowerPoint presentations for each lesson, flash cards with audio, reading and parsing of biblical texts, a full lesson manual with exercises and answers to those exercises, and links to helpful language-learning sites. Students could take the professor home, listen to lessons, and practice them until mastery of the material occurred. I created a Web site where students had learning partners and could work together teaching and supporting each other, and where they had easy access to the classroom teaching assistant. After using these technology tools for two years, I realized that students had not significantly improved their level of Greek learning.

Language learning is hard. Learning a language which has ancient texts as the focus rather than conversations with living people and interactions with modern cultures is harder. Like most biblical language teachers, I want students to feel successful and to enjoy their language-learning experience, and then to have a vision for using it consistently in ministry. However, what we often get are anxious students desperately jumping through the language hoop as if it were a great ring of fire. They hope to hop out on the other side only singed, not seriously burned, to receive their reward, the degree.

Because it is such a challenge, I think we biblical language faculty fall into the trap of believing that with the right technology tools, textbook, or classroom trick, language learning will become a more enjoyed and successful learning venture. I expected technology to be that new panacea for making the grindingly difficult task of language-learning less difficult. Technology

helps, but it is not enough. I have come to understand that I approached the use of technology in the classroom, and even the whole process of language-learning, backwards. Instead of tweaking the technology, I have to rethink how I teach Greek.

Usually we biblical language teachers begin with the content and the outcomes we want to achieve. We add materials, lectures, technology tools, and exercises to support those learning outcomes. Then students come to the class, and we begin teaching. Instead, before we even think about what we are teaching, perhaps we need to consider who we are teaching, the adult students. How do adults learn? How do adults memorize for long-term retention? How do they recall and apply correctly what they have learned? The following section deals with these questions.

Brain-based Learning and Constructivism

Brain-based learning is a learning theory developed from how the brain functions (Abbott and Ryan 1999; Caine and Caine 1994; Ryder 1994; Sylwester 1995). The learning principles are rooted in findings from cognitive psychology and neuroscience. The principles have to do with the optimal ways in which adults learn new things and remember these things long term.

A common misperception is that the brain is the thinking part of the body and that knowledge is stored in neurons much like we put things away in a drawer. Information goes in and is stored in neat little drawers, some of them harder to find than others. When the drawer is opened, we can retrieve what we need to use. Actually, knowledge is not stored in pockets of places but rather in patterns of connections. The strength of these patterns of connections determines the accessibility of retrieval. The more the patterning happens, the stronger the recall. In fact, recalling only part of a well-established pattern will signal the recall of the whole pattern. Swimming, once learned, is not forgotten no matter how many years between dips. Getting into the water unconsciously signals the recall.

Patterns of connections are distinct in each adult. Patterns are built not on a common blueprint, but rather on the unique networks established from each person's particular past experiences. Each brain learns through making new connections based on previous networks. In other words, learning is constructed on a person's particular past experiences. Learning does not happen through instruction, but through connection-making with previous established networks. If the brain has nothing on which to build new learnings, it will construct a new network.

These networks happen because the brain is social and searches for meaning. Patterns are established and personal identity determined through connections with other persons. The brain makes sense of life by creating patterns of reality. For instance, if a person was born blind, and then had her sight restored through surgery, she would have to learn how to see. Her brain learned to function without seeing. That was the brain's reality. In order to see, the brain would have to learn how to analyze and interpret what the eyes now see. As the brain searches for meaning, then patterning occurs.

The brain does not make patterns based solely on logic, but on both emotional and cognitive circuits. Emotional processes and cognitive processes are not separate but are always intertwined. Restak writes, "Almost every thought, no matter how bland, is accompanied by an emotion, no matter how subtle" (Restak 1995, 21). Emotion is the conscious result of unconscious processing happening deep in the psyche. It is the glue that integrates the body and the mind (Sylwester 1995, 75). Events trigger emotions that can signal a wide range of meaning from danger to curious interest. Persons attend to things that have emotional import. For instance, if a person is fearful because he doubts his ability to compete on a par with others in the classroom, the fear will occupy the attention of the student, whether he is aware of it or not. If the fear is intense, it can choke motivation. If the fear is less intense and energizes the student, it can increase motivation.

Emotion is a complicated matter, distinct in each individual. The notion that having students present in a classroom will result in new learning is inaccurate. The environment needs to feel safe. Positive connections between students and the teacher and between students and students are critical for learning to take place. Dr. Zull writes, "This new understanding of the brain confirms that emotion, personal involvement, and caring are required for deep learning" (Zull 1998). Students do not learn as much in classrooms where they feel passive, fearful, or stressed.

Telling an anxious student that she can learn a language is not enough. Changing an entrenched belief is hard because not only do the facts behind it have to change, but the emotions do too. The emotional systems behind the fear have to be addressed. This is only possible if the student is aware of how she is thinking and feeling, observing the metacognition that is going on all the time. Metacognition involves observing the habits, assumptions, beliefs, and practices that reside in the unconscious part of the mind. New learnings require an awareness of all that is going on inside a student, both the thoughts and the emotions. In order for students to learn, they must first recognize and address the metacognitions occurring below the surface of the classroom experience.

New learning is a social and emotional experience that involves remembering, processing, and integrating new information to make new meanings. The following points about brain-based learning are germane to language learning:

- Learning is the creation of the capacity for new memory (Gussin 2002, 1).
- Short-term memory is small and involves facts (Caine 2001–2003).
- Long-term memory is unlimited and is established through emotional connections (LeDoux 1996; Gazzaniga 1992).
- Learning is enhanced by challenge and is inhibited by threat, stress, helplessness, or fatigue (Caine and Caine 1994; Hart 1998).
- Memory that comes from a visual or spatial pattern is the most likely to remain. Hearing is the least effective way to establish memory (Caine and Caine 1994).
- Learning involves the whole body. Body movement which uses "balancing or involves fine motor control, facilitates learning" (Zull 1998).
- Activating prior knowledge enhances the adding and retrieval of new knowledge (Mann 2002).
- Retrieval of knowledge is increased when the context at learning and at recall is similar. This is called "encoding specificity" (Mann 2002).

Memorization through cramming is a short-term memory exercise. The individual is adding facts to the brain. If memorized material is to reside as a long-term memory, then several elements enhance that likelihood. Using spatial or visual patterns is critical. Building on prior knowledge and engaging the emotions and the body is also very important. Encoding specificity, where the learning took place and where it is recalled, matters. Students learn best when the new information relates to a problem or challenge they actually might encounter.

The brain has natural learning processes which sometimes are thwarted in the traditional academic environment. Adults learn best through repetitive pattern-making associations from familiar to more challenging information in which they are active participants as problem solvers in a social setting. They problem solve more effectively when they can observe the processes of an expert.

The teaching method "Brain/Mind Constructivism" takes these insights regarding the biology of the brain and creates a learning environment which facilitates the natural way students learn (Caine and Caine 1994; "Learning Theories: Constructivism"). Learning is not the primary activity of the teacher, but the primary activity of the student as the meaning-maker. Learning is student-centered. Students are responsible for constructing their own learning goals, doing research, formulating questions, accessing experts. Higher levels of thinking are encouraged. Constructivism plans for different types of learning styles and different types of intelligences since each brain is unique (Gardner 1993, 1999). The classroom experience is active, challenging, and enjoyable.

Constructivism is especially suited to the use of technology. The Internet is organic and responds to human participation and collaboration (Ryder 1994). The MIT Media Laboratory has compiled 30 years of research on how technologies enhance constructivist learning. By using technology, the teacher can move more easily from being the lecturer to being the coach. Online resources, CDs, web sites for the class with chat rooms and discussion areas, smart classrooms for PowerPoint, music and video all allow for a high degree of individual and group interactivity. Adults learn best in a learning community where the learning is application driven, and self-assessment and feedback are looped into each new learning experience. Technology can easily support such an environment.

Coordinating learning with a partner or a group is possible even with students living at great distances from each other. Students can set their own pace for learning when the information is accessible and easy to review again and again. The Internet provides a virtual library with abundant resources. Information is easy to retrieve. Experts are easy to find and consult. Students are empowered to be more competent and to make deep learnings in a subject area.

After reading about "Brain-based learning" and "Brain/mind Constructivism," I realized that some of the things I have done with my New Testament Greek class did indeed help. Using technology was a good decision, because by their nature the tools are interactive, participatory, and give access to experts. However, technology is still only a part of the framework for enhancing effective language learning in adults. The final section of this paper introduces some ideas for how a biblical language course might be reconstructed using these learnings.

Enhancing the Learning of Biblical Languages

To enhance deep learning of biblical languages the relevant factor is not any one technique or tool but rather a radical approach to the whole system of how we teach. The traditional methods of sitting at tables or desks, listening to a lecture, practicing translation exercises, even being tutored with a CD, and taking quizzes and tests, do not translate as well to deep learning. Brain learning theory and constructivism suggest several principles for creating a rich learning environment. These principles are suggestions, some of which I have tried and some with which I will experiment. I believe there are other possible connections biblical language teachers might make between these insights and language learning.

Construct the Course around Concepts Relevant to Students and their Ministries

Most biblical language courses are based on a grammatical approach to language learning. They begin with

orthography and move to nouns, verbs and tenses, adjectives, prepositions, verbals, and so forth. A more natural way to build neural networks for retention and understanding would be to construct the framework of the course around issues or concepts that are relevant to students. These concepts illustrated in New Testament texts might be key doctrinal issues or social issues that are debated in the church. They would be chosen to demonstrate the value of the grammatical structure being taught in each lesson and to correspond with the developing Greek facility of the students. These concepts could come from any number of fields such as theology, history, social science, or spirituality. For example, theological concepts might include the paradox of works and grace, the sovereignty-of-God and free-will debate, various views of the sacraments, the nature of the church, or different views of sin. Relevant social themes might include women in leadership, the nature of the family, stewardship of resources and the earth, social responsibilities, or war and pacifism. Students retain information more easily when it corresponds to their experiences and concerns. The purpose of using key concepts is to illustrate the value and relevancy of original language study. It does not resolve the issues or debates or allow time for a full discussion of the arguments.

For several years I taught a Greek survey course to counseling students. I created the lessons around the question, "What are the characteristics of a relationally healthy person?" I asked a counseling student to research the question and develop a list of 12 qualities. I found 12 New Testament passages which corresponded to the characteristics and which students could manage in a survey course. Then I wrote a lesson for the course objectives each one illustrated by a characteristic. Counseling students looked forward to taking the course, enjoyed the learning, and mastered the objectives. However, until I studied these learning principles, I did not correlate the importance of relevancy to learning for my regular New Testament Greek students.

Attend to the Emotional Environment

Emotions in a Greek class matter. People do not function well under stress, but they do work hard if they are motivated to learn something beneficial to their life and ministry. Attending to emotions does not mean diminishing the cognitive challenges. Rigor is still possible. Students generally do not mind working hard if there is an overall tone of openness and support. Factors that create stress can sometimes be alleviated if they are discussed. For instance, at times students feel that they are the only ones struggling or that they are the only ones feeling behind. Feelings are rarely discussed in a Greek class, and yet the emotions behind language-learning are

key to a student's success. I have started asking students about their level of anxiety. We try to sort out the source of the fear which often leads to naming a false belief about one's capability or identity. Talking about what is going on in the heart along with the stimulation of the head builds self-awareness and connects students in a more natural familial environment.

Humor can keep a classroom relaxed. I have a collection of Greek jokes and cartoons, which I use every now and then. The Wabash Center Web site for "Learners and Teachers of New Testament Greek" ⟨*http://www.wabashcenter.wabash.edu/greek3*⟩ collects humor for students and the classroom. This semester my students are having fun by putting the alphabet to different types of music. Humor helps and developing a caring environment helps. Having a class web site where students can post important information about events or concerns in their life keeps people connected throughout the week. I begin each class having students check in with each other and pray for each other. Paying attention to the emotions of students is essential for long-term learning.

Empower Students with Insights on Adult Learning and Metacognition

Students' self-esteem and sense of control are important. Teaching adult students about brain-based learning empowers them to undertake their own learning in a more productive manner. This semester I taught the principles of brain-based learning the first day of class, and then assigned a couple of learning style profiles for each student to complete on the Web. Knowing one's learning style strengthens self-esteem and empowers the adult student to be creative with their learning needs. After taking the profiles, students can use the results to formulate their own optimal learning methods and goals for the course. In the following class session we discussed how each style might best learn Greek, and I put them with partners that had the same learning style.

Eventually I would like to teach students the importance of metacognition for language learning. A professor could create a guided exercise, which teases out students' assumptions, beliefs, and emotions about language learning. These would be talked about in the classroom or online at the Web site. An important aspect of constructivism is having students develop awareness of their emotions and then learn how to manage them for optimal learning.

Use a Student-centered Approach in the Course Design

Student-centered learning gives students control over and responsibility for their learning. Students would set their own goals for the level of proficiency and grade they wanted to earn which would include their study

habit plans. David Black's *Using New Testament Greek in Ministry* (1993) has a helpful guide to the various levels of language learning. Students who do not need to master Greek might have different goals than the student who is going on to do doctoral work in New Testament. The professor then would structure the manner in which different goals would be evaluated.

Student-centered learning activities might include having students construct their own Greek sentences, create their own grammar notes from reading other experts, develop PowerPoint presentations, or teach someone else as they learn themselves. Students could create their own vocabulary cards and charts. In my experience, students who have been the most successful at memorizing have been the ones who created their own system for capturing the image of the word or the paradigm. Creating flash cards for students on a CD is a helpful self-assessment tool, but it is not helpful for creating pattern-making associations for long-term retention.

Each class could begin with students summarizing what they have learned, and each class could end the same way. Instead of the professor doing this, students would make the extra effort to understand what was taught. Students would benefit from coming to class already having heard the lesson. Therefore, having a CD with the PowerPoint presentation with audio would be more helpful than simply reading the next lesson in a grammar text. The purpose of the professor is to be the coach and guide, and to demonstrate the processes of an expert when handling the Greek text.

Feedback and assessment can also be student-centered. Grades are based not on the amount of information ingested, but on the level of deep learning. Having answers readily available to exercises and getting immediate feedback on quizzing or testing encourages the student to take responsibility for learning. Students continually ask me for more self-assessment exercises at the Web site. Students need many opportunities to practice and assess their learning. Grading would be based on students' accomplishment of their goals and their proficiency at their level. Getting the students to be as active and as pro-active as possible enhances their learning and retention.

Develop the Social Environment for Language Learning

Optimal learning is a social experience. A class Web site helps establish an on-going social setting for language learning. I have also found success pairing students with a learning partner. Learning partners have commensurate abilities and ideally have the same learning goals and learning styles. If one of the partners is ahead of the other, the weaker partner will either become too dependent or will isolate himself from the partner. Learning partners are encouraged to work together on assignments. I even have them do most of their in-class exercises (quizzes) together. Students are encouraged to connect with each other and with learning experts for clarification and confirmation. They are encouraged to study together, to resolve questions together.

Conclusion

The difficulties of teaching adults New Testament Greek for retention and application are obvious to professors and students alike. On the other hand, the biological insights into how adults learn are fairly straightforward and clear. These insights serve any biblical language teacher. The challenge for biblical language faculty will be in shifting how we view our role as professors and how we function in the classroom. Student-centered learning is harder for the professor than traditional professor-centered teaching. Some faculty might think that the attention to emotion and social connections is too touchy-feely and irrelevant for their primary responsibilities – to teach students and research the New Testament. Others might struggle with the personal work it would take to change one's teaching paradigm and the construction of the language course.

I myself have only begun to see the implications of changing how I teach based on how adult students learn. I invite discussion about other possible connections between brain-based learning theory and Constructivism as it relates to the learning of biblical languages. My hope is that this article will stimulate fresh thinking about how biblical languages are taught in theological and religious studies settings. Already in the reviewing of this article, one professor suggested that students begin with New Testament Greek texts which are conversational and interactive. I found the idea engaging. I believe there are other such ideas which habit and convention preclude us from imagining. Biblical language learning will always be hard. Nevertheless, using principles learned from cognitive psychology and neuroscience will enhance the learning experience of students. We will have more motivated and relaxed students who, despite the difficulties, enjoy the challenge, and who hopefully, learn and retain more New Testament Greek.

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