PERGAMON

Studies in Educational Evaluation 28 (2002) 1–33

Studies in Educational Evaluation

www.elsevier.com/stueduc

STABILITY AND CHANGE IN CURRICULUM EVALUATION

Tamar Levine

School of Education, Tel Aviv University, Israel

Introduction

It was within the context of educational innovation that curriculum evaluation first emerged as an organized and developing specialist and professional field. At first in the US during the 1930s, and then in Britain during the 50s, the demand for curriculum evaluation grew rapidly, as the pace of social change accelerated and the complexity of educational innovations became apparent (Norris, 1998). The considerable investment in developing new curricula, partly ascribable to changing needs and partly to dissatisfaction with existing educational systems, necessitated a profound examination of the nature and quality of planned curricular reform. Thus, it is hardly surprising that, initially, despite its roots in the general field of educational evaluation, testing and measurement, curriculum evaluation came to be regarded as an area within curriculum development (Lewy, 1977). It was not long, however, before educational evaluation had grown into an independent field where the difference between curriculum evaluation and curriculum development in theory and practice became increasingly marked.

Clearly, curriculum evaluation can be neither simple nor uniform. Suffice it to say that it draws on two distinct and complex fields - curriculum and evaluation – both of which relate to dozens of different definitions, approaches, and methods. Patton (1986) lists thirty different evaluation approaches. Stufflebeam (1999) identifies 22 approaches, each of which has a different meaning, a different form and different factors that affect it. This indicates that there is no ideal, all-purpose approach to evaluation that suits every occasion. The multiplicity of typologies, models, concepts and methodologies does not only denote quantity. The various evaluation approaches were developed under a variety of conditions in order to meet different needs, and they reflect a whole host of theoretical considerations and philosophical and ideological perspectives (Alkin & Ellett, 1990; Guba & Lincoln, 1989; Nevo, 1995; Smith, 1994; Worthen & Sanders, 1987). Fetterman (1988) regards the developments that have taken place in the field of evaluation as a silent revolution, and

0191-491X/02/$ - see front matter
PII: S0191-491X(02)00010-X

argues that one of the critical aspects of this change has been the shift in the underlying paradigms of research methods and aims (Lincoln, 1986).

Evaluators have identified four generations of evaluation development reflecting an evolutionary shift in ontological, epistemological, and methodological paradigms (Guba and Lincoln, 1989). In the course of these generations, evaluation has developed from a monolithic to a pluralist conceptualization, with multiple methods, multiple measures, multiple criteria, multiple perspectives, multiple audiences and even multiple interests (House, 1993; Shadish, Cook, & Leviton, 1991). It has abandoned technical and analytical procedures in favor of negotiation (Guba & Lincoln, 1989). Rather than unearthing "truth" or offering corroboration through the auspices of an expert or judge, evaluation has come to represent a collaborative, *meaning-making* process. It has evolved from an earlier reliance on objective measures to its present subjectivist, transactional approach. In methodological terms, evaluation has moved from its early quantitative emphasis to an emphasis that is less rigid and finds qualitative research methods and measures acceptable (House, 1993). Essentially the changes described above reflect a progress away from the traditional logical positivistic approach to a constructive orientation and interpretivist philosophy.

Similarly, in the field of curriculum the jury is still out with regard to the questions of defining what the curriculum is, what it should be and how to plan and implement it. In fact consensus is so far off. Curricular approaches differ in terms of definitions, goals, structure, function and planning processes (Schubert, 1986, 1996). Since 1950, the emphasis of curricular goals has moved from knowing to searching, from content learning to process application and from developing isolated skills to understanding global relationships. Curricular frameworks, now freed from the constraints of subject boundaries, embrace conceptual connections among disciplines while aiming for depth rather than breadth, and for individual and cultural development rather than the accumulation of facts. Curriculum planning and organization has evolved from a predefined, linear and sequential structure, with carefully controlled planning procedures administered by outside-school specialists, to one that is flexible, and tentative and marked by open-ended planning and the freedom to accept the challenges presented by spontaneity and contextuality. Or, if we look at this another way: The changes in curriculum planning and organization reflect a movement away from a mechanistic, linear approach rooted in the positivist orientation toward a non-linear, system-oriented, more complex approach, grounded in constructivist and complexity theories (Iannone, 1995; Levine, 1999). Interestingly, in both the fields of curriculum and evaluation, paradigm changes have occurred in four separate waves (Guba & Lincoln, 1989; Sapone & Sheeran, 1991).

A "Generation Gap" Between Curriculum Development and Curriculum Evaluation

Despite the conceptual changes in both the curriculum and evaluation fields, a review of the relevant literature shows that neither curriculum evaluation theory or its methodology have changed very much over the last twenty years. That is, although new curriculum models have been designed, curriculum evaluation still uses obsolete models and methods (Jasparro, 1998). And even though curriculum evaluators note that curriculum evaluation depends on how a curriculum is conceived (Alkin, 1994; Lewy, 1977; Madaus & Kellaghan, 1992; Norris, 1998) and implemented (Snyder, Bolin, & Zumwalt 1992),

curriculum evaluation analyses mainly refer to the more positivist theories of curriculum. There is thus an apparent generation gap separating curriculum development and curriculum evaluation. According to Patton (1998), even when faced with a new situation evaluators tend, unconsciously, to fall back on old, familiar patterns. This is particularly so when the evaluator comes face to face with complex choices and compound alternatives. Occasionally, evaluators will modify operating procedures, for example, by supplementing qualitative methods with quantitative ones. However, at the end of the day, they remain loyal to the old familiar evaluation frameworks. Thus, we run the risk of finding ourselves faced with evaluation studies that seek to apply the tenets and insights of several different evaluation approaches but all the while satisfying none.

So we find that as previously held beliefs and certainties blur into postmodern complexities many of the tried and tested assumptions regarding evaluation seem to be letting us down. Indeed, it is widely accepted that if a new paradigm is introduced it is invariably accompanied by growing pains and resistance since conceptions are essentially kept from changing by all too prevalent canonical pressures (Thomas, 1997). Changing a paradigm is no simple matter for paradigms, according to Kuhn (1970), control the methods, questions and standards that a community employs, as well as the broader constellation of beliefs, values, techniques that it cherishes. Since ontological and epistemological beliefs are the lenses through which we view education and methodology, and since our actions are dictated by our beliefs, the lack of congruence between different curricular and evaluation ideologies, and the lack of sensitivity regarding underlying theoretical assumptions, is essentially a fundamental weakness in curriculum evaluation practices today.

The present article addresses this problem. This it does from a perspective that calls for a joint ontological and epistemological view of the curriculum and of curriculum evaluation. The article explores curriculum evaluation - what it involves and what its role is in curriculum planning - from two contrasting perspectives. The first, which we refer to here as the *curriculum as a fixed product*, represents the prevailing, traditional perspective and is rooted in positivist ideology. The second, and more recent of the two perspectives, which is termed here the *evolving curriculum*, is based on a social constructivist paradigm and participatory inquiry view.

I will begin with a brief outline of the epistemological assumptions regarding the positivist and constructivist paradigms. This will be followed by a short discussion of the ramifications of these assumptions for the curriculum. Subsequently there will be an analysis of the two approaches to curriculum evaluation, positivist and constructivist.

The Basic Belief Systems for Viewing Curriculum and Curriculum Evaluation

The two paradigms for evaluation and curriculum originate from different theories regarding the nature of reality, the nature of knowledge, the process of knowing, and finally, what is worthwhile knowing. In fact, the difference between the positivist, social constructivist paradigm and the participatory worldview of reality, knowledge, knowing and the meaning of worthwhile knowledge, mirrors the difference between the philosophy of science known as realist, objectivist, or positivist, and the philosophy known as relativist.

The positivist paradigm conceives a world of objects: a single, well-structured reality that is separate from the human knower, who uses language and symbols to describe and explain the truth of this objective reality (McCarl-Nielsen, 1990). The implication is that knowledge can be judged as either true or false. It is true if and only if it corresponds to reality. Guided by the deterministic nature of the universe, the positivist view also assumes regularity and predictability, in other words, that there are general laws or patterns, mostly causal, that are true for all societies and individuals, and that once discovered, can provide a basis for predicting and controlling natural phenomena. In this conception, any irregular events can be explained by underlying regular laws and principles (Elkind, 1995). Reality therefore serves as a model for human beings who "mirror" reality through their thought processes.

The realist view assumes that we can rely on our sensory perceptions to supply us with accurate data concerning the world and posits that whatever cannot be measured or quantified is not scientific (Capra, 1989). This naturally implies a need for empirical verification. Knowledge, according to this view, is given and absolute, and is attained by adopting an objective distance from the world. Should we fail to maintain this distance, we run the risk of tainting reality with our own subjective beliefs and biases (Heshusius, 1994). Thus, realists maintain that a rational and objective approach in which appropriate procedures are used will enable us to predict and control events for the benefit of humanity.

In contrast to the realist view, the relativists do accept the existence of a real world but question whether and how this world can be known. According to this view, since observations, and the choice of which observations to make, are influenced by the beliefs, theories, hypotheses and background of the individual who makes them, it is questionable whether a truly unbiased objective observation is every feasible (Smagorinsky, 1995). Thus, argue the relativists, there is no such thing as knowledge that is "out there", independent of the knower, there is only the knowledge we construct for ourselves as we experience. Yet, adds the participatory perspective, since we are part of a whole, we will always encounter a given reality through participating in it and shaping it. In that case, knowledge is grounded in experiential participation in reality - and also shapes it. This implies that reality is not conceived as subjective but as subjective-objective. As Heron (1996) notes: "It is subjective because it is only known through the form the mind gives it, and it is objective because the mind interpenetrates the given cosmos which it shapes". Therefore it is not possible to extract any final or absolute description of reality. Here, knowledge is seen as (a) relativistic, i.e., nothing is absolute and everything relates to context, and (b) fallibilist, i.e., nothing may be taken for granted.

Accordingly, what we know is always negotiated within a context of culturally informed relationships and experiences, and knowing presupposes mutual participative awareness expressed through dialogue. In other words, knowledge stems from a more or less continuous interactive process wherein it is both built and constantly examined. From this perspective, knowledge can no longer be judged in terms of true or false, but must be assessed according to whether it works, i.e., whether the knowledge we construct functions satisfactorily in the context in which it arises. These views, argues Polkinghorne (1992), reflect a shift from the metaphors of correctness held by positivists, to those of utility. Guba and Lincoln (1989), in addition, suggest that we may consider "truth" to be the "best

informed and the most sophisticated construction on which there is a consensus". Truth and knowledge are therefore created rather than enforced (Schwandt, 1997).

Furthermore, social constructivism holds that, in order to understand the world, human beings use socially constructed dialectic strategies, which are shared through systems of language and other symbolic systems systems and adapted to meet the needs and intents of human activity (Gergen & Gergen, 1986; Gergen, 1992). Regarding methodology, the participatory worldview implies that we need a collaborative form of inquiry where everyone involved engages in joint democratic dialogue as co-researchers and co-subjects (Heron, 1996; Heron & Reason, 1997). Accordingly, cooperative inquiry occurs when people collaborate in order to define questions they wish to explore and choose a methodology for that exploration. Exploration, according to this worldview, is by people who work with one another – not by authorized explorers who objectively study and explain what it is that other people do.

In contrast to the positivist view, which argues that the ultimate reason for inquiry is to discover reality or to search for the truth, the social constructivist response to the axiological question concerns knowledge construction and knowledge growth. From the participatory standpoint, healthy human development is a worthwhile end in itself. Thus, within a participatory worldview the primary purpose of human inquiry is practical and the inquiry process is the action that causes the human race to flourish.

It is clear from the above that the two views of knowledge and reality - the positivist and the participatory - will naturally inspire different ways of thinking about the curriculum and the structure and construction of evaluation. First, let us address the question, How do these differing views affect conceptions regarding the curriculum?

Curriculum Description as a Context for Evaluation

Two Perspectives on Curriculum Essence, Purpose and Structure

The traditional curriculum model, which is based on a modernist or positivist perspective is conceived as *a fixed product.* We use the product metaphor to convey an image of the curriculum as a package that is exported from its production site to the delivery site. As a fixed product, the curriculum is conceptualized as *a planned course of action designed to produce specific learning outcomes*, and accompanied by an explicit and accurate prescription of how this can be achieved. More specifically, the curriculum is a list of knowledge areas, codified in a distinct, accurately defined form, which must be learned according to specific, predetermined rules (Young, 1999). In this sense, a curriculum is a concrete entity, something we can point to, that the teachers can implement. It is also something the evaluator can evaluate in order to determine whether its goals have been attained.

With its roots in positivist beliefs, the *fixed product* curriculum is conceived as reflecting national or cultural interests, an instrument of society, which combines administrative and pedagogical elements designed to change individuals and society in certain ways. It views the organizational structure as subordinate to the overriding need for order and control in education (Hamilton, 1990). Accordingly, outside authorities largely determine the educational goals and organizational structure of the curriculum. This means,

in practice, that pre-selected programs are regulated into a rigid and explicit structure that students and teachers must follow. The commonly used curriculum will typically emphasize which skills must be learned and sometimes it orchestrates them into elaborate scope-and-sequence charts, objectives to be attained, or lists of books to be covered by a given grade.

Born out of the power of experts to determine and conceive of knowledge domains, this curriculum reflects a monolithic approach with one single conceptualization of knowledge selection and organization. Furthermore, it represents the dominant culture in the main, failing to facilitate dialogue between representations of other knowledge domains, and between these representations and teachers and students (Levine, 1999). One important aspect of the curriculum as a fixed product is the way in which knowledge and meaning are constructed. Knowledge emerges as an objective commodity, to be transmitted from experts to teachers and from teachers to students. The authority of experts who decide which contents should be selected for the curriculum from existing knowledge domains is handed down to the teacher who accepts the material and conveys it to the students. This scientific, deterministic view of the curriculum was fully realized in Tyler's Rationale (1949), in which teaching and learning are presented as highly controlled, linear and testable activities.

The curriculum when it is founded on the social constructivist view, on the other hand, is conceptualized *as an evolving process*, a channel for personal and cultural growth which allows teachers, students and experts to explore the world from a multiplicity of view points (Cross, 1995; Greene, 1993). From the social constructivist perspective, the curriculum is less of "a running track", and more to do with "running along a track", the latter emphasizing the runner's activity of searching for meaning and finding it through interpretation and dialogue (Doll, 1993). In this view, the curriculum's focus is on the search for meaning, culture and social issues (Dewey, 1956).

When based on the principles of constructivism and participatory theory, the curriculum is conceptualized as a *dynamic and creative process in which we relate to information and knowledge in different ways and design the curriculum situationally*, in the "here and now", for every school and classroom, prompted by their unique features and needs (Greenberg, 1987; Levine & Nevo, 1997; Moll & Whitmore, 1993). The underlying premise is that teachers and students must be at liberty to decide what they wish to clarify, explore, develop, apply and create (Rogers, 1973). This process is rather complex, dynamic as well as open, flexible, context-contingent, time-dependent and linked to reality. It has no interest in boundaries or control. Instead, it reflects a creative effort which stretches the limits of teachers', students' and experts' capabilities and augments the available body of general knowledge. Thus teachers and students are not only recipients, but also take considerable responsibility for generating their own curriculum. As Doll (1993) has indicated, short-term planning is necessary since long-term planning is ineffective in dynamic or chaotic systems.

In contrast to the monopolistic or exclusive disciplinary attitude to knowledge and reality, which we found in the view of the curriculum as a fixed product, the constructivist-based curriculum addresses many different realities. Here it is reasoned that since information is subject to constant change and regeneration it is not absolute but transient and contextual, covering knowledge domains that diverge and merge in an ever moving,

dynamic process. (Levine & Nevo, 1997). This multifaceted perception of reality further assumes that we can interpret contextual and situation-dependent knowledge from many different perspectives, depending on how students and teachers explicate the knowledge. If multiple realities are accepted, curriculum goals are typically broad, general and interim. Information items are catalysts for stimulating or heightening student and teacher curiosity, rather than being objects of intellectual consumerism.

If the curriculum is conceived as an emergent or unfolding process, teaching and learning are seen as dynamic and animated as opposed to predictable and standardized or mechanical. Teachers and learners are active creators of knowledge and knowledge is viewed as a construct for social interactions with others. The evolving curriculum finds considerable merit in setting general educational objectives without establishing specific goals in advance for every unit and activity. This enables students, teachers and all those involved in planning the curriculum to decide what they believe is worth learning based on their specific conditions, visions, and needs. Thus, planning is thus anchored in more holistic, co-emergent curricula, defined as much by circumstance and happenstance as by fixed learning objectives. This curriculum is known as the *situated* or *negotiated curriculum* (Davenport, Jaeger, & Lauritzen, 1996).

Curriculum Development vs. Curriculum Planning

The rationale for a positivist curriculum assumes that knowledge is distinct from and a precursor to action and that effectiveness of action depends on rational knowledge organization and a systematic structuring of thought. More specifically, it also assumes that if goals are formally set down in writing and so-called appropriate teaching methods and assessment processes are planned in advance, then all should go according to plan. This denotes a fairly technical view of design, something Schon (1983, 1987) would call *technical rationality.* This means-ends rationality reasons that matters such as subject matter and instructional method are simply technical by nature and are therefore best reserved for those equipped with technical expertise. Therefore, as technical experts, curriculum planners are expected to suspend their own values to prevent them from clouding the objectivity of their work.

Underlying fixed-product curriculum development is therefore a belief that the curriculum planner should develop the necessary means of producing desired learning outcomes using objective and scientific means. This implies that educational outcomes are not only the primary justification for the means of achieving them but also the starting line for development. This means-ends reasoning underlies all development decision-making, a process associated with strictly regulated procedures (Kliebard, 1992). It is presumed that scenarios can be predicted and contrived, and that order, stability, content and meaning can be imposed on the curriculum. This development conception also expresses a view of the curriculum as unambiguous, linear and hierarchical, a philosophy that may be termed *rational formalism*, in that the curriculum is perceived simplistically as an engineering design. Curriculum development that is powered by rational formalist tenets will naturally follow a top-down path, where plans progress from the general to the particular, from a statement of general goals and aims toward clearly defined goals and appropriate strategies for attaining them.

In other words, the positivist curriculum approach is prescriptive (Reigeluth, 1993). Here, the curriculum developer's goal is to identify and deliver verifiable resolutions to instructional problems by carefully linking instructional strategy to desired learning outcomes. Proponents of this approach (Dick & Carey, 1987) argue that the instructional products that it delivers have the added capacity to deliver material to countless groups of learners, duplicating the original learning outcomes each time, and demonstrating stability, predictability and standardization.

However, when social constructivist theory is applied to curriculum development we find an open, flexible and experimental path offering the possibility to branch out in new and unexpected directions. Curriculum planning in this case will be dynamic, context-specific and non-linear. It will respond to students' and teachers' search for meaning, their desire to comprehend the purpose of learning, and it will interpret new situations in light of their perceptions. Responsibility for curriculum planning will be shared by all teaching staff, plus students, curriculum advisors and other experts, e.g. scientists, representatives of the arts, principals, industrialists, etc. Everyone contributes and furnishes sources of enrichment and inspiration for all involved.

A non-linear, or complexity-oriented approach to curriculum planning, knowledge selection and organizational processes, reflects a conception of a system in dis-equilibrium and its capacity to adjust itself and restructure spontaneously and contextually, thus expressing the system's ultimately non-predictable nature. Its emergent character adapts to changing situations and contexts and to the needs of the individuals involved. Its "form" is thus highly autonomous, creative, and unique to a specific school or class. Thus, the complexity approach to curriculum planning offers an open-ended, highly situated process, while curriculum development marks the stable concluding phase of a highly formal process.

Doll's (1993) comparison of closed and open systems provides a metaphor that contributes to our understanding of the positivist, constructivist and participatory approaches to the curriculum. The closed system operates according to a pattern of stability, equilibrium, and centered balance. It possesses a clear beginning and end, and employs regulation to maintain its internal balance. The system strives for stability and manages interruption by rapidly eliminating or adjusting the source of interference. The open system, on the other hand, is marked by directionality and instability; interruption or ambiguity are wholly welcomed as stimuli to transformation.

Curriculum Evaluation: Meaning, Methodology and Practice

The question I would now like to ask is: What are the implications in terms of a conception of curriculum evaluation in light of the two contrasting positivist and constructivist curriculum approaches. The following analysis of curriculum evaluation addresses the key issues that Nevo (1995) raised with regard to the conception of evaluation, and follows the theory of evaluation proposed by Shadish, Leviton and Cook (1991). The analysis examines three themes and issues: conceptual, methodological and practical.

Conceptual themes and issues relate to the meaning of curriculum evaluation: How should curriculum evaluation be viewed/defined? What is its purpose? What is worth

evaluating? and What are the most important elements of curriculum evaluation and how do they relate to one another? The *methodological* issues are: How do evaluators construct knowledge, and which procedures and methods of inquiry are to be used in curriculum evaluation. Finally, the *practical* questions ask, What is evaluators' function? How do they conduct curriculum evaluation in practice? What questions do they ask? What procedures should evaluators follow?

The Different Meanings of Curriculum Evaluation

Evaluation and the Positivist or Fixed Product Perspective

Let us now examine the different ways in which curriculum evaluation might be regarded. When viewed from the positivist, or fixed-product perspective we find that several definitions for curriculum evaluation emerge. The best known and most commonly practiced form of evaluation basically sees curriculum evaluation as a *process of determining whether curriculum objectives have been achieved or not.* This so-called "objectives achievement model" has a long history of development and application and was originally conceived and refined by Ralph Tyler as an integral part of curriculum development in the 1930s. This view sees curriculum evaluation as a description of patterns of strengths and weaknesses with regard to a series of educational objectives (Guba & Lincoln, 1981).

A somewhat broader definition within the fixed-product perspective looks at the curriculum product's adequacy by examining derived characteristics and describing appropriateness (Alkin, 1994). Here, evaluation not only relates to educational objectives as manifested in students' educational achievements but also to other curricular components, such as instructional material, instructional sequence, teachers' manuals, student background variables, etc. The logic of these two definitions is simple: If a curriculum is a statement of intentions, then curriculum evaluation should address the extent to which these intentions are realized in practice. In reality, however, since intentions are not inevitably realized, curriculum evaluation has broadened to embrace not only analysis of the curriculum as planned, but also as experienced (Goodlad, 1979). The curriculum evaluation therefore focuses on comparing the ideal, the planned, the taught and the tested curriculum. A good quality curriculum is therefore defined when there is a high degree of coincidence between the ideal curriculum, the official written curriculum, the taught, and the tested curricula (English, 1988). We should note that the positivist approach does not consider gaps between the intended and the actual as legitimate. Nor does it expect to see such gaps, even though they do exist in practice. From a positivist perspective, gaps point to error or failure to create the assumed reality.

Scriven's (1974, 1980) challenging view that the aim of any evaluation was to assess value gave rise to a broad consensus that the definition of curriculum evaluation should encompass the judgment factor and thereby demonstrate in essence that evaluation represents the act of assessing whether a curriculum has quality or worth. Apart from this, evaluators have failed to agree whether the curriculum should embody a single or multiple values (Scriven, 1994, Migotsky et al., 1997). Nor do they agree on how to determine

which values to represent. Additionally, there is no general agreement regarding whether judgment is the ultimate product of evaluation, or whether we should regard both curriculum description and judgment as products of equal significance, each with a unique role of its own (Scriven, 1994; Stake, 1967). Nevertheless, it has been commonly agreed that curriculum evaluation involves the objective and systematic gathering of information pertaining to the nature and quality of the curriculum, i.e., its design, implementation and the results it delivers. This definition of curriculum evaluation reflects the emphasis on substantiating the effectiveness of programs or "proving" their worth.

When positivist assumptions are applied, the evaluation of a curriculum as a fixed product is conceived as a *technical-rational and productive process.* Technical, in so far as it regards curricular decisions or actions as standardized, systematic and objectively reached by evaluation experts in the main, on the basis of a means-ends rationale. Productive in that it considers curriculum evaluation a process whose main purpose is to render an unequivocal judgment or curricular decision. This perspective is largely one of control. Its key value is that of order (Norris, 1990) and congruence. Thus, where this approach is concerned, curriculum evaluation is an instrument for improving and encouraging commitment to the curriculum. It shows an audit mentality of compliance monitoring and consequently, its discourse comprises concepts such as expectations, discrepancies, fidelity, congruence, satisfaction, feedback and correction, clients and products.

Evaluation and the Evolving Curriculum

The above approach to curriculum evaluation contrasts sharply with the evaluation approach used when the curriculum is perceived as an evolving process. In the latter case, the evaluation is influenced by responsive, fourth generation, and empowerment approaches. Although different, all are rooted in the social constructivist paradigm and the participatory inquiry view (Heron, 1996) and generally imply that curriculum evaluation *is a process of meaning making*: "a meaning-making technology which is applied to the curriculum, instruction and learning" (Hill, 1997, in Presno, 1998).

When the curriculum is conceived as an evolving process, curriculum evaluation needs constantly to adapt to the unpredictable nature and conditions of the curriculum and its corresponding learning environments, as well as to the constant involvement of various groups in its evolution (primarily teachers, students, parents and experts). If we accept the premise that knowledge is constructed rather than reproduced, and the idea that there are as many ways of constructing knowledge as there are individuals or groups, then our approach to curriculum evaluation will require an evaluative process that reflects the diversity of viewpoints and frames of reference regarding the curriculum. Thus, curriculum evaluation ought to address all of the many intra-school/classroom curricular realities and inter-school/classroom curricular realities. Moreover, where curriculum evaluation is inspired by the participatory approach, which posits that knowledge is constructed interactively and influenced by the individuals and context in which it functions; that it shapes individuals' construction and is also shaped by them, then the obvious inference is that curriculum evaluation is a joint activity (Stake, 1975, 1980), which can only be understood with reference to its context i.e., the classroom. It can therefore be conceived as a *shared and*

practiced continuous, situated process involving all of the individuals who play a role in examining and understanding the curriculum evolution process, i.e., the teachers, students, parents, superintendents and experts.

Curriculum evaluation is thus a communal activity, wherein most of the fundamental evaluation issues regarding the entire curriculum are constructed by a diversified, broad-based community of inquirers. The relevant issues are subjected to constant reconsideration and reexamination in a dialogic process embracing all relevant parties (Stake, 1995).

Curriculum evaluation is also a highly participatory mode of continuous inquiry that not only nourishes a dynamic mode of curriculum planning but helps those more directly involved in planning to achieve their individual and communal goals, for example the teachers and students. This is one of the advantages advocated in the empowerment approach to evaluation (Fetterman, 1994; Patton, 1994, 1998). It implies that guiding and learning are also aspects of curriculum evaluation and curriculum evaluation is therefore a *collaborative and reflective meaning-making process, situated, systemic and interwoven with curriculum planning/evolution, which contributes to ongoing learning and change.* Curriculum evaluation is not a short-lived event or process with a clear-cut beginning and end. On the contrary, on the basis of the negotiated needs, goals, beliefs and knowledge of everyone involved, it stimulates action and evolves over a long period hand in hand with the evolutionary curriculum planning process. In theory the process continues indefinitely, uniting external and internal, individual and social, process and product, not as separate entities, but as the elements of mutually constituted social-educational-cultural activities.

Once we consider the social element in evaluation, the emphasis is shifted away from the activities of gathering, processing and transmitting information with the aim of modifying and enhancing a curriculum, to an emphasis on participation and interaction that engenders and sustains a context conducive for curriculum planning and evaluation. Evaluation that proceeds hand in hand with curriculum planning provides a means of acquiring "knowledge-in-action", transforming or taking responsibility for such knowledge, and for producing and reproducing the curriculum. The evaluation locus moves from the individual evaluator's mind to the participatory framework in which the evaluation occurs: evaluation is no longer conceived as the work of a lone individual, but rather comes to be seen as a process in which the entire community participates.

We can now define the process of evaluating an evolving curriculum as a *continuous knowledge co-construction process that takes place in individual contexts and through social collaboration, experience and negotiation regarding meanings, values, and actions.* Evaluation goals and processes are attained through mindful conversations between all involved, i.e., students, teachers, parents, superintendents, evaluators and other stakeholders. The evaluator functions as guide, monitor, facilitator and learner. Teachers, students and stakeholders play a central role in implementing and regulating the process (learning and evaluation). They are both the subjects of evaluation and the evaluators. The cardinal concepts of this evaluation perspective are collaboration, inter-subjectivity, context-specificity, diversity, meaning, construction, reciprocity, and participants/stakeholders. This contrasts strongly with the characteristic discourse of the curriculum as a fixed product, which reflects modern values such as absolutism, stability, objectivity, certainty, and prediction.

Use and Purpose of Curriculum Evaluation

Shadish, Cook, and Leviton (1991) have identified three uses of evaluation: the instrumental, which concerns deciding which changes to make in a curriculum based directly on evaluation results; conceptual, when evaluations are not used directly to change the curriculum, but rather indirectly affect perceptions regarding the curriculum. The impact of conceptual use is generally long term, and as Weiss (1979) explains, more akin to enlightenment (knowledge expansion). The third use is persuasive, or symbolic, and is applied to convince people that a position taken prior to initiating the evaluation is in fact correct. How the evaluation will ultimately be employed will determine the kind of information needed for the evaluation and the method used to gather the data.

Accepting the above classification, it seems quite obvious that curriculum evaluation is most frequently intended to be used instrumentally in cases where the curriculum is viewed as a fixed product, whether in terms of intentions or in terms of actual utilization. This clearly stems from the evaluation logic and commitment to rational decision-making, where the main purpose of evaluation is to give feedback to the policy-making authority – either a government department in a centralized educational system, or curriculum development experts in the private or public sector. Ideally, evaluation findings and subsequent recommendations are synthesized and generalized and applied by head office management and planning decisions. From the standpoint of government sponsors of evaluation studies, superintendents and others, the instrumental use of curriculum evaluation is often seen as a strategy for establishing accountability.

We need, however, to differentiate between evaluation conducted at the formative stage of the curriculum, and summative evaluation. As regards formative evaluation, it is used instrumentally to provide curriculum developers with feedback during the early stages of curriculum development or during the phased development of prototype curriculum units (Lewy, 1991). In contrast, the instrumental use of evaluation in the context of summative evaluation concerns itself with curriculum impact and so addresses matters such as effectiveness and value.

The *instrumental use of evaluation* also might occur when the curriculum is perceived as an evolving process, although this case is somewhat different from the instrumental use of evaluation in the case of a fixed product curriculum. Here, instead of supplying information to the policy making echelon, following a rational decision-making process, instrumental use of the evaluation is expected to take place locally, *in situ*, at each particular site (school) and at numerous junctures during the curriculum evolution. Knowledge constructed during the planning process receives immediate consideration and is applied for planning purposes, guided by the unique requirements of each locale. The policy process at this level is transparent to stakeholders since it represents an intrinsic part of their reality given that they are regularly involved in all the major issues that the evaluation is concerned with, and play an active part in the actual evaluation and the planning conclusions reached. There is no difference therefore between the use of evaluation for formative and summative purposes since the process is entirely formative in nature.

Conceptual use might also take place in curriculum evaluation in a fixed product context since it emphasizes the importance of improving our understanding of the

curricular, instructional and learning concerns and strategies underlying educational needs, the fit between these concerns and the proposed curriculum solutions. The *conceptual use* of evaluation is moreover important to the theory and logic behind the implemented curriculum. It is particularly relevant since such knowledge is perceived as general theory, strategy, or policy that can be generalized and used to modify these strategies and policies in future. *Conceptual use* is equally relevant to the curriculum as an evolving process, as it helps to increase our understanding of the essential factors of learning and instruction, student-teacher relations, curriculum design, change in the beliefs and behaviors of students, teachers and stakeholders, the nature of the evolutionary process of the curriculum, the nature and structure of the social construction of knowledge, etc. This however differs from the *conceptual use* of evaluation in a positivist-based curriculum context. In this case, knowledge is conceived as embedded in and connected to the situation where the learning occurs, so that thinking processes and knowledge constructed are inextricably tied to the proximate social and physical context in which the curriculum is experienced. Thus, what is learned is context-bound, and since knowledge is constructed only in specific contexts, it is seen as "situated knowledge" (Lave, 1988), which, although not generalized, has a capacity to be enlightening.

Finally, *persuasive use* of evaluation is also important when the curriculum is viewed as a fixed product. During policy debate, evaluations can often be brought to convince decision-makers of certain conclusions and to implement change already suggested by the administration. Thus, evaluation can be used either to legitimize what is already known or decided, or to change an existing decision. In an evolving curriculum context, persuasive use can be meaningful, but in a somewhat different sense. The negotiations that take place as the evaluation proceeds, which take the form of give-and-take among many different viewpoints, may be regarded as persuasive uses of evaluation. Such negotiations arise either during consensus seeking and establishment on issues of concern, or when consensus is sought though not reached. Persuasive use can come to be influential in a situation where there is respect for alternative views, which are treated as legitimate and valued.

However, when we examine the evolving curriculum in light of the distinctions between the three categories of use, we find that these distinctions, which are clear in the case of the positivist-based curriculum, become blurred. Here, evaluation is a collaborative knowledge-construction process, used instrumentally, conceptually and persuasively to construct action-oriented knowledge during the curriculum's evolution. In this way, it is possible to share information and values, that relate to all aspects of the curriculum, and to encourage all the participants in the evaluation process to learn mindfully and exercise their critical faculties as they learn. The simultaneity of the planning and evaluation activities, and the reciprocal interactions between the protagonists and co-emergent evaluation process, reflect the main purpose of evaluation, which is to increase the effectiveness of curriculum planning and benefit everyone involved.

The Implications for Summative and Formative Evaluation

It seems fairly obvious that the well-accepted differentiation between formative and summative evaluation that apparently holds true for the curriculum as a fixed product cannot be similarly applied in the case of the curriculum as an evolving process. In the

former case, formative evaluation is a phase in the evaluation process which is carried out in the developmental stage of the curriculum or during the development of certain of its representative courses or units, with the aim of inviting improvement (Lewy, 1977; Tessmer, 1993). Summative evaluation on the other hand is usually carried out when the evaluation is complete and the curriculum has been established. Although not totally agreed upon (Scriven, 1991), the more typical concern of summative evaluation is the evaluation's impact, while the issues it addresses involve effectiveness and value. Put another way, summative evaluation, most typically, allows us to determine whether the curriculum is effective in terms of efficiency and answering identified needs (Stevens, Frances, & Sharp, 1997). In the context of the curriculum as an evolving process, this distinction is no longer relevant since the evaluation of the curriculum constantly evolves synergistically with the curriculum planning process. According to Abma (1997) there is no natural conclusion and no center, and therefore curriculum evaluation in an evolving curriculum context is primarily formative since its goal is to learn and reach conclusions for relatively rapid application in the on-going curriculum planning.

Since what sets summative evaluation apart from formative evaluation is its end-state, which, theoretically, in the case of the evolving curriculum, cannot be determined, the difference between summative and formative evaluation can be conceptualized as in terms of *forward looking and backward looking,* or *proactive* and *retroactive,* to use Stufflebeam's (1972) terms. Whereas *forward looking evaluation* focuses directly on enhancing the curriculum planning process, a retrospective look at the process, from any given point, provides a more holistic view of the evaluation-planning path and its significance. A holistic perspective is certainly characteristic of summative evaluation. However, a well-planned design is necessary in order to obtain a traditional summative evaluation, and evaluators tend to keep their distance from the curriculum developers (Keeley-Robinson, 1984). On the other hand, in the case of the evolving curriculum a backward looking or retrospective evaluation requires no special design nor does it need any distancing from the other participants. It nevertheless still allows a holistic view to be explored and interpreted with regard to the planning process, and any movement toward accomplishing the emergent goals may thus be viewed within the broader context.

What is Worth Evaluating?

Any discussion of evaluation must specify the object of the evaluation and the kind of evaluative information needed (Nevo, 1995). However, when we examine a curriculum as a fixed product we need to rephrase the question. Instead of asking "What is worth evaluating" we are actually being guided to ask "What *should* or *is required* to be evaluated?" since most of what is evaluated is dictated by the curriculum. The curriculum boundaries and specifications maneuver us along a particular clearly defined path. For a long time the main evaluation focus for a curriculum viewed as a fixed product was on results or outcomes and thus evaluating a curriculum meant evaluating the quality of its results or outcomes which typically implied measuring student achievement. For example, according to Scriven, in order to establish the merit of all or part of a curriculum, we do not need to know how programs work or why fail to work, or even what the components are: "Black box evaluation is not a contradiction in terms" (Scriven, 1999).

Over the years, however, under the influence of evaluation models or approaches developed by prominent evaluators such as Stake, (1967; 1975), Stufflebeam (1983), Alkin (1969), Scriven (1967), and Provus (1971), evaluation objects have been extended to include, besides students and their achievements, curriculum goals and curriculum design and implementation practices. Stake, for example, argues that curriculum evaluation should reflect the fullness, complexity and importance of a curriculum, and that curriculum evaluation should therefore go beyond the measurement of outcome data and focus on antecedent conditions (prior conditions that may affect outcomes), and classroom transactions (the process of implementation). In his CIPP model, Stufflebeam (1983) suggests that curriculum goals, design, implementation and products should be the focus of evaluation. In other words, the merit of a curriculum's goal, the worth of its design, the quality of its implementation, and the value of its outcomes should determine the quality of a curriculum.

In the context of an evolving curriculum, being able to predict possible learning outcomes and teaching methods is no easy matter. When a curriculum is evolving, educational goals, instructional and learning processes, instructional resources, etc., cannot be determined in specific or absolute terms and are assumed to change as a course progresses. Therefore, in the context of an evolving curriculum, we can only make general statements and pass value judgments with regard to what students and teachers should know, how they should develop, and what they should be able to do. Thus, evaluation questions do not simply focus on whether intended outcomes have been realized, but examines what was learned. Did what was learned and not learned match expectations? and, How much of what they learned did students and other stakeholders value? What is more, since decisions regarding educational goals and learning processes evolve as the curriculum progresses, the evaluation focus comes to rest more on the processes, circumstances, reasons and people that have led to these goals than on just the attainment of these goals. Nevertheless, it is important to emphasize that goals, whether fixed or changing, general or specific, are expected to be attained and are therefore an object of the evaluation process.

In both the evolving and most traditional type of curriculum, students sometimes learn what they were not expected to learn and sometimes do not learn what they were expected to learn. While this may indicate failure to learn what is expected and valued, it does not show a problem with learning per se. With the traditional evaluation approach, however, unexpected or non-defined goals would slip by unmeasured, because they are not factored in ahead of time. A similar pattern emerges when evaluating learning processes. For example, a teacher or students might decide to tackle certain contents in an order that differs from that of the curriculum. The traditional, "high fidelity approach" to evaluation would consider this an implementation failure. However, an evaluation of an evolving curriculum would see the order chosen for the learning as prompting further inquiry and would use this as data for future discussion, decision-making and action.

Basically, in the context of the curriculum as an evolving process, the curriculum evaluation issue is not so much "who can do what", i.e., whether the teacher can implement the curriculum as expected or whether students can meet expected levels of performance, but rather what is "there" in the learning situation that *can* be done, can be chosen to be done, and what conditions will enable it to be done. Consequently, what we learn is not a

matter of whether the curriculum is implemented or not; nor is it a question of right, wrong, good or bad. What really matters are the circumstances surrounding the learning and development that occur. Assuming that a curriculum is evolving, the information that interests us is: What are the curriculum's focal points? How are these determined, interpreted and applied?, and finally, Why has the curriculum evolved in this way? Evaluation also examines whether, and in what way, the effects of the curriculum are desired, appreciated or accomplished by the evaluation partners. Only once we understand the evolving circumstances of the curriculum and how the participants construct it will we be able to render a valid interpretation of the curriculum. Put another way, in the context of an evolving curriculum, the objects of evaluation are not restricted solely to the goals, practices and outcomes, but also to the processes that lead to the decisions taken by the participants.

Values, Criteria and Quality

Let us now look at the question of how we can tell whether or not a curriculum has value? Does the decision regarding value depend on whether the curriculum is static or evolving? According to Hartman (1967), something has value when it is fulfilled by its concept. In other words, when a curriculum matches a person's or group's concept or idea of it, it is thought to be worthy, good, exceptional, etc. Hartman also suggests that we differentiate between three categories or dimensions of values: *extrinsic, systemic* and *intrinsic*. An extrinsic value is defined as something that realizes an abstract concept. If the idea proves practical, it is said to have extrinsic value. Systemic value relates to the fulfillment of systemic ideas including mental constructs, logical entities and formal relations (Presno & Presno, 1980). Finally, intrinsic value is a value that produces something that is one of a kind, i.e., the value is derived from the exemplification of unique ideas. Hartman's categories enable us to assess the value of a curriculum from three different perspectives.

Where the curriculum is a fixed product, to find out whether it has extrinsic value, the actual program as it exists must be compared with its conception defined by the authority, developers or initiators. Thus if a curriculum is designed to improve students' knowledge or change their attitudes, in order to determine its value, we must assess the utility and effectiveness of the curriculum based on the standards defined for the criteria measured. Moreover, a curriculum would be considered as having systemic value if it possessed a distinct, tangible, learning structure that coincided with the structural model deemed appropriate by its developers with regard to such dimensions as clarity, relationships between parts of the curriculum, instructional organization, etc. Conversely, if the structure diverged from the authorities' conception, we would say that the curriculum lacked systemic value. Lastly, we can also determine the intrinsic value of a curriculum on the basis of a comparison. This time, however, we would ask whether the ideas, approaches or outcomes in a curriculum that are supposedly unique are indeed so compared with other curricula.

In the context of an evolving curriculum, the three dimensions of values are applicable but in a somewhat different sense. Since most comparisons are tentative and involve various participants, extrinsic and systemic value are actually determined at specific times through out the evaluation process, whenever a decision or a new action is

taken regarding future curriculum planning. Both extrinsic and systemic value can also be determined at agreed upon "end points", yet this time, by retrospectively comparing accomplishments relative to those established by its own participants. In this context then, the valuing process is embedded in the evaluation process itself and these values immediately serve the on-going/continuous planning process. The curriculum is thus viewed not as value free but as having its own implicit values. This point is further exemplified when considering the idea of an intrinsic value.

In the context of the evolving curriculum, the intrinsic value, representing unique ideas, is by its own definition the meaning of the curriculum. That is, being carried out to meet immediate and evolving specific and situational needs of a unique group of participants, the description of the curriculum including the process of its emergence, the goals it defined and attained, the learning that has occurred among all its participants, and the instructional resources and processes that have been developed and used, is its singularity. The curriculum and its meaning, thus, together make up the intrinsic value of an evolving curriculum. This interpretation of value is supported by Stake (1998) who once used to differentiate between description and judgment and to appreciate both, and more recently has come to the to the conclusion that: " the meaning of an evaluand and its quality are one thing, not two".

Since value resolution is the most important element of evaluation, Scriven (1980) believes that evaluators need to apply rules and rubrics in their work, and that judgment should be calibrated to minimize the risk of bias. Evaluation is typically formal which helps to prevent partiality from entering the picture. When evaluating a curriculum that is conceived as a product, the most common type of evaluation involves choosing valuable criteria and standards, and assessing the performance of the evaluand against these standards. The final stage is when the evaluator synthesizes the results obtained and gives an evaluative judgment. This contrasts with the evaluation approach in the case of a curriculum which is seen as organic/dynamic. Here, the value resolution process is continuous and collaborative. No attempt is made to produce a value-free evaluative study. Generalized rules for evaluation should not be applied to an evolving curriculum, nor should it be judged by a set of rigid standards/criteria regardless of the surrounding circumstances and concerns. Evaluation dimensions or criteria are considered important when they are adapted to the interests, concerns and values of the particular school or class during the planning process. These criteria and the way in which desired attributes are viewed may differ depending on the location, and variations may be found in the same place at different times depending on the learning context. Therefore, typical criteria such as clarity, structure, coherence, validity, authenticity, flexibility etc., take on different meanings depending on the context within which they are applied, and what is considered valuable is relative, negotiable, adaptive to situational demands and chosen by the participants (Levine 1999). As an example let's view the meaning of a typically used evaluation criterion, namely, curriculum coherence.

When viewed as a product, the curriculum is assessed in terms of its level of coherence. This arises from the assumption that the curriculum is not an arbitrary collection of contents or knowledge but an organized body of knowledge somehow connected to yield a kind of unity or completeness, which can be characterized and evaluated. The questions usually asked with regard to coherence are: Does the sequence of objectives and activities

form a structure which reflects the structure of the discipline or knowledge domain? Is there a relationship between different subject areas? Are prerequisites for one domain learned in other domains "covered" by the curriculum, or must they be acquired separately? Are new programs and information integrated into the existing curriculum, and if so, how is this achieved? In other words, checking for coherence means reliance on an "external" "objective" framework dictated by the discipline or knowledge domain and mostly based on teachers and expert opinion. Evaluating coherence in this context is done prior to introducing the curriculum into the school system and can be examined once in several years.

The meaning of coherence changes when we discuss the dynamic, emergent curriculum. In this context, coherence is not assessed in the light of an external framework, e.g., subject area or knowledge domain, but in the light of the relationship between the world outside the school and the students' and teachers' internal worlds. It is seen as a relationship, in the sense of both connection and meaning, on the part of the individual (internal) and reality (external). That is, coherence would be achieved if we succeeded in establishing connections between what is meaningful to students and their teachers, and real life phenomena and events. The fact that the curriculum is defined as an evolving process means that the level of coherence cannot be assessed prior to learning. On the contrary, because coherence becomes contextual, it is shaped and constructed during the learning process and involves an examination and clarification of meaningful contexts. Coherence is thus being constantly examined and can more globally judged only in retrospect.

Methodology and Methods

Since the meaning of curriculum evaluation and the expectations from it will vary considerably depending on whether the curriculum is viewed as a product or an evolving process, we also need to explore how evaluation knowledge is gleaned in each curriculum context and how this relates to the methods used.

Constructing Evaluation Knowledge

In the context of the curriculum as a fixed product, knowledge is constructed within a number of well-defined boundaries set by the authority responsible for the curriculum. The evaluation process characteristically takes a logical and rational approach and deductively traces the relationship between specified inputs, implementation processes and recorded outputs. Knowledge construction uses positivist, scientific methodology, which is applied objectively to both the measurements used and in terms of the remote perspective adopted in the evaluation process. This also encourages evaluators to use linear models in their work and there is no shortage of models that prescribe a step-by-step approach to evaluation or advise adopting a cyclical approach. Moreover, the knowledge construction that takes place is based on the perceptions and conceptions of a single evaluator who serves in the capacity of a lone expert and uses scientific methods to accumulate knowledge.

On the other hand, knowledge construction in the context of evaluating an evolving curriculum differs significantly. Curriculum evaluation is no longer seen as an exercise in acquiring information undertaken by an outside agency whose task it is to examine a

product's components. Instead, curriculum evaluation has a new identity, referring to knowledge construction processes formed through partnership in situated planning practices. Knowledge is therefore constructed out of the ongoing dialogue and highly interactive communication that occurs throughout the curriculum evolution and evaluation process. It draws on discussion, conversation, collaboration, negotiation and self-reflection in order to achieve a shared meaning. Or, as Foucault (1981) suggests, knowledge construction is the result of critical reference to what exists and it develops through ideological confrontation. This commitment to ongoing dialogue assists in refining questions, concerns, methods, values and interpretations, and the curriculum and evaluation design. The scope and orientation is not top-down, but interactive.

The knowledge constructed goes beyond the beliefs, needs or specific understanding and expertise of any individual or groups within the larger group of participants involved. This is referred to as "engaged pluralism", which according to Bernstein, (1991) implies an acknowledgement of the incompleteness of each individual perspective followed by the agglomeration and incorporation of the views of diverse others. The diversity within the community formed by the participants creates what Matusov (1996) calls "inter-subjectivity without agreement"; differences of opinion - and different ways of doing things – which actually provide the impetus for change in the nature of the joint evaluation activity.

Knowledge construction, which is an adaptive process in that it undergoes transformation as the curriculum and its evaluation evolve, is both iterative and dynamic. As a participatory inquiry it experiences cycles of reflection and action (Reason, 1994). Its dynamics are reminiscent of the interactions found within a complex system (Brodnick & Krafft, 1997). Meaning is frequently transformed, as evaluators and stakeholders ask questions together, seek answers to questions about what they see, and act as the planning goes on. Thus knowledge construction is non-linear and prompted by juxtapositions of events or ideas. To quote Abma (1997), "it is understood as a discursive practice, as an outcome of thousands of interactions grounded in the interpretation of the participants" (p. 109). This conception is aligned with Foucault's (1981) view that knowledge develops more in an anarchical way than systematically, and that it is an outcome of diverse, unconventional ideas and of curiosity. Individual and group knowledge, experience and understanding become a pooled resource as the group arrives at a consensus. It is this tension between diversity and consensus that is the driving force behind the knowledge construction process. While some may think consensus is desirable, others may understand that the emphasis should not be on consensus seeking but on exploring disparate views and presenting them. While the former assume that differences can, and should, be resolved, the latter believe that differences between people can be harnessed to engender new possibilities in evaluation.

Knowledge is inductively constructed in a process that builds up from specific events and addresses processes that occur in a class or a school. Inductive reasoning leads the evaluation conduct within a specific context by observing the curriculum planning as it develops, in order to construct knowledge regarding to issues of concern. For example: With regard to goal specifications, the evaluation would want to know which goals were chosen, how they were chosen and why. It would also enquire into the circumstances in which teachers and students developed certain capabilities, attitudes, knowledge or beliefs or whether this development had a linear trend, and so on. However, generalization, which

looks beyond situations, is not a matter that curriculum evaluation of an evolving curriculum looks for or is concerned with. The most important outcomes of the evaluation process are descriptions, although sometimes, along the way, the constructed knowledge may result in recommendations and prescriptions whose basis lies in shared meaning and local relevance.

Methods

When embedded within a positivist worldview, the evaluation of the curriculum viewed as a fixed product applies a rather rigid definition of methodology, namely the methods and techniques used to reach objective and generalizable facts. Mandating a rigorous separation of facts and values, the inquiry process adopts the same clinical distance as taken in more traditional research approaches, often applying the same methods used in controlled experiments in the "hard" sciences (O'Connor, 1995). These methods address the curriculum as though it did not exist in a context, but only in carefully controlled, artificial conditions (Guba & Lincoln, 1989, Stake, 1995). Although the inquiry methods mainly focus on quantifiable indicators of success or failure, good or bad, some methods also incorporate qualitative measures, particularly in the descriptive section (Guba & Lincoln, 1989; Stake, 1995). The main procedures involved are asking questions, developing the study design, defining variables, developing instruments, collecting data as objectively as possible, analyzing data and arriving at conclusions or recommendations through a process of synthesis. A major emphasis regarding these processes is on achieving precision, reliability, and validity.

Where the curriculum is evolving, the methods of inquiry can use some of the techniques for data gathering (e.g., surveys, interviews, questionnaires, focus groups, etc.) employed in traditional evaluation studies. However, the reasons for gathering the data and the scheduling of this stage are markedly different, as are the procedures for crystallizing the design and constructing the instruments. While traditional evaluation design uses a framework based on a predetermined theory, and aims to generalize and predict, evaluation in the context of the evolving curriculum is designed to learn from events as they occur and to help promote and accelerate change. Thus, this methodological mindset shows acceptance of the fact that prior to an investigation one cannot know all that it will entail or uncover, and thus the methods become part of a continuous interplay with new emerging data as the data collection and analysis proceeds. In turn, this further inspires new ideas regarding which data are relevant, and how and when they should be used. The key processes of the evaluative inquiry in the context of evolving curriculum are: asking questions, identifying and challenging values, assumptions and beliefs, reflection, and dialogue; collecting analyzing and interpreting data; action planning and implementation (Preskill & Preskill, 1997).

Qualitative and quantitative measurements can both be applied depending on the specific issues investigated. Thus, the data are not objective but rather understood in terms that invoke the values of the interpreter. Therefore, informal logic (Scriven, 1987) designed to probe the incompleteness and imprecision of existing knowledge in its particular context, mainly guides the methodology underlying the evaluation of an evolving curriculum, countering formal logic within the inductive-deductive framework which sets the methodological basis of the traditional approach to curriculum evaluation.

The Role of the Evaluator

According to Apple (1992) and Lubeck (1994), we should exercise caution when incorporating new ideas into old agendas, otherwise we might inadvertently change the very practices that structure professional careers. What this means is that, given the different meanings of evaluation in the context of the various types of curricula we have been discussing, the respective role of the evaluators in each case is likely to be significantly different.

When a curriculum has been conceived as a fixed product, the evaluator will mostly be involved in measuring and explaining how the curriculum was implemented and what its outcomes were. The critical question facing the internal or external evaluator is, Have the goals been reached, and was the implementation right or wrong? To answer such questions, the evaluator draws up and implements the design, procedures and instruments, then gathers and analyzes the data obtained and transmits whatever information emerges on the assumption that if the design is followed properly it will produce a reliable and valid judgment with regard to the curriculum quality. The scope and orientation of the evaluation is top down, underscoring the evaluator's sole authority. Normally, a certain distance is maintained between the evaluator and the developers, the teachers and students, and other stakeholders, implying that the evaluator works on, and not with, people. We might say that the evaluator acts as an omnipotent voyeur, since it is he or she who acts as the expert or judge and controls the evaluation process.

In the case of the evolving curriculum however, evaluators become the collaborators, facilitators, interpreters, mediators and learners with regard to both the curriculum and the evaluation process. The evaluator starts the evaluation, "ball rolling" initially, and occasionally intervening to encourage everyone to keep questioning, reflecting and acting upon their thoughts and experiences while the curriculum planning emerges. Since nothing that concerns curriculum may be taken for granted, the evaluator adopts the role of facilitator, encouraging participants' to question, reflect upon and discuss issues regarding the curriculum. This is naturally done in addition to undertaking the design and implementation of the data collection, analysis and interpretation activities.

The evaluation focus is on questioning the origins of conceptualizations regarding educational goals, nature of knowledge, teaching and learning and the implications within the specific context and educational circumstances. At various junctures during the evaluation process, the evaluator will reflect back to the participants their own vision of the curriculum presently used, the directions in which they see it going and the perspectives of the other participants (Levine, 1999).

The evaluator is also a learner who uses *dialogue* as a catalyst for knowledge construction. This dialogue represents more than just the coordinated actions of an autonomous agent: it guides all involved through a collective activity (Nevo, 1995). Within an evolving, situated and locally designed curriculum that adopts a participatory inquiry approach, the evaluator to some degree also plays the role of teacher since he or she enhances the relevant stakeholders' evaluation thinking processes and skills, further highlighting the fact that the evaluator's work is with others, not about them.

We see therefore, how the evaluator becomes a partner in the planning team, which means that the distinction between an external and internal evaluator (Scriven, 1991) is irrelevant. As a member of the planning team, the evaluator is responsible for maintaining an atmosphere that supports a spirit of inquiry, participants' openness to multiple viewpoints and findings, a commitment to considering change and a willingness to learn. These responsibilities and activities accompany planning in an evolving, rapidly changing environment of constant reciprocal interactions and change. As such, the evaluator supports knowledge construction that is sensitive to the local situation, mindfully focused and time dependent (Toulmin, 1990). Since in this context, curriculum evaluation is conceived as a socio-cultural process based on negotiating meaning, values, views, skills and the social construction of knowledge, it seems quite obvious that the evaluator must be sensitive to the feelings and rights of individuals, in order to serve as the process facilitator. Thus, the evaluator's role is not to deliver solutions but to assist the various stakeholders in viewing, interpreting, redefining and resolving their own concerns, problems and visions. This role therefore requires a capacity to balance reflection and action, challenge subjective views and inter-subjective dialogue – with or without agreement – and secure authentic collaboration. Within this open and transparent democratic environment, the evaluator will not necessarily be objective and is allowed to present his or her own subjective views as a voice in the collaborative conversation (Mabry, 1997).

According to Greene (1994) the issues/questions addressed by an evaluator distinguish one evaluation methodology from another. The typical and most important questions asked by an evaluator when a curriculum is conceived as a fixed product are: Is this a well-designed curriculum? Is the curriculum implementation consistent with its design? Have students mastered the chief learning outcomes identified in the planned optimum curriculum? Was the curriculum effective in achieving the overall goals, its mission, and the vision of the ideal curriculum? On a more specific level the evaluator asks: What was the curriculum rationale? What were the specific goals of the curriculum? What methods should be used for the evaluation? What data should be collected? and finally, How should curriculum judgment be made?

In the case of an evolving curriculum, a different set of questions will usually be asked. The questions are generally *conditionally* phrased and they reflect the participatory nature of the curriculum: What *might* be a rationale? What is important *for you* to improve in the system/school/classroom and why? What *might* the goals be and how *might* they evolve? In your opinion, what is the most important aspect of subject X? How might a theme/topic be facilitated? Why does it matter and to whom? What could be affectively engaging or important or difficult about it? Describe the possible social or political implications of the curriculum units of concern. How might we interpret the data? Is judgment desired, and if so, how could it be made? Who is involved in the evaluation process? How do the various stakeholders contribute to the planning and evaluation process? What might be considered valuable? Whose opinions or values are given priority?

Space limits me from elaborating on the questions that might frame the evaluator's inquiry, how they evolve, and how we deal with these questions. Nevertheless, it is important to realize that the scope of the evaluation inquiry is not only far broader, more sensitive to and more respectful of diverse viewpoints, but also that the questions are posed at different times along the planning-evaluation route, which allows the curriculum to be

portrayed and assessed in various phases of its evolution. It is not only the kind of questions asked that distinguishes the evaluation of a fixed product type of curriculum from the evaluation of an evolving curriculum, but the nature and timing of the evaluation procedures themselves. With an evolutionary curriculum, the curriculum needs become apparent as curriculum planning proceeds. Likewise, the features of the instruments and methods that are needed will emerge as the process unfolds. This of course contrasts with the need for clearly-defined, pre-set designs, procedures and instruments in the case of the fixed-product view of the curriculum. Furthermore, since each situation, school or classroom is unique and since within each school or class different phases of the curriculum planning may raise different concerns or issues, the evaluator will constantly be challenged to find new and/or revised and relevant evaluation procedures, instruments, variables and even stakeholders.

Table 1: Curriculum Evaluation – Two Perspectives

	Evaluation of curriculum viewed as a fixed product	Evaluation of curriculum viewed as an evolving process
Definition and description	Evaluation is a technical-rational and productive process	Evaluation is a collaborative, meaning-making process
	Objective and systemic collection of information regarding the quality of a curriculum in light of predicted processes and outcomes	Dynamic, emerging, collaborative process; unique, contextually and time-dependent; focus on describing the curriculum and its evolution
	Based on models, guidelines and standards; universal and general	Situated, dynamic, reflective, self-organized development process rooted in ideas and principles
	Mainly prescriptive	Mainly descriptive
	Formative and summative evaluation are distinct	Basically formative; forward and backward distinction is feasible
	Focus on judgment and decisions	Focus on continuously constructing action-oriented knowledge
Use, purpose and goals	Instrumental, conceptual and persuasive uses are distinct	Instrumental, conceptual and persuasive uses are interrelated/linked
	Measurement of curriculum implementation and outcomes	Search to understand planning, evolution, and achievements
	Provides feedback regarding the development of process prototype units (formative)	Suggests planning directions; facilitates decisions
	Provides information regarding curriculum impact and accountability (summative)	Monitoring, reflecting, constructing and negotiating context-specific knowledge

Table 1/cont.

Table 1 (cont.)

Quality and values	Quality determined by discrepancy between desired and observed	The value of the curriculum is its quality; value is inherent to the curriculum Description and judgment inseparable
	Description and judgment are distinct issues	Quality is context-dependent and conditionally phrased
	Quality is ultimately determined and stated unequivocally in absolute terms	Legitimates multiple perceptions of values and quality
	Preference for unified concept of quality	
	Extrinsic, systemic and intrinsic values are mostly established post-implementation	Continuous assessment of extrinsic, systemic and intrinsic values
Methodology: structure, design, and methods	Top-down, external, directed, controlled by experts (hierarchical and authoritative)	Participatory, self organized, evolving
	Preplanning of design, instruments, criteria and standards	Objects, instruments, and criteria are determined by negotiation between stakeholders as process unfolds
	Controlled conditions	Natural setting
	Rule-bound; standardized	Flexible, rooted in context, personal and collective knowledge (grounded theory)
	Rational mode of inquiry; search for causal links (means-ends rationale)	Search for complex patterns using informal logic
	Linear or cyclical process	Interactive and iterative process
	Legitimate black box evaluation	Clear box evaluation only
	Scientific methodology	Interactive and dialogical modes of knowledge construction depending on the planning process
	Quantitative emphasis	Emphasis on qualitative analysis; quantitative measures are legitimate
	Terminology reflects absolutes and certainties	Relative and interpretivist terminology
Evaluators	Individual researcher; sole authority	One of the partners/participants within a community of inquirers/developers (stakeholders)
	Internal and external evaluators are distinct	No distinction between internal and external evaluator
	Evaluators control and implement processes; are distant and neutral	A critical friend: collaborator, facilitator, and learner; personal values legitimate

Table 1 provides a summary of the principal differences between the curriculum evaluation process when viewed as a rational-technical action and the curriculum evaluation process when perceived as a dynamic-collaborative inquiry. The table addresses the critical factors of essence, use and purpose, values and valuing, structure, methods, and evaluator's role.

Conclusion

Modern conceptions of curriculum development and curriculum evaluation encourage us to value stability, regularity, certainty and universality; to apply guidelines and standards, and to assume that curriculum development, teaching practices and learning outcomes are predictable and carefully delineated. The aim of this chapter is to demonstrate that, in order to be relevant within a post-modern era, where curriculum is differently conceived, our approach to curriculum evaluation must undergo a fundamental change. This means embracing a fresh set of beliefs which align closely with the tenets of the more novel approaches to curriculum rooted in the constructivist and collaborative paradigms and value the constructs of diversity, particularity, contextuality, uncertainty and irregularity.

We have seen that positivist-based curriculum evaluation proceeds in clear-cut and predictable directions. Models are provided and guidelines are listed for evaluators to follow. Curriculum practices and outcomes are labeled "appropriate" or "inappropriate", "right" or "wrong". The evaluation rhetorically affirms the "truth value" of a core set of beliefs and values that appears beyond question. Knowledge is seen to have an absolute and certain quality, lending much power to the evaluation process and the evaluator as sole authority. Whereas positivist-based evaluation is mainly concerned with comparing intentions and actual performance using external, predetermined criteria for establishing success, or establishing causal relationships between teaching and learning processes and pre-defined outcomes, the main focus of collaborative and constructivist evaluation is on describing the curriculum, its meaning and its process of evolution, while being open to multiple visions and interpretations.

The above analysis outlines the differences in the meaning and design of curriculum evaluation when seen from the two different perspectives. Some approaches to the school curriculum may, however, fall somewhere between the two extremes. For instance, while a curriculum can be rigidly defined by its goals it can also allow teachers a considerable amount of freedom to adapt the curriculum as they wish. This obviously depends on the conditions or needs of a particular school, classroom or teacher. Alternatively, a school might choose a product-oriented curriculum for its core curriculum, and a constructivist type curriculum for fulfilling its other educational goals. In either case, for it to be meaningful, the curriculum evaluation must be designed and implemented to ensure that the ideologies and implied procedures of both the curriculum and the evaluation are compatible.

Traditionally, curriculum evaluation has been considered a contributing factor in curriculum development, mainly at the pre-formative and formative stages, thus ascribing evaluation a *planning* role, in addition to the role of appraising the general quality of the

curriculum. It seems, however, that neither *evaluation for planning* nor *evaluation of planning*, when viewed as perpetual, dynamic, context-specific, collaborative, meaning-making activities, with a leading role in the evolving curriculum, reflects the main features characterizing evaluation. Curriculum evaluation in fact, generates a new "identity" for curriculum thereby showing evaluation to be an inherent aspect of the curriculum planning process (*evaluation in planning*). Moreover it transpires that the evaluation process itself is a perpetual and self-developmental inquiry process (*evaluation as planning).* The curriculum evaluation process that emerges is flexible, yet methodical, open, yet directive, *and* respectful of the diverse, complex curricular visions, needs and constraints encountered in schools and classrooms. Embodied in it are new categories of relationships between people/stakeholders, all of which are grounded in an on-going dialogue that is open to changing events. Thus, curriculum evaluation takes on different forms and different trajectories of meaning in different contexts and situations. There is no evaluation model to follow or implement, and no standardized procedures or explicit guidelines. Instead there are ideas and principles, which provoke and challenge our thinking, beliefs and routines in both fields: curriculum and evaluation.

References

Abma, T.A. (1997). Sharing power: Facing ambiguity. In L. Mabry (Ed.), *Evaluation and the post-modern dilemma. Advances in Program Evaluation, 3*, 105-119. Greenwich, CT: JAI.

Alkin, M.C. (1969). Evaluation theory development. *Evaluation Comment, 2*, 2-7.

Alkin , M.C. (1994). Curriculum evaluation models. In T. Husen & T.N. Postlethwaite (Eds.), *The international encyclopedia of education* (2nd ed., *3*, pp. 1279-1283). Oxford: Pergamon.

Alkin, M.C., & Ellett, F S., Jr. (1990). Development of evaluation models. In H.J. Walberg & G.D. Haertel (Eds.), *The international encyclopedia of educational evaluation* (pp. 15-21). Oxford, UK: Pergamon.

Apple, M. (1992). The text and cultural politics. *Educational Researcher, 21* (7), 4-11.

Bernstein, R.J. (1985). *Beyond objectivism and relativism: Science, hermeneutics, and praxis.* Philadelphia: University of Pennsylvania Press.

Bernstein, R.J. (1991). *The new constellation: The ethical-political horizons of modernity/post-modernity.* Cambridge, MA: MIT Press.

Brodnick, R.J., & Krafft, L.J. (1997). *Chaos and complexity theory: Implications for research and planning in higher education.* [WWW document]. URL http://www.ship.edu/ ~rjbrod/complex1.html

Capra, F. (1989). *Uncommon wisdom: Conversations with remarkable people.* Toronto, Canada: Bantam.

Cross, B. (1995). The case for a culturally coherent curriculum. In J.A. Beane (Ed.), *Toward a coherent curriculum.* Yearbook of the Association for Supervision and Curriculum Development. Alexandria, Virginia: ASCD.

Davenport, M.R., Jaeger, M., & Lauritzen, C. (1996/7). A curriculum of caring *The Reading Teacher, 50* (4), 352-353.

Dewey, J. (1956). *The child and the curriculum: The school and society.* Chicago: The University of Chicago Press.

Dick, W., & Carey, L. (1987). *The systematic design of instruction.* Glenview, IL: Scott Foresman.

Doll, W.E. (1993). *A post-modern perspective on curriculum.* New York: Teachers College Press.

Dressel, P.L. (1986). *Handbook of academic evaluation.* San Francisco: Jossey Bass.

Elkind, D. (1995). School and family in the postmodern world. *Phi Delta Kappan, 77* (1), 8-14.

English, F.W. (1988). *Curriculum auditing.* Lancaster, PA: Technomic.

Fetterman, D. (Ed.) (1988). *Qualitative approaches to evaluation in education: The silent scientific revolution.* New York, NY: Praeger.

Fetterman, D. (1994). Empowerment evaluation. American Evaluation Association Presidential Address. *Evaluation Practice, 15* (1), 1-15.

Foucault, M. (1981). Questions of method: An interview with Michel Foucault. *Ideology and Consciousness, 8,* 3-14.

Gergen, K.J. (1992). In L.P. Steffe & J. Gale (Eds.), *Constructivism in education.* Hillsdale, NJ: Erlbaum.

Gergen, K.J., & Gergen, M.M. (1986). Narrative form and the construction of psychological science. In T.R. Sarbin (Ed.), *Narrative psychology* (pp. 22-44). New York: Praeger.

Goodlad, J.I., Klein, M.E, & Tye, K. (1979), The domains of curriculum and their study. In J.I. Goodlad et al., (Ed.), *Curriculum inquiry: The study of curriculum practice* (pp. 43-76). New York: McGraw-Hill.

Greene, M. (1993). The passions of pluralism – Multiculturalism and the expanding community. *Educational Researcher, 22* (1), 1-18.

Greene, M. (1994). Epistemology and educational research: The influence of recent approaches to knowledge. *Review of Research in Education, 20,* 423-464.

Greenberg, D. (1987). *Free at last: The Sudbury Valley school.* Framingham, MA: The Sudbury Valley School Press.

Guba, E.G., & Lincoln, Y.S. (1981). *Effective evaluation.* San Francisco: Jossey Bass.

Guba, E.G., & Lincoln, Y.S. (1986). The countenances of fourth generation – Evaluation: Description, judgment, and negotiation. *Evaluation Studies Review Annual, 11.*

Guba, E.G., & Lincoln, Y.S. (1989). *Fourth generation evaluation.* Newbury Park, CA: Sage.

Guba, E.G., & Lincoln, Y.S. (1994). Competing paradigms in qualitative research. In N.K. Denzin & Y.S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105-117). Thousand Oaks, CA: Sage.

Hamilton, D. (1990). *Learning about education: An unfinished curriculum.* Milton Keynes, Open University Press.

Hartman, R.S. (1967). *The structure of value: Foundations of scientific axiology.* Carbondale, IL: Southern Illinois University Press.

Heron, J. (1996). *Cooperative inquiry: Research into the human condition.* London: Sage.

Heron, J., & Reason, P. (1997). A participatory inquiry paradigm. *Qualitative Inquiry, 3,* (3), 274-294.

Heshusius, L. (1994). Freeing ourselves from objectivity: Managing subjectivity or turning toward a participatory mode of consciousness. *Educational Researcher, 23* (3), 15-22.

House, E.R. (1993). *Professional evaluation.* Newbury Park, CA: Sage.

Iannone, R. (1995). Chaos theory and its implications for curriculum and teaching. *Education, 115,* 41-45.

Iannone, R. (1998). Art as a theoretical base for the postmodern curriculum. *The Clearing House, 72* (2), 118-120.

Jasparro, R.J. (1998). Applying systems thinking to curriculum evaluation *National Association of Secondary School Principals. NASSP Bulletin, 82,* 598, 80-86.

Keeley-Robinson, Y. (1984). *Adult education issues for health education.* Hull: Institute for Health Studies, Hull University.

Kellert, S. (1993). *In the wake of chaos.* Chicago: University of Chicago Press.

Kliebard, H. (1992). *Forging the American curriculum.* New York: Routledge. Chapman & Hall.

Kuhn, T. (1970). *The structure of scientific revolutions* (2nd ed.). Chicago: Chicago University Press.

Lave, J. (1988). *Cognition in practice.* Cambridge, UK: Cambridge University Press.

Levin, R. (1999). Participatory evaluation: Researchers and service providers as collaborators versus adversaries. *Violence against Women, 5* (10), 1213-1227.

Levine, T. (1999). The nonlinear curriculum. In S. Sharan, H. Shachar, & T. Levine (Eds.), *The innovative school* (pp. 115-146). Westport, CT: Greenwood.

Levine, T., & Nevo, Y. (1997). *Facilitating children's and teachers' thinking via transdisciplinary and dynamic curriculum.* Jerusalem: The Ministry of Education.

Lewy, A. (1977). The nature of curriculum evaluation. In A. Lewy (Ed.), *Handbook of curriculum evaluation.* International Institute for Educational Planning, UNESCO. Paris.

Lewy, A. (1991). Formative and summative evaluation. In T. Husen & T.N. Postlethwaite (Eds.), *The international encyclopedia of curriculum.* Oxford: Pergamon.

Lincoln, Y.S. (Ed.) (1986). *Organizational theory and inquiry: The paradigm revolution.* Newbury Park, CA: Sage.

Lincoln, Y.S. (1991). The arts and sciences of program evaluation. *Evaluation Practice 12* (1), 1-7.

Lubeck, S. (1994). The politics of developmentally appropriate practice: Exploring issues of culture, class, and curriculum. In B. Mallory & R. New (Eds.), *Diversity and developmentally appropriate practices: Toward more inclusive theory, teaching, and social policy* (pp. 17-43). New York: TC Press.

Mabry, L. (1997). Implicit and explicit advocacy in postmodern evaluation. In L. Mabry (Ed.), *Advances in postmodern evaluation: Evaluation and the postmodern dilemma* (Vol. 3, pp. 191-203). London, England: JAI.

Madaus, G.F., & Kellagban, T. (1992). Curriculum evaluation and assessment In P.W. Jackson (Ed.), *Handbook of research on curriculum* (pp. 119-157). New York: Macmillan.

Matusov, E. (1996). Intersubjectivity without agreement. *Mind, Culture, and Activity, 3* (1), 25-45.

McCarl-Nielsen, J. (1990). *Feminist research methods: Exemplary readings in the social sciences.* Boulder, CO: Westview.

McCarthey, S.J., & Raphael, T.E. (1992). Alternative research perspectives. In J.W. Irwin & M. Doyle (Eds.), *Reading and writing connections: Learning from research* (pp. 2-30). Newark, DE: International Reading Association.

Migotsky, C., Stake, R., Davis, R. Williams, B. et al. (1997). Probative, dialectic, and moral reasoning in program evaluation *Qualitative Inquiry, 3,* (4), 453-467.

Moll, L.C., & Whitmore, K. (1993). Vygotsky in classroom practice: Moving from individual transmission to social transaction. In E. Forman, N. Minick & C. Stone (Eds.), *Education and mind: The integration of institutional, social, and developmental processes.* New York: Oxford University Press.

Nevo, D. (1995). *School-based evaluation: A dialogue for school improvement.* Oxford, UK: Pergamon.

Norris, N. (1990). *Understanding educational evaluation.* London: Kogan Page.

Norris, N. (1998). Curriculum evaluation revisited. *Cambridge Journal of Education, 28* (2), 207-219.

O'Connor, A. (1995). Evaluating comprehensive community initiatives: A view from history. In J.P. Connell, A.C. Kubisch, L.B. Schorr & C.H. Weiss (Eds.), *New approaches to evaluating community initiatives* (pp. 23-64). Washington, DC: Aspen Institute.

Patton, M.Q. (1986). *Utilization-focused evaluation.* London: Sage.

Patton, M.Q. (1994). Developmental evaluation. *Evaluation Practice, 15*, 311-319.

Patton, M.Q. (1998). The challenges of diversity in evaluation: Narrow versus expansive perspectives. *Science Communication, 2* (1), 148-164.

Polkinghorne, D. (1992). Postmodern epistemology of practice. In S. Kvale (Ed.), *Psychology and postmodernism* (pp. 146-165). London: Sage.

Preskill, S.L., & Preskill, H. (1997). Meeting the postmodern challenge: Pragmatism and evaluative inquiry for organizational learning. In L. Mabry (Ed.), *Advances in postmodern evaluation: Evaluation and the postmodern dilemma* (Vol. 3, pp. 155-169). London, UK: JAI.

Presno, V., & Presno, C. (1980). *The value realms: Activities for helping students develop values.* New York: Teachers College Press.

Presno, C. (1998). Assessing the value of general education programs: The addition of meaning-making to the e-value-ation process. *Education, 118* (4), 573-578.

Provus, M.M. (1971). *Discrepancy evaluation.* Berkeley, CA: McCutchan.

Reason, P. (1994). Three approaches to participative inquiry. In N.K. Denzin & Y.S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 324-339). Thousand Oaks, CA: Sage.

Reason, P. (1996). Reflections on the purposes of human inquiry. *Qualitative Research.* Thousand Oaks, CA: Sage.

Reigeluth, C.M. (1993). Principles of educational systems design. *International Journal of Educational Research, 19* (2), 117-131.

Rogers, C. (1973). *Freedom to learn.* Columbus, OH: Charles E. Merill.

Rogoff, B., Matusov, E., & White, C. (1996). Models of teaching and learning: Participation in a community of learners. In D. Olson & N. Torrance (Eds.), *The handbook of education and human development* (pp. 388-414). Cambridge, MA: Blackwell.

Schon, D.A. (1983). *The reflective practitioner. How professionals think in action.* London: Temple Smith.

Schon, D.A. (1987). *Educating the reflective practitioner: Toward a new design for teaching and learning the professions.* San Francisco: Jossey Bass.

Sapone, C.V., & Sheeran, T.J. (1991). A fourth wave model for supervision and evaluation. *NASSP Bulletin.*

Schubert, W.H. (1986). *Curriculum: Perspective, paradigm, and possibility.* New York: Macmillan.

Schubert, W.H. (1996). Perspectives on four curriculum traditions. *Educational Horizons, 74* (4), 169-176.

Schwandt, T.A. (1997). Reading the "problem of evaluation" in social inquiry. *Qualitative Inquiry, 3* (1), 4-25.

Scriven , M. (1967). The methodology of evaluation. In R. Stake (Ed.), *AERA Monograph Series on Curriculum Evaluation No. 1: Perspectives of curriculum evaluation.* Chicago, Il: Rand McNally.

Scriven, M. (1974). Evaluation perspectives and procedures. In J.W. Popham (Ed.), *Evaluation in education: Current applications* (pp. 3-93). Berkeley, CA: McCutchan.

Scriven, M. (1980). *The logic of evaluation.* Inverness, CA: Edgepress.

Scriven, M. (1983). Evaluation ideologies. In G.F. Madaus, M. Scriven & D.L. Stufflebeam (Eds.), *Evaluation models: Viewpoints on educational and human services evaluation* (pp. 229-260). Boston: Kluwer-Nijhoff.

Scriven, M. (1987). Probative logic. In F.H. van Eemeren, R. Grootendorst & T. Krueger (Eds.), *Argumentation: Across the lines of discipline* (pp. 215-247). Amsterdam: Foris.

Scriven, M. (1990). The evaluation of hardware and software. *Studies in Educational Evaluation, 16,* 3-4

Scriven, M. (1991). *Evaluation thesaurus.* (4th ed.). Newbury Park, CA: Sage.

Scriven, M. (1994) The final synthesis. *Evaluation Practice, 15,* 367-382.

Scriven, M. (1999). The fine line between evaluation and explanation *Research on Social Work Practice, 9* (4), 521-524.

Shadish, W.R., Cook, T.D., & Leviton, L.C. (1991). *Foundations of program evaluation: Theories of practice.* Newbury Park, CA: Sage.

Short, K., & Burke, C. (1990). *Creating curriculum.* Portsmouth, NH: Heinemann.

Smagorinsky, P. (1995). The social construction of data: Methodological problems of investigating learning in the zone of proximal development. *Review of Educational Research, 65* ,191-212.

Smith, N.L. (1994). Evaluation models and approaches. In T. Husen & T.N. Postlethwaite (Eds.), *The international encyclopedia of education* (Vol. 4, pp. 2101-2109). Oxford, UK: Pergamon.

Snyder, J., Bolin, F., & Zumwalt, E. (1992). Curriculum implementation In P.W. Jackson (Ed.),, *Handbook of research on curriculum* (pp. 402-435). New York: Macmillan.

Stake, R.E. (1967).. The countenance of educational evaluation. *Teachers College Record, 7,* 523-540.

Stake, R.E. (1975). *Evaluating the arts in education: A responsive approach.* Columbus, OH: Merill,

Stake, R.E. (1980). Program evaluation, particularly responsive evaluation. In W.B. Dockrell & D. Hamilton (Eds.), *Rethinking educational research.* London: Hodder & Stoughton.

Stake, R.E. (1994). Case studies. In N.K. Denzin & Y.S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 236-247). Thousand Oaks, CA: Sage.

Stake, R.E. (1995). *The art of case study research.* London: Sage.

Stake, R.E. (1998). Hoax. In R. Davis (Ed.), *Proceedings of the Stake Symposium on Educational Evaluation.* University of Illinois.

Stevens, F., Frances, F., & Sharp, L. (1997). *User-friendly handbook for project evaluation in science, mathematics, engineering and technology.* New York: NSF.

Stufflebeam, D.L. (1972). The relevance of the CIPP evaluation model for educational accountability. *SRIS Quarterly, 5,* 3-6.

Stufflebeam, D.L. (1974). Alternative approaches to educational evaluation. In W.J. Popham (Ed.), *Evaluation in education.* Berkeley, CA: McCutchan.

Stufflebeam, D L. (1983). The CIPP model for program evaluation. In G.F. Madaus, M. Scriven, & D.L. Stufflebeam (Eds.), *Evaluation models: Viewpoints on educational and human services evaluation.* Boston, MA: Kluwer-Nijhoff.

Stufflebeam, D.L. (1999). *Foundation models for 21st century educational program evaluation.* Paper presented at the Meeting of the American Educational Research Association, Montreal, Canada. 19-23 April.

Tessmer, M. (1993). *Planning and conducting formative evaluations.* Philadelphia: Kogan-Page.

Thomas, G. (1997). What's the use of theory. *Harvard Educational Revie,w, 67* (1), 75-104.

Toulmin, S. (1990). *Cosmopolis: The hidden agenda of modernity.* Chicago: The University of Chicago Press.

Tyler, R. (1949). *Basic principles of curriculum and instruction.* Chicago, IL: University of Chicago Press.

Young, M. (1999). Knowledge, learning and the curriculum of the future. *British Educational Research Journal, 25* (4), 463-477.

Weiss, C.H. (1979). Social science fiction. In G. Landsberg, W.D. Neigher, R.J. Hammer, C. Windle & J.R. Woy (Eds.), *Evaluation in practice: A sourcebook of program evaluation studies from mental health care systems in the United States* (DHEW Publication No. ADM 78-763) (pp. 242-243). Washington DC :US Government Printing Office.

Worthen, B.R., & Sanders, J.R. (1987). *Educational evaluation: Alternative approaches and practical guidelines*. New York: Longman.

The Author

TAMAR LEVINE is a Professor of Education and Chair of the Department of Curriculum and Instruction in the School of Education at Tel Aviv University, Israel. She teaches graduate courses on interdisciplinary and trans-disciplinary curriculum planning and evaluation and is involved in school change by applying progressive and critical educational perspectives to learning, instruction and evaluation. Her major fields of interest and research include design and evaluation of constructivist-based learning environments, students and teachers' epistemological beliefs and their impact on learning and teaching, the use of information technology in schools, and educational achievements of minority groups in mathematics.