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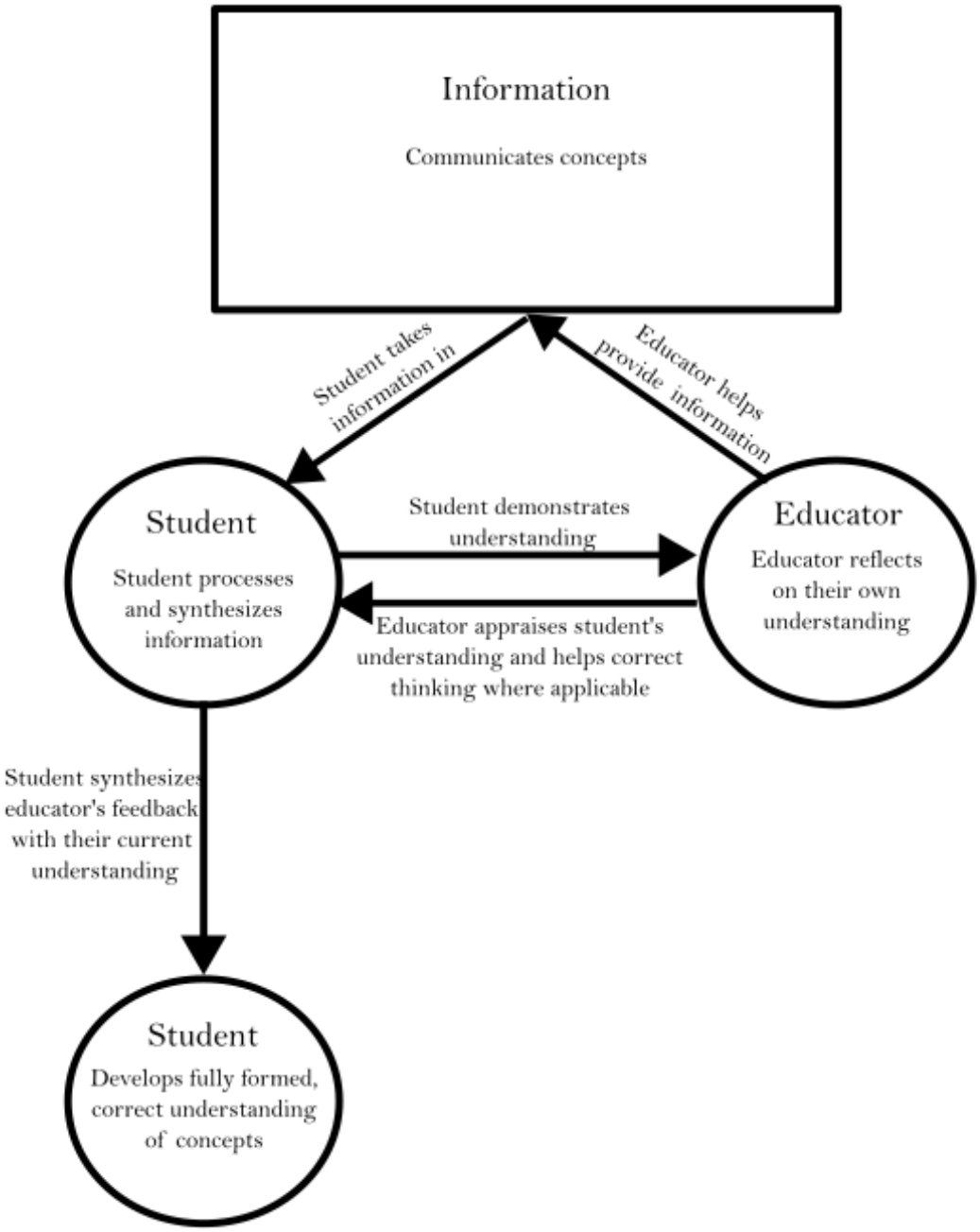
How Does Learning Happen? – Initial Ideas

In my experience, learning is something that is fundamentally dialectical. Meaning it is both a deeply personal process where you as an individual need to expend your own efforts to synthesis information in your own mind, while also engaging with others that can guide you, test you, and correct any mistakes you may have made on your own.

As an example, I always love to think back to how we learned our native language. As a baby, you are only able to communicate via simple sounds and body language. This is able to get you fairly far, but it lacks precision. Meanwhile, you hear everyone around you making specific sounds to one another, which you eventually gather are associated with different actions or objects. The desire to understand each other and communicate is at the very core of human beings, so you start trying to imitate some of the sounds you hear. Eventually, you are able to repeat these sounds well enough to actually communicate, which leads to conversations where you are able to be corrected and guided. After doing this for a while, you have learned enough of these sounds and patterns that you are fully able to speak.

In this example, we start with a basic kernel, that is the desire to learn. This leads to actively listening and absorbing information from the sources available to you. You then synthesize the information and begin to construct patterns; you recognize that a certain sound corresponds to a thing, and how it's used, and changes based on other sounds around it. You then attempt to replicate these patterns you have pieced together where you are then tested and corrected by another's input. You then take this additional input and update these patterns in your own mind. In my experience this is the general structure that all learning follows, whether it be language, mathematics, etc.

Also, in this example is how those who are helping you learn respond to you as they guide you. Far from simply acting as though you are an empty vessel for information to be deposited in, they interact with you a tailor how they explain things based on how you seem to understand things. And in the process of doing so, their own understanding may be changed; having to explain things that you have held as basic concepts can be extremely illuminating. This is at the soul of Richard Feynmann's famous advice, that you only truly understand something when you're able to explain it in fairly simple language. I think this is something that we as educators should keep in mind. We should recognize that every student will come into the class with different thinking styles, personalities, and sets of knowledge, and respond to the ways all these parts of their personality contribute to the way they learn. By recognizing these things, we are recognizing each one of our students as individuals, and we are then able to build an environment where we can help guide them to true understanding. And in the process, we may learn new ways of thinking about what we teach that we would have never arrived at on our own.


Information
Communicates concepts
Student takes information in
Educator helps provide information
Student
Student processes and synthesizes information
Student demonstrates understanding
Educator appraises student's understanding and helps correct thinking where applicable
Educator
Educator reflects on their own understanding
Student synthesizes educator's feedback with their current understanding
Student
Develops fully formed, correct understanding of concepts