What we Need to Know About Adult Learning

Australasian Professional Legal Education Council Conference
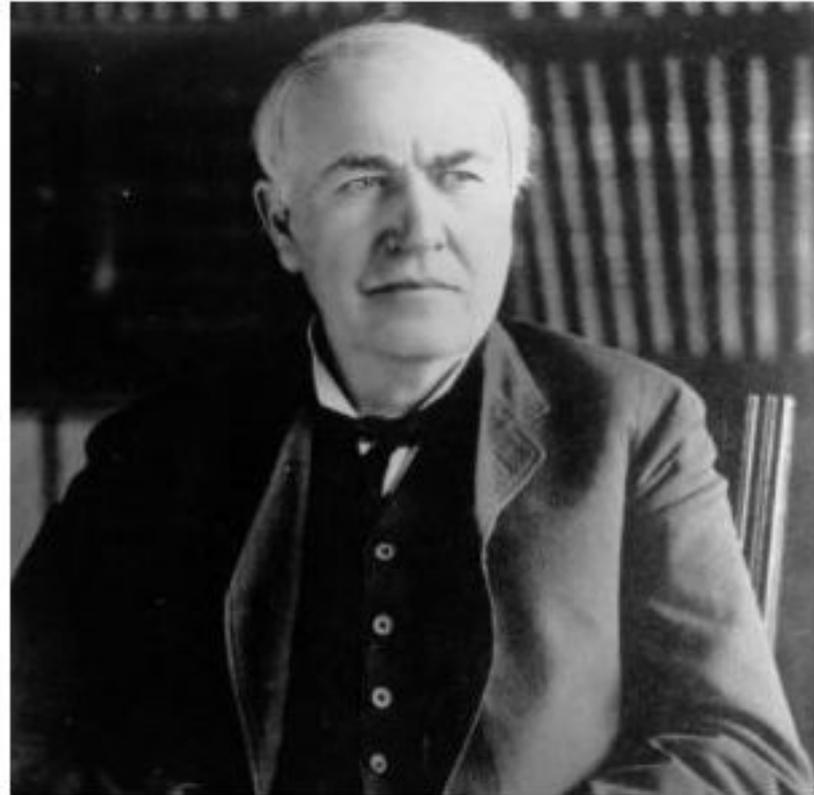
Melbourne
17th November 2017

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Thomas Edison

Thomas Edison invented the phonograph in 1877. He predicted recordings would make teachers redundant.

"Technology is just a tool. In terms of getting the kids working together and motivating them, the teacher is the most important."
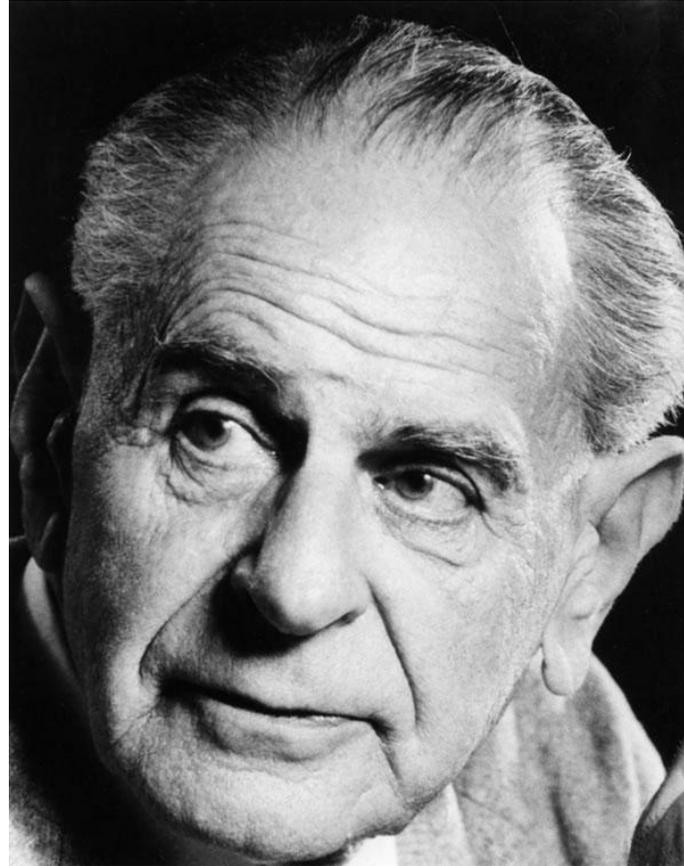
Bill Gates

"Science must begin with myths and with the criticism of myths".

- SES and home environment do have moderate/large effect sizes (= 0.52)

- SES *is* about:
  - Foundations/advantage
  - Opportunity
  - Support
  - Role models and encouragement

- SES *is not* about:
  - Innate ability
  - Social-biological determinism
  - Potential

- The theory of fixed intelligence – some people believe that their intelligence is a fixed trait. We call this an 'entity theory' of intelligence.

- The theory of malleable intelligence – other people have a very different definition of intelligence. Their intelligence is not a fixed trait that they simply possess, but something they can cultivate through learning. We call this an 'incremental theory' [growth mindset] of intelligence because intelligence is portrayed as something that can be increased through one's efforts.

1. How do students understand new ideas?

-Students learn new ideas by reference to ideas they already know.

-To learn, students must transfer information from working memory (where it is consciously processed) to long-term memory (where it can be stored and later retrieved). Students have limited working memory capacities …

-Cognitive development does not progress through a fixed sequence of age-related stages. …

2. How do students learn and retain new information?

-Information is often withdrawn from memory just as it went in. We usually want students to remember what information means and why it is important, so they should think about meaning when they encounter to-be-remembered material.

-Practice is essential to learning new facts, but not all practice is equivalent.

3. How do students solve problems?

-Each subject area has some set of facts that, if committed to long-term memory, aids problem-solving by freeing working memory resources and illuminating contexts in which existing knowledge and skills can be applied.

-Effective feedback is often essential to acquiring new knowledge and skills.

4. How does learning transfer to new situations in or outside of the classroom?

-The transfer of knowledge or skills to a novel problem requires both knowledge of the problem's context and a deep understanding of the problem's underlying structure.

-We understand new ideas via examples, but it's often hard to see the unifying underlying concepts in different examples.

5. What motivates students to learn?

-Beliefs [often wrong] about intelligence are important predictors of student behavior in school. Self-determined motivation (a consequence of values or pure interest) leads to better long-term outcomes than controlled motivation (a consequence of reward/punishment or perceptions of self-worth).

-The ability to monitor their own thinking can help students identify what they do and do not know, but people are often unable to accurately judge their own learning and understanding.

-Students will be more motivated and successful in academic environments when they believe that they belong and are accepted in those environments.

6. What are Common Misconceptions about how Students Think and Learn?

Cognitive Principles:

*Students do *not* have different 'learning styles.'

*Humans do *not* use only 10% of their brain

*People are *not* preferentially 'right-brained' or 'left-brained' in the use of their brains.

*Novices and experts *cannot* think in all the same ways.

*Cognitive development does *not* progress via a fixed progression of age-related stages.
See

http://www.deansforimpact.org/the_science_of_learning.html

http://www.deansforimpact.org/the_science_of_learning_video.html

1. **Adult learning is self-directed/autonomous**
    Adult learners are actively involved in the learning process such that they make choices relevant to their learning objectives. As such, adult learners also direct their learning goals with the guidance of their mentors. As an educator, it is important to facilitate the process of goal-setting. Students need to be given the freedom to assume responsibility for their own choices. When it comes to workload, they also need to be proactive in making decisions and in contributing to the process.

2. **Adult learning utilizes knowledge & life experiences** Under this approach educators encourage learners to connect their past experiences with their current knowledge-base and activities. Learners are taught ways to bring to their current placement past knowledge, opinions, and experiences. Educators need to be well-versed in how to help students in drawing out relevant past knowledge and experiences. In addition, educators must know how to relate the sum of learners' experiences to the current learning experiences.

3. **Adult learning is goal-oriented**
The motivation to learn is increased when the relevance of the "lesson" through real-life situations is clear, particularly in relation to the specific concerns of the learner. The need to acquire relevant and adequate knowledge is of high importance. With this in mind, adult learning is characterized as goal-oriented and intended learning outcomes should be clearly identified. Once the learning goals have been identified, it is now imminent to align the learning activities such that these objectives are fulfilled within a certain period of time. This approach is a great way to maximize a students' learning experience.

4. **Adult learning is relevancy-oriented**
One of the best ways for adults to learn is by relating the assigned tasks to their own learning goals. If it is clear that the activities they are engaged into, directly contribute to achieving their personal learning objectives, then they will be inspired and motivated to engage in projects and successfully complete them.

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5. **Adult learning highlights practicality**
Placement is a means of helping students to apply the theoretical concepts learned inside the classroom into real-life situations. It is very important for educators to identify appropriate ways and convert theoretical learning to practical activities! Learning is facilitated when appropriate ways of implementing theoretical knowledge in real life situations are made clear.

6. **Adult learning encourages collaboration**
Adult learners thrive in collaborative relationships with their educators. When learners are considered by their instructors as colleagues, they become more productive. When their contributions are acknowledged, then they are willing to put out their best work.

– https://elearningindustry.com/6-top-facts-about-adult-learning-theory-every-educator-should-know

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1.   **Principle of Andragogy#1**
     Adults must have a hand in the design and development of their learning experience.

2.   **Principle of Andragogy#2**
     Experience should be at the root of all eLearning tasks and activities.

3.   **Principle of Andragogy #3**
     Real life applications and benefits must be tied to the eLearning course.

4.   **Principle of Andragogy #4**
     Give adult learners the opportunity to absorb information, rather than memorizing it.

     https://elearningindustry.com/9-tips-apply-adult-learning-theory-to-elearning

Key findings from *How People Learn*:

- Students come to the classroom with preconceptions about how the world works. If their initial understanding is not engaged, they may fail to grasp the new concepts and information that are taught, or they may learn them for purposes of a test but revert to the preconceptions outside the classroom.

- To develop competence in an area of enquiry, students must:
  - have a deep foundation of factual knowledge,
  - understand facts and ideas in the context of a conceptual framework, and
  - organise knowledge in ways that facilitate retrieval and application.

- A 'metacognitive' approach to instruction can help students learn to take control of their own learning by defining learning goals and monitoring their progress in achieving them.

Implications for Teaching:

- Teachers must draw out and work with the pre-existing understandings that their students bring with them.

- Teachers must teach some subject matter in depth, providing many examples in which the same concept is at work and providing a firm foundation of factual knowledge.

- The teaching of metacognitive skills should be integrated into the curriculum in a variety of subject areas.

Designing Classroom Environments:

- Schools and classrooms must be learner centred.

- To provide a knowledge-centred classroom environment, attention must be given to what is taught (information, subject matter), why it is taught (understanding), and what competence or mastery looks like.

- Formative assessments – ongoing assessments designed to make students' thinking visible to both teachers and students – are central. They permit the teacher to grasp the students' preconceptions, understand where the students are in the 'developmental corridor' from informal to formal thinking and design instruction accordingly. In the assessment-centred classroom environment, formative assessments help both teachers and students monitor progress.

- Learning is influenced in fundamental ways by the context in which it takes place. A community-centred approach requires the development of norms for the classroom and school, as well as connections to the outside world, that support core learning values.

Applying the Design Framework to Adult Learning:

- Many approaches to teaching adults consistently violate principles for optimising learning. Professional development programs frequently:
    - Are *not* learner-centred.
    - Are *not* knowledge-centred.
    - Are *not* assessment-centred.
    - Are *not* community-centred.

- Since the 1970s

- More than 70 models in varied settings (EC to higher ed)

- A highly lucrative industry (instruments, manuals, videotapes, in-service packages, web sites, publications and workshops)

- Psychologists and neuroscientists believe *there is little efficacy for these models which rest on dubious grounds*

- Confusion with teaching strategies (as with 'constructivism' – see over); conflation with multiple intelligences, Myers-Briggs, etc.

- Numerous publications; few subject to peer review.

- (Hattie, 2009: 197). *'It is hard not to sceptical about these learning preference claims'*

- No clear concept of LS.

- No valid and reliable way to assess students.

- No clear evidence to support the effectiveness of matching teachers' TS to students' LS.

- See:
  - Lilienfield et al (2010). *50 Great Myths of Popular Psychology*. Chichester: Wiley-Blackwell.
  - Scott, C. (2010). 'The Enduring Appeal of 'Learning Styles'', *Australian Journal of Education*, 54(1), pp. 5-17.
  - Dinham, S. (2016). 'Students are not hard-wired to learn in different ways – we need to stop using unproven, harmful methods', *The Conversation,* September.: https://theconversation.com/students-are-not-hard-wired-to-learn-in-different-ways-we-need-to-stop-using-unproven-harmful-methods-63715
  - http://www.youtube.com/watch?v=sIv9rz2NTUk&feature=player_embedded#at=32

Myers-Briggs, etc?

*"Millions of people worldwide take personality tests each year to direct their education, to decide on a career, to determine if they'll be hired, to join the armed forces, and to settle legal disputes. ... the sheer number of tests administered obscures a simple fact: **they don't work**. Most personality tests are seriously flawed, and sometimes unequivocally wrong. They fail the field's own standards of validity and reliability."*

- see Paul, A. (2004). *The Cult of Personality: How Personality Tests Are Leading Us to Miseducate Our Children, Mismanage Our Companies, and Misunderstand Ourselves.*

- See also http://www.psychometric-success.com/personality-tests/personality-tests-popular-tests.htm

*"As **constructivism** has become the dominant view of how students learn, it may seem obvious to equate active learning with active methods of instruction. Thus, educators who wish to use constructivist methods of instruction are often encouraged to focus on **discovery learning** – in which **students are free to work in a learning environment with little or no guidance**. Under the banner of **social constructivism**, the call for discovery learning remains, but with a modest shift in form – **students are expected to work in groups in a learning environment with little or no guidance**. … The research in this brief review shows that **the formula constructivism = hands-on activity is a formula for educational disaster**."*

– Mayer, R. (2004). Should there be a three-strikes rule against pure Discovery Learning?, *American Psychologist*, 59(1) ,14-19.

Spaced versus mass practice (ES=0.71)

"If you can't go slow, you can't go fast.'... Research shows the value of deliberate practice across fields such as music to athletics: ' … whether the subject is baseball or biology, piano or palaeontology, medicine or math, children and adults need deliberate practice in order to achieve their objectives …

The components of deliberate practice include performance that is based on a particular element of the task, expert coaching, feedback, careful and accurate self-assessment, and – this is the key – the opportunity to apply feedback immediately for improved performance."

– Reeves, D. (2010). *Transforming Professional Development Into Student Results*. ASCD.

Typical Forgetting Curve for Newly Learned Information
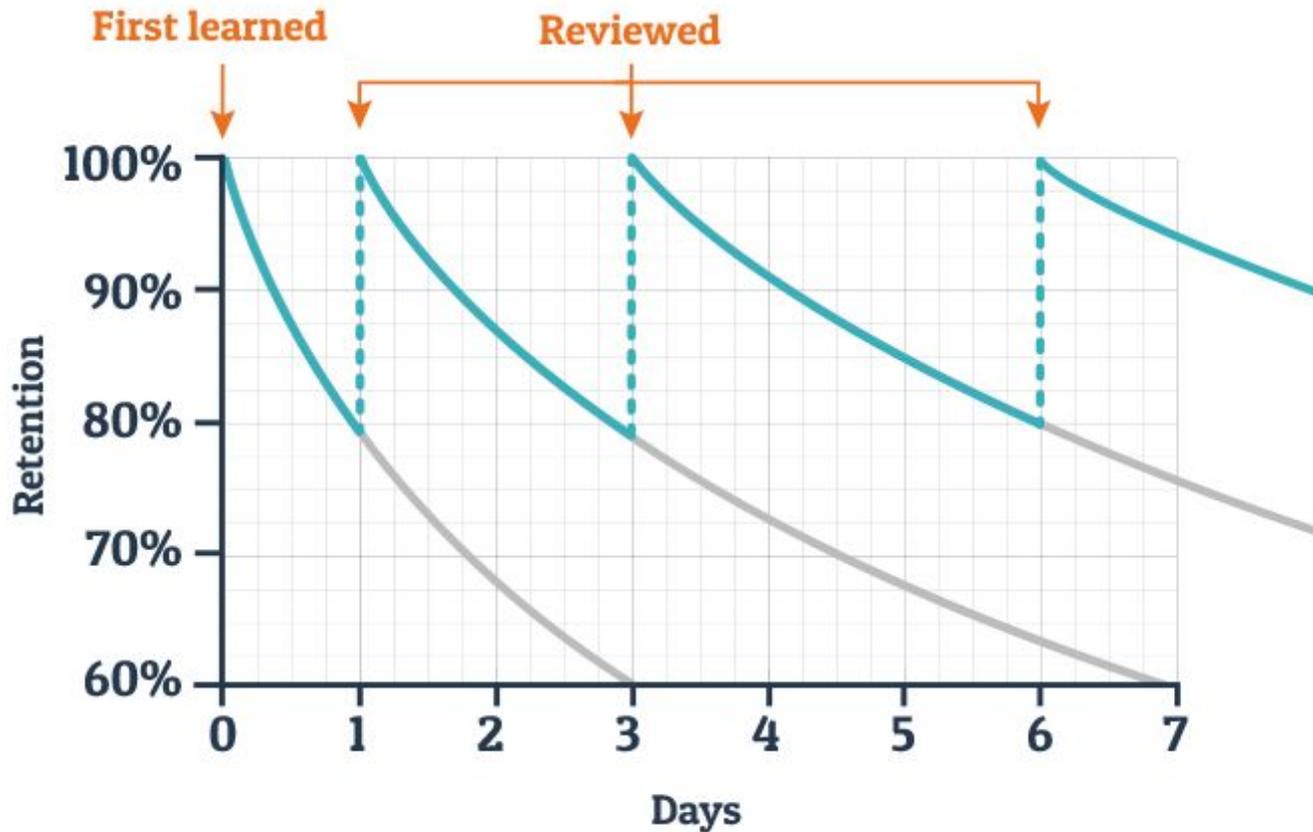
"Look at learning or mastery in fields as diverse as sports, the arts, languages, the sciences or recreational activities and it's easy to see how important feedback is to learning and accomplishment. An expert teacher, mentor or coach can readily explain, demonstrate and detect flaws in performance. He or she can also identify talent and potential, and build on these.

In contrast, trial and error learning or poor teaching are less effective and take longer. If performance flaws are not detected and corrected, these can become ingrained and will be much harder to eradicate later. Learners who don't receive instruction, encouragement and correction can become disillusioned and quit due to lack of progress."

(Dinham, 'Feedback on Feedback', 2008)

(Feedback ES = .75)

The four questions of Students:

1. What can I do?

2. What can't I do?

3. How does my work compare with that of others?

4. How can I do better?

I suggest that you begin a professional conversation about feedback by asking eight questions:

1. What are our present approaches – formal and informal – to student feedback? Conduct an audit.

2. Are our assessment methods and criteria clear, valid and reliable? Identify the links between assessment and feedback.

3. Do our students understand what is meant by feedback?

4. Is the feedback our students receive infrequent, unfocused, unhelpful, inconsistent or negative? OR

5. Is the feedback we provide focused, comprehensive, consistent and improvement oriented, addressing the four key questions raised above? (especially *How can I do better?*)

6. How can we provide our students with improved feedback?

7. How will we know if it works? What evidence will we need?

   ► ***However, feedback is only one part of the equation. It is not a substitute or remedy for poor teaching.***

- Thank You -