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EPISTEMIC VIRTUE AND THE EPISTEMOLOGY OF EDUCATION

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ABSTRACT. A certain conception of the relevance of virtue epistemology to the philosophy of education is set out. On this conception, while the epistemic goal of education might initially be promoting the pupil's cognitive success, it should ultimately move on to the development of the pupil's cognitive agency. A continuum of cognitive agency is described, on which it is ultimately cognitive achievement, and thus understanding, which is the epistemic goal of education. This is contrasted with a view on which knowledge is the epistemic goal.

0. INTRODUCTORY REMARKS

My goal is to explore the role of cognitive agency in the epistemology of education. In particular, what interests me is how we should think of virtue epistemology—which is arguably the dominant viewpoint in contemporary epistemology, and which puts cognitive agency centre-stage in the epistemological enterprise—as informing the epistemology of education.¹ As we will see, the view one is led towards is one on which education leads a pupil through a scale of cognitive attainment, from mere cognitive success to various gradations of cognitive achievement. On this picture, it is ultimately understanding—rather than, for example, cognitive success or knowledge—which is the ultimate goal of education.

1. VIRTUE EPISTEMOLOGY AND THE EPISTEMOLOGY OF EDUCATION

One way of drawing out the relevance of virtue epistemology to the epistemology of education is by reflecting on what we are trying to achieve, from an epistemic point of view, when we educate children. Given that one plausible, and historically popular, account of the fundamental epistemic good—i.e., the fundamental good *from a purely epistemic point of view*—is truth, then one answer to this question, an answer which is clearly inadequate, is that we merely want our children to acquire lots of true beliefs. What is inadequate about this answer is that it leaves out so much of what we expect an education to achieve (even where we restrict our attention to the epistemic realm). For we don't just want an education to provide children with a body of true beliefs that they can call upon, but also to provide children with the cognitive skills to be able to determine truths for themselves.^{2 3}

It is often said that we live in an information age, and in one sense this is entirely correct, in that information—lots and lots of information—is readily available to many people in the world unlike never before. But access to information is of little use if one lacks the cognitive skills to interpret this information and sift the accurate information from the inaccurate, and the epistemically useful information from the epistemically useless.⁴ This has always been the case of course, though it is something perhaps more keenly felt in an 'information age'. The point is that education is to be distinguished from the mere transmission of information to passive minds and should be thought of instead as something which elicits and enhances the cognitive agency of the student.⁵

Even this is an incomplete conception of the epistemic goals of education, as we will see later on, but we are at least on the right track towards a complete conception. In particular, we have done enough to demonstrate the *prima facie* relevance of virtue epistemology to the epistemology of education. By virtue epistemology, I mean any epistemological proposal which puts the subject's intellectual virtues and cognitive faculties—her *cognitive agency*—centre-stage. There are of course a range of proposals which fall under this general heading. But rather than getting into the details of these different views, we will instead briefly dwell on what *as a minimum* is involved in virtue epistemology.

I think we can usefully express the minimal conception of virtue epistemology in terms of the idea that cognitive *abilities* are central to epistemology, where these abilities are to be thought of as cognitive in that they are directed towards epistemic goals. The ultimate epistemic goal is usually

true belief, and that is what we will focus on here, though there are other plausible candidates, such as correct judgement. Like abilities more generally—which are reliable ways of achieving certain goals in appropriate conditions—by using one’s cognitive abilities in suitable environments and conditions one can reliably achieve the epistemic goods in question. There is, of course, more to a cognitive ability than a mere reliable belief-forming trait. What makes a reliable belief-forming (or judgement-forming etc.) trait a genuine cognitive ability is the way in which it is integrated within the cognitive character of the subject. A belief-forming trait, no matter how reliable, which was not integrated into the cognitive character of the subject would not count as one of the subject’s cognitive abilities.

This minimal conception of cognitive ability is consistent with a wide range of very different virtue-theoretic proposals. How one fills in the details will depend very much on one’s wider epistemological views. For example, while those attracted to a broadly internalist epistemology will be inclined to think of the kind of cognitive integration required for cognitive ability along fairly robust lines, such that it requires a reflective meta-perspective on the part of the subject, those attracted to a broadly externalist epistemology will be disposed to resist this demand and offer instead a less reflective, and thus less demanding, conception of cognitive integration. This contrast might also be evident in what virtue epistemologists inject into the idea of a cognitive ability too. So, for example, whereas internalist virtue epistemologists might regard cognitive abilities as essentially involving some sort of appropriate reflection (e.g., on whether the conditions and environment are suitable for the exercise of the relevant cognitive ability), externalist virtue epistemologists in contrast might well regard cognitive abilities as often being entirely unreflective.⁶

We can simplify our discussion of virtue epistemology if we focus our attention on what is common to all views of this sort, which I take is that when a subject’s cognitive success (i.e., her true belief) amounts to knowledge there is a significant explanatory connection between that cognitive success and the subject’s cognitive agency (i.e., her manifestation of cognitive ability in forming the target true belief). That is to say, a necessary condition for knowledge on virtue-theoretic proposals is that there be this explanatory connection between cognitive success and cognitive agency.⁷

An example will be useful at this point. Imagine a child who has come across a piece of information on the internet—that the square root of 9 is 3, say—and who believes what she has read merely because she believes anything she finds in this way. The child has a true belief, but she does not know what she believes, and the reason why is that her cognitive agency is not playing any

significant role in the explanation of her cognitive success. Indeed, what explains her cognitive success is rather the happenstance that she believes whatever she reads on the internet, and she has happened on a truth. Compare this case with a child who has the cognitive skills to critically assess the information presented to her on the internet. Perhaps she recognises, for example, that the site she is on is approved by her maths teachers, and hence can be relied upon to proffer mathematical truths of this kind. Perhaps she also knows enough arithmetic to appreciate that this proposition is not obviously incorrect (as ‘the square root of 9 is refreshing’ would be), even if she cannot check it herself. Such a child can come to have knowledge of what she truly believes in this case, but this is because she isn’t merely truly believing; instead, her cognitive agency is playing a significant role in the explanation of why she is cognitively successful.

Notice that I say only that the subject’s cognitive agency must play a ‘significant’ explanatory role in her cognitive success if she is to count as having knowledge. In particular, I am not claiming that it should play an *overarching* or *primary* role in the explanation of the subject’s cognitive success. The second example just offered nicely illustrates why this is the case, in that the subject concerned, while exhibiting a relevant and significant level of cognitive ability, could not really be described as exhibiting cognitive agency to such a degree that it was the overarching element in an explanation of her cognitive success. This might be true of a child who had the arithmetical abilities to reliably check this statement for herself, but our agent falls well short of this kind of cognitive performance. Still, she exhibits enough cognitive agency to qualify as having knowledge, at least in these conditions.

I think that this is an important point to emphasise. In particular, we should notice that the kind of limited cognitive performance that can in many cases suffice for knowledge might not suffice in other cases. If our child were in an epistemically unfriendly environment, for example, then that might serve to epistemically frustrate our child’s acquisition of knowledge, even if it does not prevent her from gaining a true belief. Imagine, for example, that the child has unbeknownst to her been redirected from a maths website approved by the teacher to one which is designed to deceive schoolchildren, and which is thus no less plausible than the ‘proper’ website. Our protagonist couldn’t gain knowledge from such a site even if she happened to read one of the few truths that were on there. In circumstances like these it is much better to be the child who can verify the mathematical claim for herself rather than the one who merely displays a limited degree of cognitive agency of roughly knowing whom and what to trust, since only the former can have knowledge in this scenario.⁸

The immediate import of this point is that it would be unwise to simply shift the epistemological goal of education from mere cognitive success to knowledge, where the latter involves as a necessary ingredient some significant degree of cognitive agency, and hence the display of epistemic virtue. For knowledge is sometimes very easily had. In particular, in epistemically friendly scenarios—that is, scenarios where one cannot easily go wrong—not much cognitive agency is required for knowledge. Rather, what we should focus on is the development of cognitive agency in the acquisition of cognitive success, where this is a matter of degree, and where a greater display of cognitive agency can enable one to epistemically navigate even epistemically unfriendly scenarios.⁹

In particular, although I noted earlier that even a limited degree of cognitive agency can be enough for knowledge, such that we should not make it a necessary requirement of knowledge that the overarching explanation of the agent's cognitive success should be her cognitive agency, one can make this point while nonetheless emphasising the epistemic importance of cognitive successes that meet the stronger explanatory condition. Indeed, as we will see in a moment, we should not stop there, in that we should also recognise the epistemic importance of cognitive successes that meet even stronger explanatory conditions with regard to cognitive agency.

2. A CONTINUUM OF COGNITIVE ATTAINMENT

It will be helpful at this juncture to distinguish between mere cognitive success and different grades of *cognitive achievement*. A mere cognitive success is not a cognitive achievement, since achievements by their nature imply a significant contribution from one's agency, and this is *ex hypothesi* lacking in mere cognitive successes. But we could reasonably call those cognitive successes where a significant part of their explanation is the subject's cognitive agency a kind of achievement, albeit of a very weak variety. Call these *weak cognitive achievements*.¹⁰ As noted above, weak cognitive achievements, unlike mere cognitive successes, can in certain cases—i.e., in epistemically friendly environments—be enough for knowledge.

We can contrast weak cognitive achievements with cognitive achievements proper. This is a cognitive success where the overarching explanation for the cognitive success is the subject's cognitive agency. To use terminology that is now fairly common in contemporary epistemology, a cognitive achievement is a cognitive success that is *because of* the subject's exercise of cognitive agency in just this sense (i.e., where the 'because of' relation is construed as an explanatory relation,

such that subject's cognitive agency is the overarching or primary element in the causal explanation of the subject's cognitive success).¹¹ Call these simply *cognitive achievements* (i.e., without any rider). The foregoing might be thought to suggest that while weak cognitive achievements are not sufficient for knowledge, cognitive achievements proper are. Actually, even this is false, in that in certain kinds of epistemically unfriendly environments even this level of manifestation of cognitive agency will not suffice for knowledge, though we do not need to get into this issue here.¹²

We noted above that weak cognitive achievements are sometimes very easily had, at least in epistemically friendly environments. The same is also true, although to a lesser extent, of cognitive achievements proper. In particular, in cases where it is very easy for one to attain the relevant cognitive success, then one will meet the rubric for cognitive achievements pretty easily. Indeed, take ordinary cases of perception, where one for the most passively encounters a world external to one, in an environment which is epistemically friendly with regard to judgements of this sort. Here one's cognitive success will be for the most part explained by the exercise of one's cognitive agency, even though one actually did very little.¹³

With this point in mind, it is useful to distinguish between cognitive achievements and *strong cognitive achievements*. The latter category concerns a cognitive achievement which involves either the overcoming of a significant obstacle to cognitive success or the manifestation of high levels of cognitive skill (i.e., higher than normal). Merely opening one's eyes in the morning might generate perceptual knowledge, and in the process afford one various cognitive achievements also, but it won't thereby generate strong cognitive achievements. Passive perception of one's environment is thus contrasted with active observation of one's environment. Watson may see the dirt on the subject's shoe, and so come to know that her shoes are unpolished (mere cognitive achievement), whereas Sherlock will immediately observe much more than this, seeing straight away, perhaps, that the subject before him lacks an alibi for the murder (strong cognitive achievement).¹⁴

In sketching this continuum from mere cognitive success, via weak cognitive achievement, cognitive achievement proper, through to strong cognitive achievement, we are clearly describing an important axis on which epistemic goodness can be measured that is relevant to the epistemology of education. Education may begin with the imparting of truths, but if it is done well it will quickly move onto the development of cognitive abilities on the part of the pupil. One would expect this to involve creating epistemically friendly environments in which a limited display of cognitive ability can suffice for knowledge.¹⁵ In this way, the weak cognitive achievements of the pupils are no less knowledge.¹⁶ But a proper education would not be content to leave matters there. Instead, the

educational process should continue enhancing the cognitive skills of the pupil, to encourage the level of display of cognitive agency at issue in strong cognitive achievements.

As noted above, one advantage of this cognitive enhancement is that it enables pupils' to gain knowledge even in epistemically unfriendly environments. In particular, the greater the degree of epistemic unfriendliness in an environment, then the greater the degree of cognitive ability that is required in order to gain knowledge. There is thus a clear epistemic efficacy in having highly developed cognitive abilities. But the benefits of enhanced cognitive abilities do not end there.

To begin with, there is the fact that enhanced cognitive abilities entails an enhanced *epistemic autonomy*. The pupil who has highly developed cognitive abilities and who can deal with epistemic unfriendly conditions has a self-reliance that pupils who depend on the right kind of helpful conditions being in play before they can have knowledge lack. Epistemic autonomy is arguably a good thing in its own right, regardless of what further epistemic benefits it might bring.¹⁷

Second, the kind of enhanced cognitive abilities on display in strong cognitive achievements are not just resistant to epistemically hostile conditions, but also *flexible* in their application. Enhanced cognitive abilities will typically put pupils in the position to gain knowledge in a wide range of environments and conditions, whether epistemically friendly or hostile. In this sense, cognitive enhancement is epistemically *fecund*, in that it does not just generate cognitive success in the particular conditions in which the agent finds herself in, but also puts the agent in a position to gain further cognitive successes across a wide range of environments and conditions.

Third, strong cognitive achievements, even if one sets aside the point just made about epistemic autonomy, are plausibly of *final value* (i.e., non-instrumental value). For consider the more general category to which strong cognitive achievements belong—*viz.*, strong achievements *simpliciter*, where this means a success that is because of (i.e., primarily explained by) the subject's agency, and which either involves the overcoming of a significant obstacle or the exercise of a significant level of skill. That strong achievements are of special value, over and above whatever instrumental value they might have, is a point that goes right back to Aristotle (see, in particular, the *Nicomachean Ethics*, §I.7), who regards such displays of agency as being constitutive elements of a life of flourishing. Whatever is true of strong achievements will also be true of strong cognitive achievements, and thus the latter should inherit the final value of the former.¹⁸ Indeed, insofar as one grants the previous point that knowledge does not essentially involve cognitive achievements, and hence *a fortiori* doesn't essentially involve strong cognitive achievements, then it follows that

there is a kind of value in play when a pupil exhibits a strong cognitive achievement which would be absent if they merely acquired knowledge.

Fourth, the kind of development towards strong cognitive achievements goes hand-in-hand with a focus on the advancement not just of knowledge but, more importantly, *understanding*. As I have argued elsewhere, understanding and knowledge come apart. In particular, in epistemically friendly conditions one can exhibit a limited degree of cognitive agency which can suffice to enable one to gain knowledge, and yet the degree of one's dependence on factors outwith one's cognitive agency in gaining this cognitive success can nonetheless ensure that one does not count as having understanding.¹⁹

We can illustrate this point by returning to our example from earlier of the two children coming to know that the square root of 9 is 3, but where the one child can work this sum out for herself whereas her counterpart is trusting her informant, albeit in an epistemically responsible way (i.e., because she recognises that the information is from a good information source and she can independently tell that the information is not obviously false). While both children had knowledge, only the former student's knowledge would survive an epistemically hostile environment where there are lots of falsehoods on display, and the reason for this is that she has the ability to work out the answer for herself. In being able to perform this arithmetical sum she is thereby manifesting that she does not merely know that the square root of 9 is 3, but that she also *understands* why the square root of nine is 3. Knowledge can be merely passive, and it can depend in large part on a contribution from non-agential factors, such as being in an epistemically friendly social environment, but understanding is by its nature active, in that it requires one to be able to be able to put the component parts together (where in this case this means being able to do the required arithmetic).²⁰

Unlike knowledge, understanding thus essentially involves cognitive achievement, where this means that the overarching factor in subject's cognitive success is her cognitive agency. Indeed, often understanding will involve strong cognitive achievements, where this demands in addition that there is either an elevated level of skill on display or the overcoming of a significant obstacle to success. Acquiring an understanding of anything remotely complex will often be difficult and make a number of cognitive demands on the subject. In gaining that understanding one is thus either displaying great cognitive skill (if one gains the understanding effortlessly), or overcoming significant obstacles to cognitive success (if a great deal of effort is required to gain the understanding).²¹ So insofar as strong cognitive achievements are finally valuable in the way advertised above, it follows

that understanding will also tend to be finally valuable too, and finally valuable in a way that mere cognitive success, or mere knowledge, is not.²²

3. CONCLUDING REMARKS

The upshot of the foregoing is that while the epistemic goal of education might initially be the promotion of cognitive success on the part of the pupil, this goal should ultimately be replaced with a focus on the development of the pupil's cognitive agency, where this means her epistemic virtue. In developing cognitive agency in this way one is enabling pupils to exhibit cognitive achievements, and thereby enhance their epistemic autonomy. Moreover, as we have seen, this focus on cognitive achievements as the epistemic goal of education is to be contrasted with a view on which education should be aimed at the promotion of knowledge rather than mere cognitive success. For as we have seen, it is actually understanding which is at issue here, an epistemic standing which is to be prized over knowledge.²³

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NOTES

¹ For some of the key works in contemporary virtue epistemology, see Sosa (1988; 1991; 2007; 2009*a*), Kvanvig (1992), Montmarquet (1993), Zagzebski (1996; 1999), and Greco (1999; 2000; 2003; 2007; 2008; 2009*a*; 2009*b*). For two useful surveys of recent work on contemporary virtue epistemology, see Axtell (1997) and Kvanvig (2010).

Of course, I am not the first person to reflect on the ramifications of contemporary work on virtue epistemology for the epistemology of education, though it must be said that a lot of the discussion in this regard has often failed to ‘mesh’ the two debates in an even way, such that the focus tends to either be on the contemporary epistemology angle or the philosophy of education angle. (For a notable exception in this regard, see MacAllister (2012); see also the recent debate about whether ‘education’ is a ‘thick’ concept, especially Siegel (2008) and Kotzee (2011)). I fear that my contribution continues this tradition by being too focused on contemporary epistemology. Still, if we are to make progress in this debate, then we need to start somewhere, so it is my hope that interventions such as this will be helpful, even despite this shortcoming.

² Note that this is not yet to say that the fundamental epistemic good is not truth, though one might well conclude from the fact that the epistemic goal of education is not mere true belief that there are grounds for doubting whether truth is the fundamental epistemic good. I survey some of the literature on the epistemic good in Pritchard (*forthcomingb*), and in the process defend the idea that truth is the fundamental epistemic good from some recent challenges.

³ Of course, it might be contended that the promotion of truth has *no* role to play in education (i.e., not even a minimal role as part of a set of broader epistemic ends). I have not the space to consider this possibility here. For a useful overview of some sources of scepticism about the role of truth in education, see Robertson (2009, §1.1).

⁴ One might think that the distinction between accurate and inaccurate information would map onto the distinction between epistemically useful and useless information, but I think this would be a mistake. Accurate information, after all, could be about something entirely trivial, from which no further insight could be gained. In contrast, it is possible that less accurate information about something important might enable one to further one’s knowledge in a certain domain (for example, by making one realize that an important question which one thought was settled was in fact not settled at all).

⁵ This is, of course, a familiar point in the philosophy of education. In a recent survey piece on the epistemic ends of education, for example, Robertson (2009, §1) writes, citing Elgin (1996) and Siegel (1988), that “the goal [*of education*] is not information *per se*, but, rather, knowledge that is significant and organized in patterns that contribute to perspective and understanding in orienting thought and action.”

⁶ For an example of a virtue epistemology which is cast along broadly epistemic internalist lines, see Zagzebski (1996). For an example of a virtue epistemology which is cast along epistemic externalist lines, see Greco (e.g., 1999). For a helpful discussion of the contrast between ‘responsibilist’ and ‘reliabilist’ virtue epistemology, see Axtell (1997). I have argued elsewhere—see Pritchard (2005)—that an externalist conception of virtue epistemology copes better at dealing with empirical work on the acquisition of knowledge, even with regard to expert knowledge, though we do not need to take sides on this debate for our current purposes. (For further discussion of my proposal in this regard, see MacAllister (2012)).

⁷ Note that even those virtue-theoretic proposals which disavow the project of offering an analysis of knowledge can accept this claim, since it merely commits one to a necessity claim about knowledge, and not to the full-blooded project of offering an analysis. For further discussion of the idea that virtue epistemology might be best thought of as reorienting the concerns of traditional epistemology (such as offering an analysis of knowledge), rather than simply responding to those concerns, see Code (1987), Kvanvig (1992), Montmarquet (1993), Hookway (2003), and Roberts & Wood (2007).

⁸ I think that this point about how in suitable conditions knowledge can be gained even though there is very limited cognitive agency on display undermines the so-called ‘situationist’ challenge that has been posed for virtue epistemology (and which might be thought to undermine the relevance of virtue epistemology to the epistemology of education). Very roughly, this challenge has appealed to empirical work regarding the role of minor environmental factors in determining behavior to argue that virtues, including intellectual virtues, do not play the kind of explanatory role in our behaviour that philosophers often claim that they play. In the epistemic sphere, this objection assumes that virtue epistemology is committed to the thesis that when an agent gains knowledge the overarching element in an explanation of her cognitive success is her cognitive agency, her intellectual virtue. But as I have indicated here, in many cases this is simply not the case, and hence virtue epistemology should ally itself with a much weaker conception of the relationship between knowledge and cognitive agency, one that can allow other factors outwith the subject’s cognitive agency to play an explanatory role in the subject’s cognitive success. I develop this response to the situationist challenge to virtue epistemology in more detail in Pritchard (*forthcominga*). For more on the situationist challenge as it applies in virtue ethics, see Doris (2002) and Prinz (2009). For a helpful development of the situationist challenge as it applies specifically to

virtue epistemology, see Alfano (2012). For a response to the situationist challenge to virtue epistemology which is very different to the line I take, see Sosa (2009*b*).

⁹ Within reason anyway. No incremental improvement in human cognitive virtue would suffice to deal with the sort of epistemically unfriendly scenario at issue in radical sceptical hypotheses, for example. For our purposes, however, we can reasonably bracket the problem of radical scepticism.

¹⁰ Note that elsewhere, such as in Pritchard, Millar & Haddock (2010, ch. 2), I've tended to follow convention and reserve the notion of an achievement (and thus cognitive achievement) for those (cognitive) successes which are *primarily* creditable to the subject's (cognitive) agency. If the reader prefers, she can substitute 'weak cognitive achievement' with 'quasi-cognitive achievements'.

¹¹ Greco is the chief exponent of a view of this sort, though his proposal has become more nuanced in recent years (in ways that do not concern us here). See Greco (2003; 2007; 2008; 2009*a*). For a different account of the 'because of' relation in play here, one that is cast along dispositional lines, see Sosa (2007; 2009*a*). For a comparative, and critical, discussion of these two accounts of the 'because of' relation as used in virtue epistemology, see Kallestrup & Pritchard (*forthcomingc*; *forthcomingd*).

¹² See Pritchard, Millar & Haddock (2010, ch. 3) and Pritchard (2012) for an explanation of why even cognitive achievements proper do not suffice for knowledge. See Kallestrup & Pritchard (*forthcomingd*) for a development of this idea.

¹³ The same point applies to achievements more generally, if achievements are to be understood as successes that are because of (i.e., primarily explained by) a subject's manifestation of relevant ability. Raising one's arm in normal circumstances constitutes a success that is because of one's ability in this sense (assuming we have any free will at all of course), but as achievements go it is rather limited. See also endnote 14.

¹⁴ The notion of a strong cognitive achievement is arguably much closer to the ordinary language notion of an 'achievement' than a (mere) cognitive achievement. So, picking up on the point made in the last endnote, while raising one's arm in normal circumstances isn't a strong achievement, raising one's arm when, say, one's arm is in a cast (and thus there is an obstacle to arm-raising that needs to be overcome) is a strong achievement. Since we wouldn't normally describe merely raising one's arm as an achievement, but we might well describe raising one's arm when it is in a cast as an achievement, this is grounds for thinking that the ordinary language notion of an achievement roughly corresponds to what we are here calling strong achievements.

¹⁵ Ben Kotzee has pointed out to me that the idea of an educator creating epistemically friendly environments as part of the educational process is also central to Lev Vygotsky's (e.g., 1978) educational theory. See in particular his notion of the *zone of proximal development*, which effectively involves educators creating favourable learning conditions for their pupils (a process which in the contemporary educational literature is often called 'scaffolding'—see, e.g., Wood & Middleton (1975)—though Vygotsky never used this term himself). For a useful recent overview of Vygotsky's educational theory, see Davydov & Kerr (1995).

¹⁶ The educational context thus highlights how the acquisition of knowledge can be epistemic dependent upon factors in one's social environment. See Goldberg (2010; 2011) for an important discussion of this notion. See also Kallestrup & Pritchard (*forthcominga*; *forthcomingb*). For a useful discussion of epistemic dependence in the context of the philosophy of education, see Robertson (2009).

¹⁷ Indeed, it has been argued—most recently by Roberts & Wood (2007, part two)—that epistemic autonomy is a necessary ingredient in a life of flourishing. For a defence of epistemic autonomy in the context of the philosophy of education, see Siegel (2003). For a related, though much more qualified, endorsement of epistemic autonomy in this context, see Robertson (2009).

¹⁸ For two very different defences of a claim of this sort, see Greco (2010, ch. 6) and Pritchard, Millar & Haddock (2010, ch. 2; cf. Pritchard 2009*b*). For a survey of the recent literature on epistemic value, see Pritchard (2007) and Turri & Pritchard (2011).

¹⁹ Although not particularly relevant for our purposes, knowledge and understanding also come apart in the other direction, in that one can have understanding while lacking the corresponding knowledge. For more on this point, see Pritchard (2009*a*) and Pritchard, Millar & Haddock (2010, ch. 4). For further discussion of the epistemology of understanding more generally, see Grimm (2010). See also Grimm (2006) and the exchange between Grimm (*forthcoming*) and Pritchard (*forthcomingc*).

²⁰ Note that I'm taking it as given here that in 'doing' the required arithmetic one is not merely blindly undertaking an automatic process which one learnt by rote. That would be akin still to a weak cognitive achievement, in that one is epistemically dependent to a significant degree on factors outwith one's cognitive agency (e.g., that one was taught this process by an authoritative source, and so on). But what we are dealing with here is a strong cognitive achievement, and this is a much more epistemically demanding notion.

²¹ Note that this is not to insist that understanding should always involve reflection. Whether it does will depend in part on whether one casts one's virtue epistemology along epistemically internalist or externalist lines, and what one's conception of understanding is. In particular, it is compatible with the view just described that understanding might involve a great deal of tacit knowledge. For a discussion of the role of tacit knowledge even in the context of expert judgements, see Pritchard (2005). For an independent defence of the thesis that the promotion of understanding, as opposed to the mere inculcation of truths, should be the goal of education, see Elgin (1996; 1999*a*; 1999*b*), though note that Elgin conceives of understanding in a different way to the present author (e.g., to the extent that understanding doesn't in general require truth).

²² For more on the idea that understanding is finally valuable, see Pritchard (2009*a*) and Pritchard, Millar & Haddock (2010, ch. 4).

²³ Thanks to Allan Hazlett, John Ravenscroft, and Lani Watson. Special thanks to Ben Kotzee and an anonymous referee who read and commented on an earlier version of this paper.