



## Learning Styles

The way in which individuals tackle a learning situation depends upon a number of factors. Principal amongst these is what psychologists describe as *personality*; by this psychologists generally mean what makes one person different from another, although some would separate *intelligence* from those differences. There have been many attempts to classify the different factors of personality and to measure them but those do not need to concern us here except as they influence learning and teaching styles.

### Honey and Mumford

The term *Learning Styles* is chiefly associated with Honey and Mumford (1992) who developed some of Kolb's ideas. They suggest that each of us has an predisposition to use a particular part of the learning cycle as our prime approach to learning. This gives four types of learner - *Activists*, *Reflectors*, *Theorists* and *Pragmatists* - corresponding roughly with the experiencing, reflecting, generalising and testing stages of the cycle. They do accept that style may vary according to the learning situation and also that some individuals may have a mixed strategy (thus, many academics are reflector/theorists rather than one or the other). There is no intention of suggesting that any one style is better than another.

In learning situations, *Activists* favour:

- Teamwork, games and simulations, role-plays;
- Brainstorming, unstructured discussions;
- A range of diverse activities;
- Project work;
- Creative situations
- Problem-based learning;
- Extrovert activities eg giving presentations.

They find difficulty with:

- Passive learning eg listening to lectures;
- Solitary activities;
- Repetition;
- Concepts not anchored to practice;
- Detail;
- Rigidly following instructions.

*Reflectors* favour:

- Cerebral activities;
- Passive situations eg watching video;
- Good briefing before participative activity;

- Time for preparation;
- Painstaking research;
- Lack of pressure or deadlines;
- Structured learning situations.

They find difficulty with:

- Inadequate information;
- Time pressured activity;
- Extrovert activities eg role-play;
- Thinking 'on their feet';
- 'Cut and dried' instructions.

*Theorists* favour:

- Learning set in a conceptual framework;
- Structured situations with a clear purpose;
- Listening to, or reading about, well-argued, logical ideas;
- Being intellectually stretched;
- Interesting notions even if they are not immediately relevant;
- Understanding and participating in highly complex situations;
- Being able to question and probe assumptions, models and logic.

They find difficulty with:

- Learning situations emphasising emotions and feelings;
- Overviews without tackling anything in depth;
- Situations with no apparent context or an ambiguous one;
- Ideas that have not been subject to detailed scrutiny;
- Mixing with others with different learning styles;
- Open-ended problems and uncertain situations.

*Pragmatists* favour:

- Obvious links between theory and practice;
- Skills and techniques with obvious practical advantages eg time management;
- Working with a credible expert;
- Demonstrations, simulations, films etc with a practical bias;
- Working with real problems, realistic case studies;
- Knowledge with immediate and obvious application;
- Action plans.

They find difficulty with:

- 'Chalk and talk'
- Lack of guidelines or clear practice;
- Discussion without any clear end point;
- Ideas that seem distant from reality, too 'ivory-towered';
- Concepts that they will not be able to practice.

## Grasha - Riechman

Grasha (1996) describes six types of learning style that he and Sheryl Riechman have used as the basis for their Student Learning Styles Scales:

- *Competitive* students learn material in order to perform better than others. They like to receive recognition for their accomplishments and prefer both teacher-centred instruction and also group tasks where they can lead or demonstrate their pre-eminence;
- *Collaborative* students feel that they can learn by sharing ideas and talents. They like to co-operate with the teacher and to work with others. This leads to a preference for group work, projects, seminars and lectures that feature small group discussion;
- *Avoidant* students are uninterested in classroom learning and participate reluctantly. They prefer large group situations where they can remain anonymous and do not like enthusiastic teachers.
- *Participant* students are good citizens and enjoy participating in as much as they can. Typically, they are eager to take all the options that they can and to fully meet all the requirements. They prefer participative exercises, including lectures that allow student participation, informal discussions and reading assignments;
- *Dependent* students show little intellectual curiosity and learn only what is required. They look for structure and specifics and prefer teacher-centred classroom situations, good handouts or notes to copy and clear deadlines and instructions for assignments;
- *Independent* students like to think for themselves and are confident in their learning abilities. They often like to work alone and prefer student-centred methods, self-paced instruction and assignments that give students a chance to think independently.

## Fleming's VARK

At first this might sound as though it will feature James Bond, but Neil Fleming has devised a model of learning based on the principal sensory mode of learning. He classifies these as:

- Visual (viewing images, models etc)
- Auditory
- Read/Write
- Kinaesthetic (ie learning by doing)

The consequences of this for teaching style are most important; if we indulge principally in a lecturing style then it will have great appeal to Auditory learners but little to offer the Kinaesthetic! Compare this typology with Bruner, Olver and Greenfield's *modes of representation* .

## Felder and Silverman

Richard Felder and Linda Silverman (1988) pose a model which suggests that a student's learning style may be defined in part by the answers to five questions:

- What type of information does the student preferentially perceive: *sensory* - sights, sounds, physical sensations, or *intuitive* - memories, ideas, insights?
- Through which interface is sensory information most effectively perceived: *visual* - pictures, diagrams, graphs, demonstrations, or *verbal* - sounds, written and spoken words and formulae?
- With which organization of information is the student most comfortable: *inductive* - facts and observations are given, underlying principles are inferred, or *deductive* - principles are given, consequences and applications are deduced?
- How does the student prefer to process information: *actively* - through engagement in physical activity or discussion, or *reflectively* - through introspection?
- How does the student progress toward understanding: *sequentially* - in a logical progression of small incremental steps, or *globally* - in large jumps, holistically?

The dichotomous learning style dimensions of this model (sensing/intuitive, visual/verbal, inductive/deductive, active/reflective, and sequential/global) are continuous and not discrete categories. A student's preference on a given scale (e.g. for inductive or deductive presentation) may be strong, moderate, or almost non-existent, may change with time, and may vary from one subject or learning environment to another. As you will note, this model reflects some of the elements of other models, including the Jungian concepts of personality type.

## Personality & Learning Style

One of the attempts to classify personality is the Myers-Briggs Type Indicator. This is a popular classification because it is an *ipsative* test, which means that it sets out to classify personality without attempt to measure how 'good' or 'bad' an individual is compared with the rest of the population. It sets out four dimensions:

- Preferred speed of interpersonal response
- Preferred focus of information
- Preferred reasons of action
- Preferred speed and approach to problem solving

These are usually presented as four dichotomies:

- Extraversion - Introversion (Talking it out - Thinking it through)
- iNtuitive - Sensing (The big picture - Attention to detail)
- Feeling - Thinking (Concern for people - Concern for logical implications)
- Judging - Perceiving (Coming to conclusions - Staying open to suggestions)

These are then often represented by their letters (eg someone may be an INTP or an ESTJ).

The table below illustrates the results of some of the research into the association between different Myers-Briggs preferences and student approach to study. Keirsey and Bates (1984) cite a study in a group of high schools and colleges in California which highlighted a disparity between the profiles of teachers and of the students that they

taught. This is particularly important because there are profiles that are more common in some professions than in others.

<p><b>EXTRAVERT STUDENTS</b></p> <p>Like variety and action in the classroom Talk to others about their ideas Show energy and enthusiasm express thoughts and feelings openly Are often friendly and talkative Can be distracted easily Enjoy 'cut and thrust' Work out their thinking whilst talking Like group work</p>	<p><b>INTROVERT STUDENTS</b></p> <p>Like working on their own Can become engrossed and absorbed by their ideas Very often conceal their interest Let others speak first Often fade into the background Don't like interruptions May not like spontaneous questions Like to think about ideas before discussing</p>
<p><b>INTUITIVE STUDENTS</b></p> <p>Like the chance to be original Focus on the future Prefer learning new skills Work in bursts of inspiration Are less concerned with order and sequence Dislike taking time for precision and can get facts wrong Want variety and spontaneity Enjoy designing new methods to solve problems</p>	<p><b>SENSING STUDENTS</b></p> <p>Like precise instructions Focus on the present Prefer skills already learned Work steadily and patiently Prefer facts and measurable things Like things presented sequentially Enjoy detail Like tradition Solve problems by using established methods Serialist learners</p>
<p><b>FEELING STUDENTS</b></p> <p>Prefer sharing information with others in groups Want harmony and avoid confrontation Generate 'class warmth' and are sensitive to everyone's feelings Need to be praised Enjoy subjects which have a human dimension Need to be able to relate to the teacher Look for the good in people and in events Have difficulty in accepting criticism</p>	<p><b>THINKING STUDENTS</b></p> <p>Prefer personal achievement to group work Enjoy debates and disagreement May enjoy talking with teachers more than with other students Need to succeed Are analytical and look for flaws Need to have information presented clearly Want to know why things are done as they are Are interested in grades and marks May like lectures</p>
<p><b>JUDGING STUDENTS</b></p> <p>Like to get things settled and sorted out Do not like unfinished work Do not like surprises Like to work to set timetables and schedules Invariably hand their work in on time Work best when it is planned and carefully prepared Tend to be in control of their work Usually have good study habits</p>	<p><b>PERCEIVING STUDENTS</b></p> <p>May start a new piece of work before finishing the first Like to move around and not be tied to a desk Are curious and like surprises Are often late finishing their work Cope well with the unexpected and unplanned Often feel that their work controls them Are often unorganised, with too many things left to the last moment</p>

Felder (1996) suggests that engineering professors usually orient their courses towards INTJ students by presenting lectures and requiring individual assignments, rather than active involvement and co-operative learning; by focusing on the underlying science rather than on design and application; by stressing abstract analysis rather than interpersonal considerations; and, by concentrating on following the syllabus rather than on exploring ideas and solving problems creatively.

## Teaching Styles

Grasha (1996) describes five teaching styles:

- *Expert* Possesses knowledge and expertise in the subject; concerned with transmitting information; strives to demonstrate expertise to students and thus maintain own status;
- *Formal Authority* Possesses status because of role as a teacher; concerned with the correct, acceptable and standard ways of doing things and with providing feedback, both negative and positive; likely to establish learning goals, expectations and rules of conduct;
- *Personal Model* Believes in teaching by personal example; oversees, guides and directs by showing how to do things and encouraging students to observe and emulate;
- *Facilitator* Guides, supports and encourages students to develop themselves; encourages asking questions and exploring options; develops initiative and responsibility; works with students on projects in a consultative fashion;
- *Delegator* Perceives role as a resource to be called upon by students; expects students to work autonomously and independently.

What are the attributes of our teaching style? The obvious ones are often the ones over which we have little control - the extent to which we use formal lectures rather than seminars, the amount of laboratory or workshop classes. But, when we come to look at Teaching and Lecturing Skills we will find that there are also different possibilities within the formal lecture or seminar or laboratory class.

## Teaching Styles and Teaching Roles

Looking at the Brigham Young University College of Engineering and Technology Harb, Hurt, Terry and Williamson (1995) identified four teaching styles:

- *Type 1 Teachers* who focus on the personal development of the students; they form about 10% of the teaching faculty at the College;
- *Type 2 Teachers* who focus primarily on the transmission of knowledge; they form about 50 % of the teaching faculty;
- *Type 3 Teachers* who primarily focus on promoting productivity and competence; they form about 30% of the teaching faculty;
- *Type 4 Teachers* who encourage experiential learning; they form about 10 % of the teaching faculty.

Each of these four types has preferred modes of teaching. For the Type 1 Teacher, the preferred mode is group discussion; for the Type 2 Teacher the preferred mode is the traditional lecture; for Type 3 laboratories and workshops and; for Type 4 the emphasis is on facilitating learning.

Harb et al also related four teaching roles to Kolb's Learning Cycle. Although there is some overlap, these four roles do not correspond exactly with their teaching types, rather the intention is to demonstrate the need for a broader approach to teaching. The roles are:

- *Motivator* who introduces the subject, provides the big picture, provides meaning, generates enthusiasm and shows respect and interest;
- *Expert* who provides information to the student, organises and integrates new material and provides time for thinking and reflection;
- *Coach* who provides opportunities for students to apply the material, helps students to develop problem-solving patterns and establishes a safe learning environment for experimentation;
- *Evaluator* who provides opportunity for self-discovery, provides opportunities for students to share discoveries and evaluates performance.

The Motivator moves the student on from Experience to Reflection, the Expert from Reflection to Conceptualisation, the Coach from Conceptualisation to Application and the Evaluator from Application to Experience.

### Personality and Teaching Style

Keirse and Bates (see above) found some differences of approach in teaching style according to personality type. Using their four-fold typology:

SP's prefer	Projects, demonstrations, games,, contests
SJ's prefer	Drills, essays, tests, demonstrations, recitation
NT's prefer	Lectures, projects, tests, essays, reports
NF's prefer	Group projects, seminars, games, interaction

### Follow-Up

Given the variety of styles of learning, how does this impact on your choice, and use, of learning media?

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