Journal of Philosophy of Education
The Journal of Philosophy of Education Society of Great Britain
pesgb

*Journal of Philosophy of Education, Vol. 51, No. 1, 2017*

# Aims of Education: How to Resist the Temptation of Technocratic Models

**ATLI HARÐARSON**

*A technocratic model of curriculum design that has been highly influential since the middle of last century assumes that the aims of education can be, and should be: 1. Causally brought about by administering educational experiences; 2. Specified as objectives that can be attained, reached or completed; 3. Changes in students that are described in advance.*

*Richard S. Peters argued against the first of these three tenets by making a distinction between aims that are causally brought about by the means and aims that are constituted by the means. I argue that further distinctions between ways in which ends and means can be related throw doubt on the remaining two tenets. My argument against the second one rests on a distinction between open aims that cannot be completed and closed aims that can be reached. I use a third distinction, between aims as principles of design and aims as principles of reform, to show that the third tenet of the technocratic model is also suspect.*

*I conclude that a realistic view of educational aims must take into account that they are more multifarious than envisaged by the technocratic model of curriculum design.*

## INTRODUCTION

In a paper entitled 'Must an Educator have an Aim', originally published in 1959, Richard S. Peters criticised the predominant view on educational aims according to which teaching and learning are instrumental means to terminal endpoints that students are supposed to reach. According to Peters, 'this model of adopting means to premeditated ends is one that haunts all our thinking about the promotion of what is valuable. In the educational sphere we therefore tend to look round for the equivalent of bridges to be built or ports to be steered to' (Peters, 1973, p. 123).

In the first section I shall show that a technocratic view similar to the one Peters criticised is still influential in curriculum discourse. I shall then argue that to resist the temptation of this view we need to be mindful of how multifarious educational aims and purposes are.


Published by John Wiley & Sons Ltd, 9600 Garsington Road, Oxford OX4 2DQ, UK and 350 Main Street, Malden, MA 02148, USA.

## THE TECHNOCRATIC VIEW OF CURRICULUM DESIGN: HISTORICAL ORIGINS AND CORE TENETS

A view similar to the one that Peters criticised was advanced by the US curriculum theorist Franklin Bobbitt in a book published in 1918, where he argued that curriculum-making along scientific lines must specify in detail what is to be achieved. Bobbitt also foretold that 'the era of contentment with large, undefined purposes is rapidly passing. An age of science is demanding exactness and particularity' (Bobbitt, 1972, p. 41). The tradition Bobbitt initiated became highly influential in the USA in the middle of the last century. Its most important advocate was Ralph W. Tyler, whose *Basic Principles of Curriculum and Instruction* was published in 1949. In their work on the history of curriculum theory published in 1995, William F. Pinar, William M. Reynolds, Patrick Slattery and Peter M. Taubman said that Tyler crystallised a half-century of curriculum-development thought in one thin book and was 'perhaps the most influential figure the field has known' (Pinar *et al.*, 1995, p. 149). Tyler's book begins with a statement of a principle of curriculum development which is commonly denominated the *Tyler rationale*:

> The rationale developed here begins with identifying four fundamental questions which must be answered in developing any curriculum and plan of instruction. These are:
> 1. What educational purposes should the school seek to attain?
> 2. What educational experiences can be provided that are likely to attain these purposes?
> 3. How can these educational experiences be effectively organized?
> 4. How can we determine whether these purposes are being attained? (Tyler, 1949, p. 1).

An important strand of Tyler's curriculum science is his emphasis on viewing education as a process of changing the behaviour of learners. He urged that the purposes schools seek to attain should be defined as objectives that 'represent the kinds of changes in behavior that an educational institution seeks to bring about in its students' (Tyler, 1949, p. 6). According to Tyler, educational aims should not specify what the instructor plans to do. They should be learner-centred, not teacher-centred: 'any statement of the objectives of the school should be a statement of changes that take place in students' (Tyler, 1949, p. 44).

The model of curriculum development Tyler presented was intended to ground a method of design, a way to create school curricula starting with the slate wiped clean. From what he wrote about the sources of educational objectives in his first chapter it is evident that he thought of them as end states that are causally related to the means. Discussing evaluations of schools in the fourth chapter, Tyler further argued that objectives should be specific enough so that one could measure or test if students had acquired the behaviour aimed at.

Among Tyler's most important successors was Benjamin S. Bloom, who edited an influential work, *Taxonomy of Educational Objectives,* published

in 1956. His work was a continuation of Tyler's and he posed the same four questions (Bloom, 1956, p. 25) as Tyler (1949, p. 1), taking them to be the fundamental questions of curriculum theory. He furthermore followed Tyler in claiming that his classification scheme could be used to represent and classify all educational goals. Bloom admitted, however, that in one sense the taxonomy was not completely neutral.

> It cannot be used to classify educational plans which are made in such a way that either the student behaviors cannot be specified or only a single (unanalyzed) term or phrase such as "understanding", or "desirable citizen", is used to describe the outcomes. Only those educational programs which can be specified in terms of intended student behaviors can be classified (Bloom, 1956, p. 15).

It seems evident from the quotation that Bloom wanted to exclude what Bobbitt (1972, p. 41) called 'large, undefined purposes'.

The academic discourse on curriculum theory changed around 1970 and became more concerned with understanding curriculum (what is taught or learned in schools) than with methods of curriculum design. Subsequently, different theorists have advocated different understandings of schooling, e.g. as a manifestation of political ideology, or theological world views. Pinar *et al.* (1995) refer to the changes that took place in the 1970s as *reconceptualisation*. Nevertheless, recent textbooks on curriculum design, such as Kellough and Kellough (2007) and Marzano and Kendall (2008), advocate a model similar to Tyler's.

In a section on aims, goals and objectives, Kellough and Kellough (2007, p. 191) advocate learner-centred objectives and say that 'one of the most common errors made by teachers is to state what *they*, the teachers, intend to do rather than what the anticipated student performance is.' According to this textbook, learning objectives are typically derived from more general aims. These general aims are, however, presented as end states that instructors intend to reach rather than as values exemplified by school work, and teachers are supposed 'to be able to assess with precision whether the instruction has resulted in the desired behavior' (Kellough and Kellough, 2007, p. 191). It seems implicit that these end states are supposed to be causally brought about by instruction.

Marzano and Kendall (2008) describe their work as an improvement on the taxonomy presented by Bloom (1956). They do, however, accept Bloom's and Tyler's general notions of what to count as valid aims of education, although they classify them in a different way.

According to Philip W. Jackson (1992), Tyler's model was still dominant among school administrators in the USA in 1980. It reached new heights of influence and ambition, in England and in the USA, when its advocates 'allied themselves with the neoconservative movements of the 1980s' (Reid, 2006, p. 67). Towards the end of last century, Swann (1997) asserted that objectives-based planning was endemic in formal education in England. Two years later, Ecclestone (1999) saw Bloom's taxonomy of objectives as enjoying a renaissance in higher education and learning increasingly

confined to pre-specified, learner-centred outcomes. Quite recently, it was still seen as influential in school administration in these countries by several prominent scholars in the field (Au, 2011; Elliott, 2009; Holt, 2009; Klein, 2009; Short, 2009). The changes that took place in England and the USA in the 1980s had their analogues in other countries such as Finland, Iceland and Sweden in the 1990s, where aims-based organisation, or goal steering, became an integral part of educational policy that emphasised competition and economic efficiency (Jóhannesson *et al.*, 2002).

This model has now been largely incorporated into the so-called Bologna Process in Europe (also known as the Process of Building the European Higher Education Area), where one of the key concepts is *learning outcome* (Karseth, 2006, p. 270). In an article in the *Bologna Handbook*, Kennedy *et al.* (2006) advocate learner-centred specific outcomes in almost the same terms as Tyler used to do. They claim that among 'the great advantages of learning outcomes is that they are clear statements of what the learner is expected to achieve and how he or she is expected to demonstrate that achievement' (Kennedy *et al.*, 2006). In a recent paper, authors Lozano *et al.* (2012) analyse the notion of competence, the key element of the Bologna Process. They argue that, in recent policy documents, the emphasis is on schooling as instrumental to ends that are external to the process of education and can be described as features of individual learners.

The tradition outlined above is not uniform. Its vocabulary and some important doctrines have changed over the years. It has nevertheless been fairly consistent in maintaining the core tenets advocated by Tyler, namely that the aims of education can be, and should be:

1. Causally brought about by administering educational experiences.
2. Specified as objectives that can be attained, reached or completed.
3. Changes in students that are described in advance.

According to these three core tenets, educational aims are, as Peters (1973) pointed out, analogous to bridges to be built or ports to be steered to, i.e. end states described in advance of the means, and causally brought about by school work. In his paper, Peters argued against the first tenet by making a distinction between different ways in which ends and means can be related.

## ARE EDUCATIONAL AIMS CAUSALLY BROUGHT ABOUT BY ADMINSTERING EDUCATIONAL EXPERIENCES?

Within some activities, it is easy to distinguish between aims (or ends or purposes) and means. Turning on the cooker is, for instance, a means to the end of boiling potatoes, boiling potatoes can be a means to the end of serving a meal, and serving a meal can be a means to ends like showing hospitality, alleviating hunger or keeping a daily routine. Within a game of chess, each move is a means to the end of mating the opponent's king. Playing the game can also be a means to the end of winning a tournament or of increasing one's ELO rating. Sometimes, however, we are not sure if what we do is a means to something else. Is winning a tournament or

showing hospitality, for example, a means to something? Maybe it is a way of gaining prestige. But is that also a means to something else?

Over 50 years ago, Carl G. Hempel, who began his philosophical career as one of the founders of logical positivism, gave a persuasive argument for a means-end view of rational action. According to Hempel (1961, p. 5) an action cannot be rational unless it is done for reasons that include ends that the agent seeks to attain. His thesis seems plausible because every time I try to bring something about, I have an aim, and if I am asked what I am trying to bring about, I normally answer the question by mentioning my aim. It can, however, as Peters pointed out, also be argued that there is something fundamentally wrong with the means-end view of human action if the end is always taken to be caused by the means. According to Peters (1973, p. 127), some educational aims function as principles of procedure rather than something to be brought about. A few years after Peters wrote this, Alasdair MacIntyre pointed out that if the means-end model of rational action is applied to work or education it gives rise to a paradoxical position because 'a sense is engendered that the important is being treated as a means to the trivial' (MacIntyre, 1964, p. 7). Although some people may see work as merely instrumental, e.g. as a means by which a family can be raised, there seems to be an element of truth in what MacIntyre said about the paradoxical implications of instrumentalism. This is more evident in the case of education than in the case of work because when the means-end model is applied to education, then what is most valuable, such as understanding, culture or virtue, is seen as means to something else like, for instance, economic gain, consumption or leisure. On the subject of education, Macintyre concluded that:

> Our aim ought to be to help people to discover activities whose ends are not outside themselves; and it happens to be of the nature of all intellectual enquiry that in and for itself it provides just such activity. The critical ability which ought to be the fruit of education serves nothing directly except for itself, no one except those who exercise it (MacIntyre, 1964, p. 19).

It does not follow from this that we should conceive of education as aimless, but it does follow that some of the aims are constituted by the process of education rather than caused by it. If we follow Peters and MacIntyre and acknowledge aims that are not outside education, then we can preserve the truth in Hempel's view without the paradoxical results MacIntyre described. In other words, we need to distinguish between different ways in which ends and means can be related. On the one hand we have intended consequences expected to be caused, or causally contributed to, by the means. On the other hand, we have aims that are constituted or partially constituted by what we do, i.e. realised by the means by being identical to it, or involving parts or aspects that are identical to parts or aspects of it. Aims of this second type are not (at least not entirely) distinct from what we do to attain them.

If we think of, say, marriage, learning, friendship and work as means to the end of living a good life then we are thinking of the second type of means-ends relationships rather than the first. More simple examples from everyday life can also be used to explain this distinction. Suppose, for instance, that I carry someone's bag in order to help that person get home with a load of goods. Carrying the bag is then a means to the end of helping. Carrying the bag and helping are, however, not two events where the former causes the latter. Here, talking of means and talking of ends are two ways to describe the same action, where the second description justifies that action by subsuming it under a category of deeds that do not need further justification. When we state the aims, purposes or ends of our actions, we sometimes list the intended consequences. But sometimes we only describe what we are doing in different terms and thereby subsume it under a category of actions that are valuable or worthwhile. Therefore, I call the distinction made here between two types of means-end relationships the *distinction between causation and subsumption*.

From the premise that every rational action has an aim, it does not follow that it brings about or contributes causally to some end or purpose that is distinct from the action. It is also possible that a rational action serves an end that is not separate from it. Brian Crittenden, an Australian educationist, has made a similar distinction between types of aims. In one of his writings, he expresses it aptly: 'one may have a purpose in acting without having a purpose beyond the action' (Crittenden, 2007, p. 47). MacIntyre's argument shows that if we exclude means-end relationships of the subsumption type, then the requirement that all rational actions have some end or aim leads to unfortunate conclusions. This distinction between causation and subsumption is needed to account for the aims of education because learning can both cause what is sought and, as Peters and MacIntyre argued, be constitutive of worthwhile aims. Since Peters and MacIntyre wrote about the means-end relationship, similar conclusions have been supported in more detail. A recent and insightful example is a book by Pádraig Hogan (2010). Drawing upon the work of MacIntyre and the hermeneutic tradition developed by Martin Heidegger and Hans-Georg Gadamer, Hogan presents an understanding of education as a practice in its own right with its own goods, and argues that if we focus exclusively on the external effects of instruction, we miss the vital elements of education that enable people to flourish through teaching and learning.

Although causation and subsumption are two different ways in which means and ends can be related, they are not exclusive. Sometimes the same action simultaneously exemplifies the end sought and contributes to it causally. In the beginning of the second book of his *Nicomachean Ethics*, Aristotle argued that people learn to be virtuous by acting in accordance with virtue (Aristotle 1941, pp. 952–953, [1103a–b]). On this account, a good act performed by someone who is not yet (completely) virtuous is both worthwhile in itself and good because it causes the doer to become (more) virtuous. In this case, both of the types of means-ends relationships apply to the same action: the end is both partially constituted and partially caused by it. Something similar seems to apply to an example used by Peters

(1973, p. 127), namely equality as an educational aim. If equality as a value or norm is built into school practice and this causes pupils to appreciate the value of equality, then the practice simultaneously exemplifies the end and contributes to it causally.

The distinction between *causation* and *subsumption* is related to another distinction that is sometimes made between aims that are *external* and aims that are *internal* to the means. The internal ones are logical consequences of our description or conceptualisation of the means. The aim of removing dirt is, for example, implied by the concept of washing. External aims are, on the other hand, not logically related to our formulation of the means. In the example above, the end of helping is constituted by carrying the bag. Since helping does not follow from an analysis of the concept of carrying, however, subsumption is different from logical implication. Therefore the distinction between *causation* and *subsumption* is different from the one between *external* and *internal*.

The answer to the question posed in the heading of this section is that some educational aims are causally brought about by administering educational experiences. Some are, however, constituted, rather than causally brought about, by the means.

This section has discussed the first of the three core tenets of the technocratic view. In what follows, I shall argue that the remaining two can also be shown to be suspect with arguments similar to the one Peters gave, namely by making further distinctions between ways in which ends and means can be related.

## ARE EDUCATIONAL AIMS OBJECTIVES THAT CAN BE ATTAINED, REACHED OR COMPLETED?

Obviously some aims are *objectives* that can be attained, reached or completed. I call such aims *closed.* There are also *open aims*, or *ideals*, that we work towards, although the task cannot be completed. Going for a swim this afternoon, painting the kitchen, and going for a walk with one's life partner next Sunday are aims of the first type. Staying healthy, keeping a beautiful home and having a happy marriage are lifelong tasks of the second type.

Educational aims defined in terms of behaviour typically belong to the first category. Learning to use Newton's inverse square law to calculate the gravitational force between two masses may be understood as a closed aim in this sense, but understanding gravity is better seen as an open aim that cannot be conclusively reached. When has a student understood gravity? When she has learned to do simple calculations based on Newton's formula? Is able to explain how massive objects affect space-time? Has mastered the concepts used to describe black holes? Knows what the long search for the Higgs boson was all about? Can participate in debates about the differences between gravity and the other fundamental forces of nature? Understanding gravity is an endeavour which, arguably, cannot be completed. Although memorising facts about the constitutional assembly in Norway in 1814 can be seen as a closed aim, understanding the effects of the French revolution

on politics in Scandinavia or the evolution of democracy in the Nordic countries, cannot be done once and for all. Our understanding depends on other knowledge that is evolving and under review and therefore can never be complete and final.

In light of the examples given, it seems plausible that without open aims the closed ones are, at least in some cases, pointless. Memorising formulae like the inverse square law, or facts about the French revolution, is worth something provided we are trying to understand nature or society. Going for a swim, painting the kitchen, or taking a walk together is desirable if we want to stay healthy, keep a beautiful home or have a happy marriage. In all these examples the open aims are important, something we are, rightly, reluctant to abandon or revise. Relative to them, the closed ones are less important. If it rains, a couple should be happy to give up an aim like going for a walk together and go, say, to the movies instead. Abandoning an ideal or open aim, like a happy marriage or staying healthy, is something much more serious. Likewise, the endeavour to understand nature or society is more important educationally than specific learning objectives such as memorising this or that fact.

Not only is it impossible to complete educational ideals, i.e. open aims, like the examples from physics and history mentioned above but, in some cases, it is also impossible to tell how far one has advanced towards them. One proposal about how to understand the significance of a historical event may be based on a theory that looks promising but later turns out to be ill-founded. Another suggestion may look less promising but later turn out to be deep and interesting. The same applies, *mutatis mutandis*, to what our students may come to think about gravity.

I do not deny that some aims that involve understanding within academic fields can be reached. A beginner in geometry can, for instance, reach an understanding of why the angles of a triangle add up to 180 degrees. Nevertheless, attempting to understand something is often a lifelong and open-ended endeavour. Understanding why the above-mentioned rule about the angular sum of triangles only applies in Euclidean spaces, and what the relationship is between physical space and mathematical spaces, is an ideal rather than an objective.

Ideals, or open aims, are needed to choose and criticise objectives, and modify them in an intelligent way in the light of changing circumstances and unforeseen opportunities. Expounding such aims can be a way of stating the values of education. Any list of open aims is, however, bound to be tentative and provisional, because, as Geoffrey Hinchliffe (2001) has argued, education is a self-critical enterprise and therefore essentially open-ended. In so far as it involves questioning and criticisms of its own value, education enables people to progress to an ever improved understanding of what is educative, and what aims are worthwhile. (For a different argument for this same conclusion see also Harðarson, 2012.)

The answer to the question of whether educational aims are closed aims, that is, objectives that can be attained, reached or completed, is that some

are, but some are not. If we only consider aims that can be completed, we tend to focus on the trivial rather than on what is important.

## ARE EDUCATIONAL AIMS CHANGES IN STUDENTS THAT ARE DESCRIBED IN ADVANCE?

I now turn to the third and last core tenet of the technocratic view and argue that some educational aims are, as a matter of fact, not described in advance of the means.

Curriculum design, like any other activity, can relate to aims in different ways. It is aims-based in the strongest sense if it is derived from previously specified aims or designed to meet them. It is aims-based in a weaker sense if it evolved more or less independently of the aims though each part of it can, however, be justified by appeal to them. The relationship is still weaker if the aims are to some extent adjusted to the previously existing curriculum, or if aims that are not feasible within existing school traditions are excluded or cast aside. At one end of the scale, we have educational aims as *principles of design*, or aims that are specified before any decisions are made about what subjects to teach or how schooling is to be organised and then used to determine each detail of the curriculum. At the opposing end, we have aims as *principles of reform*, or aims that guide piecemeal reform of previously existing traditions. In between these two extremes, there are various intermediate possibilities.

Tyler's model was originally proposed as a method to design school curricula starting with the slate wiped clean. This idea has deep roots in European rationalism and was elegantly expressed by Descartes, who stated, in his *Discourse on Method*, originally published in 1637, that,

> . . . there is very often less perfection in works composed of several portions, and carried out by the hands of various masters, than in those on which one individual alone has worked. Thus we see that buildings planned and carried out by one architect alone are usually more beautiful and better proportioned than those which many have tried to put in order and improve, making use of old walls which were built with other ends in view. In the same way also, those ancient cities which, originally mere villages, have become in the process of time great towns, are usually badly constructed in comparison with those which are regularly laid out on a plain by a surveyor who is free to follow his own ideas (Descartes, 1979, pp. 87–88).

Thinking of aims as plans or guidelines for recreating schools or designing a whole curriculum *ab initio* has its parallels in modern conceptions of top-down design or top-down engineering. The basic idea behind this methodology is that design should begin with a clear statement of what is to be accomplished and progress downwards to details of implementation. Suppose, for instance, that our aim is to make a chocolate cake. We can break that down into two sub-tasks, or subordinate aims, such as baking the cake and making the topping. On the next level below, we break the former sub-aim down into mixing the dough and heating the oven.

Down at the bottom of this hierarchy we have details like breaking the eggs.

The opposite of top-down design is bottom-up design, which begins with what we have. I used chocolate cake as an example to explain what top-down design is like. A similar example can explain bottom-up design. Suppose that the shops are closed and I want to make something to eat. Finding three eggs, some soft cheese and yogurt in the refrigerator and one banana, some honey, vegetable oil and flour in the larder, I ask myself what I can do with what I have. In this case, I do not begin with a detailed specification of the outcome, but with ingredients that would be mentioned close to the bottom of the hierarchy in a top-down model of cooking or baking. When using a bottom-up strategy, specification of the outcome comes last.

Top-down design begins with a clear and detailed statement of what we want and proceeds to specify what we need in order to obtain what we want. Bottom-up design begins with realising what we have and proceeds to figuring out how to use it to obtain what we seek. In short, those who work from top down ask how to get what they want, but those who work from bottom up ask how to make use of what they have. Using bottom-up methods does not exclude working towards aims or having a purpose. In the example above, the purpose is clearly to make something to eat. Nevertheless, a bottom-up approach excludes beginning with an exact description of the outcome, so the aims that can be specified in advance are rather what Bobbitt (1972, p. 41) called 'large, undefined purposes'.

In real life, we often mix these two approaches. Suppose, for instance, that I believe that I need baking powder in addition to the ingredients listed above in order to make a decent cake. If I call my neighbour and ask to borrow some, I am using top-down thinking along with the bottom-up approach, because the need for a raising agent is derived from an idea of what I want to end up with, namely something with the texture of a cake. Likewise, the design of the chocolate cake that was supposed to be an example of top-down engineering relies on a whole world of agriculture and culinary traditions that were not designed as tasks or modules subordinate to the aim of making a cake.

In a book published in 1995, *Tinkering toward Utopia - A Century of Public School Reform*, US historians of education David Tyack and Larry Cuban reviewed research on school reform in the 20th century. One of the questions they posed was: 'Could the state mandate educational excellence by top-down regulations?' (Tyack and Cuban, 1995, p. 80) Their answer was that the history of school reform in the 20th century made it doubtful that technocratic approaches to school improvement could ever work as intended (Tyack and Cuban, 1995, p. 83).

In an earlier publication, Cuban (1992) distinguished between the intended curriculum and what teachers actually teach, i.e. the taught curriculum. There he argued that while 'planned changes have occurred in the intended curriculum in districts and schools, there has been a remarkable durability in the taught curriculum' (Cuban, 1992, p. 216). He attempted to explain why it is hard to change schools by likening the historical curriculum to a coral, 'a mass of skeletons from millions of animals built up

over time, that accumulates into reefs above and below the sea line, and gets battered and reshaped by that sea as it forms into islands. It is a presence that cannot be ignored either by ships or inhabitants' (Cuban, 1992, p. 223). This metaphor is a way of saying that in curriculum work we have to build on what we have, working bottom-up. According to Cuban, numerous attempts at large-scale school reform, engineered in a top-down fashion, follow a pattern that is so familiar as to almost qualify as a ritual (Cuban, 1992, p. 217)—a cycle of condemnation of traditional schooling, grandiose plans and great expectations, stories of astounding results, disappointing reassessments: 'experts pronounce the innovation a failure. Villains are sought' (Cuban, 1992, p. 220).

Other scholars working in the USA have come to similar conclusions as Tyack and Cuban, for example, Seymour B. Sarason (1971) and Barbara Benham Tye (2000). The same is true in Northern Europe where David Hamilton has described ideals of planned education as unrealisable technocratic dreams (Hamilton, 1989, pp. 153–154) and argued that education and schooling are subject to influences beyond technocratic control (Hamilton, 1990, p. xvi).

Scholars more sympathetic to top-down engineering of school curricula, like Tyler (1949), typically admit that actual curricula have not been derived from aims or accurate descriptions of what schools are supposed to accomplish. A more recent example is John White. Although his writings on aims-based education (White, 1982, 1997, 2004; Reiss and White, 2013) do not belong to the technocratic tradition criticised in this paper, White advocates a top-down approach where specific objectives and details of implementation are derived from the most general aims. School improvement schemes should, he says, start with ensuring that the aims which 'are to power everything else' are soundly based. The next stage is 'to see what follows from these aims about sub-aims which are their necessary conditions.' After the sub-aims have been identified, experts in various fields are called on to figure out the details of implementation (White, 1997, pp. 52–54). Commenting on papers in a publication he edited a few years later, White concedes, however, that custom is tenacious and that the papers bear out that the present curriculum of English schools was essentially created in the 19$^{th}$ century (White, 2004).

Many of the educational aims that are operative in schools are not, as a matter of fact, principles of design that were decided on prior to and independently of school practice. Could they be? I do not think philosophical argument can show conclusively that top-down design of school curricula is impossible. We have, nevertheless, strong historical evidence that the task is harder than envisioned by Tyler and other advocates of top-down methodologies.

## CONCLUDING REMARKS

I have made three distinctions between different types of means-end relationships.

| | Left column | Right column |
|---|---|---|
| Distinction 1: | Causation | Subsumption |
| Distinction 2: | Closed aims (or objectives) | Open aims (or ideals) |
| Distinction 3: | Principles of design (top-down) | Principles of reform (bottom-up) |

The technocratic view of curriculum design focuses on the types listed in the left column. This view of educational aims favours prescriptivism in design of school curricula and a culture of control described by Kevin Williams (2007, pp. 221–226) as leaving little room for spontaneity and creative responses to unforeseen questions and opportunities.

It is true in a trivial sense that any worthwhile activity serves an aim of some sort because whatever is worthwhile about it can be described as an aim. It seems also beyond doubt that those who organise schools should be mindful of something that is truly good, desirable, beneficial and worth learning—that is, of good and worthy aims. If what I have said about the first distinction is right, it is, however, a mistake to think of all these aims as states of affairs or results that are caused by school work or educational experiences. It is also wrong to assume that educational aims can generally be completed or reached. Some of the most important of them are not learner-centred objectives that can be completed, but ideals in the sense I outlined when I explained the second distinction. Last but not least, as a matter of fact, educational aims do not normally function as principles of design in the sense given by the third distinction.

It does not follow from my arguments that aims of the types listed in the left column lack value. Account, however, needs to be taken of aims of the types listed in the right column. If the focus is exclusively on goods that are caused by educative activities then opportunities to make learning an experience that is rewarding in itself will be missed. If all our aims are closed rather than open, we lack the intellectual repertoire needed to criticise educational aims and modify them to meet changing circumstances. Thinking of aims exclusively as principles of top-down design gives rise to unrealistic expectations about what can be accomplished through detailed and exact planning. Bottom-up methods and aims as principles of reform are necessary to make the best of what we have and to see opportunities, rather than hindrances, in local conditions.

If we are not mindful of how multifarious educational aims and purposes are, it may be hard to resist the temptation of the technocratic view that, according to Peters (1973, p. 123), ‘haunts all our thinking about the promotion of what is valuable.’ In my opinion, it is at least possible that one of the reasons why so many programmes of school improvement have failed is that they have been based on a simplistic and unrealistic view of educational aims.

*Correspondence*: Atli Harðarson, University of Iceland, School of Education, v/ Stakkahlíð, Reykjavík, 105 Iceland.
Email: atlivh@hi.is

**ACKNOWLEDGEMENTS**

This paper is based on my PhD work in education at the University of Iceland. I want to thank my supervisors, Professor Kristján Kristjánsson and Professor Ingólfur Ásgeir Jóhannesson, for their academic guidance. I also want to thank the University of Iceland Research Fund for their financial support.

**REFERENCES**

Aristotle (1941) *The Basic Works of Aristotle* (New York, Random House.)

Au, W. (2011) Teaching under the New Taylorism: High Stakes Testing and the Standardization of the 21st Century Curriculum, *Curriculum Studies*, 43.1, pp. 25–45.

Bloom, B. S. (1956) *Taxonomy of Educational Objectives, the Classification of Educational Goals – Handbook I: Cognitive Domain* (New York, David McKay Company).

Bobbitt, F. J. (1972) [1918] *The Curriculum* (New York, Arno Press).

Crittenden, B. (2007) Aims, Intentions and Purposes in Teaching and Educating, *Educational Theory*, 24.1, pp. 46–51.

Cuban, L. (1992) Curriculum Stability and Change, in: P.W. Jackson (ed.) *Handbook of Research on Curriculum: A Project of the American Educational Research Association* (New York, Macmillan Publishing Company).

Descartes, R. (1979) *The Philosophical Works of Descartes, Volume 1* (Cambridge, Cambridge University Press).

Ecclestone, K. (1999) Empowering or Ensnaring? The Implications of Outcomes-based Assessment in Higher Education, *Higher Education Quarterly*, 53.1, pp. 29–48.

Elliott, J. (2009) Connecting Action with Research, in: E. C. Short and L. J. Waks (eds.) *Leaders in Curriculum Studies: Intellectual Self-portraits* (Boston, Sense Publishers).

Hamilton, D. (1989) *Towards a Theory of Schooling* (London, The Falmer Press).

Hamilton, D. (1990) *Learning about Education* (Milton Keynes, Open Universiy Press).

Harðarson, A. (2012) Why the Aims of Education Cannot Be Settled, *Journal of Philosophy of Education*, 46.2, pp. 223–235.

Hempel, C. G. (1961) Rational Action, *Proceedings and Addresses of the American Philosophical Association*, 35, pp. 5–23.

Hinchliffe, G. (2001) Education or Pedagogy, *Journal of Philosophy of Education*, 35.1, pp. 31–46.

Hogan, P. (2010) *The New Significance of Learning: Imagination's Heartwork* (New York, Routledge).

Holt, M. (2009) The Scenic Route, in: E. C. Short and L. J. Waks (eds.) *Leaders in Curriculum Studies: Intellectual Self-portraits* (Boston, Sense Publishers).

Jackson, P. W. (1992) Conceptions of Curriculum and Curriculum Specialists, in: P. W. Jackson (ed.) *Handbook of Research on Curriculum: A Project of the American Educational Research Association* (New York, Macmillan Publishing Company).

Jóhannesson, I. Á., Lindblad, S. and Simola, H. (2002) An Inevitable Progress? Educational Restructuring in Finland, Iceland and Sweden at the Turn of the Millennium, *Scandinavian Journal of Educational Research*, 46.3, pp. 325–339.

Karseth, B. (2006) Curriculum Restructuring in Higher Education after the Bologna Process: A New Pedagogic Regime? *Revista Española de Educación Comparada*, 12, pp. 255–284.

Kellough, R. D. and Kellough, N. G. (2007) *Secondary School Teaching: A Guide to Methods and Resources* (Upper Saddle River, NJ, Pearson/Merrill Prentice Hall).

Kennedy, D., Hyland, Á. and Ryan, N. (2006) Writing and Using Learning Outcomes: A Practical Guide, in: E. Froment, J. Kohler, L. Purser and L. Wilson, (eds.) *EUA Bologna Handbook – Making Bologna Work* (article C 3.4–1) (Berlin, Raabe Verlag).

Klein, M. F. (2009) Pivotal Events and People in My Career, in: E. C. Short and L. J. Waks (eds.) *Leaders in Curriculum Studies: Intellectual Self-portraits* (Boston, Sense Publishers).

Lozano, F. J., Boni, A., Peris, J. and Hueso, A. (2012) Competencies in Higher Education: A Critical Analysis from the Capabilities Approach, *Journal of Philosophy of Education*, 46.1, pp. 132–147.

MacIntyre, A. C. (1964) Against Utilitarianism, in: T. H. B. Hollins (ed.) *Aims in Education: The Philosophic Approach* (Manchester, Manchester University Press).
Marzano, R. J. and Kendall, J. S. (2008) *Designing and Assessing Educational Objectives: Applying the New Taxonomy* (Thousand Oaks, CA, Corwin Press).
Peters, R. S. (1973) *Authority, Responsibility and Education* (London, George Allen & Unwin).
Pinar, W. F., Reynolds, W. M., Slattery, P. and Taubman, P. M. (1995) *Understanding Curriculum: An Introduction to the Study of Historical and Contemporary Curriculum Discourses* (New York, Peter Lang Publishing).
Reid, W. A. (2006) *The Pursuit of Curriculum: Schooling and the Public Interest* (Greenwich, CT, Information Age Publishing).
Reiss, M. J. and White, J. (2013) *An Aims-based Curriculum: The Significance of Human Flourishing for Schools* (London, Institute of Education Press).
Sarason, S. B. (1971) *The Culture of the School and the Problem of Change* (Boston, Allyn and Bacon).
Short, E. C. (2009) Introduction: In Anticipation of these Essays, in: E. C. Short and L. J. Waks (eds.) *Leaders in Curriculum Studies: Intellectual Self-portraits* (Boston, Sense Publishers).
Swann, J. (1997) How Can We Make Better Plans? *Higher Education Review*, 30.1, pp. 37–55.
Tyack, D. and Cuban, L. (1995) *Tinkering Toward Utopia: A Century of Public School Reform* (Cambridge, MA, Harvard University Press).
Tye, B. B. (2000) *Hard Truths: Uncovering the Deep Structure of Schooling* (New York, Teachers College Press).
Tyler, R. W. (1949) *Basic Principles of Curriculum and Instruction* (Chicago, The University of Chicago Press).
White, J. (1982) *The Aims of Education Restated* (New York, Routledge).
White, J. (1997) Philosophical Perspectives on School Effectiveness and School Improvement, in: J. White and M. Barber (eds.) *Perspectives on School Effectiveness and School Improvement* (London, University of London, Institute of Education).
White, J. (2004) Conclusion, in: J. White (ed.) *Rethinking the School Curriculum: Values, Aims and Purposes* (London, RoutledgeFalmer).
Williams, K. (2007) *Education and the Voice of Michael Oakeshott* (Exeter, Imprint Academic).