

WHAT ARE THE AIMS OF EDUCATION?

Theorists of education have long debated the ultimate aims of education, often proposing one or another cognitive aim, such as true belief or critical thinking.¹ I will argue first that there are no ultimate aims common to all kinds of education, apart from the vacuous ones of transmitting cognition and improving the student's cognition.² In light of this conclusion, the matter to investigate is the ultimate aims of certain broad kinds of education. I will restrict my inquiry here to *cognitive* ultimate aims, and I will focus on liberal arts education. I will propose that the organizing cognitive ultimate aim of liberal arts education is justified belief rather than true belief.

For our purposes, "education" may be understood as the social activity of teaching by at least one teacher and consequent learning by at least one student – learning that is broad or systematic with respect to the material taught.³ This is, I believe, our central ordinary sense of "education." ("Teach" and "learn" are success verbs and thus so is "educate," but for the sake of convenience I will sometimes use "education" to mean merely *attempted* teaching, rather than successful teaching.) Education so understood occurs both in and outside of educational institutions.⁴

What do we mean when we ask what *aims* education has? Are we asking which aims motivate educators when they educate? I think not. Rather we are asking which *functions* education has. Compare: agriculture has the aim of producing food for consumption. In claiming this, we are not claiming that this aim motivates farmers in their agricultural activities. The intended claim is perfectly compatible with saying that each farmer aims only to grow certain plants on his or her own plot and to make a living by doing so. Nor are we claiming that it is *as if* each farmer aims to produce food for consumption. Agriculture in a community might still have the aim of producing food for consumption even if no

farmer behaved as if aiming to produce food for consumption – even if every farmer showed concern only for making a living. Rather we are claiming that agriculture has the function of producing food for consumption. In this sense a stockpile of food for consumption is its aim.

When we ask what aims education has, we are asking what functions it has in a sense analogous to the functions of agriculture. Thus, to ask whether education has a certain aim (e.g., the true beliefs of students) is to ask whether it has the function of producing a certain effect (true beliefs). It is not easy to show that education, or for that matter agriculture, has functions, and I will not try to do so. But I do believe that such functions are what theorists have in mind when they ask what the aims of education are. One might go further and say that theorists are asking what functions education has *in society*. We can certainly ask this question for social educational institutions. It is less clear that this is the question we have in mind when we ask what functions *noninstitutional* education has. If a parent homeschools a child, this could be (and not so long ago was) an activity apart from social educational institutions, but it still seems sensible to ask what functions the education has (or had) apart from its functions in society. But I will not try to settle whether the aims of education are restricted to functions it has in society.

What do we mean by the *functions* education has? The functions of education are restricted to effects education (as we say) *ought* to produce. These are not necessarily effects that it *actually* produces.⁵ A clock has the function of telling time even if, through poor design or malfunction, it fails to do so. Similarly, education can have a certain function even if, through poor structure or malfunction, it fails to fulfill that function.⁶

A clock has an *artificial* function: it ought to tell time because we design it to do so. An antibody has a *natural* function: it ought to kill viruses; but

not because anybody designed it to do so. "Natural" here can simply mean "not imposed by anyone's design." Some kinds of education (e.g., kindergarten) were designed for their purposes (to introduce preschoolers to the rigors of school) and thus have artificial functions. Others (e.g., up-bringing or the initial acculturation of a child) were not designed (though over time they may have been altered by design) and indeed are coeval with culture, hence not products of cultural evolution. Yet others (e.g., vocational education) are harder to classify as artificial or natural.

When we ask what functions a kind of education has, we are asking what effects it ought by *the very nature of that kind of education* to produce. No doubt education ought to produce effects other than those it ought by its nature to produce. Education ought to produce happiness. But there is little plausibility to the idea that education ought by its nature to produce happiness, or that it has the function of producing happiness. Compare: agriculture ought to produce happiness. But its function is to produce food for consumption, not happiness.

I do not claim that *all* functions of a thing are effects it ought by its nature to produce. I leave open the possibility that education has other functions. If it does have such functions, there will be a distinction between *intrinsic* functions of education – effects it ought by its nature to produce – and *extrinsic* functions. It is intuitively more plausible that education has intrinsic functions than that it has extrinsic functions. I will not, however, try to judge whether education has any extrinsic functions. We may simply focus on the more plausible category of intrinsic functions of education. I add that some functions of education may be instrumental to others, and other functions will be ultimate.

Our primary interest here will be the ultimate intrinsic functions, or aims, of education. These are aims that are final within the intrinsic functions of education, though they may be instrumental to extrinsic aims of education. True belief could be an ultimate intrinsic aim of education even though it is instrumental to the aim of a good life, because a good life is a merely extrinsic aim of education.

The intrinsic functions of education fall into two classes. There are functions in virtue of what is

internal to the process of instruction. The function of *transferring* relevant information and skills from the teacher to the student falls into this class. And there are functions of producing features of the desired product of instruction in virtue of the nature of education. True belief, if it is an ultimate intrinsic function, falls into this second class. Plausibly no functions of the first class are ultimate aims of education; all are instrumental to functions of the second class. Since we are interested in ultimate aims, we may ignore functions of the first class.

We may now return to our initial question: are there any nonvacuous ultimate aims common to all broad kinds of education? I argue not. For the subject matter of education varies so much that the different broad kinds of education have no nonvacuous ultimate aims in common.

To see this, consider these two broad kinds of education: practical education and liberal arts education. (These are neither exhaustive nor exclusive of the kinds of education.⁷)

By *practical education*, I mean education in an art, craft, trade, sport, practice, or skill ("art" for short). Practical education ultimately aims to produce students competent in a given art. It covers vocational training aimed at producing a student competent to fill a job. It encompasses all education aimed at producing professionals and technicians – lawyers, doctors, nurses, engineers, and the like. It can be extended to subsume moral education aimed at producing a moral person, and religious education aimed at inducting someone into a religion (if such a thing counts as education rather than indoctrination). It can also be extended to subsume up-bringing or child-rearing, which inducts a child into a culture and aims at initial acculturation.

Practical education aims to produce students with sufficient competence in the art. For all arts, this involves certain beliefs, belief-forming methods, cognitive habits, propositional knowledge, and know-how. But just what is required for competence varies enormously with the art. Swimming requires very little propositional knowledge, while the practice of physics requires a great deal. Practical education in an art accordingly ultimately aims to produce students endowed with certain cognitive conditions varying with the given art. It aims to produce true, justified, or

rational belief and rationality only insofar as these are required for propositional knowledge, know-how, and the rest of the cognitive conditions defining competence. The cognitive conditions at which practical education ultimately aims are determined entirely by the nature of its subject matter, the art taught. There is no stand-alone ultimate aim of true belief and the like. The ultimate aim of practical education is simply competence in the art. Since what is required for competence varies greatly from one art to the next, we expect no commonality in the aims of practical education.

For an example of practical education, consider up-bringing. Up-bringing ultimately aims at the child's belonging to the culture. It does not ultimately aim at any cognitive conditions in the child other than whatever cognitive states constitute the child's belonging to the culture. These cognitive conditions include beliefs with certain propositional contents and skills of problem-solving. Possibly, they include some knowledge as opposed to mere belief, though that is not clear to me. I doubt whether they include true belief, justified belief, or rational belief except perhaps in so far as these are required by knowledge. It is questionable, then, whether the ultimate aims of up-bringing include true, justified, or rational belief. It is not at all clear to me that culture includes rationality, as opposed merely to conforming to certain non-normatively defined cognitive standards that happen to be rational, or being subject to certain criticisms that employ the concept of rationality. Up-bringing, then, may well be a kind of education that does not have true or justified belief as ultimate aims. In any event, we can make the point that the ultimate aims of up-bringing derive entirely from the nature of its subject matter, culture, and do not include any stand-alone aims of true belief and the like.

Let us now consider *liberal arts education*. It has two important salient aims. One is deep acculturation—that is, acculturation beyond what is supplied by up-bringing. This is an important practical aim, but I do not believe it is the most important salient aim of liberal arts education. That aim has sometimes been called “a sound mind.” Having a sound mind is not entailed by deep acculturation. It is a cognitive aim. It is not a

practical aim in the sense of an art, a practice, or even a structure of practices. Apart from acculturation, the ultimate aims of liberal arts education are determined by the aim of a sound mind. Any commonality with the cognitive ultimate aims of practical education is accidental.

I begin with a fundamental respect in which liberal arts education differs from practical education (a respect in which liberal arts education is, in fact, like physical education). Liberal arts education does not vary in its aims from one subject matter to the next, as the ultimate aims of practical education vary from art to art. There is no one ultimate aim of practical education in the various arts. Corresponding to this is the point that there is no such thing as being overall well educated in arts. No one thinks it makes any sense to try to educate people so that they are competent in some appropriate combination of arts—in the combination, for example, of cooking, chess, sewing, medicine, and gymnastics. Indeed, there is no notion of an *appropriate* combination of arts. There is no unity to arts that could fund the aim of overall competence. By contrast, there is one aim common to all liberal arts education, apart from acculturation. Education in mathematics as a liberal art aims at the same thing as education in history as a liberal art: to contribute to a certain sort of overall intellectual excellence in the student. That there is such a sort of excellence is made possible by the unity of the liberal arts, which derives from the unity of intellectual life. The fields of intellectual endeavor are essentially connected in a way that the various arts are not. One might take these fields to be connected in their subject matter, or merely in the cognitive abilities needed to succeed in them. I believe they are connected in both ways, but here, at the cost of incompleteness, I will try only to capture the latter. Education for overall excellence involves some exposure to each of the liberal arts, and some balanced combination of concentrations in the liberal arts. This is what liberal arts education involves. It is not itself the overall excellence—the sound mind—at which the education aims, but rather the means to a sound mind.⁸

These reflections lead me to the conclusion that there is no interesting question what the ultimate aims of education are in general. Kinds

of education share ultimate aims only accidentally. Moreover, there is no interesting general answer to what the ultimate aims of practical education are; these differ for the different arts. In fact, the only interesting question to which true belief, justified belief, or rationality could be an answer is the question what the ultimate aims of liberal arts education are.

One might think that we can ask what the ultimate aim of mathematics education is without further qualification. What should a mathematics teacher try to do? And one might think that the answer includes as a main aim imparting true belief. But in my view, there is no one thing a mathematics teacher should try to do. She might try to teach facts of mathematics, the practice of mathematics, or mathematics as a liberal art. And one and the same instructor might try to do all three of these things at the same time, for different students (teach facts and liberal arts to undergraduates, and professional training to graduate students) or even for the same student. The important point, however, is that the ultimate aim of the instruction varies for each kind of teaching. And in the case of trying to teach facts, it is doubtful that there is an aim in the sense relevant here. To be sure, the teacher has the goal of teaching facts, but it does not follow that the instruction has any function (or function in society) in virtue of the nature of mathematics education. There is no direct inference from mathematics education to the aim of true belief in some kind of education. For there is no such thing as the ultimate aim of mathematics education per se. The various kinds of mathematics education differ profoundly in their aims. (I would make similar remarks about rote teaching or the inculcation of truths. It is doubtful that rote teaching has any one function, even though it is essential to all kinds of education and instrumental to fulfilling their aims.)

I now offer a conjecture about the ultimate aims of liberal arts education (in mathematics, or any other subject matter), setting aside any ultimate aims to do with the aim of acculturation. My first step here is to understand "a sound mind" in the least controversial way I know how, restricting my attention (as noted) to whatever unity of the liberal arts derives from a connection in cognitive abilities rather than from a connection in subject matter among the various fields. To a

crude approximation, in aiming at a sound mind, a liberal arts education aims at the student's abilities to: perceive accurately and sensitively, imagine possibilities about, inquire (in the right way) into, acquire knowledge of or justified belief about, solve problems in, make discoveries in, understand, and appreciate any arbitrarily selected specific subject matter. The case for this is in part that liberal arts education that failed to produce students with any such abilities would not count as fulfilling the aims of liberal arts education. I suspect that more is required to fulfill the aims of liberal arts education than merely to produce students with some ability on this list. What is required is to produce students with some significant portion of the abilities on the list, and in the right combinations and proportions. I will not try to say more about which portions, combinations, or proportions of abilities are targeted in aiming at the abilities on the list.

Someone might say that these abilities do not exhaust the characterization of a sound mind, and that a liberal arts education also aims to produce students with an ability to inquire about (etc.) the world as a whole, and not just about an arbitrarily selected specific subject matter. But I am not sure what it is to inquire about the world as a whole, unless it is simply to do philosophy, which may be viewed as a specific subject matter.

A more worrying response to my conjecture, and one that really does call for its revision, is that it is too strong to require of a liberal arts education that it produce students who have an ability to inquire into arbitrarily selected specific subject matters. No one has or even can have such abilities. Subject matters are simply too diverse in the sorts of inquiry they require for anyone to have a standing ability to inquire into any arbitrarily selected subject matter, or even to inquire into a large number of subject matters. I think that is right. In response, I would revise the proposal in this way. Liberal arts education does not aim to endow students with the ability to inquire into arbitrarily selected subject matters, but rather with the meta-ability to acquire an ability to inquire into any of a large variety of subject matters. My conjecture, then, in a formula, is that liberal arts education aims saliently at the meta-ability to learn how to learn any of a large variety

of subject matters.⁹ The ultimate aims of liberal arts education are determined by this salient aim.

One might object that this is not enough: a liberal arts education that does not actually impart extensive and broad knowledge of the world, abilities to inquire into selected subject matters, and an understanding and appreciation of the world does not succeed in its aims.

I am inclined to respond in this way: such knowledge and specific abilities are required, not by the aim of a sound mind, but by means that are contingently instrumental to this aim. The means we use to achieve the aim is deep education in a few subject matters, with a large dose of reflection on methodology and foundations as we learn these subject matters. The point of a liberal arts college major might well not be to provide knowledge of, and skills of inquiry into, the subject matter of the major, but merely to provide an example of learning how to inquire that will transfer to a different subject matter in the future. I think it will be granted that, for the purpose of a liberal arts education, it does not matter which of various academic disciplines one majors in. The reason for this appears to be that the overarching point of a major is to acquire generalizable abilities, not discipline-specific abilities. And the point of studying subjects that give one an understanding and appreciation of the world as a whole, such as philosophy, religion, and fictional literature, may be to enable one to transfer to other subjects abilities to inquire acquired in the course of one's major. For example, philosophy enhances one's ability to situate a new subject matter in relation to others and to transfer reasoning from one subject to another, thereby facilitating new learning. However this may be, I will leave our view of the salient aim of liberal arts education at this: the meta-ability to acquire an ability to inquire about (etc.) many given subject matters.

We finally have enough structure in our account of the salient aims of liberal arts education to ask whether its ultimate aims include true belief, justified belief, rational belief, and rational or critical thinking.¹⁰ When we ask whether true belief, say, is an ultimate aim, there are two questions. One is whether the function of a liberal arts education is more fully fulfilled by a meta-ability that, applied persistently enough,

actually leads to true belief than by a meta-ability that does not. An affirmative answer is needed if true belief is to count as an *aim* of liberal arts education. To simplify our discussion, I will ask whether the function of a liberal arts education is more fully fulfilled by abilities on the list that actually lead to true belief (etc.) than by abilities that do not. The second question is whether true belief explains the meta-ability in the sense that having and applying the meta-ability is instrumental to or constitutive of true belief. An affirmative answer is needed if true belief is to count as an *ultimate* aim. I will focus on the first question. I will also ask whether true belief (etc.) is an *organizing* aim in explaining all abilities on the list, in the sense that they are instrumental to or constitutive of true belief.

A preliminary point is that the targets of the abilities on the list—inquiry, accurate perception, and the like—are valuable on their own, regardless of whether they lead to true belief, rationality, or justified belief. The target right inquiry, for example, is valuable on its own, regardless of whether it resolves our cognitive state and terminates in true belief or withholding of false belief, justified belief or justified withholding of belief, etc. There is surely value even in inquiry that conforms to the Pyrrhonian prescription to continue inquiring indefinitely without resolution. It is by no means obvious that liberal arts education that produces Pyrrhonian inquirers is to be regarded as having failed to fulfill its aim of a sound mind. We can allow that it fulfills its aim while granting that right inquiry itself aims at true or justified belief. We can say that such liberal arts education fulfills its aim because it results in right inquiry, even though the latter fails to fulfill its aim of true or justified belief. In this way, we reach a *pluralism* about the ultimate aims of liberal arts education. We admit right inquiry as an ultimate aim in the sense that a liberal arts education that leads, via the meta-ability, to right inquiry more fully fulfills its function than one that does not, regardless of whether it also leads to true belief and the like.

However, this pluralism is quite compatible with a version of *monism*: all the abilities on the list are present there because their targets are constitutive of or instrumental to some one organizing aim. Admittedly, if the targets are

merely *instrumental* to one aim, we could not appeal to this aim to explain why the targets are themselves *ultimate* aims of liberal arts education, though we could do so if the targets are *constitutive* of the one aim. But even in the instrumental case, we could explain why the targets are *aims*. If one aim can explain all the abilities on the list, this is reason to think it is an ultimate aim of liberal arts education.

Let us consider, then, whether any of the usual candidates might be the one organizing aim. Rational and critical thinking are not up to the task. The targets of the abilities are not all constitutive of or instrumental to these aims. Rational thinking is a practice of correct *reasoning*, and critical thinking a practice of *thinking* critically. Right inquiry is perhaps partly constitutive of rational and critical thinking. But the list of abilities includes the ability to perceive accurately and to imagine remote possibilities. And accurate perception and imagining possibilities are not partly constitutive of or instrumental to rational and critical thinking. I note, too, that rational and critical thinking are themselves instrumental to justified belief. For they are conditionally justifying thinking – i.e., reasoning that leads to justified belief given justified beliefs as inputs or background.¹¹ So we can account for rational and critical thinking as aims of liberal arts education if justified belief is an ultimate aim of liberal arts education.

The case of justified belief differs crucially from that of rationality. For *all* the targets of the abilities on the list are instrumental to and (in the right combination—in fact, the combination at which liberal arts education aims) constitutive of justified belief. Justified belief is not restricted to belief resulting from a certain kind of reasoning, as rational belief is; it covers perceptual belief as well. And employing a good enough range of imagination is necessary for justified belief even though not for rational belief. The aim of justified belief can account for each of the abilities on the list.

The case of justified belief also differs from that of *true* belief. Justified belief is constituted by the targets of the abilities. A liberal arts education that produces the abilities on the list and their targets is bound to produce justified beliefs if any beliefs at all (i.e., it is bound to produce justified

beliefs or justified withholdings of belief) because justified belief simply is belief that results from the targets. Right inquiry leads to justified belief (or justified agnosticism). In this sense, justified belief is a guaranteed outcome of liberal arts education. A liberal arts education that gets so far in fulfilling its functions that it produces the abilities and their targets must produce justified beliefs, by the nature of its functions and of justified belief. By contrast, true belief is not a guaranteed outcome when liberal arts education produces its abilities and their targets. (More exactly, it is not guaranteed except for its role in the knowledge produced.) So the place of justified belief in the functions of liberal arts education is much more secure than the place of true belief.

Is true belief an ultimate aim of liberal arts education?¹² First, can true belief account for all the abilities on the list?¹³ Certainly ability to inquire and the other abilities on the list generally tend to produce true beliefs (or withholdings of false beliefs), and inquiry is itself aimed at true belief in the sense that the inquirer has true belief as a goal. Moreover, liberal arts education leading to the meta-ability and consequently to the abilities more effectively produces true beliefs in a wide range of subject matters than any alternative means available to us. Obviously liberal arts education that produces the abilities on the list, their targets, and additional true beliefs (beyond those required by having the abilities and realizing their targets) is in one important respect *better* than education that produces the abilities on the list and their targets but no additional true beliefs. But does it more fully fulfill the *function* of liberal arts education? I believe the answer is that it does in some cases but not others.

Suppose liberal arts education leads to the abilities and their targets but not to true beliefs. Aristotelian science was a product of liberal arts education, or the nearest ancient equivalent to it. Despite this, Aristotelians were unable to think of many conjectures in physics, chemistry, biology, or psychology that proved to be true. Their education did not endow them with an imagination adequate to think up true hypotheses. Certainly their thinking exhibited a significant cognitive failure. But this failure was no fault of their education. It did not entail a failure to fulfill

the functions of a liberal arts education. Liberal arts education does aim to develop the student's imagination, but it does not fail its function if cultural conditions prevent its students from formulating true hypotheses. I conclude that liberal arts education does not have the function of producing true beliefs in the sciences—at least, it did not in ancient times.¹⁴

In reply, one might grant the point that falsity in the one episode, Aristotelian science, does not prevent liberal arts education from fulfilling its function in that episode. But one might maintain that if it is not the case that liberal arts education would in general (or in the fullness of time) lead to abilities and targets that produce true scientific beliefs, this would show that it fails to fulfill its function in *any* episode. In this sense, one might insist, true belief is an ultimate aim of liberal arts education (with respect to science), even though its absence in the particular episode of Aristotelian science did not detract from fulfilling the function of liberal arts education. But I am inclined to respond that we can imagine an unending history of episodes of false science like Aristotelian science. And I am inclined to say that in this imagined history, liberal arts education does not fail its function even though it never leads to true beliefs in science. The success of liberal arts education is not hostage to the truth of the scientific beliefs it produces. For the latter depends on the right sort of imagination to yield true beliefs, and liberal arts education cannot be faulted for all failures of imagination that stand in the way of true belief. Let me explain.

Compare the case of agriculture. The function of agriculture is to produce food, and it has as a main aim a stockpile of food. Suppose an agricultural system does produce a stockpile of food. Suppose, however, that people are unable to consume this food because they have a virus that prevents consumption. For this reason, the system of agriculture does not lead to consumption. Still, intuitively the system does fulfill all of its functions. This shows that the system does not aim at food consumption, only at food production. To be sure, an agricultural system that actually leads to food consumption is in one respect better than the system we are imagining. But the failure of the system actually to lead to consumption is no fault of the system. This failure

does not detract from its fulfilling all of its functions. In this regard its failure to lead to consumption differs from a failure to do so caused by bad weather. The latter failure would detract from its fulfilling the function of producing food. The reason agriculture does not have the function of leading to food consumption is evidently that it is unsuited to do so. Doing so lies outside its powers. We infer from the fact that agriculture is unsuited to lead to food consumption, that it lacks the power to do so, and thus it is no fault of agriculture if it does not do so, and no part of the function of agriculture to do so.

Of course not every unsuitability of an institution to produce a result excuses that institution from the function of producing that result. For example, foreign language instruction in the United States is unsuited to produce competent speakers of foreign languages—as shown by its notorious failure rate. Still, it intuitively has the function of producing competent speakers. The fact that it is unsuited to doing so does not entail that it lacks this function. The reason, I think, is that, even though it is unsuited to doing so, nevertheless, in a sense, it has the power to do so. For, although it is not suited to doing so as currently constituted, it belongs to a category of activity, foreign language instruction, that can be constituted so as to produce competent speakers of foreign languages. Admittedly, U.S. students lack motivation to learn a foreign language, and this lack of motivation would impede even the most effective system of language instruction. But a lack of motivation is like bad weather — a background condition to which the activity is hostage. Just as bad weather does not excuse agriculture from its task of producing food, so a lack of motivation does not excuse foreign language instruction from its task of producing competent speakers. In short, agriculture lacks the power to lead to food consumption in a way that foreign language instruction does not lack the power to produce competent speakers. And thus agriculture fulfills its function even in the presence of the virus, while foreign language instruction fails its function.

Returning now to the case of liberal arts education and true belief, we may say that liberal arts education has the power to produce true beliefs in some fields and not others. In such a

field as mathematics, liberal arts education has the power to produce true beliefs. Its failure to do so would count as a fault of the education. It would count as a failure to fulfill its function. In such fields as philosophy and the interpretation of the arts and literature – fields in which we are unable to distinguish truth from falsity with much confidence – liberal arts education may not have the power to produce true beliefs (at least not to produce a high percentage of true beliefs). A failure to produce true beliefs may be endemic to the subject matter of these fields, not something for which education can be faulted. Liberal arts education does not have the aim of true belief with respect to fields in which there is such an obstacle.

Certainly, how hard it is to come by truth in a field, and why, varies with circumstances. Plausibly, truth was more difficult to come by in science before the scientific revolution of the seventeenth century than afterwards, a consequence in part of the development of experimental method and scientific argument. This difference is not endemic to the subject matter, but may nevertheless exempt liberal arts education from fault for its earlier performance. The difference may therefore impose a distinction on the aims of earlier and later liberal arts education, so that true belief (with respect to science) was not among the aims earlier, but is now among the aims.¹⁵ (I note that the very conditions that exempt liberal arts education from fault for failing to produce true beliefs in a field may also prevent us from judging the function of liberal arts education accurately. The Aristotelians would justifiably, though falsely, ascribe to their liberal arts education the aim of truth with respect to science, in the mistaken impression that the limits of their imagination do not exempt their liberal arts education from the aim of truth.)

Of course I am not saying that liberal arts education does not aim at true belief merely because it cannot succeed in producing true beliefs. It is possible for a kind of education to fail systematically at its aim. Rather, I am saying that systematic failure to produce results in the face of certain obstacles entails not having as an aim the production of those results. Such obstacles include those endemic to the subject matter. I have no general account of which sorts of obstacles exempt from fault.

In denying that liberal arts education always has true belief as an aim, I am not denying that liberal arts education always has *value* when it leads to true beliefs in any field, or tends to do so. I am not denying that teaching strategies in liberal arts education should be evaluated by their tendency to produce true beliefs: we should prefer those strategies that produce more true beliefs. Alvin Goldman (1999, pp. 363-5) has even suggested that certain strategies of education (such as inculcation) may properly lead to true beliefs apart from whether they produce justified beliefs. What I have said is quite consistent with this suggestion. Indeed, it is consistent with the view that such strategies are valuable quite apart from whether they ultimately enhance the production of justified beliefs. I am simply denying that for each field value of this sort is that of fulfilling the function of liberal arts education with respect to the field. The value by which we judge strategies of teaching for liberal arts education may well go beyond its functions.

My conclusion is that justified belief explains all of the abilities on the list and is thus an organizing ultimate aim of liberal arts education. Rational and critical thinking and rational belief are ultimate aims that explain some of the abilities on the list. True belief is an ultimate aim only with respect to certain fields.

In saying this, I do not mean to deny that justification is instrumental to true belief. It is so, on the reliabilist view that justification is simply a kind of belief-formation that tends to produce true beliefs.¹⁶ Can we then say that, since liberal arts education aims at justified belief, and justified belief aims at true belief, it follows that liberal arts education aims at true belief after all? There are several points to make against this inference. For one thing, it is not entirely clear that justified belief has an aim in the same sense in which education has an aim. Justified belief is not an activity or institution, as education is, and it is not clear that it has a function in the sense in which education does. Second, even when the sense of “aim” is the same, the form of inference is invalid. Health science aims at a healthy lifestyle; a healthy lifestyle aims at (functions to yield) a productive life; it doesn’t follow that health science aims at a productive life. Third, the point remains that justified belief is constitutive of the targets on the

list when they are carried to completion; true belief is not.¹⁷ Fourth, even if we take true belief to be the ultimate aim of liberal arts education because justified belief is instrumental to it, the fact remains that justified belief is the organizing aim: true belief enters the picture only because justified belief explains all the targets and justified

belief is instrumental to true belief. In short, I am inclined to maintain that for some fields of study the instrumentality to true belief goes beyond the functions intrinsic to education. Justified belief is the last general aim before exiting what is proper to education.

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Notes

- 1 Goldman 1999 proposes true belief as the ultimate aim of education. However, he seems to mean by this only that educational practices are to be evaluated primarily by their tendency to produce true belief. I take this to be compatible with my position in this paper, for reasons explained in the text. Siegel 1997 is a good example of the popular view that rationality is the ultimate aim of education. I explore the possibility of justified belief as the right focus for an evaluation of educational practices in Schmitt 2000 section 5. See Siegel 2004 for a concise discussion of true belief vs. rationality as ultimate aims. For further discussion of the aims of education, see the articles in Marples 1999.
- 2 No doubt there are common aims instrumental to any instruction leading to cognitive or practical improvement, such as getting the attention of the student, but these are merely instrumental, not ultimate aims of education.
- 3 Teaching can occur in cases in which the subject matter is not sufficiently broad or systematic to amount to education. A teacher can teach a student a single fact and nothing else. So teaching does not entail education in my sense.
- 4 I will omit discussion of education in the sense merely of broad or systematic untutored learning from experience, as in the platitude "life gives the best education." Education in this sense clearly has no aim as we will use the term "aim" here.
- 5 One might object to this "function" account of aims on the ground that it prevents us from distinguishing the aims education *ought* to have from the aims it *actually* has. For it entails that the aims it actually has are simply the effects it ought have; but the aims it ought to have are also simply the effects it ought to have. Yet there is surely a distinction between the aims it ought to have and the aims it actually has. But I believe the account, suitably developed, can maintain this distinction. The aims education actually has are the effects it ought to have, given how we (at some level) actually treat it. The aims education ought to have are the effects it ought to have, given how we ought to treat it. We can see that there is a distinction here by considering how these conditions might come apart for a specific institution. For example, the circus actually has the function of entertainment—it ought to entertain, given how we treat it. But perhaps we ought to treat it differently. Perhaps it is an antiquated institution that would be better treated as an

instructive specimen of a crude and objectionable form of entertainment. Then we ought to treat it differently, and it ought to instruct us given this treatment. The aims it actually has and the aims it ought to have diverge on the proposed account. That said, I do not think that the aims education has and those it ought to have really diverge. Moreover, it is not clear that a divergence is possible when we are speaking of the functions education has in virtue of its nature. It may well be that the effects education ought to have in virtue of its nature, given how we treat it, must be the same as the effects it ought to have in virtue of its nature, given how we ought to treat it.

- 6 We need to qualify the formula that an object has a function only if it ought to produce a certain effect. An antibody has the function of killing a virus. Yet most antibodies do not kill viruses. That is because most never get the chance; they are absorbed without fulfilling their function. One might say that an antibody has the function of killing a virus because it ought to do so given the opportunity to do so. (Alternatively, one might say that the function of an antibody is not killing a virus but rather the *conditional* effect of killing a virus given the opportunity to do so.) Similarly, one might say that education has a certain function—say, producing competent workers. But education cannot be expected to produce competent workers under just any circumstances. It cannot be expected to do so if students are drafted into the armed forces before completing their education. Rather, education has the function of producing competent workers because it ought to produce competent workers, given the opportunity to do so. It is a difficult matter to specify which circumstances of opportunity go into the account of the function of an item, and I will not investigate the matter here.
- 7 They are not exhaustive because physical education, for example, does not fit into either kind. It aims at a sound body, meaning physical coordination and good overall physical skill, and this aim is not an art or practice. They are not exclusive because liberal arts education aims at deep acculturation, which falls under practical education.
- 8 Of course I do not mean to deny that practical education—in pottery making or swimming, for example—can be appropriated for holistic educational purposes, such as the aim of a sound mind in a sound body. Conversely, mathematics education can be treated as aiming simply at improvement in mathematics as a practice, without regard to its contribution to the liberal arts. In this case, it does not share a substantive aim with history education. But so treated it would not amount to education in mathematics as a *liberal art*, only as a practice. I am only saying that education in any particular subject as *liberal arts education* necessarily involves a holistic aim, whereas education in an art or craft as *practical education* does not. I note that liberal arts and physical education have themselves been seen as sharing a substantive aim of contributing to the whole of a sound mind in a sound body. But I am skeptical as to whether this aim has any real content, beyond the aim of a sound mind and the aim of a sound body.
- 9 I do not say that the aim is the ability to learn how to solve problems. Specifying only learning how to solve problems gives too weak an aim, since learning a subject matter requires more than this.
- 10 I leave off intellectual virtue because virtues entail dispositions to cognize well, and it seems that liberal arts education can fulfill its aims if people cognize well even though they do not do so from dispositions to cognize well.
- 11 This needs qualification. Rational thinking is reasoning that cannot be faulted as reasoning. But it might still be faulted in some other way that prevents it from yielding a justified belief, even when the input beliefs are justified. For example, a failure to imagine a broad enough range of counter-possibilities or objections is not a fault of reasoning, but it may stand in the way of justified belief. So rational thinking is not quite conditionally justifying. Even so, rational thinking is an aspect of reasoning instrumental to justified belief.
- 12 True belief is entailed by knowledge and may be part of accurate perception. Thus, we have already accepted it as a component of ultimate aims, since abilities on the list target knowledge and accurate perception, and targets are ultimate aims.

- ¹³ One objection that has been made to true belief as the ultimate aim of education is that it gives us no reason to prefer the instrumental aim of a meta-ability to develop the ability to inquire and the like, over the instrumental aim of direct inculcation of true beliefs. Both of these instruments lead equally to satisfaction of the aim of true belief, but inculcation is not a proper aim of education apart from the role it plays in preparing the student for inquiry. I think this is a good objection to an unqualified aim of true belief, but it forces only adding one other ultimate aim to true belief – namely, the aim of quantity and diversity of content. The meta-ability to develop an ability to inquire can be expected to produce many more true beliefs than inculcation can – beliefs in diverse and unforeseen subject matters, and original beliefs. This reply of course adds quantity and diversity of content to the ultimate aims. Inculcating true beliefs, apart from preparation for inquiry, will not serve the ultimate aims of liberal arts education, once the aim of content is added to the ultimate aims.
- ¹⁴ One might object that liberal arts education in science aims at science; science aims at true belief; so liberal arts education in science aims at true belief. But liberal arts education in science does not aim particularly at science. And anyway the inference is invalid, since transitivity does not hold for aims.
- ¹⁵ Alternatively, the difference may be taken to show that liberal arts education always has an aim that is conditional on circumstances: true belief if the circumstances are what they are after the scientific revolution.
- ¹⁶ For my defense of reliabilism, see Schmitt 1992.
- ¹⁷ The position I am crafting imposes a constraint on the individuation of belief-forming processes in the account of justification. To ensure fulfillment of the aims of liberal arts education, Aristotelian science must be justified. So on reliabilism, it must result from reliable processes, even though it is massively false. Consequently, these processes must have true output outside of Aristotelian science.

Frederick Schmitt is Professor of Philosophy at Indiana University. His principal research areas are metaphysics, epistemology, and the history of epistemology. He is the author of *Truth: A Primer* (1995) and *Knowledge and Belief* (1992); and is the editor of *Theories of Truth* (2004); *Socializing Metaphysics* (2003); and *Socializing Epistemology* (1994). His current research is on social epistemology, social metaphysics, and Hume's epistemology.

Uskali Mäki is Professor at the Erasmus Institute for Philosophy and Economics at Erasmus University, Rotterdam. His research interests include philosophy of economics, scientific realism, models and idealisations, intertheoretic relations, rhetoric of inquiry, social epistemology and social ontology. His recent publications include *The Methodology of Positive Economics: Milton Friedman's Essay Fifty Years Later* (2005); *Fact and Fiction in Economics: Models, Realism, and Social Construction* (2002); *The Economic World View: Studies in the Ontology of Economics* (2001); as editor of and contributor to *The Handbook of Economic Methodology* (1998) and *The Handbook of the Philosophy of Economics* (forthcoming).