Presentation Two: Outline

* Introduction: Education theories (SETUP)
	+ As students, we are all likely concerned about learning, and how we can learn best
	+ In the world of education, people are constantly developing ways to help students learn, and coming up with different theories and learning models
	+ Today, I want to focus on two of the most common ones
	+ Have you ever heard of being a visual/auditory/kinesthetic learner?
		- Raise your hand for which one you identify with
	+ What about the theory of multiple intelligences? I remember in my eighth grade class taking a little quiz and then writing our names by the intelligence we most identified with.
		- Raise your hand if you feel you fall under this category, for each of the eight (can pick more than one): linguistic, logical/mathematic, bodily/kinesthetic, visual/spatial, interpersonal, intrapersonal, musical, and naturalistic.
	+ These two theories are pretty popular, to the extent where they can be considered pretty common knowledge.
	+ What would you say if I told you there was no scientific evidence for either of these theories? (INCITING INCIDENT)
* VARK (DEVELOPMENT)
	+ I wanted to know how I as a student could trust these theories that seemed to be telling me so much about my own learning. Could understanding these help me with academic success? How much do my teachers consider ideas like this in planning their lessons?
	+ I decided to investigate each of these theories to discover their origins and basis.
	+ The first one I want to talk about is VARK
	+ VARK is a theory about styles of learning developed by Neil Fleming, a New Zealander educator in 1987. The acronym stands for visual, auditory, reading and writing, kinesthetic.
	+ The idea here is that individuals have inclinations towards one of these modes of learning, and that these methods help them to learn better.
	+ This idea has become commonplace since the 1980s, both in the classroom and beyond – evident just by how many of you have heard of it.
	+ However, this theory is just that: a theory
	+ If you look up Fleming’s work on this theory, there are few to no scientific methods employed to back up his ideas
	+ What’s more, many articles have been published since debunking Fleming’s claims, citing the difficulty to back his theory up scientifically.
		- *Scientific American* outlines an Indiana University study by Hussman and O’Loughlin in which students took the VARK quiz and reported on their own learning and study techniques
		- More than 70% did not comply with techniques that supported their supposed learning style
		- The about 1/3 who did study using techniques in accordance with their supposed learning style did no better in either the lecture or lab portion of the studied class than students who did not comply with their learning style
	+ Another suspicions item that I noted was the use of data on the VARK webpage
		- Entire page devoted to complicated looking statistics – but all of these are about the data derived from the VARK quiz.
		- None of these numbers actually give any evidence for the origins or proof behind VARK, or any attempts to verify its methods scientifically
		- According to *The Atlantic*, in a study of learning styles by the *British Journal of Psychology*, learning styles appeared to be more what students liked better – not actually what helped them learn, furthering this idea that there is no evidence behind any benefit to the learning style method
	+ All of this led me as a learner to feel very suspicious of so-called learning styles and other methods I’m using to enhance my learning
* Multiple Intelligences (DEVELOPMENT)
	+ All of this information I uncovered about learning styles made me want to investigate another popular education theory to see if I would uncover similar problems.
	+ The theory of multiple intelligences was developed in 1983 by Harvard professor Howard Gardner in his book *Frames of Mind: The Theory of Multiple Intelligences*
		- I learned about this theory in my IB Psychology class last year, showing just how prominent the theory is
	+ This theory was developed in response to the Intelligence Quotient test that was prominent at the time, claiming that intelligence could not be measured as just a single domain
	+ Gardner proposes 8 intelligences, though this number has fluctuated over time. (graphic here to display these)
	+ Multiple intelligence theory is impossibly difficult to prove using traditional scientific methods due to the un-quantifiable nature of the ‘intelligences’ that must be measured. So how well does this theory hold up?
	+ Studies by Sabriye Şener and Ayten Çokçalışkan in Turkey, and Yaghoob Raissi Ahvan and Hossein Zainali Pour in Iran attempted to measure multiple intelligences in students of various ages and were able to measure perceived “levels” of these intelligences in various students.
	+ Another counterargument lies in the form of questioning the need for strictly evidence-based education policies
		- Thomas Armstrong, an education speaker and advocate, maintains that multiple intelligences are in fact research based, even if they cannot be statistically proven.
		- “Multiple intelligences is the solidest research-based theory that education has ever had, if you count as research: neuroscience studies, anthropological findings, semiotic research (intelligences have different representational systems), animal studies, cognitive archeology (the presence of the eight intelligences are suggested in archeological digs), and abnormal and developmental psychology (highlighting the life trajectories of noted individuals as well as savants).”
		- “Results are expressed in fMRI data, individual case studies, field studies, content analysis and other largely non-statistical measures.”
	+ So here lies the real question: when there’s no traditionally “scientific” evidence, how much faith can you put in a theory?
* So what now? (RESOLUTION)
	+ The results I found were slightly different for each of these theories. Traditionally scientific evidence doesn't really back up either of them, but even so, scholars seem to have more trust in multiple intelligence theory than VARK
	+ Many of the same articles that debunk these learning theories also offer some potential next steps for teachers and students alike
	+ After all, these are ideas that have been prevalent in society for quite some time. It’s not simple to just let go of them
	+ Possible conclusions/things for students to consider!
		- Examine the difference between ‘learning’ methods and ‘studying’ methods
		- Metacognition – the process of thinking about thinking. Ex: thinking about what study strategies worked for you and what didn't on a previous test when studying for a future one.
		- Varying instructional methods depending on the discipline
		- Different instructional methods in general – allowing students to think both broadly and deeply, on their own and in collaboration with others, and using all forms of sensory engagement.
		- “Students are more successful when they space out their study sessions over time, experience the material in multiple modalities, test themselves on the material as part of their study practices, and elaborate on material to make meaningful connections rather than engaging in activities that involve simple repetition of information (e.g., making flashcards or recopying notes)” – Cindy May, Scientific American
	+ People tend to like to sort themselves, or look for some deep psychological truths that will unlock some secret of learning. But sometimes, what really helps is a smidge of hard work!

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