Learning Styles

This Factsheet is about individual differences in learning styles, which is relevant to the topic of educational psychology. It focuses on four key theories about learning styles, which are explained and evaluated. This Factsheet has been written with reference to exam board specifications and takes into consideration examiner comments and feedback. Words in bold are explained in the glossary and the worksheet gives you the opportunity to apply what you have learned to exam style questions.

The examiner will expect you to be able to:

- Consider ways in which psychology can inform our understanding of learning

- Examine variations in learning styles with reference to psychological theory

- Discuss theories of multiple intelligences

- Apply psychological theory and research to real-life events and situations

- Evaluate theories relating to learning styles.

Introduction

You are probably reading this Factsheet because you are learning about psychology. You might be in a class of ten, fifteen, twenty or more other learners who are all learning about psychology too. Imagine how many people are learning about psychology in your town, or in the UK, or in Europe, or the whole world! Each of these people learns differently to the next due to their **individual differences**. These differences between learners might be obvious things such as gender, age or culture, but there are also differences in styles of learning. You might prefer to learn by reading text books and Factsheets like this one. Other people prefer to learn by listening. Others still prefer active learning, for example by carrying out experiments or research of their own. This Factsheet explores the ways in which psychological theory can explain differences learning styles. It might also help you to understand your own learning style and apply this understanding to more effective learning.

> **Exam Hint:** *You will be expected to describe and evaluate a number of psychological theories relating to learning styles and support these with reference to research studies and evidence.*

Curry's onion model

Curry's (1983) theory of learning styles is known as the **onion model** because it suggests that, like an onion, there are multiple layers influencing our style of learning. Curry specifically named three layers; the outer layer is the preferred method of instruction, in other words, how the learner likes to be taught. If you think about your own
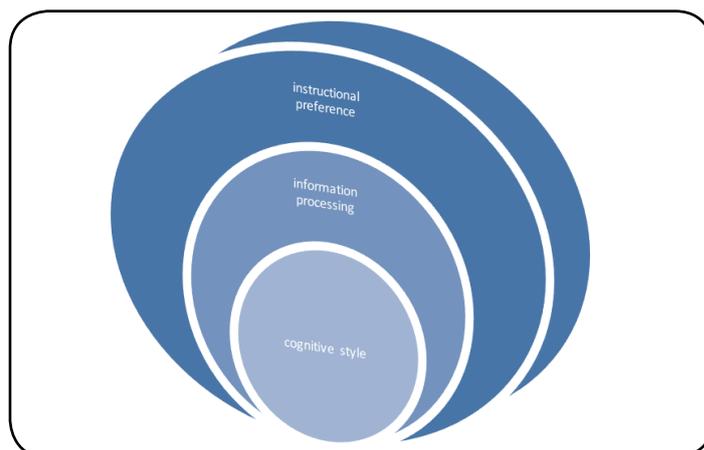
experiences, there are likely to be some teaching styles that suit you better than others and some that make it feel more difficult for you to learn. Curry called this layer **instructional preference**. The middle layer relates to how the learner processes the information they are given (the **informational processing** layer). The innermost layer of the onion model is **cognitive personality style**, which relates to the learners' style of thinking. Cognitive styles are based on the **Myers-Briggs type indicator (MBTI)** which describes personality type in four domains; extraversion/introversion, sensitive/intuitive, thinking/feeling and judging/perceiving. It is believed that personality is stable over time and affects behaviour, including learning.

> **Exam Hint:** *Having a good understanding of the Myers-Briggs type indicator will help you to produce a detailed definition of the cognitive personality style layer of the onion model. But you should make sure you remain focused on learning styles in your answer and that the emphasis doesn't drift onto one about personality.*

How personality types influence learning style:

- Extraversion/introversion affects your focus your attention

- Sensitive/intuitive affects the way you take in information

- Thinking/feeling affects how you make decisions

- Judging/perceiving affects how you deal with the world, and ideas about the world.

The main strength of Curry's onion model is that it takes into consideration different aspects of the learning process including how the learner likes to be taught, how they process information and their style of thinking. However, to reduce the process of learning to these three 'layers' is over simplistic. Just like an onion has many more than three layers, there are many other variables in learning that this model ignores, such as gender, age and culture as well as intelligence style and level. Another weakness is that cognitive style is based on the Myers-Briggs type indicator, which assumes that personality is fixed and stable.

Kolb's experiential learning theory

Kolb's **experiential learning theory (ELT)**, published in 1984, is influence by **Gestalt** theory and takes a **holistic** approach to learning. ELT takes into account experience, perception, cognition and behaviour. It is a two-part theory; the first part is a four-stage learning cycle and the second part is the four distinct learning styles. The stages of the learning cycle are:

1. Concrete experience, where the learner encounters a new experience or re-experiences an existing experience

2. Reflective observation, where the learner considers the personal experience

3. Abstract conceptualization, where the learner forms new ideas based on their reflections

4. Active experimentation, where the learner applies their concepts to new experiences

Kolb suggested that the learner can begin the learning cycle at any stage and that it can take a short or longer time to complete. But for effective learning to take place, the learner must progress through each stage of the cycle.
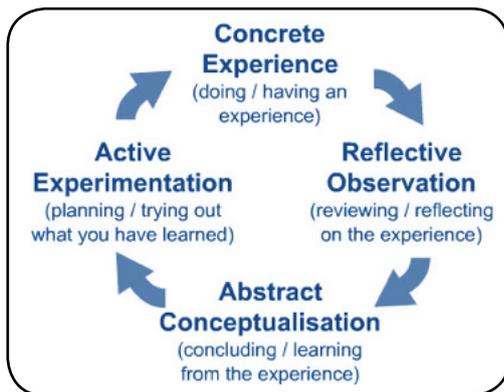

Kolb's learning styles are based on two dimensions: *understanding* information and *processing* information. Styles are assessed using a set of questions, which are then scored and classified into four styles of learning as summarised in the table below. Examples of questions to assess learning style are:

- I tend to be a perfectionist
- In discussions, I usually produce lots of spontaneous ideas
- In meetings, I put forward practical, realistic ideas
- I steer clear of subjective (biased) or ambiguous (unclear) topics
- I enjoy the drama and excitement of a crisis situation
- People often find me insensitive to their feelings.

Activists	Theorists	Reflector	Pragmatists
Prefer practical tasks over theory	Prefer a clear and obvious purpose	Need time for observation and consideration	Need clear links between theory and practice
Take risks and respond to challenge	Like handouts and ideas for independent study	Prefer to be passive – listening or watching rather than doing	Like to learn transferable skills and knowledge
Like games and problem solving	Are analytical and can generalise findings	Are good at interacting without conflict	Want opportunities to practice what has been learned
Like to be leaders	Focus on theory and methodology	Like to have regular breaks	Like shortcuts and tips

The final part of Kolb's experiential learning theory is to bring together the four-stage learning cycle and the learning styles, as illustrated below:

Diverging	Converging	Accommodating	Assimilating
Concrete experiencer Reflective observer	Abstract conceptualisation Active experimenter	Concrete experiencer Active experimenter	Abstract conceptualiser Reflective observer
Diverge from a single experience to multiple possibilities	Good at solving problems using theory	Solve problems intuitively	Prefer clear information and instruction
Prefer watching than doing	Apply learning to practical issues	Prefer a hands-on approach to learning	Logical and analytical
Have a strong imagination	Unemotional and can lack imagination	Attracted to new challenges	Like organised and structured learning
Prefer group work, but distressed by group conflict	Prefer to work alone or independently	Strong preference for doing rather than thinking	Interested in concepts and abstracts rather than people
Broad interests in different cultures	Like facts and efficiency	Can be challenging	Prefer to think rather than do
Think deeply about experiences	Prefer technical tasks and experimentation	Do not like routine	Like lectures rather than activities
Respond to constructive feedback	Learn by understanding how things work in practice	Learn better by themselves than with others	Respect the knowledge of experts
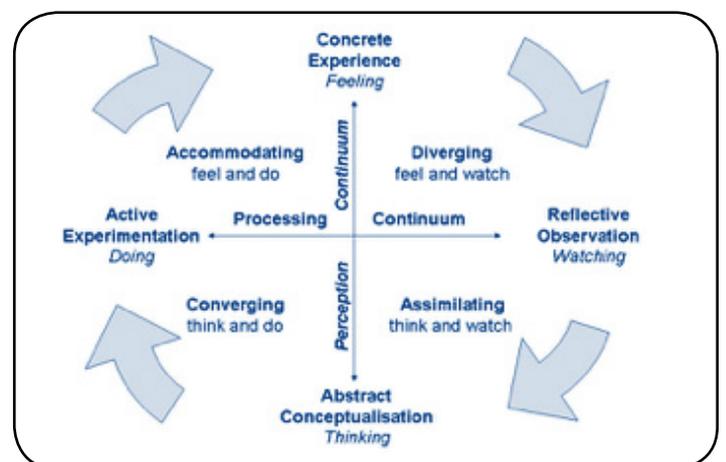
Evaluation

- Kolb's experiential learning theory is detailed, taking into account both the cycle of learning as well as styles of learning

- However, any stage theory, such as this, could be criticised for being too simplistic as reality is more complex

- Similarly, the suggestion that learning styles can be categorised into just four types is a **reductionist** notion

- The model does not adequately address the process of reflection in learning

- The model ignores other variables such as gender, age and culture as well as intelligence style and level.

Grasha-Riechmann model

Grasha and Riechmann were teachers who realised that not all students learn in the same way. They proposed the idea that teachers must try to understand each student's individual learning style in order to maximise their potential. They proposed six styles of learning, known as the **Grasha-Riechmann model** (1996), which is based on preferences and attitudes to learning, summarised in the table below:

Learning style	Characteristics
Independent	Prefers to work alone rather than in groups and at their own pace rather than to timescales set by the teacher
Dependent	Prefers to receive direct instruction from the teacher and work to specific time scales
Competitive	Compares themselves with other learners and is driven by the desire to do better than peers, is motivated by recognition and achievement
Collaborative	Prefers to work in a group rather than alone. Cooperates with peers and has no desire to compete
Avoidant	Is often absent or abstains from learning. Is unenthusiastic and can feel overwhelmed by learning
Participant	A compliant learner who is eager to carry out tasks set and is eager to learn but can struggle to work independently

Grasha and Riechmann went on to suggest that once learning styles have been established, teachers can maximise student potential by adapting their teaching styles. For example, a competitive learner is likely to enjoy opportunities for leadership and reward, so the teacher can introduce games and quizzes with a competitive element that would suit this type of learner. A collaborative learner, on the other hand, would prefer small group work without a competitive element. The key, of course, is for the teacher to vary their teaching style as much as possible so as to appeal to a wide range of learning styles.

Evaluation

- As educators, Grasha and Riechmann based their model on their real-life observations of teaching and learning
- The model's main strength is that it takes into consideration both learners' preferences and attitudes to learning
- However, the suggestion that learning styles can be categorised into six distinct types is an over-simplification
- The model ignores other variables such as gender, age and culture as well as intelligence style and level.

Gardner's theory of multiple intelligences

In the 1980s, cognitive psychologists began to realise that learners differed in the ways they understood and remembered information. They explained these differences by suggesting that learners had different kinds of minds. Gardner built on this idea and developed a theory of multiple intelligences (1991). This theory proposed that individuals have different strengths depending on different kinds of intelligence. Some people are good at music and are therefore said to have musical intelligence; others have visual-spatial intelligence and are good at puzzles and creative challenges. Gardiner suggested six distinct intelligences which are outlined in the table below:

Intelligence	Characteristics	Leaning preferences
Visual-spatial	Think in terms of physical space, awareness of their environment	Graphics, charts, photography, drawing, 3-D modelling, multimedia, pictures, charts, graphs
Musical	Sensitive to rhythm and sound in the natural environment and through music	Lyrics, speaking, musical instruments, music, multimedia, background music during learning
Interpersonal	Ability to understand and interact, empathetic	Learn through interaction, group work, seminars, audio conferencing, time and attention during learning
Bodily-kinaesthetic	Sense of body awareness and use of the body	Movement, making things, touch, body language, physical activity, hands-on learning, acting, role play
Linguistic	Use words effectively, highly developed listening skills	Reading, word games, poetry, stories, computers, games, multimedia, books and lecture
Logical-mathematical	Think conceptually and abstractly, ability to see and explore patterns and relationships	Experiments, puzzles, logic games, investigations, mysteries. Need to learn and form concepts before they can deal with details
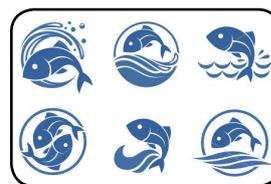
Gardner argued that an education system which assumes everyone can learn the same way, using the same materials and which tests learners using the same methods is insufficient in meeting the needs of all learners. He suggested instead that teachers should use a range of styles to teach and assess learners that includes visual, printed and multimedia resources, as well as sound, movement and real-life activities in a range of settings.

'If You Judge a Fish by Its Ability to Climb a Tree, It Will Live Its Whole Life Believing that It is Stupid'

Evaluation

- The main strength of Gardner's theory is the suggestion that intelligence should not be measured in one domain
- A further strength is that it takes into consideration the different ways in which learners understand and remember information
- Another strength is that the model can be applied to teaching and learning
- However, the suggestion that intelligence can be categorised into six distinct types is an over-simplification; intelligence is likely to be more complex than the model implies and the model ignores other variables such as gender, age and culture.

Exam Hint: *You should be able to compare/contrast Gardner's theory of multiple intelligences to theories about learning styles in terms of their similarities and differences.*

Applications

Psychological theories about learning styles have obvious applications to teaching. If the teacher understands the ways in which their learners learn, it can help them to develop more appropriate learning opportunities. Teachers are encouraged to use a range of teaching styles so that different learning styles are catered for in the classroom. This is known as **differential learning**. Teaching and learning should facilitate different stages of the experiential learning cycle by including opportunities for concrete experience, reflection, conceptualization and experimentation. Teachers should also vary their methods of delivery to include both passive and active tasks and include opportunities for independent study as well as small and large group work. This will provide opportunities for all learners to learn in the ways that suit them best.

Exam Hint: *The examiner will expect you to apply your knowledge to real life scenarios of teaching and learning.*

Conclusion

Psychological theory can explain differences in learning styles through various models that have influenced how teachers teach and how learners learn. Each model has something valuable to tell us about learning styles and each has its own strengths and limitations. There are also some generic criticisms of learning styles, which are listed below:

- Learning style theories have been criticised as they lack any scientific basis
- There is little evidence that assessing learning styles and matching has any effect on learning
- Labelling learners according to learning styles can create a **self-fulfilling prophecy** that limits learning
- Labelling learners according to learning styles can raise ethical issues
- Any theory that sorts people into categories is limited
- Measurements of learning styles seem to lack **test-retest reliability**
- Learning styles are not fixed; they change over time and with different tasks
- Measurements of learning styles may lack **concurrent validity,** raising doubts about one or both of the tests.

Glossary

Cognitive personality style
Innermost layer of Curry's onion model.

Concurrent validity
The extent to which the results of different tests find the same results.

Differential learning
Varying teaching methods to suit differences in learning**.**

Experiential learning theory (ELT)
Kolb's model of learning that combines a four-stage learning cycle with four learning styles.

Gestalt
Approach to psychology and philosophy that considers the whole rather than individual parts; proposes that the whole is greater than the sun of its part.

Grasha-Riechmann model
1996 model of learning styles based on preferences and attitudes to learning.

Holistic
Theories that consider the whole rather than aspects of the whole, such as Gestalt, opposite of reductionist.

Individual differences
Aspects of individuals that makes them different to others, such as gender, age, culture, personality, intelligence and preferences, etc.

Informational processing
Middle layer of Curry's onion model.

Instructional preference
Outermost layer of Curry's onion model.

Myers-Briggs type indicator (MBTI)
Assesses personality type according to four domains.

Onion model
Curry's (1983) theory of learning styles that proposes three layers influencing our style of learning.

Reductionist
Criticism of theories that over-simplify complex ideas.

Self-fulfilling prophecy
Changes in behaviour on the basis of what is expected to happen, for example due to a label.

Test-retest reliability
The extent to which the results of a test are the same or different when the same test is taken again.

Exam Hint: *When evaluating theories of learning styles, you have a choice between depth/breadth. You could choose to evaluate each theory in turn and in detail, as illustrated in the sections above, and/or you could evaluate learning style theory as a whole, as summarised in this final section. In order to reach the top band marks, it's probably a good idea to incorporate both!*

Worksheet: Learning Styles

Name: _____

1. What is the relationship between personality type and learning styles?

   ....

   ....

   ....

2. Clara is always shouting out answers in class and in group work she always wants to be the leader. She is in top sets for English and Maths but gets upset if she doesn't score top marks in tests. What is Clara's learning style and how can her learning potential be maximised?

   ....

   ....

   ....

3. Aaron hates school. He is often late, never joins in with group activities or discussions and is falling behind because of his low test scores. What is Aaron's learning style and how can his learning potential be maximised?

   ....

   ....

   ....

4. Kolb's learning styles are based on understanding information and processing information. Explain the difference between these two dimensions with reference to Kolb's learning styles of diverging, converging, accommodating and assimilating.

   ....

   ....

   ....

   ....

   ....

   ....

   ....

5. Drawing on Gardner's theory of multiple intelligences, how would you advise a new teacher to plan resources that meet the needs of a diverse group of learners?

   ....

   ....

   ....

   ....

   ....

   ....

   ....

   ....