

A BRIEF HISTORY OF EDUCATIONAL OBJECTIVES

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General outlook

The term *objective* is frequently used by educators and laymen as a synonym for *goal*. Sometimes it can be replaced by *aim* or *intention*, without appreciable loss of meaning. However, it has also come to acquire a more technical meaning, whose significance is not so readily apparent to those unfamiliar with its use in the education literature. In this more specialised sense, it normally refers to an intended and pre-specified outcome of a planned programme of teaching and it is expressed in terms of what it is hoped the student will have learnt. The two usages are often distinguished by referring either to general objectives (goals) or to specific objectives (intended learning outcomes).

This more technical use of the term *objectives*, with its associated demand for lengthy detailed statements of intended learning outcomes, is criticised by a number of writers on both practical and theoretical grounds. Thus, to help the reader understand some of the controversies, as well as the development among some educators of a specialised terminology for communicating objectives, this article will focus on a brief historical survey. It introduces different recommendations for the specification of objectives, with special attention directed both to the notion of levels of specification and to various formulations of the concept of behavioural objectives. The ensuing discussion of problems associated with the status of objectives examines structural relationships between objectives, the logic of intentions expressed by an objective, and the political status of statements of objectives. Finally, the present paper will analyse the uses and usefulness of objectives in curriculum development, in lesson planning, in instructional design, in evaluation, and, of course, in the process of

communicating to students.

First of all, let us present a clear historical review on the stages of development of educational objectives throughout time. The origin of thinking about objectives in a more technical manner is usually attributed to Bobbitt (1918), whose book *The Curriculum* was probably the earliest systematic treatise on curriculum theory. The circumstances were significant. Only five years previously, Bobbitt had been the first to formulate principles of educational administration directly based on Taylor's theory of scientific management (1912). Industrial language suffused the book while Bobbitt readily accepted Spencer's utilitarian approach to knowledge selection. Where Spencer (1860) had merely asserted that '*the first step must be to classify, in order of importance, the leading kinds of activity which constitute human life*', Bobbitt proposed to use Taylor's time and motion study techniques to make this a reality.

A similar position was advocated by Charters in 1924. In his notes for curriculum construction, he emphasises the necessity that first of all the major objectives of education should be determined, by means of a study regarding the life of man in its social setting. Secondly, these objectives should be analysed and translated into ideas and activities, continuing this process down to the level of working units. Pendleton's taking this advice resulted in his listing 1581 objectives for English. On the other hand, Billings, doing the same thing, listed 888 important generalisations for social studies teachers. Hence the objectives movement was already collapsing under its own weight when its prevailing utilitarian ideology was eclipsed by the progressivism of the 1930s. Its revival by Ralph Tyler, a former student of Charters, was in a different context – that of diagnostic testing and evaluation – and with a different philosophy – one

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of individual development rather than utilitarian efficiency (Smith and Tyler, 1942). Tyler's Eight-year Study was a cooperative venture with a group of progressive schools; one of its main purposes was to formulate educational objectives which involved pupils in thinking for themselves and applying their knowledge rather than merely memorising it or performing routine exercises. This aspect of the work was further developed by Tyler's former student, Benjamin Bloom, and a group of college examiners who eventually published two taxonomies of objectives, one for a cognitive domain and one for an affective domain.

Tyler's approach to curriculum development was based on reciprocal interaction between the formulation of objectives and the evaluation of their attainment (Tyler, 1949). Evaluation was important for the improvement of educational programmes and proper evaluation required knowledge of what objectives the programmes were aiming to achieve. Thus, objectives needed to be formulated with sufficient specificity to guide evaluation and subsequent attempts at course improvement in which the objectives themselves might be altered, both to include new possibilities and to remove that which was no longer considered feasible or of sufficiently high priority. For this purpose Tyler recommended that curriculum planners use behavioural objectives, in which both the content and the intended type of student behaviour are specified, and that course objectives be summarised into a two-dimensional matrix with content categories along one dimension and behavioural categories along the other.

It is sometimes forgotten that Tyler and the taxonomists defined objectives at a relatively general level and it was Mager's influential book on preparing for programmed instruction (1962) which more fully recaptured the spirit of Bobbitt. Moreover, like Bobbitt before him, Mager derived his position from the behavioural technology approaches of trainers in military and industrial settings.

In his influential paper written in 1962, he argued that behaviour should be specified only in observable terms and outlawed the use of verbs like 'know', 'understand', 'feel', or 'appreciate', that were indicative only of unobservable internal states of mind. Then, he insisted that the standard of performance should be specified in minute detail, providing an assumption of mastery (i.e. 90% of the students should get 90% of the questions correct on a test covering a given topic. Further on, to avoid any ambiguity, he asked for the conditions of performance to be clearly identified. Given the emphasis on the value of the

terminal performance itself, objectives which satisfy Mager's criteria are sometimes referred to as performance objectives, though the term behavioural objective is still more usual.

In 1965, Gagné was among the many psychologists who welcomed Mager's operational definition because it would help to determine the particular type of learning required. Unlike Tyler who was concerned with providing general guidance to teachers and curriculum planners, Mager and Gagné were interested in instructional design, which at that time was seen in terms of the detailed planning of instructional events in accordance with the principles of behaviourist psychology. If the design did not always lead to programmed learning, it was still expected to yield something very like it.

Several authors took up Mager's guidelines on specifying observable behaviours and gave special attention to the action verbs whose incorporation into the statement of an objective was said to meet this requirement. More recently, however, in 1974, Gagné and Briggs, realising that operational definitions of performance conveyed little information about the kind of learning that had taken place, recommended the addition of a '*learned capability*' component to the specification of an objective [5]. There would seem to be some contradiction between the focus on performance and the abandonment of operationalism implicit in the addition of the learned capability component.

Finally, it should be noted that it is possible for a planning group formulating objectives to pursue each of the four dimensions mentioned in this discussion (content, behaviour, conditions, and standards) to varying degrees of specificity, and this issue is further discussed below.

Levels of specificity and the limits of specification

In 1965, Krathwohl distinguished three levels of specificity and suggested that each is appropriate for a different purpose.

At the first and most abstract level are the quite broad and general statements, most helpful in the development of programs of instruction, for the laying out of types of courses and areas to be covered, and for the general goals towards which several years of education or an entire unit such as an elementary, junior, or senior high school might strive.

At a second and more concrete level, a behavioural objectives orientation helps to analyse broad goals into more specific ones, which are useful as building blocks for curricular instruction. These behaviourally

stated objectives are helpful in specifying the goals of an instructional unit, a course, or a sequence of courses.

Third and finally, there is the level needed to create instructional materials. Such materials are the operational embodiment of one particular route (rarely are there multiple routes included) to the achievement of a curriculum planned at the second and more abstract level, the level of detailed analysis involved in the programmed instruction movement.

The first movement corresponds to what Taba called in 1962 a 'platform for general objectives', though it may also apply to a specific programme within a school [10]. The second level corresponds to Tyler's and Taba's versions of the term 'behavioural objective', and is also the level at which the taxonomies were developed. In 1976, Kratwohl calls them 'general objectives', a term which Taba reserves for level one.

While it is customary to describe levels of specificity in terms of language and purpose, the addition of a quantitative density dimension can also sometimes be helpful. Since objectives are usually formulated in groups or clusters, an index of density can be simply defined as:

$$\frac{\text{number of objectives in list}}{\text{hours of learning the list covers}}$$

Another writer to identify three levels of objectives was Scriven, in 1967, though his perspective was primarily epistemological [8]. His first level, entitled a 'conceptual description of educational objectives', gives priority to conceptual structure and to student motivation. Then, his second level, 'manifestation dimensions of criterial variables', is concerned with the various ways in which a student's conceptual knowledge and understanding and his or her attitudes and non-mental abilities may be manifest or made observable. The third level provides an operational description of an objective in terms of how it is to be assessed. Thus, Scriven's second and third levels correspond fairly closely to those of Kratwohl, but the first level has quite a different character, being based on curriculum content rather than general goals.

Both Kratwohl and Scriven say that level one statements of objectives can guide the development of level two objectives, and that level two statements can guide level three. But this process is much more complicated than simple logical deduction. There is no defensible set of rules or procedures for deriving specific objectives from general objectives because, according to Hirst's point of view, (1973):

- Selection decisions are made involving judgements about appropriateness and priority;

- The kind of analysis required goes beyond the existing state of philosophical and psychological knowledge.

In 1970, Gronlund makes a useful distinction between *minimum essentials* and *developmental objectives* [6]. While *minimum essentials* can be handled as level three objectives, *developmental objectives* are so complex that:

- Only a sample of representative behaviours can be tested.
- Teaching is directed towards the general class of behaviour that the objective represents, rather than towards the sample that is specifically tested.
- Standards of performance are extremely difficult, if not impossible to define; so, it is more meaningful to talk of encouraging and directing each student towards the maximum level of development he or she is capable of achieving.

A more radical distinction is made by Eisner in 1969. He argues for separate treatment of instructional and expressive objectives. While instructional objectives can be pre-specified and mastered, expressive objectives are concerned with outcomes that cannot and should not be pre-specified because some form of original response is being sought. An expressive objective may specify an educational situation or task, but it cannot predict what will be learnt from what is intended to be an idiosyncratic response. While more usually associated with art and literature, the term is equally applicable to essays and projects in which students are encouraged to develop personal perspectives and insights.

Use of objectives in curriculum development

Objectives may be used in curriculum development without any assumption that more detailed specification by teachers or by instructional designers will necessarily follow.

The arguments in favour of using objectives for curriculum development purposes alone would appear to be:

- that they clarify the intentions of the developers;
- that they focus attention upon the learner as well as the teacher.

What the use of objectives cannot do is to resolve disputes over what should be taught, though sometimes they may help to map out the issues. Objectives at the second level will never be devoid of ambiguity, and some educators are more skilful than others in using the language of objectives, so the question whether or not objectives do indeed clarify intentions can only be answered in terms of individual cases.

At institutional level, however, the context of

curriculum specifications is quite different because formal curriculum documents are only a small part of the communication between the teachers concerned. A statement of objectives then has a strongly indexical character, in which its meaning is enriched by and partly dependent upon other communications which occurred before, during and after its preparation.

An important criticism from a theoretical rather than a practical perspective does not concern the use of objectives, actually, but focuses on the approaches to curriculum development which assume that statements of objectives are adequate on their own in the first stage of curriculum planning. Several authors, such as Stenhouse in the '70s, have argued for prime attention to content; others for an early consideration of assessment, which often counteracts the impact of objectives; and yet others for the early specification of certain crucial and often non-traditional learning experiences such as project work, community service, work experience, or artistic performance. Many of these other curriculum elements can be so important for a course that they need discussion prior to any detailed formulation of objectives. Moreover, when curriculum development is viewed as a problem-solving activity with a premium on creative imagination, an early emphasis on objectives may lead only to the reformulation of traditional practice at a time when more radical change is what is really needed, as Eraut envisaged in 1975 [4]. Thus, when the emphasis is on curriculum innovation, objectives may not be a starting point but a late development of the curriculum maker's platform, in Walker's opinion, expressed in 1971.

The argument against using objectives which has probably received the greatest support is that they are only appropriate for some areas of the curriculum. In 1969, Eisner eloquently argued against behavioural objectives in the arts, Stenhouse, in 1971, against their usefulness for describing higher level learning in the humanities, and Eraut, in 1975, questioned their utility in the field of social sciences [4]. In all these cases it is the individuality and complexity of students' work which is said to limit the applicability of the language of objectives. Two major issues are at stake: the nature of the subject and the autonomy of the learner. Both have been and will long continue to be matters of debate among educators, although many would now agree that objectives are more helpful in some situations than in others. The main problem lies in recognising those situations in which the use of objectives is appropriate.

Given the problems of deriving, formulating and justifying objectives, it is much safer if, in the context

of the education system as a whole, objectives were regarded as means, rather than ends. The courses and curricula that are planned constitute the means by which students are guided towards a variety of ends. In this context, the language of objectives provides one means of clarifying intentions during the planning process.

Use of objectives in lesson planning

The claim that highly specific objectives (Kratwohl's first level) improve the quality of lesson plans and, subsequently, pupils' performance, is usually argued by asserting that good lesson planning is logically dependent on knowing what one is seeking to achieve, and that it necessarily entails having learning objectives. Both parts of this assertion have been challenged. To begin with the second – one counterargument is that teachers know what they are doing because they are working in a recognised teaching tradition. Provided that they can relate the content of their lessons to a topic on a syllabus, a chapter in a textbook, or a possible question in an examination, they do not need any separate list of course objectives. Once a tradition is clearly established, objectives become redundant. The use of objectives in such a context is less likely to be one of defining the course, or one of inspiring teachers to move their students beyond the level of routine completion of textbook exercises and memorization of content.

When more informal approaches to teaching are adopted, objectives are less likely to be implicit in textbooks, syllabi and examinations. In 1976, Sockett argued that objectives were totally inadequate as descriptions of teachers' ends because a teacher always has other equally important ends, to which his/her actions were directed: being fair to groups, getting students to ask questions, building up weaker children's confidence, developing inter-pupil discussion, and so on [9]. Though one can argue that these *procedural aims* should be included as general course objectives, they need to be pursued over a long period. Such aims have a justifiably important influence on teaching, but cannot be converted into specific objectives for individual lessons.

Another criticism came from Jackson in 1968: during his interviews with teachers judged as outstanding, he discovered that both their planning and their classroom actions were not aimed directly at the achievement of objectives, but at creating productive learning conditions and securing student involvement. Therefore, good lesson planning is dependent on

having appropriate activities and strategies to achieve a high degree of student involvement. Where there is no established tradition, course objectives may be helpful in choosing between possible activities and in alerting a teacher to put special opportunities to good use; but it is unreasonable to expect the teacher to sustain a detailed knowledge of how each of 30 or more students is progressing towards each of a dozen or so objectives in every single lesson. Worse still, it might distract the teacher from the primary task of securing involvement in learning.

A further argument against using highly specific objectives in lesson planning is that they overconstrain the teacher. Both Jackson and Socket characterise good teaching as being strong on opportunism [9]. Moreover, as early as 1968, Atkin suggested that higher order objectives were best pursued whenever the opportunity appeared rather than according to pre-planned schedules. Eisner's expressive objectives also resist very precise planning [3].

As a conclusion, using general course objectives to guide lesson planning is productive and it is quite a different procedure from allowing lesson planning to be dominated by the detailed specification of behavioural objectives. However, the use of objectives should remain a matter of personal preference expressed by the teacher, as the teacher is supposed to be the person mainly concerned with effective class-work and responsible, well prepared students.

Use of objectives in instructional design

The term *instructional design* commonly refers to the design of teaching and learning materials by a specially designated team, who may or may not include the teachers responsible for their implementation.

The claim that using highly specific objectives at Kratwohl's third level improves the quality of instructional design is prominent in the literature and it is often taken for granted. It would be more reasonable if the opinion above were restricted to the following: *highly specific objectives are needed for individualised learning programmes based on mastery learning*, as it would have much stronger theoretical and practical backing.

Use of objectives in evaluation

It is in the context of evaluation that the concept of objectives has been continuously used and elaborately improved. Tyler's primary concern was with evaluation and the taxonomies were also developed for

evaluation purposes.

Intended student outcomes can often be expressed either as objectives or in terms of performance on some task or in some anticipated situation. Thus, an evaluation concerned with the achievement of intention will usually need either to collect existing evidence of student performance (folders of work, test papers, etc.) or to devise some means of assessing what students have learnt. If some differentiated comment on student performance is required, this can be achieved by separate reports on each performance task or by using a list of objectives and commenting on the achievement of each. Classification schemes may be used to help set out the range of objectives, either at the data analysis stage or as an aid to constructing assessment instruments wherever necessary.

The convenience of collecting student achievement data in this way and using them for improving the course by what is now called formative evaluation is what led to Tyler's model of curriculum development, and it helps to explain the continuing popularity of that model with many evaluators, as Bloom specifies in 1981 [1]. Moreover, as other disputes about performance (Stake, 1973) and careful studies of test performance (Cicourel, 1974) have revealed, the kind of cognitive behaviour which leads to a particular performance is not necessarily the same as what was intended. Students interpret tasks differently and get tested in many different contexts. Thus, the usefulness of information about objectives and their achievement is dependent on additional information about conditions which can assist in their interpretation. Even statements of objectives have to be seen in context, as they are not absolute criteria, but mere indications of people's attempt to express their intentions.

A further problem in evaluating large-scale educational programmes is that their objectives are usually negotiated as part of some political compromise, being, therefore, ill-suited for bearing the burden of a programme evaluation based on educational objectives, as Cronbach stated in 1980 [2]. Closely related to the use of objectives in evaluation is their use in monitoring of student achievement and in accountability.

Use of objectives in communicating to students

There is much more empirical evidence on this issue than on other uses of objectives. Several reviews on this topic have been published throughout time: Hartley and Davies, 1974; Faw and Waller, 1976; Lewis, 1981 [7]. As methods for drawing learners'

attention to what is expected of them, Hartley and Davies discuss pre-tests, overviews and advance organizers. Faw and Waller also include inserted questions. Most of the evidence reported is based on work with college or high-school students and very little with other populations, and it has stemmed from situations of learning from textual material rather than a teacher.

The general conclusion is that clear indications given to students enhance their learning and objectives are only one of the means of doing it.

Conclusions

An educational objective cannot be considered in isolation, either from its companion objectives, or from objectives which are intended to come before or after it in some planned sequence. It is necessarily embedded in some structure of intentions, whether this is described explicitly in some plan or document, or left implicit in the way the curriculum is organised. However, the list format which is commonly used to communicate sets of objectives is not suitable for conveying structural information.

There may also be considerable differences between the structure embedded in course materials, the structure in the mind of the teacher, and the structures developing in the mind of each student.

When compilers of objectives do pay attention to structural assumptions, they frequently turn to the concept of a learning hierarchy. A group of objectives is said to constitute a learning hierarchy when it can be represented by a structure rather like a family tree, in which the achievement of each objective is dependent on the achievement of all the objectives connected to it on the level below. A hierarchy is usually developed by logical analysis, breaking down an objective into sub-objectives until each step constitutes a clearly distinguishable learning task. Both the dependency claims of the hierarchy and the concomitant assumption that the level of analysis is appropriate may need to be empirically verified.

From the student's point of view, what probably matters most is the position of an objective on the immediacy – remoteness scale. Many objectives will appear to students both as conceptually remote (because they are far from what seems to be relevant in the community outside school) and as temporally remote (because their utility lies far in the future). Perceiving links between their immediate objectives and possible ultimate goals can be crucial for some students' motivation.

The suggestion is that objectives being communicated to students should be accompanied by individual rationales or justifications which relate them to more distant and more valued goals.

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