*Critical review*

# Fieldwork in Geography: A Review and Critique of the relevant literature on the use of objectives.

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## Contextualisation

Having an aim in mind for a particular educational activity is usually taken to be a key part of lesson planning. Often such an aim is realised in terms of learning related 'objectives'; intended outcomes for the activity in question. The critical review that follows examines the notion of 'objectives', contrasting it to a more learning 'process' orientated approach. Geography fieldwork is used as a context in which these issues are explored.

**Abstract**: *Learning is the ultimate goal of all educational processes. It takes place through the interplay of a number of influential but related factors. More importantly, learning is purposeful and not randomised. This explains why, at the end of any learning process, it is essential to gauge the extent to which learning has actually occurred. The literature reveals that this can be done through pre-specifying the learning objectives* (***objectives model***) *or using an open-ended approach in which objectives are not specified at all* (***process model***). *This paper argues that as students learn Geography through fieldwork, the decision to use the former or latter model is immaterial because what matters most is how much effective learning takes place rather than the model used in the lesson preparation process. The guiding principle, therefore, should be on* ***meaningful learning****, which is the ultimate goal of all sound educational processes and not whether objectives have been specified or not.*

## Background

The purpose of this research is to investigate the learning benefits of fieldwork to 'A' level geography students in Zimbabwe. The study was therefore carried out to answer the following key research question:

> How does fieldwork focused on a given topic enhance deep level learning by 'A' level geography students in Zimbabwe?

In the context of this study, deep level learning is learning focusing on the interpretation and analysis of the learnt material as opposed to surface learning which encourages rote learning. The review and critique of related literature in the study focuses on learning as it relates to fieldwork in Geography. This is imperative because learning is the ultimate goal of all educational processes. In order to highlight the pivotal role of learning as it pertains to fieldwork, however, it is essential to realise that learning during fieldwork takes place through the interplay of a number of influential but related factors. This explains why, besides learning, it is apposite to examine the following factors in this review, all of which impact on learning in various ways:

- the meaning of fieldwork;
- history of fieldwork;
- rationale for fieldwork;

- objectives for fieldwork;
- fieldwork strategies;
- structure of the field experience;
- fieldwork and information technology (IT);
- assessment of fieldwork;
- virtual fieldwork;
- constraints and possible solutions to fieldwork; and
- the future of fieldwork.

Such an approach to the review of related literature, I believe, gives a holistic picture of how a number of elements act in concert to influence learning through fieldwork. This paper reviews and critiques the related literature as it pertains to the objectives of fieldwork

## Objectives of fieldwork

### *Overview*

As we examine the literature on the objectives of fieldwork, it is important to ascertain that these objectives equally serve, perhaps refine, those that teachers hope to achieve when they teach Geography in a classroom setting. The objectives achieved through classroom practices and those through fieldwork are intertwined. This is so because at the end of it all, both strategies, teaching in the classroom (through exposition, for example) and fieldwork, should all help promote pupils' understanding of Geography. The objectives which fieldwork purports to serve should not be divorced from the content that the students at any given level will be learning. What this means is that they must satisfy the requirements of the topics outlined in a given course programme. It is also useful to note that fieldwork has no objectives of its own per se. These objectives, as Donaldson and Swan (1979) note, are those of the subjects being taught (for example, science, geography, or geology). What teachers do, according to Donaldson and Swan (*op. cit*.) is simply deal with the methodologies involved in going outside the classroom, to learn and teach that which can best be learned and taught outdoors. In addition, a review of the objectives of fieldwork cannot be done meaningfully without making reference to the whole concept of objectives of curriculum and instruction. It is thus essential to prefix what the literature says about the objectives of fieldwork with an overview of the debate about whether objectives should be used or not. Perhaps such an approach would help establish a firm link between this and the use of objectives in geography fieldwork.

#### The Objectives Model versus the Process Model

The issue of 'objectives' in education in general and learning processes in particular has attracted much attention from educationalists. Some have advocated objectives based curriculum, that is, the 'objectives model' school spearheaded by Tyler (1949). Others have advanced arguments in favour of an objectives free curriculum, that is, the 'process model' fraternity, whose chief protagonist is Stenhouse (1975). The teaching and learning vehicle under review, 'fieldwork', has also attracted attention (Smith, 1999; Kent, Gilbertson, Hunt, 1997; Lonergan and Andresen, 1988; Smith, 1987; Van Matre, 1979; Boardman, 1974) from

many geography-orientated authors who have written on the issue of fieldwork objectives. The task here is to establish where the literature specifically places the whole notion of objectives between the 'objectives model' – 'process model' continuum and still leave efforts to use fieldwork strategies meaningful and essential to the teaching and learning of Geography.

**Objectives Model**

Stenhouse (1975) says that the classic model based on objectives can be linked to the work of Bobbitt, as featured in *The Curriculum* (1918) and *How to make a Curriculum* (1924). Bobbitt's message is that "human life…consists in the performance of specific activities. Education which prepares for life is one that prepares definitely and adequately for these specific activities" (Bobbitt, 1918, p 42). Kliebard (1968) gives an elaboration of Bobbitt's thinking by commenting that:

> Bobbitt undertook the specification of those activities as educational objectives. By setting out the range of man's adult activity in detail, he hoped to introduce a practicality and scientific objectivity into the uncertainty and speculation that surrounded the question of the purposes of schooling. (Kliebard, 1968, p 243)

The concept of objectives was further developed and articulated by Tyler (1949). Bearing in mind that a school is a purposive institution, Tyler (1949, p 1) asks: "what educational purposes should the school seek to attain?". Inevitably, the view here is that, the identified purpose of learning in schools, is equated with an objective or a goal. An important contribution of Tyler's work, which has a strong bearing on the objectives of fieldwork, is that the educational purposes of a school should focus on a student's change in behaviour as a consequence of receiving instruction in a learning situation. Tyler (1949) suggests that:

> Since the real purpose of education is not to have the instructor perform certain activities but to bring about significant changes in the students' patterns of behaviour, it becomes important to recognize that any statement of the objectives of the school should be a statement of changes to take place in students.
>
> (Tyler, 1949, p 44)

Taba (1962) also contributed to the debate on objectives by differentiating aims from objectives. The former refers to broad statements of purpose and intention. The latter come into play when general statements of aims are broken down into more specific behavioural objectives. The level of achievement of the general aims is arrived at by finding out if individuals acquire certain knowledge, skills, techniques and attitudes as a result of a learning process. The more specific outcomes are generally called educational objectives (Taba, 1962). Objectives, therefore, "serve as a guide for the evaluation of achievement" (Taba, 1962, p 199).

The essence of the 'objectives model' of curriculum development is a means of translating the study of education into the practice of education. Similar sentiments were echoed by Bloom, Krathwohl and Masia (1956) and later Krathwohl, Bloom and Masia (1964). In their highly influential taxonomies of educational objectives, attention was put to the changes produced in individuals as a result of educational experiences. Bloom's taxonomy focused on classifying the intended behaviour of students, that is, "the intended behaviour of students, the way they act, think or feel as a result of participating in some unit of instruction" (Bloom *et al.,* 1956, pp 12-13), one of which could be through fieldwork. In fact, as noted by Hogben (1972), Bloom's taxonomy has impacted more than any other single event, for the overwhelming interest, which has been seen over a long period of time in the identification, description, classification and measurement of educational objectives.

Admittedly, this taxonomy has a number of strengths such as simplicity and the sequential development of its domains. The taxonomy supports the thinking of those who advocate the 'objectives model' (Smith, 1999; Smith, 1987; Boardman, 1974; Hogben, 1972; Wood, 1968; Lewis, 1965; Tyler, 1949), who collectively believe that it is impossible to teach without specifying a lesson's objectives, just as we cannot take students into the field without knowing what we want to achieve there. Objectives are portrayed as the "terminal behaviours of the pupil, that is to say an account of what he should be able to do at the end of a course of study in terms of remembering, thinking and understanding with respect to certain subject matter areas" (Wood, 1968, p 83). Tyler (1951), as cited in Lewis (1965, p 186) extends this by making references to assessment, thus: "it is hardly possible to devise, or properly interpret, a test without first clarifying the objectives it is intended to measure". The assumption made by advocates of the 'objectives model' is that "if teachers and students know exactly where they are going, they will be left in no doubt as to when they have arrived: it is indeed an attractive prospect" (Hogben, 1972, p 43).

All this is impressive and compelling. It should, however, not influence us to accept it at face value without querying some of the main tenets of the 'objectives model'. Hogben (*op. cit*.) takes issue with the whole concept of pre-specifying objectives. He argues that it 'short-changes' the student in terms of broadening the scope of learning. "The danger inherent in this approach is that teaching-learning efforts are likely to be concentrated on those objectives which have been operationalised, and the easiest to identify and express operationally are those that require the memorization and recall of factual information, or the mastery of relatively simple skills" (Hogben, 1972, p 45). Atkin (1968), further exposed this shortfall in the 'objectives model' by writing that:

> If identification of all worthwhile outcomes in behavioural terms comes to be commonly accepted and expected, then it is inevitable that, overtime, the curriculum will tend to emphasize those elements which have been thus identified. Important items which are detected only with great difficulty and which are translated only rarely into behavioural terms tend to atrophy. They disappear from the curriculum because we spend all the time allocated to us in teaching explicitly for the more readily specified learnings to which we have been directed.
>
> (Atkin, 1968, p 28)

Perhaps this should inform teachers that they can never be exhaustive about what they want their students to learn, neither can they be convinced that the objectives identified are necessarily the most pedagogically useful in the topics taught. So much learning takes place in the classroom and/or the field. Eisner's (1967) views, as quoted in Hogben (1972, p 45) help to reflect on the rigidity of pre-specifying objectives in a learning situation, thus: "the particular amount, type and quality of learning that occurs in any classroom [field] is largely unpredictable and, therefore, the outcomes are far too numerous and complex to be covered by any list of objectives set down in advance". Ausubel (1968), shares similar views, when he refers to intended and unintended learning outcomes.

In an effort to come up with a more meaningful framework, as opposed to those of Bloom *et al*. (1956), Sullivan (1969, p 75), contends that all behaviours linked to cognitive challenges in school learning can be viewed in the form of performance terms, namely: "identify (select, distinguish between, discriminate between, mark, match); name (label, list); describe (define, tell how, tell what happens when); construct (prepare, draw, make, build); order (arrange in order, sequence, list in order); and demonstrate (show your work, show the procedure, perform an experiment, perform the steps)". Although, innovative, Sullivan's suggestions fall far short of persuading one to move away from Bloom's taxonomy. This is because virtually all the categories (identify, name, describe, order and demonstrate) have a strong bias

towards testing factual recall (low-level, simple cognitive performance skills) all of which are subsumed by Bloom's 'knowledge and comprehension' categories. It is only the 'construct' category which attempts to test high level skills but unconvincingly, since there is no 'application', 'analysis', 'synthesis', and 'evaluation' categories which definitely operate at a high level of cognition. In any case, a child needs knowledge and comprehension skills in order to accurately identify, name, describe, construct, order, and demonstrate, thus reflecting an approach that virtually retraces Bloom's taxonomy.

Hogben (*op. cit*.) is not averse to the use of behavioural objectives. He acknowledges that, "they provide fairly clear instruction and evaluation guidelines within the restricted compass of simple instructional (training) models" (Hogben, 1972, p 47). What he is advocating is the use of a more flexible approach to the way we formulate objectives. He argues that this will tolerate a level of ambiguity and more importantly accommodate objectives catering for a variety of achievement and outcome. Such an approach does justice to viewpoints of fieldwork given, as Job (1999, p iv) observes, by both those sympathetic to the:

- technocentric view which considers that the natural world can be controlled to meet human needs through the use of technology and scientific knowledge; and

- ecocentric view of the Earth and nature which gives equal value to all life forms, values spiritual as well as scientific understandings of the Earth, and encourages forms of human activity which minimise their impact on natural systems and processes;

- modernist (the dominant world view of the Western world over the past four centuries) in which phenomena and events are interpreted on the basis of objective knowledge, classical science and linear sequences of cause and effect; and

- postmodernist view, that is, an emerging way of interpreting phenomena and events. It denies objective knowledge, but accepts that individual experience and the cultural perspective affect every explanation, thus rejecting absolute certainties about anything interpretations of the world are catered for.

This approach, focusing on flexibility and the student is gaining support as shown by the literature (Job, 1996; 1999; Hawkins, 1987; Van Matre, 1979). The approach explains why it is useful to consider Hogben's (1972, p 48) suggestions whenever we formulate objectives, that is:

- we should state the course objectives by all means, but we should not insist that they are all framed in highly specific behavioural terms;

- we should not be afraid to state long-term objectives. There are many worthwhile educational outcomes which may not be apparent until months or years after the conclusion of a particular course;

- we must be continually on the alert for unexpected or unintended outcomes – both desirable and undesirable. Curriculum evaluation should not be limited to an assessment of the extent to which specified objectives have been attained;

- in translating broad general curricular goals into more specific language, we should make sure that the sum of the objectives faithfully reflects the full intention of the goals that generated them;

- we should not allow measurement considerations alone to dictate objectives formulation and teaching practice. An objective, the achievement of which cannot readily be assessed, need not be unimportant or unrealistic. Creative and innovative teachers and curriculum builders should not be constrained unduly by present shortcomings in measurement and evaluation technology.

**Process Model**

Perhaps the developments referred to above persuaded educational progressives like Stenhouse (1975) to oppose the 'objectives model' in favour of what he termed the 'process model'. In a critique of the use of objectives, Stenhouse (1975) comments:

> I believe that there is a tendency, recurrent enough to suggest that it may be endemic in the approach, for academics in education to use the objectives model as a stick with which to beat the teachers. 'What are your objectives?' is more often asked in a tone of challenge than one of interested and helpful inquiry. The demand for objectives is a demand for justification rather than simply description of ends. As such it is part of a political dialogue rather than an educational one. It is not about political design, but rather an expression of irritation in the face of the problem of accountability in education. (Stenhouse, 1975, p 77)

The argument continues by noting that pre-specified goals have a hidden danger of straitjacketing one's thinking and, therefore, making the evaluator inattentive to the unforeseen. "An adequate theory should be advancing our knowledge of the situation so that unanticipated results become susceptible to anticipation" (Stenhouse, 1975, p 77). It is inadequate and a weakness for a model to simply say to teachers 'keep your eyes open' in case something unanticipated comes up. Eisner (1969), as quoted in Stenhouse (1975), also participated in the debate on the use of behavioural objectives. He differentiated instructional objectives from expressive objectives. The former touches on what to me is one of the key concerns of education as confirmed by Eisner (1969), as quoted in Stenhouse (1975, p 77), that is, "giving mastery of the cultural tools already available whilst the latter makes possible creative responses which go beyond what is available and help to develop it and individualize it".

Eisner (1969) raises compelling arguments about the differences between instructional objectives he views as similar to behavioural objectives and expressive objectives. The effective curriculum, when aimed at instructional objectives, Eisner argues, will develop forms of behaviour whose characteristics are known before hand and, are not prescriptive and do not specify the behavioural change expected of a student after having undergone one or more learning activities as is the case with instructional objectives. Eisner (1969) explains:

> An expressive objective describes an educational encounter: it identifies a situation in which children are at work, a problem with which they are to cope, a task in which they are to engage; but it does not specify what from that encounter, situation, problem or task they are to learn. An expressive objective provides both the teacher and the student with an invitation to explore, defer, or focus on issues that are of peculiar interest or import to the inquirer. An expressive objective is evocative rather than prescriptive. With an expressive objective what is desired is not homogeneity of response among students but diversity. (Eisner, 1969, pp 15-16)

It is this notion of flexibility, which Stenhouse (1975) encourages by arguing that a teacher must always cast him/herself as in the role of the learner. "Pedagogically this may in fact be a preferable role to that of the expert. It implies teaching by discovery or inquiry methods

rather than by instruction" (Stenhouse, 1975, p 91). Freire (1990) concurs when he tells us that the teacher should be the instigator of the learning process and should be flexible enough to learn from students too, instead of looking upon him/herself as a fountain of knowledge. The teacher has, therefore, to employ pedagogy suited to this type of approach. One strategy is to reconstruct the principles behind the pedagogy and then express them as pedagogical aims as Hanley, Whitla, Moo and Walter (1970) suggest:

- to initiate and develop in youngsters a process of question-posing (the inquiry method);
- to teach a research methodology where children can look for information to answer questions they have raised and use the framework developed in the course (for example, the concept of the life cycle) and apply it to new areas;
- to help youngsters develop the ability to use a variety of first-hand sources as evidence from which to develop hypotheses and draw conclusions;
- to conduct classroom discussions in which youngsters learn to listen to others as well as to express their own views;
- to legitimise the search, that is, to give sanction and support to open-ended discussions where definitive answers to many questions are not found;
- to encourage children to reflect on their own experiences;
- to create a new role for the teacher, in which he (she) becomes a resource rather than an authority. (Hanley *et al*., 1970, p 5)

Unlike in the 'objectives model' (which is closely orientated towards examinations), it is difficult to assess pupil's work using the 'process model' of curriculum development. Reservations about the objectivity of marking (using the objectives-based examinations) were, however, expressed by critics of this model. In the 'process model', as opposed to the 'objectives model', the teacher is looked at as a critic and not a marker. "This shows that the process model is essentially a critical model, not a marking model. It can never be directed towards an examination as an objective without loss of quality, since the standards of the examination then override the standards immanent in the subject" (Stenhouse, 1975, p 95). The argument aspires to the idea that we can still examine students following a process model based curriculum but simultaneously allow them to pursue other aspirations. Unfortunately, with the importance attached to examinations in most societies, teachers are compelled to teach within the parameters set by the 'objectives model'. This means that the conditions of teaching at present too often make survival a more urgent concern than scholarship.

Although the arguments being advanced by Stenhouse (1975) are plausible, the practical side of life seems to be pointing towards the use of an 'objective' driven type of assessment as opposed to a *laissez faire* one. Perhaps a teacher can offer a critique as the students are preparing for an examination with the hope that they will write a better and more balanced examination, but to leave everything fluid, is courting disaster. How, for instance, are we going to make valid comparisons of student's performance in an environment in which the teacher is asked to be a critic? What would one do with the variety of perceptions among the teachers? How are these going to be catered for without giving rise to another controversy? I can, therefore, argue that the teacher's main concern is not that of survival at the expense of scholarship but to be as fair as possible to the students. In any case it is very difficult to sustain an argument that, the teaching and learning done under the framework of an objectives model, lacks scholarship. It all depends on the pedagogical skills of the teacher.

Besides, Tyler (1949), the chief protagonist of the 'objectives model' school of thought, never gave his model of instructional design as a prescription nor a panacea for curriculum design problems. Rather it was a way of coming up with something functional in this area. The 'process model' does not come up with the functional aspect and as a result appears to me to be a very good supplement, rather than a replacement of the main model, which happens to be the objectives model. Tyler (1949) convincingly shows the main tenets of the 'objectives model' when he says:

> This book outlines one way of viewing an instructional program as a functioning instrument of education. To the student is encouraged to examine other rationales and to develop his own conception of the elements and relationships involved in an effective curriculum. (Tyler, 1949, p 1)

Tyler has thus left the door open to other views. He, however, reminds us that it is perturbing for a teacher and any education system for that matter, to have and run programmes without clearly defining the purpose they are meant to serve. The truth of the matter, however, is that "if an educational program is to be planned and if efforts for continued improvement are to be made, it is very necessary to have some conception of the goals that are being aimed at" (Tyler, 1949, p 3). Only then will the whole process of content selection, materials selection, pedagogical procedures and tests and examinations be meaningfully prepared.

## Fieldwork objectives specific to geography

This whole debate about the 'objectives model' on the one hand, and the 'process model' on the other, is of special interest to fieldwork in Geography. Even examination boards, particularly in the United Kingdom, have consciously encouraged the use of fieldwork as part of the student's preparation for the examinations. The surprising thing, however, is that most of the relevant literature (Frew, 1986; Bentley, Gowing and Roberson, 1974; Bolton and Newbury, 1970; Archer and Dalton, 1968; Wooldridge, 1955) focuses on the content, strategies and benefits of this teaching and learning vehicle but fails to address the issue of objectives *per se,* as students learn the subject through fieldwork. This did not deter teachers from taking their students into the field though, as they all recognised the benefits of fieldwork to the learners and themselves too. All this became a concern to Boardman (1974) who states that:

> Unless objectives are specified, however, there is a danger that the teacher may not be fully aware of the impact of fieldwork on the pupils' learning. It is also possible that fieldwork may fail to achieve objectives which are different from those which can be attained in the classroom. (Boardman, 1974, p 159)

The objectives of any fieldwork exercise need to be clearly identified, since they condition the type of fieldwork and its success as an educational exercise (Kent *et al.,* 1997, p 319). They have also to be clear and precise in such a way that they are understood by students and achievable when carrying out the fieldwork activities (Lonergan and Andresen, 1988). In order to bridge the gap referred to earlier, Boardman (1974, p 159), carried out research to find out "how geography teachers define the objectives for fieldwork for pupils following GCE and CSE courses, and to identify the constraints which limit the freedom of teachers to carry out fieldwork with these pupils". In all, one hundred and ten Geography teachers drawn from the West Midlands (United Kingdom) made up the sample. Boardman's paper discusses only the objectives. The factors, which were considered in the preparation of the objectives, in summary, included:

- the level of development of the pupils;

- the types of learning situations with which they (the pupils) are commonly presented in the field;

- the skills which are specific to fieldwork and the extent to which these skills might help the pupils in classroom learning situations. (Boardman, 1974)

Teachers were involved in a discussion of these objectives before their finalisation. The final list contained objectives touching on the knowledge, skills and attitudes pupils were expected to develop as a result of the fieldwork experience [Appendix 1]. Using a four point Likert scale showing the relative importance of each objective, the teachers rated them "ranging from *very important (4)* and *fairly important (3),* down to of *minor importance (2)* and of *no importance (1)*". (Boardman, 1974, p 159)

Boardman observed that skills related to the study and use of maps in the field featured among the most important three objectives. Some of the lowly rated objectives were those involving field sketching, making measurements and those concerning affective objectives touching on attitudes and values. However, affective objectives entailing the enjoyment of studying Geography and the cultivation of a deeper interest in the subject were rated highly. Conclusions from Boardman's research include:

- the need for authors of various teaching and learning resources on fieldwork to specify clearly the aims and objectives of the field activities they promote; "The formulation of objectives would help to clarify the nature of the knowledge to be learnt, the type of skills to be developed, and the kind of attitudes to be fostered through the medium of fieldwork". (Boardman, 1974, p 165)

- The need for examination boards to specify the objectives of fieldwork so that both the teachers and the candidates are aware of these; this will provide a pointer as to how field-based projects could be assessed thus increasing the validity of such examinations.

Several authors (Jenkins, 1994; Gold, 1991; Lonergan and Andresen, 1988; Tranter, 1986; Adderly, 1975) as cited by Kent *et al*. (1997, p 319) added and refined Boardman's contribution by examining fieldwork objectives under: "subject specific objectives; transferable/enterprise skills and socialisation and personal development (the 'hidden agenda' of fieldwork)" [Appendix 2]. I would also remind teachers that fieldwork activities should be attuned to match the cognitive abilities of the students. At the same time they should be challenging enough to avoid boredom and disaffection.

Similar views were echoed by Foskett (1997, p 189), who argues that, "outdoor education helps in the development of a learner's intellectual (cognitive) skills, notably subject specific skills (for example, field sketching), wider generic skills (for example, data collection and recording) and intellectual skills (for example, problem-solving)". In addition, learners are offered an opportunity to translate and apply what is learnt in the classroom into reality, test hypotheses and acquire more and new knowledge and concepts through first-hand observation. Aspects of the affective domain (feelings, attitudes and values) and the concept of 'a sense of place' (Job, 1999) are also developed.

It is useful to note that fieldwork objectives are not static and thus change. The same thing applies to the importance attached to these objectives. This is expected because Geography, as a subject, is very dynamic. The change in the objectives is closely linked to changing paradigms in Geography, for example, from descriptive regional geography to more interpretive and quantitative geography with special interest on the quality of the environment and its sustainability. Smith (1999), in a replicated investigation of Boardman's (1974) survey

revealed that the research evidence indicated changes in the way teachers viewed objectives and the importance they attach to them.

Smith (1999, p 181) discovered that "the objectives have changed from an emphasis on mapping skills to data collection skills and field inquiry". For example, the objective 'to relate landforms to contour patterns' ranked as the most important in 1974 (mean score 3.59), was much less important in 1996 (mean score 3.13). The objective referring to 'to orientate a map in the field' which ranked top in Boardman's 1974 survey (mean score 3.59) was ranked 21st in Smith's survey (mean score 3.24). Smith (1999, p 185) contends that "this shift in the importance of objectives is determined by a bias favouring human geography in the original National Criteria for GCSE of 1986 where there was an emphasis on the candidate's ability to demonstrate an awareness of attitudes and values in social, economic and environmental issues". Since then, syllabuses in the United Kingdom have required a student to carry out a fieldwork activity/project involving data collection ultimately interpreting that data and coming to their own conclusions. Smith (1999, p 186), notes that, "the main objectives now appear strongly related to inquiry type fieldwork with increased importance attached to this type of fieldwork by the new Qualifications and Curriculum Authority (QCA)".

It is essential to comment that despite a change in the importance of the objectives as revealed and discussed by Smith, I would strongly argue, that the place of mapping and its associated skills is still very important in virtually all geographical fieldwork activities. Geographers cannot afford to relegate the role of mapping and attach a low status to objectives of fieldwork associated with mapping. A geographer lacking mapping skills is 'blind' especially when operating outdoors. It is shortsighted to teach and learn Geography without maps. Vaughan, as quoted in Marsden (1976, p 79), says that: "a proper mode of familiarising very young pupils with an idea of the meaning and intention of maps, is to lay before them a plan or a map of the district in which they reside". Maps, therefore, play a central role in the teaching and learning of geography particularly in the field.

## The way forward

A close look at the arguments and counter-arguments for the use of objectives in curricula in general and when planning and conducting geography fieldwork in particular, puts us in a dilemma. Which way should we go? The solution here probably lies in looking at the whole spectrum from an 'objectives model' – 'process model' continuum. The decision to define objectives (or not), for a particular fieldwork activity is pedagogical and determined by the context of the time, place and class to be taught. There are so many factors determining whether objectives should be stated for a particular activity or not. Some of these include: the level of cognitive development of the learner/s (Bruner, 1960; Piaget, 1953; Vygotsky, 1986); the field strategy being used (Job, 1999; Nundy, 1998; Harvey, 1991; Van Matre, 1979); dictates of examinations boards, whether one holds modernist or post-modernist views and if one's viewpoint of the environment is technocentric or ecocentric (Job, 1999).

I am persuaded to believe that learners become more and more capable of operating in the 'process model' fold as they mature and their experiential levels rise. They will then be able to handle affective skills more meaningfully and competently. Therefore, at some stage in the life of a student, there is no harm in identifying objectives if we are convinced that this gives more direction to the learner (Smith, 1999; Boardman, 1974; Bloom *et al.,* 1959; Tyler, 1949) nor is it wrong to empower them to explore on their own in a given situation (Job, 1999; Hawkins, 1987; Van Matre, 1979). The answer lies in flexibility (Hogben, 1972) and that whatever we decide to do, should be defined by the method of inquiry in which the objectives are embedded. Objectives should not be viewed rigidly and pigeonholed but "as a useful starting point in rethinking fieldwork programmes and activities" (Higgitt, 1996, p 359). Ultimately, whether one is for an 'objectives model' or a 'process model', is immaterial. What

matters, I would like to argue, is how much effective learning takes place. One should, however, heed Smith's (1987, p 210) view that: "perhaps the main point to make about outdoor education is that it implies young people being personally involved in the learning; it is quintessentially experiential". Smith uses a three-tier strategy (Figure 1) entailing outdoor pursuits, outdoor studies and the residential experience.

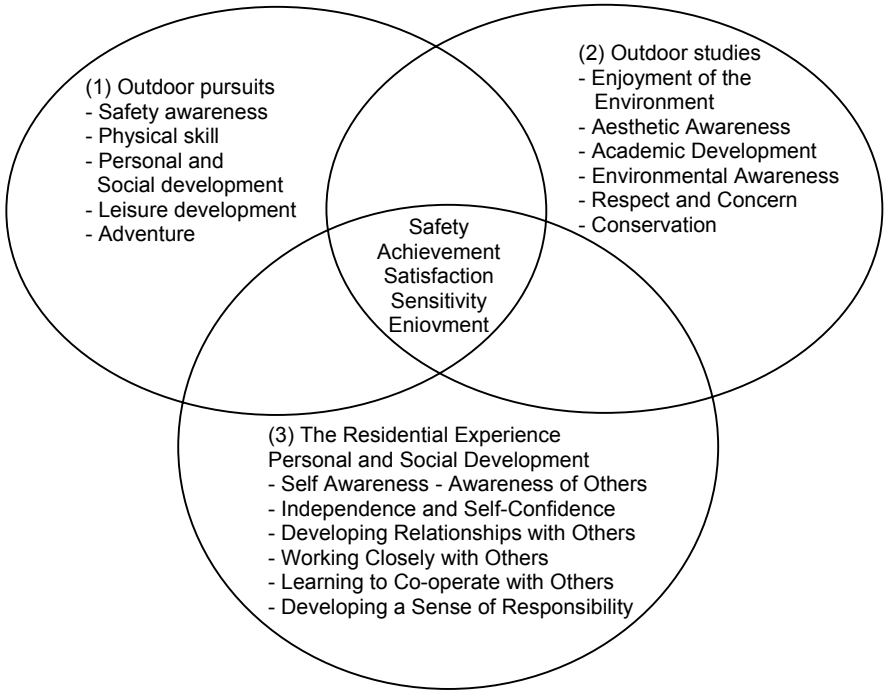


Figure 1. Major elements of outdoor education (Smith, 1987, p 215)

Such an outline is important because it not only contributes to a holistic approach to teaching and learning but also caters for the interests of both the followers of the objectives and process models of curriculum development.

A closer look at Smith's three-tier strategy, however, shows that it is rather lopsided in favour of low-key skills (*surface learning*) focusing on knowledge with understanding. Such a gap could have been narrowed had a conscious effort been made to include high-level skills (*deep learning*) such as application, analysis, synthesis and evaluation (Bloom *et al*., 1956). This is appropriate because the very existence of fieldwork is determined by its ability (during and after the fieldwork) to impart such high level skills to learners in an interesting, challenging and experiential manner. Fieldwork goes 'an extra mile' beyond what can be done in a classroom setting but only if it caters for the high level skills.

## Conclusion

It is evident from this review and critique of related literature and the discussion emanating from it, that the critical issue is not whether objectives for a particular activity have been specified or not. The greater concern and interest is on how much effective learning (in terms of cognitive, affective and transferable skills gain) takes place when students are taken into the field to learn Geography. The guiding principle, therefore, should be on *meaningful learning* (Ausubel, 1968; 2000), the ultimate goal of all educational processes.

# Appendix 1

### Objectives of fieldwork (Boardman, 1974, p 160)

| Item | Objective | Mean Score |
|---|---|---|
| 4. | To relate landforms to contour patterns. | 3.59 |
| 1. | To orientate a map in the field. | 3.59 |
| 2. | To follow a route using a map. | 3.58 |
| 15. | To give a reasoned interpretation of phenomena observed in the field. | 3.57 |
| 30. | To enjoy the study of geography and acquire a deeper interest in the subject. | 3.57 |
| 14. | To comprehend in the field concepts learnt in the classroom. | 3.56 |
| 23. | To understand the relationship between physical features and human activities. | 3.54 |
| 19. | To comprehend in the classroom concepts learnt in the field. | 3.52 |
| 16. | To recognize on maps in the classroom features studied in the field. | 3.50 |
| 5. | To relate real features to map symbols. | 3.47 |
| 22. | To appreciate the role of man in modifying the physical environment. | 3.46 |
| 24. | To associate the different phenomena which together comprise the geography of an area. | 3.44 |
| 11. | To recognize in the field features studied on maps in the classroom. | 3.43 |
| 17. | To recognize on photographs in the classroom features studied in the field. | 3.43 |
| 3. | To comprehend the scale of a map. | 3.42 |
| 18. | To recognize on diagrams in the classroom features studied in the field. | 3.37 |
| 8. | To draw and annotate a field sketch. | 3.37 |
| 7. | To add information to a base map. | 3.35 |
| 12. | To recognize in the field features studied on photographs in the classroom. | 3.34 |
| 25. | To use first-hand experience of one area as a means of visualizing features of other areas. | 3.30 |
| 21. | To understand the natural processes of physical geography. | 3.29 |
| 13. | To recognize in the field features studied in diagrams in the classroom. | 3.28 |
| 6. | To make notes on phenomena observed. | 3.27 |
| 20. | To give a reasoned interpretation of phenomena studied in the classroom. | 3.17 |
| 27. | To show an awareness of the need for the conservation of the environment. | 3.15 |
| 28. | To co-operate with the teacher and other pupils outside the classroom. | 3.14 |
| 26. | To show an aesthetic awareness of and a respect for the countryside. | 2.91 |
| 9. | To make measurements in the field. | 2.90 |
| 10. | To conduct interviews in the field. | 2.81 |
| 29. | To participate in and enjoy a healthy outdoor activity. | 2.65 |

## Appendix 2

The various objectives of fieldwork grouped under the three general categories identified at the higher education study group meeting, 1994.

(1) *Subject –specific objectives:*
- Teaching of specialist field techniques and research methods;
- Use of experimental data to solve specific problems and thus illuminate areas of theory and practice;
- The integration of the subject, from theory to practice;
- Fostering awareness of other places and cultures ('spirit of place');
- Exposing students to a variety of approaches to the discipline;
- Providing a basis for independent research by students;
- Exposure of students to 'real' research;
- Provision of 'real' material and context for a laboratory-based practical course ('live' problems);
- Enhancement of analytical and interpretive skills;
- Training students in observation, measurement and recording;
- Teaching students to use experimental design;
- Learning to 'filter' observations and discriminate valuable data from 'noise';
- Development of interpretive abilities from both landscape observation and results of problem-oriented fieldwork.

(2) *Transferable /enterprise skills:*
- To provoke students to ask questions and identify problems;
- Stimulation of independent thinking;
- Development of the motivation and skills to learn autonomously;
- The enhancement of communication and presentation skills;
- Development of group-work skills;
- Development of leadership skills;
- The improvement of organisational skills such as time/ human resource management;
- Appreciation of the importance of safety in fieldwork;
- Realisation of the parallels between skills involved in carrying out fieldwork and those in employment in the 'real' world.

(3) *Socialisation and personal development ( the hidden agenda' of fieldwork ):*
- Stimulation and enhancement of enthusiasm for study;
- Development of a respect for the environment;
- Encouraging and developing social integration of the student cohort;
- Enhancement of staff-student relations;
- Getting to know colleagues;
- Helping to market the course;
- Becoming involved in staff research.

(Kent *et al.,* 1997, p 319)

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