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Philosophy of Learning

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Definition

In philosophy, there is no such thing as a noncontroversial definition. However, when it comes to learning, the problem is not with disagreement, but with a lack of debate. While there are many philosophical discussions that are relevant for developing a theory of learning, no such theory is at the forefront of philosophical consciousness.

As such, we propose the following minimal definition as the starting point for our discussion:

Learning is a process of knowledge acquisition, where “knowledge” is construed broadly.

Next, we delineate five major questions that should govern an area of philosophy properly called “philosophy of learning.” Those questions are: (1) Is learning possible?; (2) Is all knowledge acquired through learning?; (3) Where do we draw the boundaries of learning?; (4) Are there different kinds of knowledge that can be learned?; and finally, (5) What are the prerequisites of learning? In this context, we will review several philosophical debates that are essential for establishing a theory of learning.

Theoretical Background

Is Learning Possible?

Though the question “is learning possible?” seems preposterous, it is critical to note that at the beginning of philosophy, for reasons that continue to plague modern epistemologists, Plato insists that the answer to this question is “no.” We should note that this paradoxical claim follows from Plato’s narrow conception of knowledge. As we shall see, knowledge, for Plato, does not include skills, abilities, or beliefs concerning contingent truths.

In the Meno, Plato denies that learning is possible and argues that what we commonly call learning is actually recollection (anamnesis). In this dialogue, Socrates proposes that the soul is immortal and has learned all there is to know before its birth. Socrates demonstrates his theory by leading Meno’s slave through a series of geometry questions. Socrates shows that without having to “teach” the boy anything, that is, without relating any facts or explaining any principles to him, the boy grasps some basic rules of geometry. This is meant to be a proof of the theory of recollection because the slave did not pick up knowledge externally, but found it in himself. Socrates concludes that the boy must have already had the knowledge within himself and was simply induced to recollect it.

A crucial aspect of the theory of recollection is its connection to Plato’s theory of the Forms. It follows from the fact that knowledge is of the Forms that recollection is of those things that cannot be learned through sense experience. Socrates illustrates this in the Phaedo with the concept of “Equal.” His argument is grounded in the fact that any particular instance of two things being equal will never be an instance of perfect equality. All particular instances will be deficient in some way because there is no such thing as perfect equality in the natural world. However, we do have the concept of Equal – perfectly and exactly equal. Socrates concludes that since we have never encountered absolute equality in experience, the concept must come from somewhere else. Hence, again we are led to the theory of recollection: that which cannot be learned through experience is already in us at birth.

Is All Knowledge Acquired Through Learning?

Taking as its starting point the issues that Plato raises, the question of what can and cannot be learned through experience has constituted a major debate in modern epistemology and is at the heart of the disagreement between the rationalists (Descartes, Spinoza, and Leibniz) and the empiricists (Locke, Berkeley, and Hume). The rationalists, following Plato, claim that not all knowledge can be acquired through experience and, thus, not all knowledge can be learned. Knowledge that does not come from experience is called a priori knowledge. Two paradigm instances of a priori knowledge are the

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necessary truths of mathematics and logic, and concepts or universals. Since our knowledge of universals and necessary truths cannot be the result of experience (recall the example of “Equal” above), rationalists claim that it must come from innate ideas and/or the reasoning that allows us to move from one innate idea to another.

In contemporary debates, an example of rationalism can be found in Noam Chomsky’s theory of universal grammar. Though Chomsky does not posit innate propositional knowledge or concepts, he is committed to the existence of innate organizing principles that are necessary to account for our ability to acquire language. In this way, Chomsky claims that what we can learn from experience is not sufficient to explain what we come to know.

The empiricists, on the other hand, are committed to the idea that all knowledge comes from experience. The empiricists claim that everything we know, we learn as a result of contact with the world and with our awareness of that contact. Importantly, empiricists do not hold that knowledge of universals or necessary truths can be acquired through experience but, rather, they deny that the nature of universals and necessary truths are as the rationalists describe. For example, Hume argues that our concept of causation is not really of one thing causing another (since we never perceive causes) but only of constant conjunction – of one thing regularly following another. In this way, Hume reinterprets the concept of causation so that it does not go beyond that which we can learn empirically. Likewise, W.V. Quine, a few hundred years later, has insisted that the truths of math and logic are not about the world, but rather, about our ideas. It would follow that there is nothing that we can know about the world that does not begin with our experience of it.

Notoriously, Kant has tried to split the difference between empiricism and rationalism by arguing that we need both experience and innate concepts for a satisfactory epistemology. This is best exhibited by Kant’s famous dictum, “Thoughts without content are empty, intuitions without concepts are blind.” Kant argues that neither innate concepts nor raw experience can account for what we know. As such, learning requires innate ideas to order our empirical experiences.

Where Do We Draw the Boundaries of Learning?

Issues concerning *a priori* knowledge place limits on learning by claiming that we have in our possession knowledge that cannot be learned through experience. However, there are also important theoretical considerations regarding the boundaries of a learning event. That is, there are important considerations concerning which changes in behavior are legitimate instances of learning.

If we grant that not every goal-related change in behavior is an instance of learning, then this issue becomes critical. For instance, it is important to consider whether sensitization, classical conditioning, associative learning, or the adaptive changes that occur through evolution qualify as learning. After all, in these instances, we observe changes in behavior that are goal-directed and sensitive to environmental features. Even plants exhibit such behavioral changes, but do these qualify as instances of learning?

This issue has been advanced by Fred Dretske and developed in his exchange with Daniel Dennett. While Dretske and Dennett both consider learning to be an essential indicator of minimally rational behavior, they disagree on which behavioral changes qualify as legitimate instances of learning. Significantly, for both, learning plays a crucial role in determining the behaviors that qualify as cognitive or intelligent.

Dretske argues that behavior is minimally rational when it is properly connected to reasons. Importantly, it is learning that transforms bare informational states into reasons for action. This is because learning requires that a creature is able to pick out relevant environmental features and, given its goals, respond appropriately to those features. Learning illuminates that a creature is responding with some degree of flexibility to states that have acquired meaning for it. These qualities of flexibility and meaningfulness, Dretske holds, are the hallmarks of intelligent behavior.

Further, Dretske insists that learning must take place during the course of a lifetime if it is to give rise to minimally rational behavior. In response, Dennett has argued that the time frame of a lifetime forwards an arbitrary limit on learning. Dennett claims that changes in behavior that amass over generations, that is, those that are realized through evolution, exhibit the necessary logical relations to shifting environmental conditions such that they ought to qualify as learning. As such, species-wide changes that occur through evolution would provide the grounds for minimally rational behaviors.

Are There Different Kinds of Knowledge?
The fourth question that ought to frame a philosophy of learning concerns the categorization of various knowledge kinds. After all, the learning process and the knowledge that results from that process presumably have an intimate connection. As such, the kind of knowledge that we possess may tell us something about the kind of learning that is required for its acquisition. Additionally, as we have seen
Responses to the proposal that knowledge-how is reducible to knowledge-that come in two general varieties: (1) criticism of Stanley and Williamson’s positive thesis, on behalf of the anti-intellectualists, and (2) criticisms of Ryle’s equation of knowledge-how with an ability or disposition, on behalf of the intellectualists. The details of this debate are critical for determining not only what we learn, but also for understanding the nature of the relationship between learning and knowledge.

Alva Noé, Tobias Rosefeldt, Michael Devitt, John Noé, Tobias Rosefeldt, Michael Devitt, John Koethe, and John Williams forward arguments that fall into the first, anti-intellectualist category. Noé, Rosefeldt, and Koethe all claim that “practical mode of presentation” talk is really disguised talk of abilities or dispositions. As such, they argue that Stanley and Williamson do not solve the problem of knowing-how, but rather, incorporate it into their own intellectualist story. This is because it is not the content of the propositional knowledge that does the heavy lifting for Stanley and Williamson, but rather, the way that this knowledge is represented. However, the details of how knowledge is represented under a practical mode of presentation are missing from Stanley and Williamson’s account.

Further, Devitt argues that it is implausible that all agents that know how to do something possess a corresponding singular concept that identifies w as the way to do it. Devitt questions whether it is reasonable to suppose that everyone who knows how to ride a bike, catch a ball, think rationally, or speak meaningfully is in possession of a sophisticated concept of how this is done. Lastly, as both Williams and Koethe argue, Stanley and Williamson’s positive account of knowing-how starts the very regress that they claim knowing-how does not begin. This is because for Stanley and Williamson, knowing-how is cashed out in terms of intentionally entertaining a proposition.

In contrast, the intellectualists attempt to cleave knowledge-how from its manifestation in action in order to show that knowing-how is simply another version of knowing-that. To do this, intellectualists such as Paul Noé, Tobias Rosefeldt, Michael Devitt, John Snowdon, John Bengson, Marc Moffett, and Jennifer Koethe argue that ability is neither necessary nor sufficient for knowing-how attributions. To show that ability is not necessary for knowing-how, Snowdon offers several examples that suggest that ability lacks the opportunity to put their knowledge into practice. For instance, Snowdon knows how to make Christmas pudding but he does not have the ability to make Christmas pudding since the world’s supply of sugar has been destroyed. To illustrate ability’s
insufficiency to generate knowledge-how, Snowdon appeals to cases where one exercises an ability but only by fluke or accident. In such a case, it would be highly inappropriate to make a knowledge attribution. Further, using experimental philosophy, Bengson, Moffett, and Wright provide data indicating that ordinary people do not require agents to have an ability in order to attribute to them the corresponding knowledge-how.

The debate about knowing-how and knowing-that is just one example of a philosophical discussion about knowledge kinds, which has implications for a theory of learning. We should notice that if knowledge-how is reducible to knowledge-that, then any nonpropositional aspect of ability will not qualify as knowledge and, as such, will not be the result of learning.

What Are the Prerequisites of Learning?

In order to develop an adequate account of learning, we must examine the requirements that the systems and processes that perform learning have to fulfill. As such, we must ask about the nature of systems that are responsible for the input, processing, storage, and output stages of learning. In this entry, we focus on the problem of representation because this issue is relevant to all stages of learning: It is relevant to the input stage of learning because the features that are detected by an organism must be represented by a system if it is going to be able to adjust or respond to them. Further, representation is relevant to the processing stage of learning since we must understand how the transformations of learning occur.

When it comes to the memory or storage stage of learning, we are once again forced to ask how the products of learning are represented.

Representation is a central topic in philosophy of mind and cognitive science. The classical view regarding the nature of representation and information processing is called computationalism. Computationalism is rooted in a metaphor between the mind and a digital computer. Accordingly, computationalism is committed to the idea that the mind processes symbols and produces meaningful states that are entirely determined by those symbols and their relations. Crucially, the syntax of a state wholly determines its semantics. Computationalism is famously championed by Jerry Fodor, who claims that mental representations have a language-like structure. Fodor insists that the constituents of a representation are structurally and compositionally just like the sentences of a natural language except that they do not occur in natural language, but rather, in the Language of Thought (LOT).

In opposition to computationalism, connectionism has forwarded a theory of mental modeling where mental representations are identical to the emergent processes of interconnected networks composed of simple units. Using neural networks where representations are stored nonsymbolically in the weights between units, mental states are seen as a dynamic evolution of activity in a neural net. At the heart of connectionist models is the idea that representations are distributed throughout the network. Prominent philosophical exponents of this position are David Rumelhart, James McClelland, Paul Churchland, and Andy Clark.

Importantly, both types of representational systems realized by cognitive modeling have advantages and disadvantages. The subsymbolic architectures of connectionist models are considered to be better at learning associations, detecting simple grammatical structures, and recognizing patterns. In contrast, symbolic architectures are traditionally considered better at realizing higher-level cognitive abilities such as those related to language, reasoning, and problem solving. However, neither approach addresses how such information processes are implemented in an actual human brain.

In an attempt to merge the strengths and avoid the weaknesses of computationalism and connectionism, a third hybrid view has emerged. This theory, often called implementational connectionism, is committed to the idea that neural networks implement symbolic processing at a higher level of description. As such, neural networks can retain the strengths associated with distributed processing and also account for mental processes that require a symbolic or compositional structure.

Important Scientific Research and Open Questions

As always, in philosophy, we are left with more questions than answers. These unresolved issues, however, are instructive for elucidating the conceptual landscape that we must traverse in order to develop an adequate theory of learning. In this section, we will end by exploring four questions that follow from the above discussions.

Is Knowledge That Is Not Acquired Through Experience Not Learned?

In the previous discussion, we followed tradition by claiming that knowledge that is not learned through sense experience is not learned at all. It is important, however, to distinguish between innate ideas, such as propositional knowledge or concepts, and innate mechanisms. Once we make this distinction, the question becomes: is it possible that the innate mechanisms that structure propositional knowledge and concepts ought to be considered mechanisms of learning themselves?
Further, if we are committed to the notion that necessary truths or concepts are innate, we must consider whether the experiences that “trigger” a priori knowledge count as learning. After all, the necessity that innate ideas are manifest as the result of some sort of experience may give us reason to conclude that that which stimulates those ideas is itself a kind of learning. As such, even if knowledge is not necessarily the direct result of experience, this does not mean that it is not, in any meaningful way, related to a learning process.

Is There a Connection Between the Method Through Which Knowledge Is Learned and the Knowledge That Results from the Learning Process? In order to learn the capitals of the South American nations, one must sit down and memorize them. In order to learn to play the piano, one must sit down and practice. Is the knowledge that results from the first method of learning necessarily different from the knowledge that results from the second? It seems plausible that the way something is learned can tell us something about the nature of the resultant knowledge, but must this always be the case? When I learn the alphabet through singing and when I learn it through reading, are the alphabets that I learn different in kind?

There seems to be compelling evidence in favor of opposing answers to this question. It appears that there are various methods for learning the same knowledge (think innovative pedagogy). However, there also seem to be particular methods that are exclusively suited for other kinds of learning (think playing the piano). As such, the questions remain: (1) Can examining the method of learning tell us about the nature of knowledge acquired as a result of that method? and (2) Is it possible that learning may affect but not dictate the nature of knowledge, and, if so, then what features of learning might affect the said knowledge?

Is There Some Foundational Type of Learning on Which All Other Learning Processes Are Based? Some psychological theories suggest that particular areas of learning are reducible to other foundational types of learning. However, it is an open question as to whether we should consider learning to be a monolithic or a heterogeneous phenomenon. We should ask whether various knowledge kinds and the various learning processes that lead to them can be combined into a unified theory. We should ask whether it is possible that what we ordinarily call learning may actually refer to various independent processes. We should ask whether the mechanisms involved in, for example, learning to play soccer are really identical to the mechanisms involved in learning a multiplication table.

Is Learning a Success Term? That Is, Can We Learn Things Other Than Knowledge? Is it possible that learning is not simply a matter of knowledge acquisition? Can one learn a false belief? Can one learn a bad habit? The answers to these questions will depend on whether we treat learning as a success term. We should consider whether learning must be defined by its results or whether the learning process can be defined independently of them. Importantly, as we saw above, if learning is knowledge acquisition then that which qualifies as knowledge will determine what may qualify as learning. If the scope of knowledge is narrow, then what counts as learning will likewise be narrow. As such, we must ask whether all learning ought to be defined by its results and, if so, then how narrow or wide these results should be.

Cross-References
- Epistemology and Learning
- History of the Science of Learning
- Knowledge Representation
- Locke, John (1632–1704)
- Plato (429–347 BC)
- Skill Acquisition/Learning

References


