

Psychology of Exceptional Learning

How we learn : A framework for looking at learning

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How we learn : What things affect how we learn?

Concepts in contemporary theories of learning. Since we are looking at contemporary learning theories, what are some key concepts, 'buzz words' that have emerged over last 10 years. Examples are

- multiple intelligences
- peer coaching
- work place learning;
- scaffolding

In small group, list as many as you can think of in 5 minutes.

What makes learning easy / hard ? Think of two things you learnt recently, something you learnt well and something you didn't learn as well. What things do you think made a difference between the two situations ?

Situation in which you learnt well	Situation in which you didn't learn well

What do you do to learn ? Read the following and discover what a bof is, note why you made this decision, and what you did to learn more about bofs.

Peter knew enough about bofs to be aware of the danger he was in. He thought about his predicament . Bofs, he knew, were short-sighted, but had a very good sense of smell. They also had very sensitive hearing.

In the distance he could hear the roar of the river. Would that cover the noises that he was sure to make as he tried to escape ? Slowly and silently he turned and backed away from the clearing.

The bof couldn't see Peter, but knew that he was escaping; its sense of smell told it this. It padded along on its huge paws, claws sharp and extended. It moved its head from side to side, its nose pointing up and swinging like a radar scanner searching for its target.

Peter made his way to the waterfall. He stopped on the bank of the river, keeping as still as he could.. Then he saw the bof again. It was standing on a rise that ran along the bank. It was hungry. It was also angry because it had been deprived of its dinner. It padded up and down on the green grass carpet making a soft grunting noise as it moved, It furiously sucked in air through its dilated nostrils as it searched for Peter's scent. Its huge arms thrashed around as it groped for its quarry. Suddenly its pointed ears pointed in Peter's direction.

What, do you think, is a bof ? What did you do in order to decide ?

Good / poor teaching procedures With a partner, list as many good and poor teaching procedures you can think of in 5 minutes. Then combine with another pair and select by agreement the 5 best and 5 worst procedures.

Learning functions. To learn successfully, learners interact with the teaching information in various ways; they need to use 'learning functions'.

• a challenge or reason for learning something

• an idea of knowing where they will end up, see the goals

• make links with and use what students know re topic

- stimulate what they know a topic; let them see what they already know
- how they know, what they know about how to learn, how to think
- what they feel about themselves as learners of the ideas, how well they value the ideas; the teaching needs to help them see they can learn the ideas, that we believe / expect they will be able to learn them
- identify what they don't know about the topic, unanswered questions; the teaching helps them get their knowledge ready to change
- use some of this knowledge automatically
- recode what they know to match the teaching

• see a pathway to the goal

• learn new ideas in specific limited, supported, 'scaffolded' ways

- learn in particular context first with support, scaffold;
- learn as actions, imagery, in familiar language
- ask questions *How can we get from ...to .. ?*, discuss ideas in small groups, trial.
- paraphrase, act, read, model, visualize, write, link and categorise ideas, solve problems, look for cause-effect, practise, use analogy, compare, record (in notes, pictures, show what they think, get corrective feedback
- recode imagery, action knowledge of new ideas into words

• deepen what they have learnt; abstract it, link it more broadly with what is known

- link episodic, semantic and procedural aspects of idea at once ; say, write, draw, do.
- review, consolidate what was learnt *What have you learnt ?*
- decontextualize, summarize, organize, link with what is known, main/subordinate ideas.
- elaborate and extend ideas through questioning.
- teach the conventional ways of communicating new ideas

• invest positive emotion in the new knowledge

- interest level, •value • use of ideas • students as successful learners of ideas

• store what they have learnt in memory, practise remembering it

• identify how they learnt, what they did that helped them to learn

• see themselves making progress

• automatise what they have learnt so it can be more easily used

• transfer and generalise the new knowledge

• organise what they have learnt for assessment purposes

Key issues include

- teachers can activate them through their systematic use of a range of teaching strategies.
- the effectiveness of a lesson depends on how they are put in place.

Student differ in

- how they use each function.

- how prepared they are to be programmed by the culture to think or learn,
- how susceptible they are to group valuing.
- how prepared they are to guess, to take risks, to experiment, how they do this ;
 - some make a quick guess , others are timid of taking risks and delay interpretation.
 - some make bigger leaps in knowledge.
- how well they learn in groups, understand and value how others learn.
- how prepared they are to show what they know
- how well they make opportunities for showing what they know, see opportunities they have for display.

How this analysis can help

- children differ in how they learn - some learn actions better, etc. Some have difficulty recoding - they learn something in one form, eg in words but can't put it into actions and this restricts the feedback they get, how well they can show what they know.
- it gives a way of analysing how students are operating from an 'effective learning' perspective. Because it identifies key learning aspects, we can see which are not developed and how they can be developed , the problems that might ensue.
- it helps us to interpret the problems learners show from a learning perspective
- it allows us to benchmark review and evaluate our teaching from a learner perspective and to improving teaching by matching teaching with learners.

Teaching procedures to support the learning functions

The learner functions need to be supported by several activities; the teaching needs to help students to

- ***stay motivated to learn / achieve.*** They are more likely to stay motivated if they see that
 - curiosity and enquiry are valued, that it is acceptable to ask questions as they learn.
 - that what they already know is valued and relevant.
 - they have some control over how they will learn. You can allow them to decide
 - which aspects of some topics they will learn in depth,
 - how they might show what they know,
 - when and how they will study particular topics,
 - who they might work with.
 - you believe they can learn successfully.
 - see that there is some payoff for them to learn the idea.
- ***reflect both on the ideas they are learning and how they learn.*** Students can 'replay' and analyse earlier experiences, identify what worked and select what they might do in the future. To become self-managing, students need to engage in this reflective activity.
- ***display what they know and to get corrective feedback for this.*** Each function involves students displaying what they know. They do this in different ways. Showing what they know opens the opportunity for receiving corrective feedback.
- ***see themselves making progress.*** Students need to see themselves making progress as they use each function. The sequence of learning functions has diagnostic value. If students find an idea difficult to learn or a problem difficult to deal with, they can work explicitly through each function in turn and clarify its outcome, for example did they
 - frame up key questions / issues that they expected the teaching to deal with ?
 - have an impression, even general and diffuse, of the desired outcome, ?
 - link the new learning or context with what they already knew, try to make links ?
- ***manage and direct their own learning.*** They can learn to use each function independently and spontaneously and see how it works for them.
- ***learn in a range of contexts.*** Students frequently need to learn in small group peer-centred co-operative and collaborative learning contexts.

Learning starts with what students know

The different ways in which we can know. Suppose you receive from your bank a brochure intending to teach you about **he banking revolution and what it means for you**. You can link the information in the brochure with what you know in different ways: you can

- imagine yourself in your local bank or at an ATM; *experiential or episodic knowledge*.
- recall that 'banking refers to ways of managing your money' and think about concepts to do with personal banking, investing and borrowing money. This is a more abstract knowledge not linked to particular experiences - '*semantic*' *knowledge*.
- think of the language used to talk about banking, that is, *domain specific language*; the jargon and often symbolic language.
- think of the actions you do when you bank; *procedural knowledge*, knowing 'how to'.
- have an emotional reaction to banking, for example, you may believe that banking is one of the most (or least) valuable institutions that can exist in a society; *attitudinal knowledge*, how disposed positively or negatively you are to the topic.
- recall the things you need to do to manage banking issues in your life, for example, how you decide where to get the best investment return for your deposits; *knowledge of how to learn*, your cognitive and metacognitive knowledge.

Knowledge in these areas work together to influence how we learn. Effective teaching takes account of what you know in each of them. Your attitude to banking, interest in it and how successfully you believe you can learn about it determine whether and how you learn. How well you make sense of the information and link it with what you know determines what you learn. How successfully we believe we learn affects our attitudes towards the ideas, how prepared we are to try out ideas, to take risks when learning and to manage our learning. These in turn affect the learning outcome.

Teaching
information

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| <ul style="list-style-type: none">• existing content knowledge ?• what the outcome of learning might be like ?• how to get there ?• how useful are the ideas once they have been learnt ?• is worthwhile embarking on the learning ? Are they likely to be successful• how will the teaching - learning be managed; what will they be expected to do to learn, what will they expect their teachers to do ?• what do they know about actions to take to learn; learning strategies, cognitive strategies ? |
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