

	Social-Cognitive / Self-Efficacy	Multiple Intelligences	Bloom's Taxonomy
Who Developed it?	<p>developed in response to behaviourist learning theories, which focused on stimulus-response as the basis for learning and did not consider the actual learner. (Rosenthal, 1978)</p> <ul style="list-style-type: none"> - social learning theory was initially proposed by Miller and Dollard in 1942 (Pajares, 2002) - it was developed into its more modern form by Bandura, who proposed the concept of self-efficacy as a key factor in motivation to learn. 	<p>Developed to counter the idea of a single intelligence (IQ); many researchers had previously proposed a variety of multiple intelligences, but none were widely adopted (Moran, 2011).</p> <p>Developed in the 1980s by Gardner (book: Frames of Mind) in response to a request to investigate human potential by a Dutch philanthropic group (Armstrong, 1994, p. ix).</p>	<p>Developed in 1964 by Benjamin Bloom, who recognized that humans could demonstrate different types of knowledge (cognitive, affective, and psychomotor), but also proposed that this knowledge could exist at differing depths/levels, and developed taxonomies of cognitive and affective outcomes (Driscoll, 1994). Bloom's Cognitive Taxonomy was recently updated by Anderson and colleagues (reviewed in Anderson, 2005) to make it easier to apply to educational situations.</p>
Major Concepts	<ul style="list-style-type: none"> - Social learning theory proposes that much of learning is done through observation of others and imitation of successful actions. Studies in animals (Galef, 2009; Oostindjer et al., 2011) have allowed researchers to elucidate some general social learning strategies. These same strategies have also been observed in humans; for example, Laland and Rendell (2010) describe the use of various such strategies in cases of plagiarism. - Bandura's main contribution to this field has been the introduction of the concept of self-efficacy as part of the motivation for learning, whereas before that motivation was only viewed in terms of expected outcome (Rosenthal, 1978; Pajares, 2002). This is likely the result of the great influence of behaviourist theories of 	<ul style="list-style-type: none"> - Challenged the view that there was only one intelligence and the idea of measuring IQ. - Proposed a set of criteria for the definition of intelligences based on evidence from the various fields of psychology, biology and anthropology. (Moran, 2011) - Based on this, he proposed the existence of at least 7 (later modified to "8 1/2") different intelligences: Verbal/Linguistic, Logical/Mathematical, Visual/Spatial, Bodily/Kinesthetic, Musical/Rhythmic, Interpersonal, Intrapersonal, Naturalistic, Spiritual/Existential – the last one being the "1/2" (Gardner, 2003) - The theory states that everyone possesses all of these intelligences but 	<p>Bloom divided the cognitive levels within his taxonomy into: knowledge, comprehension, application, analysis, synthesis and evaluation (Driscoll, 1994). These are ordered from the lowest to highest cognitive outcomes, indicating that forming new concepts or making judgements about novel concepts are the most complex ways of applying knowledge. Analysis, evaluation and synthesis are understandably important in a knowledge economy, and thus their development in students is highly desirable.</p>

	<p>motivation for learning at the time.</p> <ul style="list-style-type: none"> - Bandura's recognition of self-reflection as a common driving force in the alteration of thinking and beliefs (ie. learning) served to shift the field away from focusing on external factors as the only sources of motivation. 	<p>they are developed to different extents in each person, thus accounting for different abilities in different individuals (Armstrong, 1994).</p>	
<p>How it applies to adult learning</p>	<ul style="list-style-type: none"> - The recognition of self-efficacy as a crucial component of learning is very relevant to teaching adults. Adult learners can bring low confidence, poor study patterns/skills, increased sensitivity to failure, and greater apprehensiveness about their ability to successfully complete a course (Lecture 1). An adult student's perception of their ability to successfully complete and excel in a course (along with their locus of control) has been shown to positively correlate with the choice of course (in terms of difficulty-level) and performance in that course (Severino et al., 2011). 	<p>Adult learners are likely to come into the learning environment with an already well developed set of intelligences (Lecture 1), and may be less willing to make adjustments. There is evidence that efforts to integrate an MI approach into an adult education program can result in decreased incidences of learning difficulties, increased learner self-efficacy and increased retention rates (Kallenbach and Viens, 2002).</p> <ul style="list-style-type: none"> - The awareness of the dominant intelligences in the learners and the need for a conscious effort to accommodate this is important in light of research on secondary school teachers, indicating that their own MI profiles tended to determine their teaching strategies (Sulaiman, Abdurahman and Rahim, 2010). - While it may not always be possible to customize a course to each student, specifically designing training situations to simultaneously appeal to 	<p>This approach is applicable to all ages, but a focus on developing the higher levels of knowledge is likely to be more desirable in adult learning. Since adults are likely to be reentering the classroom for professional development (lecture 1) and are likely to need to see practical applications of the knowledge being presented (Thompson and Deis, 2004), it is especially important to design the learning activities with that level of the taxonomy in mind.</p>

		<p>as many intelligences as possible has shown to be very beneficial in clinical simulation exercises for medical professionals (Clark, 2007).</p>	
<p>2 strategies for use in the class</p>	<p>- Yu et al (2010) has found that the use of online social networking among university students, helped them attain social acceptance among their peers and positively influenced their learning outcomes.</p> <p>- Another study of web-based learning showed that something as simple as receiving feedback on the correctness of a response to a question significantly increased student performance, and elaborated feedback significantly increased the students' self-efficacy (Wang and Wu, 2008).</p> <p>- Thus, the use of online discussion groups, real-time chat along with periodic simple questionnaires/quizzes are likely to have a significant positive impact on learning. These will provide an opportunity to socialize with peers, and to provide different types of feedback.</p>	<p>- The important thing to remember when designing teaching tools, is that the concepts need to be presented in more than just one way. Armstrong (1994) suggests the use of planning sheets included in his book to plan lessons – these help to think of learning activities for each of the intelligences.</p> <p>While there doesn't seem to be much research on MI in an online context (Riha and Robles-Piña, 2009), in some ways online teaching, by it's very nature, would seem to encourage the development of MI-based learning activities. Because physical interaction between student and instructor is not always possible, the instructor is faced with the problem of presenting often complex information in a way that is most likely to be understood by (hopefully) any student.</p> <p>Presenting textual information is one of the simplest things to do online, but this is frequently accompanied by images, which often help to clarify concepts more easily than text ever could.</p> <p>Current online learning management systems also make it very easy to embed video and sound, and to encourage interaction with peers in</p>	<p>Valcke and colleagues (2009) have shown that something as simple as making students aware of Bloom's taxonomy and asking them to use it to label their contributions to an online forum resulted in a much higher degree of cognitive learning than a control group.</p> <p>Similarly, a conscious effort to apply Bloom's taxonomy by the instructor can also have a significant effect regardless of the teaching format.</p> <p>In a study of doctoral students' use of web technologies in an online course, Meyer (2010) found that the tool used (wiki, blog, etc.) was less important than the nature of the assignment. She found that the level at which a question was posed was a much better predictor of the level of learning that was demonstrated in the answer, although students did find that using an online forum did help them develop their ideas more fully (Meyer, 2010). Thus the most important factor in promoting deep learning is the way questions that are asked to guide the student's exploration of the topic. It is clear however that, in an online format, it would be important to provide a way to discuss one's thoughts with peers.</p> <p>In another study, undergraduate students reported a preference for an in-class lecture in comparison to two forms of</p>

		discussion forums.	online lecture (Stephenson, Brown and Griffin, 2006). Interestingly, the evaluation of their learning indicated that the online format that periodically tested their understanding of a topic before moving on, resulted in deeper learning as determined by Bloom's taxonomy (Stephenson, Brown and Griffin, 2006). This shows the power of building small quizzes into online teaching modules; they can be used to periodically “check-in” with the student to ensure that concepts are being understood before moving onto the next topic. Something similar is also being done in classrooms with the use of the various clicker systems.
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