

Learning Styles and Student Achievement: Bringing Psychology into the Agricultural Classroom

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I. Introduction to Learning Styles

"Each man is good in the sight of the Great Spirit. It is not necessary for eagles to be crows."

—*Sitting Bull (Tatanka Yotanka)*
Lakota Chief, late 19th century.

"...in every class we have ever tested, there are students who prefer to learn by themselves with appropriate resources, others who prefer to learn with peers, and some who wish to work directly with their teachers."

—*Dunn, Beaudry, and Klavas*

- A. The diversity of learning styles which our students bring to the classroom can be confusing, and the most effective path of action can be ambiguous.
- B. How can knowledge of learning styles be usefully incorporated into the agricultural classroom?

II. Learning Style Research

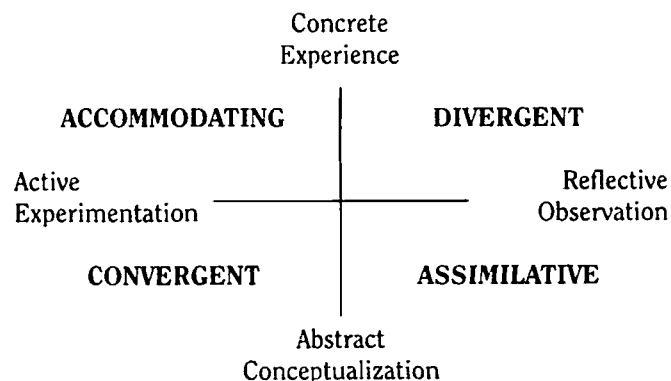
"It can be embarrassing, sometimes, to ask practicing educators why they are using a particular technique or a program, because they often can't give you a good reason. Learning styles provides that kind of legitimate criteria. Teachers I work with aren't using learning styles for learning styles' sakes; for them it's a framework for decision making."

—*Pat Guild, in Brandt, p. 11.*

Three widely used models of learning styles are summarized below:

A. David Kolb's Learning Style Inventory

Kolb finds that many individuals differ along two dimensions in learning preferences: from Abstract to Concrete and from Reflective Observation to Active Experimentation. Scores from a nine-item questionnaire will typically cluster in one of four quadrants:



- **Convergent.** Prefer problem-solving, decision-making, practical application of ideas, finding a single correct answer or solution, working on technical tasks.
- **Divergent.** Prefer organizing many specific relationships into a meaningful gestalt, generating alternative ideas and implications, brainstorming, imagination.
- **Assimilative.** Prefer reasoning, creating theoretical models, integrated explanations, working with ideas, concepts, sound and precise theories.
- **Accommodating.** Prefer doing things, carrying out plans, seeking opportunity and risk, taking action, fitting the theory to the facts relying on other people for information.

The four leading styles grow out of preferences that grow out of personality characteristics.

Kolb; Davis, pp. 78-79

B. Myers-Briggs Indicator

The Myers-Briggs learning style theory is extrapolated from a theory of personality based on categories developed by psychoanalyst Carl Jung. People with certain personality characteristics will have related orientations to learning.

- **Extrovert.** Learns best in situations filled with movement, action, talk. Enjoys discussion groups, cooperative projects. May have trouble sitting still, reading books, writing.
- **Introvert.** Learns best alone in periods of concentrated study. Teacher-centered, enjoys lectures, may not like dis-

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cussion. May not share what is known. Thinks before speaking.

- **Sensing.** Likes to focus on concrete here-and-now, facts and details, putting knowledge to use, learning skills and procedures, being precise and accurate.
- **Intuition.** Likes to gain general impressions, the entire gestalt, concepts, theories. Dislikes structures and mechanical approaches to learning, prefers open-ended assignments, opportunities for imagination. May be careless about details.
- **Thinking.** Prefers performance criteria, wants to know how learning will lead to a deeper understanding of how things *work*. Likes rule-based reasoning.
- **Feeling.** Wants to know how learning will affect people, interest in process of learning, motivated by learning that touches convictions and values.
- **Judgment.** Prefers structured learning environments, goals, deadlines. Enjoys accomplishment, getting assignments done, achievement.
- **Perception.** Prefers more free-wheeling learning environment, working on several things at once, delaying closure until the deadline. May feel imprisoned in highly structured classes.

Murray; Davis, p. 80

C. Sensory Modalities

According to Barbe and Swassing, all learners have differences in ability in using sensory modalities, and these differences can be expressed as preferred styles of learning.

- **Auditory learners.** Like to use their voices and ears, learn best by talking and listening. They like to “talk it through” and enjoy lectures and class discussion. Silence can be disturbing for them.
- **Visual learners.** Like to see the words written down. They like pictures, charts, diagrams, graphs, time lines. They enjoy completing written assignments.
- **Tactile-kinesthetic learners.** Like to be “up and doing.” They like projects—to build, to handle materials, to act out. They don’t want to be told about the computer; they want to try it. When they do it, they learn it and remember it. They hate sitting still.

Barbe and Swassing; Davis, p. 81

III. How Do Educators Use Learning Styles

“...although there appears to be a logical connection between personality type and learning style preference, it is not always clear what the teacher is to do with this information.”

—*Davis, p. 80.*

A. Key Results of Learning Style Research

- People are different.
- Learners will respond to a variety of *instructional* methods.
- We should strive to respect and honor the individual differences among us.

B. Three Ways to Bring Learning Styles into the Classroom

- **Individual.** Know thyself and the person you are interacting with. Understand both your own and the other persons’ perspectives.
- **Curriculum design and instructional process.** Knowing that people learn in different ways, you can provide a comprehensive model that adapts instruction to the major learning differences.
- **Diagnostic/prescriptive.** Identify key elements of the individuals learning style, and as much as possible, match your instruction and materials to those individual differences.

IV. Usefulness of Learning Styles; Ideas for Application

“I am not asking teachers to diagnose every student’s style; rather, I know that attention to learning styles brings variety to their teaching.”

—*Pat Guild, in Brandt, p. 12.*

- A. Use a diversity of styles, formats, assignments, and strategies in each lecture and course.
- B. Teach each concept or idea from more than one perspective. For example, in economics, we use (1) a story, (2) a graph, and (3) a mathematical model to demonstrate the same concept or idea.
- C. Watch teaching professionals, and follow their leads. However, be sure to develop your own personal style.
- D. Information concerning students, their backgrounds, experiences, and learning styles can be effectively employed. For example, a “Student Information Sheet” can be used to learn more about students.
- E. Think about and write down what went well and what didn’t after each lecture, or encounter with students.
- F. Have students write down a summary of each lecture, or any questions that they might have on a 3x5 card. Ambiguities can be cleared up during the next lecture.
- G. Peer review: invite a colleague or outside expert to evaluate your lectures. This can be intimidating, but yields enormous benefits.

H. THINK, MEDITATE, MULL, BROOD, PRAY, STARE OUT A WINDOW, PONDER, OR WHATEVER IT TAKES TO THINK THROUGH WHAT YOU ARE ATTEMPTING TO ACCOMPLISH IN THE CLASSROOM, AND HOW BEST TO DEAL WITH A DIVERSITY OF LEARNING STYLES.

I. IF YOU WANT TO IMPROVE YOUR TEACHING EFFECTIVENESS AND YOUR IMPACT ON OTHERS WITH DIVERGENT LEARNING STYLES... YOU WILL!!!

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