Introduction to Learning Styles

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Presentation Overview

- Why Learning Styles are Important
- Four Learning Style Models
- Your Learning Style Preference
- Becoming Acquainted with Other Learning Styles
Reason for Learning Style Assessment

Research shows that students have preferential learning styles

- Facts, Data, Algorithms
- Theories
- Mathematical Models
- Experiments
- Visual
- Verbal
Instructor Learning Styles

Instructors have preferential learning styles

If student/instructor styles compatible, students tend to:

- Retain information (and students)
- Apply information more effectively
- Have more positive post-course attitudes toward subject

Stice (1987)  
Felder (1996)
Learning Style Models

- Myers-Briggs Type Indicator (MBTI)
- Kolb’s Learning Style Model (KLS)
- Herrman Brain Dominance Instrument (HBDI)
- Felder-Silverman Learning Style Model (FSLS)
Learning Style Models

- Indicate a Relative Preference for (Continuum)
- May change with time
- May vary from one subject or learning environment to another
Myers-Briggs Type Indicator

Inventory Based on Carl Jung’s Theory of Psychological Types

Four Dimensions of Personality Profile:
1. Orientation to life
2. Perception
3. Decision making
4. Attitude to outside world

Myers, McCaulley (1986)

Montgomery, Groat (1998)
1. Orientation to life (MBTI)

Extroverted
- Group interactions
- Applications

Introverted
- Working alone
- Concept and ideas

Montgomery, Groat (1998)
2. Perception (MBTI)

Sensing
- Facts and procedures
- Detail oriented

Intuitive
- Imaginative
- Concept oriented

Felder (1996)
3. Decision Making (MBTI)

Thinking
- Skeptical
- Logic and rules

Feeling
- Subjective
- Search for harmony

Felder (1996)
Montgomery, Groat (1998)
4. **Attitude to Outside World (MBTI)**

**Judgement**
- Planning
- Control

**Perception**
- Spontaneity
- Adaptive

Montgomery, Groat (1998)
Kolb’s Learning Style Model

Learning-Style Inventory Developed to Assess Ability to Learn from Experience

Kolb (1984)

Four Learning Stages (part of a cycle):

- Concrete Experience (CE)
- Reflective Observation (RO)
- Abstract Conceptualization (AC)
- Active Experimentation (AE)

Stice (1987)
Kolb Learning-Style Inventory

Short paper and pencil instrument

- Scores for each of the learning stages: CE, RO, AC, AE
- \( x = AE - RO \)
- \( y = AC - CE \)
- Point \((x,y)\) identified on KLS type grid

Stice (1987)
Montgomery, Groat (1998)
Type I: Divergers (KLS)

Concrete, Reflective
Question: Why?
Need: Motivation

How Course material relates to:
- Experience
- Interests
- Future Careers

Felder (1996)
Stice (1987)
Type II: Assimilators (KLS)

Abstract, Reflective
Question: What?
Need: Expert

Information:
- Organized
- Logical
- Reflection time

Stice (1987)
Felder (1996)
Type III: Convergers (KLS)

Abstract, Active
Question: How?
Need: Coach

Experimentation:
- Well-defined task
- Guided practice
- Trial and error (without harm)
- Feedback

Felder (1996)
Stice (1987)
Type IV: Accommodators (KLS)
Concrete, Active
Question: What if?
Need: Discovery

Application of Course Material to:
- New situations
- Real problems

Stice (1987)
Felder (1996)
Indicators of Learning Style
Questions Asked by Students

Divergers:
How is this activity going to help us learn about ....?

Assimilators:
What is the theory you are using for your statement?
Indicators of Learning Style
Questions Asked by Students

Convergers:
Could you outline what you are going to talk about so I can see how the parts are related?

Accomodators:
How would you implement that?
Herrman Brain-Dominance Instrument

Ned Herrman’s identified four distinct types of thinking corresponding to one of the four brain structures:

- Left Brain,
- Right Brain
- Cerebral
- Limbic

Herrmann (1988)
Felder (1996)
Quadrant A (HBDI)

Left brain, Cerebral

Logical
Analytic
Quantitative
Factual
Critical

Felder (1996)
**Quadrant B (HBDI)**

- Left brain, Limbic
- Sequential
- Organized
- Planned, Detailed
- Structured

Felder (1996)
Quadrant C (HBDI)

Right brain, Limbic

Emotional
Interpersonal
Sensory
Kinesthetic
Symbolic

Felder (1996)
Quadrant D (HBDI)

Right brain, Cerebral

Visual
Holistic
Innovative

Felder (1996)
Felder-Silverman Learning Style Model

Developed by Richard Felder and Linda Silverman (1988)

Five Dimensions

- Sensing-Intuitive (Myers Briggs)
- Active-Reflective (Kolb)
- Visual-Verbal
- Inductive-Deductive
- Sequential - Global
Perception of Information

Sensory
- Facts and Procedures
- Detail Oriented

Intuitive
- Imaginative
- Concept Oriented

Felder (1993)
Processing Information

Actively
- Doing Something
- Group Work

Reflectively
- Thinking Things Through
- Working Alone

Felder (1993)
Sensory Information

Visual
- Pictures
- Diagrams
- Graphs
- Demos

Verbal
- Sounds
- Words (written and spoken)
- Formulas

Felder (1993)
Organization of Information (FSLS)

Inductive
- Specific to general

Deductive
- General to specific

Felder (1993)
Progress toward Understanding (FSLS)

Sequential
- Linear
- Orderly
- Incremental Steps

Global
- Holistic
- System thinkers
- Large Leaps

Felder (1993)
Gender Differences

Survey (Philbin (1995))
- Male (48%) Assimilator
- Female
  - (20%) Assimilator
  - Diverger and Converger Dominant

Montgomery, Groat (1998)
- More Female students preferred Active Learning
Your Learning Style Preference

Provided with a Felder-Silverman Learning Style Survey covering 4 of the 5 Model Dimensions:

- Active-Reflective (Kolb)
- Sensing-Intuitive (Myers Briggs)
- Visual-Verbal
- Sequential - Global
Answer Key

Exchange Answer Sheets with a person sitting near you

Total up the number of selected answers in each column

- Record at bottom of column
- Identify the column with the highest total (Circle this Number)
Learning Styles

Active-Reflective Continuum
Column 1: Active (Red)
Column 2: Reflective (Blue)
Middle (Green)

Sensing-Intuitive Continuum
Column 3: Sensing (Red)
Column 4: Intuitive (Blue)
Middle (Green)
Learning Styles (cont.)

Visual-Verbal Continuum
Column 5: Visual (Red)
Column 6: Verbal (Blue)
Middle (Green)

Sequential – Global Continuum
Column 7: Sequential (Red)
Column 8: Global (Blue)
Middle (Green)
Specific Model Not Important

Learning Style Model Useful if:

- Balance instruction
- Meets the learning needs of essentially all students in a class
- Teaching around the cycle

(Next Presentation)
Lunch-Time Assignment

- Sit next to someone with a different predominant learning style.
- Describe how you taught a lesson in the previous week.
- Discuss how you could alter that lesson to make it accessible for students with different learning styles.