# It's Elementary: Unlocking the Mysteries of Learning

Presented to Dr. Davey Naugle in Partial Fulfillment of the Requirements of Summer Institute of Christian Scholarship

> By Judy Abercrombie November 7, 2003

## It's Elementary: Unlocking the Mysteries of Learning

On one recent Friday, the DBU Lab School was abuzz with all sorts of activity in the name of learning. Each kindergartner proudly sported a "nerdy necktie" in celebration of the letter "N" while first graders were playing musical chairs to help learn reading words. The second graders were busy preparing for a play they were presenting in reading, and a third grade student, dressed as Dr. Ben Carson, related what he learned from reading Carson's biography. Further down the hall, fourth graders were posing for their immigrant family pictures as they prepared to cross the ocean to a new land; and fifth and sixth graders were sketching pictures of pyramids before building scale models. This may not necessarily be education as you remember it. However, it may be closer to the learning that was modeled by Jesus and the instruction provided for the younger generation of the children of Israel. Have we come so far in education that everything old seems new again?

Recent developments in brain research have radically impacted the education field. An area of research often referred to as Brain Based Research has developed as technology has allowed researchers to actually view the workings of the brain as it functions. The information that is now coming from this area of research causes leaders in educational research and reform to call for changes in teaching strategies, curriculum development, and classroom environments. The movement of Brain Based Research invites educators to examine closely all they have accepted as the best practices for imparting information and encouraging students to learn. Yet, a closer examination of the movement confirms for us that the Creator has always provided us with the clues and models we need to be exemplary teachers. Modern research reaffirms that we can trust the instructions that the Lord has given His people regarding the teaching and training of their children. It further shows that Jesus Christ demonstrated masterful teaching skills when he taught his disciples and followers.

A little background is necessary to understand where this education reform furor is coming from. For a long time, education theorists could only guess what was going on inside the brain. Protected by a skull, the brain was not readily viewable as it worked. Most of what we knew about the mysterious workings of the brain came as a result of examining it after trauma or death. Since educators could only guess at what was going on inside the brain, they watched what happened as children grew and learned, what happened in a classroom, even what happened as animals were trained. They tried to get information from parents, students, and teachers. From these observations, interviews, and hundreds of repeated experiments, various theories developed. Consequently, some students were cajoled into learning through various rewards and punishments. Others were coaxed to learn by understanding the feelings the child was experiencing. Some were taught by making learning appear so enticing the child would be naturally drawn to the learning process. The intentions of all the researchers, educators, and parents generally were good—find the best way to get information into a child's head and keep it there for further use.

Now that modern body imaging techniques are fairly common, we are no longer left to guess at what is going on inside the brain as students learn. We can actually watch the brain as a student reads, is exposed to new information, works math problems, or even does a presentation. The scientist can see changes in the chemical make up of the brain. He can isolate the areas of the brain where changes are taking place. He can even detect differences in chemicals in some brains which help the educator understand much more about learning differences (Sylwester, 1995).

After studying this type of information, researchers and educators have worked together to determine that there are specific teaching strategies that enhance the learning of new material. Others promote assimilating new information with information already stored in the brain, and still others are favorable for storing information in long or short-term memory. When we compare the information coming from this type of research with the instructions that were given to Old Testament parents for educating children or to the teaching style of Jesus Christ, there is an amazing similarity. We can conclude that the Creator of the person has been showing us all along the best way to teach him.

Researchers at Midcontinent Research for Education and Learning (McREL) did extensive research to determine the best teaching practices for teachers to use in all levels of classrooms to increase student achievement. Their studies revealed nine strategies that most contribute to increased student achievement. Those strategies are:

- Identifying similarities and differences
- Summarizing and note taking
- Reinforcing effort and providing recognition
- Homework and practice
- Nonlinguistic representations
- Cooperative learning
- Setting objectives and providing feedback
- Generating and testing hypotheses

• Cues, questions, and advance organizers. (Marzano, Pickering, and Polluck 2001).

We can find examples of all of these strategies in the ways Jesus taught, the ways parents of children in the Old or New Testament were instructed to teach their children, or as a part of actual practices of worship. From the beginning, we will see, the Creator was putting into practice those teaching strategies which educators have come to call "the best practices" of teaching. We may find ourselves hitting our collective foreheads and saying, "We should have known that!" However, before we are too hard on ourselves, we can also find reason to be grateful that the research validates that the Creator of the universe indeed knows His creation well. Once again, science confirms that all knowledge comes from God. All truth ultimately rests in Him.

## Identifying Similarities and Differences

Researchers into learning strategies have concluded that the mental operations used in identifying similarities and differences are at the core of all learning (Marzano, Pickering, & Polluck). As a part of their research, they gave a group of students a problem to solve. Approximately 10% of the group were able to solve the problem. After giving the same group a story which could be compared to the problem, 90% of the group were able to solve the problem. Their conclusion was, "…once the similarities are identified between the story, which is easy to understand, and the problem, which is difficult to solve, the solution becomes obvious" (Marzano, Pickering, & Polluck). Strategies that use identifying similarities and differences are

- comparing and contrasting
- classifying
- creating metaphors
- creating analogies.

Jesus often used these strategies when teaching either His disciples or a crowd who had come to learn from Him. Parables were one of His favorite teaching strategies. Parables allow the learner to compare something with which he is familiar to something he may not understand. When Jesus wanted His hearers to understand the concept of the kingdom of God, He used parables. He would begin these discussions with the statement, "The kingdom of God is like." Then, He would catch their attention by comparing it to something they understood. For instance, He said the kingdom of God is like yeast in dough or a mustard seed planted in a garden (Matthew 13:31-33). The hearers of these comparisons would have been farmers and homemakers. They could relate immediately to what Jesus was teaching. Mark tells us "With many similar parables Jesus spoke to them, as much as they could understand. He did not say anything to them without using a parable," (Mark 4:33-34a). According to the educational researchers, Jesus was using teaching techniques that are at the core of all learning.

Another type of identifying similarities and differences strategy is classifying. Consider this lesson from Jesus.

> A farmer went out to sow his seed. As he was scattering the seed, some fell along the path; it was trampled on, and birds of the air ate it up. Some fell on rock, and when it came up, the plants withered because they had no moisture. Other seed fell among thorns, which

grew up with it and choked the plants. Still other seed fell on good soil. It came up and yielded a crop, a hundred times more than was sown. (Luke 8:5-8 NIV)

In this story, Jesus calls on His hearers to classify the different types of plantings. Through this exercise in classification, they were able to understand their responsibilities in sharing the lessons they were learning. Once again, Jesus taught to the very core of human learning and understanding as confirmed in modern research.

Still another type of identifying similarities and differences is creating metaphors. Metaphors are comparisons of seemingly unlike things. As the learner isolates a basic pattern or concept, he can see how these things are alike. This gives the learner the opportunity to associate new information with something that he already knows. Researchers into learning have long understood that new information must be linked to something the learner already knows (Kauchak & Eggen, 1993). Jesus was a master at using metaphors. At the Last Supper, Jesus said that the bread was His broken body and the wine was the blood of the covenant (Mark 14: 22-24). These strong metaphors still teach His followers today as we take part in this traditional meal. From then until now, these pictures have helped Christians understand the full extent of the sacrifice that was offered for our salvation. In the fifteenth chapter of the book of John, Jesus uses another metaphor to help His disciples understand the relationships between Jesus and His Heavenly Father and between Him and His disciples. First, he clarifies His relationship with the Heavenly Father. "I am the true vine and my Father is the gardener. He cuts off every branch in me that bears no fruit, while every branch that does bear fruit he trims clean so that it will be even more fruitful" (John 15:1-2a NIV). Then, He extends that metaphor even further when He says, "I am the vine: you are the branches. If a man

remains in me and I in him, he will bear much fruit; apart from me you can do nothing" (John 15:5 NIV). The hearer of this metaphor would have understood the role of the gardener as well as the relationship between the vine and the branches. Once again, the use of the metaphor has clarified the lesson that Jesus was teaching.

Other parts of the Bible use metaphors to teach lessons also. For instance, Psalm 23 tells us that the Lord is our shepherd. This method has been so effective that a class of fifth graders were so familiar with this metaphor that they almost overlooked it when picking out metaphors. "Well, the Lord **is** our shepherd," argued one as the reason for not including that passage as an example of a metaphor. It was only after recognizing that they were not really sheep that they saw this was not a fact statement but a comparison. It is no wonder that researchers are finding the use of metaphors to be such a powerful learning strategy. Obviously, the Old Testament writers understood its impact on the mind of man.

Still another strategy that relies on identifying similarities and differences is analogies. Teachers use analogies to identify relationships between pairs of concepts or as Marzano, Pickering, and Polluck put it "identifying relationships between relationships."

"Analogies help students learn information more meaningfully and retrieve it more easily, particularly when the topic is new to students or when the material is relatively abstract," (Ormrod, 1995). Researchers have confirmed that the use of analogies can enhance learning greatly (Marzano). An analogy allows the learner to compare an unfamiliar concept to something with which the student has more familiarity. The equation for analogies is A:: B as C :: D. This equation can be implied in a part of the Sermon on the Mount. Jesus said,

You are the light of the world. A city on a hill cannot be hidden. Neither do people light a lamp and put it under a bowl. Instead they put it on its stand and it gives light to everyone in the house. In the same way, let your light shine before men, that they may see your good deeds and praise your Father in heaven. (Matthew 5: 14-16 NIV)

One could summarize this teaching in the equation: a lamp :: darkness as a believer :: evil. In other words, just as light conquers the darkness of the house for all in the house, the believer and his righteous living help to conquer the evil in the world by revealing the Father in heaven to all who see the deeds.

# Summarizing and Note Taking

In order for the information we are teaching our students to really stick with them, they or we must take time periodically to summarize what is being learned. The summarizing process exposes us to the information one more time in a succinct fashion. It forces the learner to identify the most important part of the information they have heard or read. If one can summarize the information, one is closer to being able to claim the information as one's own. Research shows that summarizing and note taking skills, "...both require students to distill information into a parsimonious, synthesized form," (Marzano, Pickering, and Polluck). In order to effectively summarize a passage, the learner must be able to "delete some information, substitute some information, and keep some information" (Marzano, 2003). In order to accomplish these tasks, the student must analyze the information at a fairly deep level of understanding. Information, which is

understood in such a fashion, is information that can be stored. Note taking consists of the same activities of the mind. Most of us are not able to take down every word that is said. Our minds are in the process of summarizing as we take notes. It is hard to imagine Jesus and His disciples walking around with notebooks and pencils making notes. However, there is evidence that Jesus took time to summarize His teaching. Recall again the parable of the sower and the seeds. After the crowds had gone away, Jesus brought His disciples together and gave them a summary of what was being said.

This is the meaning of the parable: The seed is the word of God. Those along the path are the ones who hear, and then the devil comes and takes away the word from their hearts, so that they cannot believe and be saved. Those on the rock are the ones who receive the word with joy when they hear it, but they have no root. They believe for a while, but in the time of testing they fall away. The seed that fell among thorns stands for those who hear, but as they go on their way, they are choked by life's worries, riches, and pleasures, and they do not mature. But the seed on good soil stands for those with a noble and good heart, who hear the word and retain it, and by persevering produce a crop. (Luke 8:11-15 NIV)

At this point, the disciples had heard the lesson twice. They also had heard from Jesus what He considered to be the salient parts of the lesson. It is not hard to think that Jesus may have done this more often with His disciples than is recorded in scriptures. In fact, Mark tells us, "But when he was alone with his own disciples, he explained everything," (Mark 4:34bNIV). Unfortunately, as John said, the book would be too long to include everything that was said between teacher and students (John 21:25). Students today use note taking to remind themselves of the important things that were discussed. In this society that passed its religious training to the next generation in a verbal tradition rather than a written one, Jesus summarized the lessons he taught so well that the hearers could make mental note and preserve them in later manuscripts for us.

# Reinforcing Effort and Providing Recognition

When the researchers talk of reinforcing effort, they are referring to convincing the student that the amount of effort a student puts into a task has a direct bearing on the results of the effort (Marzano, Pickering, & Polluck). Homework becomes an issue for some students because they do not believe that it makes a difference in what they are doing. However, research disputes this claim. In fact, it confirms that homework increases learning when the student does it with the confidence that the effort will be rewarded with increased or improved learning (Varlas, 2002). There are some examples of Jesus' teaching that at least allude to this idea. In the Sermon on the Mount, when teaching about prayer, He said to ask, seek, and knock. The Greek verbs in the present tense more accurately translate ask and keep on asking, seek and keep on seeking, knock and keep on knocking. According to the *Biblical Illustrator* this passage carries the instruction not just to pray when you want something, but to view prayer as a duty (not unlike homework to the student). Consequently, the hearer was being instructed to pray even when he did not feel like praying. The result of this type of prayer was that the person praying would be heard and answered. One should pray repeatedly until the answer comes. (Exell, 1955) Jesus taught his followers that the effort was necessary. He indicated that the answer would come commensurate with the effort put forth. Educational researchers are learning that as students put more effort into learning, there is an increase in achievement. Just as Jesus was teaching His disciples, Brain Based Research authenticates that perseverance is an important element in learning.

Another part of this strategy is also providing recognition. "According to research, recognition is most effective if it is contingent on the achievement of a certain

standard. Also, symbolic recognition works better than tangible rewards," (Varlas). Teachers often use rewards to coax students to study harder or behave better. Research shows that this is especially effective when the student knows what the standard for achievement is. Jesus went with his disciples to the synagogue. As people gave their offerings, Jesus pointed out a poor widow lady. He said that she had given more than any of the other worshippers had given that day. Since the collection device probably was made of metal, the coins of each giver would announce to the world the amount of offering they gave. This little woman had only two coins of little value. So, the disciples were confused. He then explained the standard. This woman had given all that she had. He recognized that the amount of her offering was acceptable because it reflected all she had (Mark 12:41-44). That type of recognition taught a valuable lesson to all who heard.

Jesus also recognized the faith of the young centurion who had come to ask Jesus to heal his servant. He told Jesus that a trip to his house was unnecessary because Jesus could just speak and the man would be healed. Jesus recognized the man's faith. In fact, he said that He had not seen that kind of faith anywhere in Israel (Luke 7:1-10). The recognition not only confirmed the man's faith, but also taught those who heard the recognition. Just as teachers have learned to use recognition to enhance learning in the classroom, Jesus used it to increase the learning among the crowd that was following Him.

#### Homework and Practice

In order to perfect certain skills, teachers ask students to practice those skills many times. Frequently that practice is called homework. In the last decade, educators and parents have questioned the value of homework. Some teachers have questioned its value because they suspect the work is done not by the student, but by the parent. Some parents have seen homework as calling on them to do the job of the teacher. Homework for the sake of homework or busyness does not contribute to the higher achievement of students. However, homework or practice that allows the student to extend knowledge or to perfect a needed skill can indeed strengthen achievement (Varlas). Just as it was hard to visualize Jesus' disciples carrying around notebooks and pens, it is also hard to see Jesus assigning homework at the end of each day. However, we do see Jesus teaching us that practice is necessary to perfect the living out of His instructions. When Jesus took time to specifically teach His disciples to pray, He included in the prayer, "Forgive us our debts as we forgive our debtors." Much discussion has been given to this part of the prayer. To many followers, it is alarming to understand that our forgiveness is directly related to our ability to forgive. Yet, Jesus encouraged us to practice this lesson over and over. Recall when Peter asked Jesus how many times he should forgive his brother. With what he considered a show of generosity, Peter suggested that seven times would be a right understanding of this teaching. Jesus, however, said that a minimum requirement was more like seventy times seven (Matthew 18:21-22). The implication from Jesus is that we must practice the lessons he has taught us over and over. They are not learned in one session, but only as we practice them repeatedly.

Jesus encouraged his learners to practice the lessons He had taught them when He told them this parable:

**Therefore everyone who hears these words of mine and puts them** into practice is like a wise man who builds his house on the rock. The rain came down and the streams rose, and winds blew and beat against that house; yet it did not fall because it had its foundation on the rock. But everyone who hears these words of mine and does not put them into practice is like a foolish man who built his house on sand. The rain came down and the streams rose, and the winds blew and beat against that house, and it fell with a great crash. (Matthew 7:24-27 NIV)

One might conclude that Jesus' homework assignment was to live out the lessons that He taught. In practicing what Jesus taught, His followers were building a firm foundation on which to build their lives. This kind of homework is certainly homework with a purpose beyond filling time or doing something for the sake of saying it was done. Meaningful homework and practice, according to modern researchers, does reinforce the learning that has taken place. Jesus taught His followers to keep practicing what He was teaching them. That way, the lessons they were learning would be so ingrained in them that they would be a part of their everyday life.

# Nonlinguistic Representations

According to research, students can store information for further use in two forms—linguistic and visual. Research also validates that the more students can use both forms of storage, the more those students can achieve. So, students need to have both words and pictures to assist in memory (Varlas). The Jewish community used nonlinguistic representations from the beginning to teach their children. One of the most ancient traditions of the Jewish community is the Passover Feast. This meal which reminds them of their deliverance from slavery is filled with nonlinguistic representations such as the unleavened bread and the bitter herbs. "They celebrated their freedom from slavery, and the Passover observance created potent teachable moments" (Stonehouse, 1998).

Moses instructed the parents of the Israelite nations to teach their children about the God who brought them out of slavery into a promised land. Moses told them that they should teach the commandments to their children and talk about them all the time. In addition, they should, "Bind them as a sign on your hand, fix them as an emblem on your forehead, and write them on the doorposts of your house and on your gates," (Deuteronomy 6:8-9). In fact, as one children's educator reminds us,

The people of Israel used visual symbols to remind them of God. When fathers prayed, they strapped to their left hand and forehead small leather boxes containing selected verses from the Law. Selected verses were also placed in little boxes called *mezuzahs* and attached to the doorposts of the house. Each time they passed through the doorway, the Jews touched the *mezuzah* and were thus frequently reminded of God's Law. (Stonehouse)

Another place of nonlinguistic representation was in the design of the tabernacle which is filled with symbols for the community to understand who God is and what their relationship should be to Him. At one point in the wandering days, there was mumbling and grumbling that Moses and Aaron were not the kind of leaders that the people wanted. The others accused these leaders of just taking over. Tired of listening to the grousing, the Lord eventually told Moses to get the staff of each of the tribal leaders including Aaron's staff. He told him to lay the staffs before him. The Lord told Moses to let the people know that the staff that sprouted would be owned by the person whom God had chosen to be the priest. All the tribal leaders brought their staffs. The next morning, not only had Aaron's staff sprouted, but there were full blossoms and almonds on it. Through this demonstration, God taught the tribal leaders that He was choosing not only Aaron, but also those who would come from his line as the priests for these people. This powerful visual image reinforced what God had been saying through Moses from the beginning.

Until the time of Jesus, the followers of God understood him through His words. They had received instructions concerning the proper way to live and relate to the Lord. However, the lessons did not always stick. The Old Testament records the roller-coaster relationship between God and His chosen people. In order to allow man to fully understand the relationship that God required, he put His words into the nonlinguistic representation of human form. John tells us, "The Word became flesh, and lived for a while among us," (John 1:14 NIV). Jesus used other visual images that prompted learning on the part of his followers. When he called Peter and James to be his disciples, he promised to make them "fishers of men." To these fishermen, the image of fishing was strong and understood. When He wanted His disciples to understand the full requirements of following Him, He provided other visual images like turning the other cheek, going the second mile, and giving your cloak. Then, when He said, "Love your enemies," (Matthew 5:44a NIV) they knew what was involved in following that command. One of his most vivid visual teachings was based in exaggeration. He explained that they were judging others wrongly. Their judgement was clouded by their own shortcomings. He said that they could not remove the splinter from another's eye because their vision was blocked by the planks in their own eyes (Matthew 7:3-5).

Of course, to the Christian, the most effective visual teaching of Jesus was the cross. The follower of Christ realized the full extent of His love, when He willingly died on the cross for our sins. To this day, the cross, which should symbolize the dregs of society, is a symbol of the love and sacrifice that the Lord made for our salvation.

Educational researchers are confirming that this teaching strategy which Jesus employed of using nonlinguistic representations is one of the teaching styles that best promotes learning in the students.

## Cooperative Learning

Cooperative learning uses small groups of students with various ability levels to work together to solve a problem. Some of these groups operate under stringent procedures, but others are more informally run. One benefit that comes from using this strategy of teaching is that the group generates a greater variety of ideas than one person working alone can develop. In addition, the group levies a greater sense of responsibility on the group members. Educational researchers stress that varying the size and type of groupings will also contribute to greater achievement than relying on just one size or type. (Marzano, Pickering, and Polluck) Examples of using cooperative learning are included in Jesus' teaching strategies also.

When Jesus began his public ministry, He called out a small group whom we have come to call His disciples. That group of twelve men learned directly from Jesus about the kingdom of God, about their role in furthering that kingdom, about God's expectations of His children, and about the tremendous love that God has for His children. From those men, we have learned what it means to follow Jesus. Essentially, Christianity began as a cooperative group. Biologically speaking, cooperative groups are powerful teaching strategies because cooperative groups allow the members of the group to feel valued and cared for. The brain reacts to those feelings with the release of endorphins and dopamine which are neurotransmitters of pleasure. Hence, we enjoy the work more (Jensen, 1998).

Look at the make up of that group. It consisted of men who were trained in different fields, had different political views, and different family status. It is a heterogeneous group. Research tells us that cooperative learning will increase achievement in any group be it homogeneous or heterogeneous. However, the greatest strides in achievement are made in heterogeneous groups (Marzano). In Teaching with the Brain in Mind, we learn that "The best types of groups may be multi-age and multistatus groups," (Jensen). Increased achievement is attained partially because of the immediate feedback. This feedback in a heterogeneous cooperative group is varied. Such variety contributes to a greater understanding of what is being taught. "Group interaction provides feedback because it gives so much dramatic evidence, like nonverbals. ... Greenough\* says the ideal feedback involves choice; it can be generated and modified at will" (Jensen). The heterogeneous cooperative group gives the learner that kind of choice. Isn't it exciting to recognize that the use of this teaching strategy that was central to Jesus' teaching is now being corroborated by modern Brain Based Research as one of the best practices in teaching?

## Setting Objectives and Providing Feedback

Learning objectives define the learning that should occur in a lesson. They outline the goals for the outcome of the learning. Sometimes those goals are expressed in

<sup>\*</sup> Greenough refers to W. T. Greenough whose research was included in the *Annals of the New York* Academy of Science in 1991.

Information that will be learned. Other times, the goals express the actions that will occur once the learning objective has been met. Probably the most thorough understanding of the expectations of Jesus' followers is contained in the Sermon on the Mount. Jesus made it clear that following Him would call on the disciples to change their lifestyles. Hear some of the objectives that He called His followers to endorse:

You have heard that it was said to the people long ago, "Do not murder, and anyone who murders will be subject to judgment." But I tell you that anyone who is angry with his brother will be subject to judgement. Again anyone who says to his brother, "Raca," is answerable to the Sanhedrin. But anyone who says, "You fool!" will be in danger of the fire of hell. .... You have heard that it was said, "Do not commit adultery." But I tell you that anyone who looks at a woman lustfully has already committed adultery with her in his heart. If your right eye causes you to sin gouge it out and throw it away. It is better for you to lose one part of your body than for your whole body to be thrown into hell. And if your right hand causes you to sin, cut it off and throw it away. It is better for you to lose one part of your body than for your whole body to go into hell. (Matt 5: 21-22; 27-30 NIV)

The list of objectives is certainly longer than those listed here. However, this sample of Jesus' teaching lets us know that His followers were not at a loss as to what was required of them. The objectives may have been new to them and may have seemed harsh in many settings, but they were clear to those who desired to follow Jesus. When the rich young ruler came to Jesus for instruction, he asked Jesus what he needed to do to have eternal life. After discussing the rules from the law, Jesus told him he lacked only one thing, which was to go and sell all his possessions and give them to the poor. He could not do that (Matthew 19:16-22). The record of this discussion does not say that Jesus lowered the standard for this man. It just said that the man went away sorrowful because he had many possessions. He understood what was required. Jesus' teaching gives

evidence that He set objectives and provided feedback that let His followers know if they were meeting those objectives. This is another teaching strategy that Brain Based Research is showing to be one of the most brain-friendly teaching strategies for our classrooms.

## Generating and Testing Hypotheses

A part of the learning process demands that students create and test educated guesses as to why something occurs or what is occurring. In education we refer to this process as generating and testing hypotheses. This type of teaching strategy is most commonly associated with science. "Research shows that a deductive approach (using a general rule to make a prediction) to this strategy works best. Whether a hypothesis is induced or deduced, students should clearly explain their hypotheses and conclusions"(Varlas). These hypotheses may be expressed in several ways. The most common ways would be systems analysis, problem solving, historical investigation, invention, experimental inquiry, and decision-making (Marzano, Pickering, and Polluck). Jesus called on His disciples to think in this manner also.

Jesus called on the disciples to use historical investigation and decision making when he said to them, "Who do people say the Son of Man is?" (Matt 16: 13b NIV). They answered him with a list of possibilities for how He was perceived by the people. Then, he called them to make a decision when He said, "But, what about you?... Who do you say I am?" (Matthew 16:15 NIV). In one of the great statements of faith, Peter confidently said, "You are the Christ, the son of the living God," (Matthew 16: 16 NIV). No doubt the disciples had been giving some thought to this issue. They had considered the possible answers to that question. Peter had decided that only one answer was possible to that question. Jesus confirmed the rightness of his answer by replying, "Blessed are you, Simon, son of Jonah, for this was not revealed to you by man, but by my Father in heaven," (Matthew 16:17 NIV). Jesus was, once again, using a teaching strategy that modern research is confirming as one of the most effective stategies for allowing the brain to receive and retain information.

# Cues, Questions, and Advance Organizers

Since new learning must be tied to information already in the brain, good teachers often use cues from previous learning, questions, or advance organizers to help students learn new material. This process allows the students to integrate new information with what he already knows (Marzano). Research has shown that the questions may come before the lesson is taught, as the lesson is taught, or after the lesson is taught. It gives the student a way of analyzing and organizing what is being taught. Jesus often used questions to keep His followers alert to the importance of lessons He was teaching. Often these questions would be directed at those who were criticizing Him. His critics asked why He and His followers were not fasting according to tradition as John and his disciples had done and as the Pharisees did. Jesus answered with a question that directed the thinking not only of the people who asked the question, but also of those who heard the answer. He said, "How can the guests of the bridegroom mourn while he is with them?" (Matthew 9:15 NIV). Once again the critics of Jesus asked him, "Is it lawful to

heal on the Sabbath?" (Matthew 12: 11 NIV). Again, Jesus answered with a question, "If any of you has a sheep and it falls into a pit on the Sabbath, will you not take hold of it and lift it out?" (Matthew 12:12 NIV). Through the use of questions, Jesus allowed his hearers to think through not just the accusation, but also the implications of the questions. In each of these cases, the answers to the questions forced the learner to call on information that he had already learned. He took the learner to a more substantial place educationally by the questions he posed. The learner was made ready to expand his knowledge by linking it to information he already had.

Jesus used another series of questions to teach Peter. Three times He asked Peter, "Do you love me?" With each question and answer exchange, He took Peter further into the understanding of his role as a follower of Jesus (John 21: 15-19). Even though the experience may have frustrated Peter somewhat, the experience also confirmed for him what his obligation would be for the days to come after Jesus left the earth.

Jesus also had a habit of cueing his disciples in when He was saying something particularly important. He would precede the statement with, "Verily, verily." This word cue would catch their attention and cause them to pay close attention. These teaching strategies help the learner analyze what is important in what is being said and taught. They also give the learner assistance in organizing the information for storage purposes. Hence, they are effective teaching strategies that are proving to be excellent in promoting learning achievement.

## Conclusion

Jesus had a very short time to teach his followers what was required of them. In order to do that, He lived with them and made use of every minute and teaching opportunity. After analyzing His teaching strategies, we can see that He used teaching strategies were the same as those that modern research confirms will that allow learners to receive and retain as much information as possible. Through the use of identifying similarities and differences, summarizing and note taking, reinforcing efforts and providing recognition, homework and practice, nonlinguistic representations, cooperative learning, setting objectives and providing feedback, generating and testing hypotheses, and cues, questions, and advance organizers, He was able to teach a great deal of information in a short time. That information was stored in the disciples' memories and passed on to us through the Bible. Now, hundreds of years later, researchers are confirming that Jesus used teaching strategies that are very brain friendly. In fact, they are the teaching strategies that are being encouraged in all classrooms for increased achievement.

Society has often judged Christian education to be inferior to nonChristian education. It is refreshing to be able to take modern research and confirm that Christian education carries with it the propensity to be as good as any other type of education. For Christian education should focus not only on the Scriptures, but also on the lessons of the Bible. Some of those lessons have been taught in such a way that generation after generation has come to base their entire lives on them. The lessons were taught by Jesus himself using teaching strategies that were varied and meaningful to the hearers of the lessons. Now, we can also affirm, that those strategies are considered among the best practices in teaching according to modern research results. To the Christian, this does not come as a big surprise. It only makes sense that the creator of the mind would know how to access it as a master teacher.

To the researchers who have spent much time confirming that the nine teaching strategies discussed in this paper lead to classroom instructions that really works, we can say thank you. In the process of establishing this helpful information for teachers, you have confirmed in our minds that Jesus knew what He was doing as a teacher. The implication for all of us as educators of minds is that we are obligated to continue to use the best strategies in our classrooms regardless of the subject taught. Jesus is not just an example to follow in relating to other people; He is also an example to follow as a teacher. It may call on some of us to reconsider how we teach a unit. We may be encouraged to vary the instruction in our classes. As a teacher, He excited His learners; He called on them to incorporate all that He was teaching into a life-style that would radically impact their world; and He challenged them to learn more everyday. If He has taught us how to be master teachers, shouldn't our students experience that same excitement, change, and challenge? Christian education should not only include the lessons He taught, but should also emulate the teaching style of Jesus. If we do that, we have done what we can to produce students who are fully prepared for whatever field into which they are being called. Research is confirming that what happens in the classroom is important. If we desire to see exemplary results, we must use those teaching strategies that are proving to be most effective in getting information into the minds of our students. In order to do this, we can rely on Jesus as an excellent example of masterful teaching.

## Bibliography

- Exell, Joseph S. (1955). *The Biblical Illustrator—Matthew*. Grand Rapids, MI: Baker Book House.
- Jensen, Eric (1998). *Teaching with the Brain in Mind*. Alexandria, VA.: Association for Supervision and Curriculum Development.
- Kauchak, Donald P. and Paul D. Eggen (1993). *Learning and Teaching—Research-Based Methods*. Needham Heights, MA: Allyn and Bacon.
- Marzano, Robert J., Debra J. Pickering, and Jane E. Polluck (2001). Classroom Instuction That Works—Research-Based Strategies for Increasing Student Achievement. Alexandria, VA.: Association for Supervision and Curriculum Development.
- Marzano, Robert J. (2003). *What Works in Schools—Translating Research into Action*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Ormrod, Jeanne Ellis (1995). *Human Learning*. Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Stonehouse, Catherine (1998). Joining Children on the Spiritual Journey—Nurturing a Life of Faith. Grand Rapids, MI: Baker Book House Co.
- Sylwester, Robert (1995). A Celebration of Neurons—an Educator's Guide to the Human Brain. Alexandria, VA. Association for Supervision and Curriculum Development.
- Varlas, Laura (2002). Getting Acquainted with the Essential Nine. *Curriculum Update*, 4-5.