

Epistemic Responsibility and Constructivism: A virtue-based way of knowing for constructivist teaching and learning environments

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Abstract

The popularity and ubiquity of constructivist teaching and learning methodologies has led to a great diversity of theoretical and pedagogical approaches. However, the epistemological groundings for constructivism have remained largely stable, with knowledge conceived as being external to the individual but is constructed and internalised through active engagement with the environment. Studies in the epistemology of constructivism as well as in educational epistemology as a whole have focused on beliefs about knowledge of the individual but focus less on the traits and characteristics that would impel the person to want to learn. This study aims to explore the use of virtue epistemology as an alternative way of knowing for constructivism that would better take the motivations and traits of the individual into account. A virtue for knowledge can be defined as an acquired excellence of a person who is motivated and reliably successful at gaining knowledge from cognitive contact with reality. In particular, the virtue of epistemic responsibility as a trait that drives a person to substantiate beliefs and knowledge claims in authentic situations can provide those in constructivist classrooms with a better means of judging how and why a student would want to learn. This study seeks not just to elaborate on the aspects of epistemic responsibility that pertain to constructivism – traits of knowledge-maximisation, flexibility and adaptability as well as contact-maximisation, but also to suggest a means of measuring these aspects in students.

Keywords: constructivism, epistemology, virtue theory, responsibility

Knowing Constructivism: The Point of Departure

The ubiquity of constructivism in all areas of education along with the myriad applications of constructivist teaching and learning methodologies brings with it the need to be aware of the conditions by which constructivism can best elicit learning in students. The constructivist view of education and knowledge acquisition emphasises ‘knowledge construction rather than knowledge transmission and the recording of information conveyed by others. The role of the learner is conceived as one of building and transforming knowledge.’

Common descriptions of constructivism in education focus on two main features – that knowledge is actively constructed and not passively received by the learner; and that knowledge is not an entity independent of the learner who comes to know through a process of adaptation and organisation of lived experiences. A learner, as conceived by constructivist theorists, should be an actively cognising individual who is adaptable and is able to make sense of his or her experiences in the light of prior knowledge. A good learner within such a context would not only need to be motivated to learn but would also need to know how to create or locate the conditions where better learning can occur.

There is a clear focus on the individual and especially in the individual’s willingness to actively engage with and organise his or her experiences into what could be knowledge. The focus on knowledge construction and the central role of the learner or individual in building knowledge points to a need to go beyond the common conception of knowledge in epistemology as being a matter of justified true beliefs. Here, knowledge exists securely outside the individual and the latter ‘knows’ when the personal beliefs are justified as true based on

propositions that occur. Problems raised by epistemological theorists about the nature and conditions for justification that in turn led to ever greater ‘fastidiousness and technical finery’ in justification made epistemology less relevant to broader human concerns. Epistemology thus conceived were insufficient in taking the individual and his or her motivations or character traits into account that lie at the heart of constructivist teaching environments.

An epistemological system that could be more helpful in accounting for the role of the individual in constructivist learning environments is virtue epistemology that places people and their motivations at the heart of epistemological analysis. Virtue epistemology theorists responded to the seeming deficiency in the view of knowledge as justified true beliefs with the claim that epistemic properties could be reduced to natural ones that were based more in intellectual virtues or character traits like autonomy or open-mindedness. Thinking about knowledge in this way points to it being more a result of a character trait of the person rather than purely resulting from acts of the mind. This conception of knowledge can thus be more closely linked to the motivated, active and adaptive learner that constructivist learning environments can engender.

Ernst von Glasersfeld describes knowledge in the constructivist context as ‘something that is far more important to us, namely what we can do in our experiential world, the successful ways of dealing with the objects we call physical and the successful ways of thinking with abstract concepts’. The individual is thus thrust into the centre of the learning process where learning cannot occur without the individual’s active assent and adaptation to the environment around. The need to examine the motivational component in the learning process and how it relates with the perceptions of knowledge of learners comes as one recognises the importance of the learner’s willingness to come into contact with and actively engage with the reality that would in turn build knowledge. By exploring the inner traits of the individual’s desire to gain knowledge, this paper will attempt to ground the efficaciousness of constructivism in an alternate epistemology that would move it towards the possibility of seeing constructivism as learners gaining stable truths through discovery and exploration.

This paper will make use of virtue epistemology as a backdrop for the examination of the particular virtue of epistemic responsibility as a means of explaining how learners perceive knowledge and how that perception would affect their motivation to put themselves in situations where learning can occur. It is from this examination of epistemic responsibility that three aspects of epistemic responsibility in the individual emerge namely: (1) knowledge maximisation, (2) flexibility-adaptability, and (3) contact maximisation. The philosophical and pedagogical discussions related to epistemology and constructivism indicate that an epistemically responsible individual would demonstrate tendencies towards maximisation of contact with reality, flexibility and adaptability to different learning situations, and would tend towards maximisation of knowledge in general.

Virtue Epistemology: Responsibility for Knowledge

Virtue epistemology came as a response to perceived inadequacies of more ‘traditional’ approaches to epistemology that posits that knowledge is made up of true convictions that are supported by sufficiently good reasons. The locus of knowledge building in this view lies more in the mental assent or acceptance of belief than in traits or characteristics of persons. This suggests that in the ‘traditional’ structuring of knowledge, a person does not need to have particular traits, preferences or motivations to gain knowledge. The look at how the traits and motivations of an individual can lead to the building of knowledge through the virtues can allow for an alternative to this ‘traditional’ approach.

Linda Zagzebski defines a virtue as ‘a deep and enduring acquired excellence of a person, involving a characteristic motivation to produce a certain desired end and reliable success in bringing about that end’ (1996, p. 137). The particular emphasis on the personal dimension of knowledge building and the fact that an individual would tend to choose to act in a way that would lead to knowledge points to the need to examine *why* the individual would want to build knowledge in the first place. Taking Zagzebski’s definition of knowledge as being ‘a state of cognitive contact with reality arising out of acts of intellectual virtue’ (1996, p. 270), one would be able to see an initial connection between what she considers intellectual virtues and the motivation to build

knowledge. The intellectual virtues, those parts of the person that cause him or her to excel at knowledge building, also provide the same person with the impetus to *want* to gain knowledge.

The very idea of intellectual virtues as being the source of deep motivation to achieve cognitive contact with reality paints a picture of an individual who is aware of his or her relationship with the world and is willing make an effort to understand it better. The orientation towards knowledge that intellectually virtuous persons exhibit presupposes not just an aptitude for learning but ‘a drive or concern or will to understand, to discover truth, to ground their beliefs ever more firmly’. Examples of intellectual virtues as described by virtue epistemologists include courage, intellectual honesty, open-mindedness, wholeheartedness, love of knowledge and conscientiousness (Zagzebski 1996, Code, 1984). An individual who displays such virtues would thrive in a constructivist learning environment as he or she would *want* to harness the opportunities to learn actively through discovery and exploration to learn well.

Motivation or the will to learn seems to lie at the heart of the intellectual virtues and it would not be inapt to claim that intellectually virtuous individuals would tend to hold themselves accountable or responsible for their own efforts at gaining knowledge. It is here that a case for the consideration of epistemic responsibility as a key intellectual virtue can be made. Lorraine Code makes use of the concept of ‘responsibility’ to allow an emphasis on the active and creative nature of the knower in bringing about knowledge, highlighting the role of the individual’s disposition in building knowledge. In particular, she notes that epistemic responsibility should be the primary virtue as it drives a person towards the best means of substantiating beliefs and knowledge claims while rejecting knowledge as a monolithic impersonal structure. This responsibility is also rooted in realism in that an intellectually virtuous person would find value in knowing and understanding things contextually, as they are in the world and not as abstract concepts. Also, epistemic responsibility drives a person to coexist among others within an epistemic community where members exercise their intellectual virtues in a mutually beneficial relationship of knowledge building.

Although very much based on the individual’s perception and actions with regards to knowledge, the discussion of virtue epistemology and epistemic responsibility has broader implications for education. An epistemically responsible person is one who finds value in knowing and understanding things as they are and does so for its own sake and not for any other instrumental reason. Individuals would thus be motivated to act in such a way as to maximise their success in knowledge and understanding – a manifestation of epistemic responsibility that for both Code and Zagzebski represent the fundamental intellectual virtue upon which the rest of the intellectual virtues proceed from. Furthermore, recognising that knowledge is not gained through a single individual act but is often mediated and aided by the actions of others emphasises the social aspect of knowledge building within the virtue epistemology context. Using an epistemically responsible individual as an exemplar for an effective learner, one can see that to learn well, the person needs to be responsible, knowledge-seeking and willing to work with others in the knowledge building enterprise. From the point of view of an educator, creating the conditions for epistemically responsible individuals to operate would be key to maximising the potential of such learners but even more important would be efforts in inculcating the intellectual virtues, and in particular that of epistemic responsibility, in learners themselves.

The Epistemically Responsible Individual

The discussion of virtue epistemology and constructivism leads to the beginnings of a portrait of an epistemically virtuous learner. The need for contact with reality for the building of knowledge as described by Zagzebski (1996) as well as the inclination towards knowledge over other choices as suggested by Code (1984) all point to particular aspects of an individual who is motivated to engage with the world around him or her to build knowledge. This provides a starting point for the description of the aspects of epistemic responsibility.

Locating the intellectual virtues in the individual can be difficult due to their structural diversity and resistance to the ‘one-size-fits-all’ analysis that many epistemological theorists try to bring into the study of the theory of knowledge. Also, given the focus on character traits that drive the individual towards knowledge, it may be more useful to begin the examination of the epistemically virtuous person holistically so as to gain an insight into the orientation of such a person.

Epistemic responsibility is seen as the fundamental virtue because it is this inner drive for knowledge that creates the possibility for both the other intellectual virtues to thrive and work towards the successful building of knowledge. As such, getting a clearer sense of what an epistemically responsible individual is would require an examination of what an epistemically virtuous person would look like. In their examination of the intellectual virtues, Roberts and Wood describe an epistemically virtuous person as being one who ‘values, cherishes, seeks, and appreciates intellectual goods. She wants to know important truths and ... wants contact with reality.’ (2007, p. 72) An individual thus described would not only have the inner drive to want to know the truths of the real world around him or her but also innately appreciate the need for such goods. Taking this ‘*want to know*’ trait as the root of the intellectually virtuous person, it would also be reasonable to consider this same trait to be linked with the idea of epistemic responsibility as described by Code. Furthermore, an epistemically responsible person who values knowledge for its own sake and seeks it for the same reason would thrive as an active and adaptive learner in the constructivist learning environment.

In describing the intellectually responsible individual, it should be noted that the intellectual virtues focus on internal or intrinsic traits over the extrinsic. Epistemic responsibility represents one of these intrinsic traits of the intellectually responsible individual. It is the orientation of the individual towards the end of knowledge as a good in itself that would drive the virtuous person towards knowledge. Three aspects of an epistemically responsible individual emerge from these descriptions, namely knowledge maximisation, contact or reality maximisation and flexibility or adaptability.

These aspects of epistemic responsibility align well with the tenets of constructivism described above. The motivational nature of knowledge maximisation would correspond to active nature of the learner within constructivist learning environments. The aspect of flexibility and adaptability corresponds to the adaptive nature of cognition that constructivists describe. Lastly, the contact maximising nature of the epistemically responsible person aligns well with the need for a learner within the constructivist environment to organise and make sense of real experiences. These aspects are driven by the innate epistemic responsibility of an individual who sees knowledge as an important good in itself and who will act in a knowledge building and truth seeking manner whenever possible.

Knowledge Maximisation

Knowledge maximisation in the epistemically responsible individual can be described as the key aspect that grounds the others. An individual who demonstrates knowledge maximisation will, all things being equal, seek to maximise knowledge in all situations. When there is a choice involved, such an individual would choose to act or think in such a way as to maximise knowledge. The individual is thus shown to be intrinsically oriented towards knowledge and is personally responsible for its increase. Knowledge maximisation is similar to what some theorists describe as the virtue of ‘love for knowledge’, which is a deep motivation for all truths, especially those that are valued¹ by the individual.

It can be difficult to clearly define what constitutes the ‘maximisation’ of knowledge and it may be apposite to examine the motivational component in epistemic responsibility to fully understand how and why an individual would seek to maximise knowledge. A person can be said to be motivated epistemically if he or she has a desire for truth and knowledge and that this desire influences the person’s conduct. Given this motivation, a person would not only seek the best means to acquire knowledge but would choose options that would have the potential to maximise knowledge. To do this would require a certain amount of metacognitive awareness² of what constitutes knowledge and a recognition of what constitutes a maximisation of knowledge and the tasks and strategies that would be required to reliably build that knowledge. For instance, a knowledge maximising learner would be able to weigh the possible knowledge outcomes of a group study session against self study and would choose that which would reliably provide more knowledge. The constructivist paradigm allows this to occur as the learners are encouraged to make such choices in their approach to knowledge.

Flexibility–Adaptability

Learners within a constructivist learning environment are often required to respond to reality in active and imaginative ways and the attribute of flexibility and adaptability is linked to this. In order to build knowledge over a variety of situations, an epistemically responsible person would have to be sufficiently flexible to marshal whatever resources, cognitive or otherwise, to experience or learn what is necessary. The need to be flexible and adaptable flows from the motivation to acquire knowledge and it also follows that a person thus motivated would seek all means necessary to reach the good that is knowledge.

Flexibility, especially in relation to constructivist theorists, refers to a person being able to make use of his or her skills and prior knowledge in a multitude of ways and in different situations for the purpose of gaining knowledge. Adaptability is more attitudinal and has to do with a person's ability to respond to the environment around him or her. An adaptable person would make adjustments to his or her perspectives and approaches to situations of potential learning and would adopt the attitude that would maximise knowledge. Given the fluid nature of constructivist learning environments, a learner who is able to be both flexible and adaptive to the changes and nuances within these situations would be able to adjust and maximise knowledge. As in the previous example, the flexible and adaptable learner would be able to adjust to collaborative or individual learning situations easily as the needs arise.

Contact Maximisation

The definition of knowledge as being cognitive contact with reality according to Zagzebski means that a person who would seek knowledge as a good in itself would also seek to maximise this cognitive contact with reality. What this means is that the individual would take an active role in bringing his or her cognitive powers to bear on the experiences and situations that are encountered and would also actively seek out situations where this would occur. The epistemically responsible person has a 'practical' orientation that leads him or her to make use of both prior knowledge as well as new skills to ensure knowledge is gained. The same practicality also leads the person to want to make use of these skills in a broad range of situations and activities.

The attitude of an individual who maximises contact with reality for the sake of knowledge is somewhat akin to extroversion in interpersonal relations. Just as an extrovert seeks the company of others, the contact maximising learner would seek to maximise experiential contact with people, things or situations that would have the greatest potential for knowledge. As is the case of knowledge maximisation, a contact maximising individual would 'love knowledge' and would not be averse to experimentation, trial and error methods or 'muddling around' in his or her quest to organise experiences to gain a contextual knowledge of reality. An example of this would be a learner who chooses to learn through experiential situations instead of reading about the same subject because the experiential experience presents a more cognitively 'real' knowledge encounter that would in turn have a higher potential for learning and knowledge.

The Way Forward

The identification of epistemic responsibility and its related aspects allows for the possibility of investigating the traits of students who would thrive or do well in constructivist learning environments. Further to this, the ability to identify and possibly measure traits that would dispose students to constructivist methodologies could provide educators with an additional means of assessing the efficacy of constructivism not just in engendering content knowledge but in increasing the learners' individual capacities to learn. By recognising and focusing on the traits of the individuals and not just their actions or beliefs, one would be able to gain a better insight into how learners react and respond to constructivist teaching and learning environments which would in turn aid in the design and crafting of the same.

Further work in quantifying the aspects of epistemic responsibility that are informed by previous studies on epistemological beliefs would help to give an empirical grounding to what has been described in this paper. The recognition of the role of the traits of the individual learner would also add to the understanding of how

constructivism can work in the classroom and how educators can better harness these traits in engendering learning in constructivist teaching and learning environments.

Notes

1. Roberts and Wood also state that a lover of knowledge is able to distinguish between trivial knowledge and knowledge of things of value. To avoid a 'weird intellectual pathology' or just amassing trivial and eclectic knowledge, the lover of knowledge would value propositional knowledge along with knowledge that is worthy and relevant. The ability to discern value is part of the virtue of the love of knowledge and the building up of rationality as a whole.
2. Metacognitive awareness includes knowledge of strategies, tasks and the self. What this means is that an individual who is metacognitively aware has awareness of what kind of knowledge he or she desires, the tasks and strategies that would enable him or her to gain that knowledge as well as a knowledge of the self and preferences.

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