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AUTHOR Shaver, James P.
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ABSTRACT

Epistemology traditionally has been defined as the division of philosophy that investigates the nature and origin of knowledge. More specifically, epistemology usually is said to be concerned with either the development of common bodies of knowledge or the establishment of personal knowledge. In recent years, epistemology also has come to be used to encompass how people learn coupled with the term "constructivism," it signifys learning as an active process that occurs as each person constructs his or her own portrayal of reality. This paper is concerned with the implications epistemology has for the education of social science teachers. There is a general lack of thought among educators about how what teachers bring to their teaching--for example, their frames of reference, including their beliefs about subject matter and how children learn--affects the purpose behind their teaching. Epistemology as knowledge-building and epistemology as learning are both relevant to the education of social science teachers. Research on the elements of epistemology is examined and ways in which the principles described are important to the knowledge base for social science teachers are illustrated. It is important to help social science teachers to be thoughtful about the epistemological elements in the frames of reference they bring to their teacher education programs, about the varying epistemological orientations within and across the social sciences, and about their assumptions as to how students best learn. (Contains 56 references.) (DB)

EPISTEMOLOGY AND THE EDUCATION OF SOCIAL SCIENCE TEACHERS

James P. Shaver

Utah State University

Keynote paper prepared for presentation at the International Conference on Subject-Specific Teaching Methods and Teacher Education, Universidade de Santiago de Compostela, Spain, July 6, 1992. Comments by Richard S. Knight were very helpful.

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James P. Shaver
Utah State University

As Charles Beard (1934) and John Dewey (e.g., 1964) recognized years ago, thoughtfulness by teachers about their frames of reference, including their beliefs about subject matter content and about how children learn, is crucial if teaching is to be more than the passing on of biases, prejudices, and outdated content to uninterested students. The explication of assumptions and the examination of their validity and of the implications for teaching have not been strong components of typical teacher education programs. Education courses have been more often geared to the survey of materials and teaching techniques and to classroom applications than to helping prospective or inservice teachers reflect on the why and the what of teaching. Silberman's (1970) comments are still generally pertinent today: There is a lack of thought in education about purpose and about how teaching techniques, curricular content, and classroom organization affect purpose. Much of the lack of thoughtfulness by teachers is undoubtedly a reflection of the education that they have received themselves.

The teaching effectiveness research findings widely embraced by teacher educators (despite the limited student populations, school subjects, and learning outcomes that have been studied [e.g., Brophy & Good, 1986; Rosenshine & Stevens, 1986]) are in the mechanistic, nonreflective tradition. The counter-emphasis in recent years (e.g., Shulman, 1987a) on teachers' knowledge and reflection has been a welcome shift for those concerned with social studies teaching as a profession (e.g., Shaver, 1977).

Two types of teacher knowledge have epistemological elements: content

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knowledge and knowledge about how students learn. Epistemology has traditionally been defined in terms of how persons come to know about reality--either the development of common bodies of knowledge, as through the scientific enterprise, or the establishment of personal knowledge, such as belief or disbelief in the existence of a God. In recent years, epistemology has also come to be used to encompass how people learn, with the term constructivism signifying learning as an active process that occurs as each person constructs his or her own portrayal of reality (e.g., Watzlawick, 1984).

As Petrie (1981, p. 4) observed, it is useful to distinguish the growth of human knowledge from individual learning; the inquiry strategies of social scientists do not, for example, necessarily translate into appropriate learning strategies for nonscientists (Shaver & Oliver, 1968). The dual usage of the term epistemology can muddy that important distinction. However, there is conceptual overlap (see, e.g., Glasersfeld, 1984), with constructivism also used to label an individualistic approach to building knowledge in the social sciences (e.g., Gergen, 1985; Lincoln, 1990).

Epistemology as knowledge-building and epistemology as learning are both relevant to the education of social science teachers. The criteria by which social scientists produce new knowledge and reject old ideas are a critical aspect of content knowledge. Similarly, questions about how individual students learn are important for teachers in the context not only of effective teaching, but of the purposes of social science education. The importance of the two conceptions of epistemology for social-science teacher education, including the constraints that they can impose on our thinking about that endeavor, are worth exploring, beginning with epistemology as knowledge building.

Epistemology as Knowledge Building

Some insight into the role of epistemological subject-matter knowledge in social-science teaching was provided by Wineburg and Wilson's (in press) report of an observational-interview study of two American history teachers. Both teachers believed that history instruction must go beyond conveying historians' narratives to teaching "a way of knowing" about the past (p. 36). Each viewed history as knowledge constructed by persons puzzling over past events, with individual judgment particularly critical in the determination of the significance of particular events or trains of events for understanding the past.

One teacher saw history as basically "themes . . . that bind past to present, and provide a framework for organizing the welter of information" (pp. 18-19). As a result, history is to be taught through students' involvement in the consideration of conflicting sources and points of view as an "epistemological representation" of historians' ways of pursuing inquiry and constructing knowledge (p. 43).

Similarly, the other teacher emphasized interpretation based on conflicting evidence as the heart of historiography. He involved students in distinguishing fact and opinion as part of the effort to get at the truth about past events. He also stressed the analysis of bias and the probing of the rhetorical uses of language, so that students would learn that texts should not be taken at face value.

Wineburg and Wilson (in press) did not select their teachers to be representative of social science teachers generally. In fact, they differed markedly from the social studies teachers consistently portrayed by research findings: largely acting as if history is no more than the oversimplified and overgeneralized content of their textbooks. As a result, students read history

texts taken to be true and respond to questions during classroom recitations, on worksheets, and on tests that call for the verbatim reproduction of textbook content (e.g., Goodlad, 1984; Shaver, Davis, & Helburn, 1980). Wineburg and Wilson's teachers illustrate, by comparison, the extent to which self-conscious awareness of the epistemology of a discipline can impact teaching.

Disciplinary Impacts

Wineburg and Wilson's (in press) teachers shared an epistemological perspective. The report of another observational-interview study (Wilson & Wineburg, 1988), this time of four beginning teachers of American history with different undergraduate majors--anthropology (with an emphasis in archeology), political science, American studies, and American history--indicates the effects of differences in epistemological perspectives.

The novice history-trained teacher shared with Wineburg and Wilson's (in press) experienced U.S. history teachers a sense of historiography as historical interpretation that involves the analysis of evidence and going beyond the evidence to synthesis. The novice teacher who had majored in anthropology, on the other hand, tended to see history as facts rather than as interpretation. She guided her students to stick close to the available physical evidence, seeking certainty in hypothesis testing rather than encouraging speculation. The political science major also treated history basically as factual information about the past, avoiding interpretive issues such as causality. History, to him, was background material for interpretations made by political scientists. Neither of these two novice teachers went beyond history as fact to urge their students to consider alternative views of events and their causes.

The perspective of the American studies major was similar to that of the American history major. Although he shared with the political science major an

orientation toward political and economic interpretation, he also perceived the importance of historical interpretation. Like the American history major, ne involved his students in seeking competing explanations for historical events.

The differences among the four novice teachers illustrate that the subject area within which social science teachers receive their education can have strong impacts on what they convey to their students about the raising and validation of truth claims. Wronski (1991) has suggested that an interpretive orientation such as Wilson and Wineburg (1988; Wineburg & Wilson, in press) perceived in their U.S. history teachers distinguishes history from the other social sciences. Historians, he argued, ally themselves more with the intuitive humanities, while other social scientists are more likely to be aligned epistemologically with the more data-based, hypothesis-testing biolcgical and physical sciences. Wronski did, however, presume history to be among the social sciences--a position that I have taken implicitly, but I trust obviously, in this paper.

The focusing and screening power of disciplinary frames of reference raises perplexing questions about the education of social science teachers, especially in the context of the variety of social sciences and the breadth of substantive and epistemological content in each. Is it realistic to expect prospective teachers to gain an adequate depth of understanding of the various social science disciplines during the few years of undergraduate education? If deep understanding and grasp of subtle epistemological differences and their teaching implications are anticipated, the demands seem untenable (Shaver, 1977; Shulman, 1987a).

Shifting attention to continuing education for inservice teachers will not necessarily address the issue of adequate subject-area comprehension. Wilson and Wineburg (1988), for example, found that even though their novice teacher trained

in political science gained a great deal of historical knowledge through teaching history (allowing him to do very well on the National Teachers Examination in history), his deep beliefs were not affected; even with his increased knowledge, he did not incorporate historical interpretation as part of his instructional frame of reference.

Inquiry Paradigms

The potential epistemological influences on teaching of teachers' social-science backgrounds are more than a matter of interdisciplinary differences, given recent challenges to the dominant positivistic epistemology (e.g., Guba, 1990). The debate over the possibility of establishing truth in the social sciences is pertinent for teacher educators who believe that social science teachers should explicate and examine the epistemological assumptions in their frames of reference and ask what way or ways of knowing they should exhibit with and teach to their students (Wronski, 1991).

Contemporary scholarship makes Scheffler's (1965) epistemological categories--rationalism, empiricism, and pragmatism--seem oddly anachronistic. In contrast, for example, Guba (1990) described the epistemological assumptions of four inquiry paradigms--positivism, postpositivism, critical theory, and constructivism. Although this is not the place to treat those various perspectives in depth, a brief sketching of the epistemological positions posited by Guba and some instructional implications will serve to help make further evident the potential importance of differing epistemological orientations for social science education.

The objectivist operationalism of the Vienna Circle's logical positivists has long been discredited, but a less constricting form of <u>positivism</u> has persisted. The modern day positivist takes a realist ontological position and

an objective epistemological stance; that is, he or she assumes an existent reality governed by natural laws that can be known through investigations in which the researcher maintains a separateness from the phenomenon under study. Included is the belief that the investigator can control his or her own values and perceptual biases in coming to understand reality, but gone is the insistence that a construct has meaning only in terms of the operations for implementation or assessment.

Postpositivism (Guba, 1990; Phillips, 1990) is a further step in intellectual liberality. Although postpositivists assume that a reality driven by natural laws does actually exist, they also conclude that the reality, including the natural laws, is not susceptible to complete understanding. Although objectivity, in the sense of psychological independence from the phenomenon being studied and control of one's own biases and values, remains an ideal to postpositivist researchers, they acknowledge that complete detachment cannot be achieved. Collegial critiques are considered crucial for identifying and controlling individual bias in research design, implementation, and interpretation.

Some postpositivists (e.g., Cronbach, 1975; Gergen, 1973) have added the qualification that the accumulation of knowledge about human social reality is impeded by continuing psychological and sociological changes, including cultural adaptation that occurs as social science research findings become known popularly and enter the culture--and as a result are invalidated. Although the enculturation of research results is an orderly, law-abiding phenomenon that could be studied, reports of the investigations would lead to further cultural modifications that would have to be studied in a never-ending spiral of investigation, change, investigation, and change. Consequently, it is argued,

valid laws or nomothetic theories of human behavior can only be constructed historically.

Critical theory (Guba, 1990; Popkewitz, 1990) shares the ontological stance of postpositivism but represents a significant epistemological shift. Basically, critical theorists argue that although there is an actual reality to be understood, all inquiry is ideologically based and influenced. Objectivity in social science research is impossible because all perceptions and conceptions are mediated by our values. As Guba (1990) has pointed out, the term critical theory is used to encompass a variety of "'ideologically oriented inquiry,' including neo-Marxism, materialism, feminism, Freireism, participatory inquiry . . ." (p. 23). In his discussion of critical research, Cherryholmes (1991) included poststructural criticism, such as interpretive analytics and deconstruction. Not surprisingly, critical theorists find themselves comfortable with social epistemology (Popkewitz & St. Maurice, 1991), a position that the discovery and justification of knowledge cannot be separated from the societal and historical contexts in which researchers work.

Constructivists reject both the ontological and the epistemological positions of the positivists and the postpositivists and the ontological position of the critical theorists in favor of a basically relativistic stance (Guba, 1990; Lincoln, 1990). Included is the ontological assumption that reality does not exist independently of the mental constructions of individuals and the epistemological assumption that the enquirer and that which is inquired into cannot be separated. Indeed, as Guba (1990, p. 26) pointed out, constructivism "renders the distinction between ontology and epistemology obsolete," with reality literally created as an outcome of human inquiry and thus "problematic and ever changing" (p. 26).

Teaching Implications

The vast majority of teachers, as portrayed in recent studies (e.g., Goodlad, 1984; Shaver et al., 1980), with their reliance on textbooks as authoritative statements about social reality, implicitly, if not explicitly, convey positivist ways of knowing. The two history teachers studied by Wineburg and Wilson (in press), with their emphasis on multiple interpretations, seem to have been operating from a postpositivistic epistemology. Although a few social science teachers might be found who teach from either a critical theory or constructivist base, they are likely rare, if for no other reason than the lack of exposure of prospective teachers to such thinking in their social science coursework. Adoption of the epistemological assumptions of either critical theory or constructivism would result in social science education quite different from that of the textbook positivists or even the interpretive postpositivists.

Cherryholmes (1982) outlined some implications for social studies instruction based on the work of the critical theorists of the Frankfurt School. In this view, obtaining "truth" depends upon clear, sincere, communicative interaction and upon the testing of problematic truth claims through discourse, defined as dialectical communication in which the purpose is to search for truth, rather than to protect institutionalized values. Critical reflection would characterize social science education taught from this perspective. The search for truth would be ongoing with final resolutions rare, because discourse is likely to reveal that any final conclusion is "the product of false consciousness; historically and culturally conditioned institutions and processes may be mistaken for fundamental and unchanging social reality" (p. 65). (Also see Cherryholmes, 1991.)

Critical pedagogy (Stanley, 1991) is an application of critical theory to

the conceptualization of teacher competence in social studies. Based on the critical theorists' assumption that social values and institutions shape the choice of problems to be studied, the methodologies followed, and the conclusions arrived at, and that, consequently, the social science knowledge transmitted in schools serves to reinforce the dominant, official culture, the goal of critical pedagogy is the empowerment of individual students through the self-conscious, critical examination of social and institutional influences on individual thought and action. Teaching from such a perspective might well provoke strong negative community reactions, raising the type of complex questions about the purposes of social science education that should be addressed as teacher educators explore issues of epistemology and the education of social science teachers.

Social science instruction based on a constructivist epistemology would move beyond the focus of critical pedagogy on the examination of social constraints to the comparison and contrast of individual constructions of reality. Again, teaching would involve open communication and dialectic discourse as a means of helping students achieve informed views of reality. The major difference would be a relativistic emphasis on the validity of individual constructions independent of grounding in an extant external reality. Again, community reactions could be strong as indicated by the fate of Man: A Course of Study (MACOS), a "New Social Studies" elementary school anthropology project that foundered at least in part on the public perception of relativism in the cross-cultural curricular material (Shaver, 1977; in press).

Elaboration of the above and other epistemological positions and their implications for social science education is an important task for social science teacher educators, but beyond the scope of this brief paper. In carrying on epistemological discourse, however, it is crucial that teacher educators not wear

scholarly blinders. Dysfunctional tunnel vision includes not only the tendency to see epistemology from one's own disciplinary background, but to see epistemology only from a scholarly perspective. Epistemology, how we come to know about reality, includes issues in the development of personal knowledge. There is a clear transition from common-knowledge building to personal-knowledge construction in the constructivist epistemological position, and that aspect of epistemology must also be considered in the education of social science teachers.

Epistemology of Personal Knowledge

Students bring to their teacher preparation studies epistemological assumptions formulated from their earlier experiences. These beliefs may well influence significantly both what individuals glean from their college education and, depending to some extent upon the impact of teacher preparation, how they teach. For example, although a source of truth often disdained by academicians, many people do believe in knowing through authority. The acceptance of reality as portrayed by political, economic, or social authorities or through the authoritative force of the printed page or television presentations (Splaine, 1991) has been a subject of social science research and should be a source of concern in the education of social science teachers.

Individuals also accept religious authorities as sources of knowledge--including the revealed truths of literally interpreted sacred books, such as the Bible, and the divine revelations of prophets--with significant implications for the purposes of schooling. The relevance of such epistemological considerations has been made particularly poignant for science educators in the United States through contentious public debates over whether creationism, a literal interpretation of the creation of the world as put forth in the Book of Genesis, or the theory of evolution, as developed by scientists, should be presented in

elementary and secondary school science courses.

Similar disputes have not emerged in social science education, but the potential for controversy is there. For example, how a social science teacher handles an environmental issues curriculum that includes the question of overpopulation might well be conditioned by the teacher's acceptance of a literal interpretation of the admonition in the Bible's Book of Genesis to "be fruitful and multiply and replenish the Earth." Or, the manner in which a social science teacher teaches a unit on issues of public policy related to ethnicity might well be affected by acceptance of the Biblical interpretation that black skin is the result of curses by God on the progeny of Cain and by Noah on the progeny of his grandson, the son of Ham.

Summary

To sum up: First, teachers' beliefs about how knowledge is discovered and verified and the potential influences on social science education should be of concern to social-science teacher educators. Second, traditional versus modern, as well as cross-disciplinary, epistemologies should be considered. Third, dealing with knowledge building as only a scholarly issue is too limited an approach to the education of social science teachers; longstanding, strongly held personal-knowledge epistemologies must be taken into account. Fourth, issues in establishing knowledge cannot be dealt with meaningfully except in the context of the purposes of education.

Epistemology of Social Studies Education

The pertinence of the purposes of social science education to issues of epistemology-as-knowledge-building is further illustrated by the longstanding debate, at least in the United States, about distinctions between social science

education and social studies education. This debate has often been framed (e.g., Shaver, 1967) in terms of how to define the term, social studies: as curricula posited on the social sciences as scholarly fields of study, simplified and adapted for pedagogical purposes; or as a curriculum with education for adult citizenship participation as its primary aim, and with the social sciences as central, but not exclusive, curricular sources. The central argument is whether with citizenship education as a purpose, social science education (or social studies education) must go beyond the substantive knowledge and inquiry processes of the social sciences.

The definition of social studies as the teaching of the social sciences dominated the New Social Studies curriculum movement of the 1960s and the 1970s in the United States, with Bruner's (1962) The Process of Education the guiding text. The mandate was explicit: The curriculum should be based on the structure of subject-matter fields, whether "mathematics or history", so as to provide students with "a sense of the fundamental ideas" of the discipline (Bruner, 1962, pp. 3, 31). The underlying hypothesis that "any subject can be taught effectively in some intellectually honest form to any child at any stage of development" (p. 33) was, in effect, taken as a directive. The focus was on how to "tailor fundamental knowledge to the interests and capacities of children" (p. 22), with the assumption that "intellectual activity anywhere is the same, whether at the frontier of knowledge or in a third grade classroom" (p. 14).

Although the term epistemology was not prominent in The Process of Education, there was an emphasis on conveying to students scholars' attitudes toward knowledge building. Nearly all of the New Social Studies curriculum development projects were based on the structure of the disciplines approach, with a heavy emphasis on "the mode of inquiry of history and the social sciences

. . . , the manner in which practicing social scientists develop and validate hypotheses" (Fenton and Good, 1965, p. 207).

In marked contrast was the Harvard Social Studies Project (Oliver & Shaver, 1966/1974), which had citizenship education, especially the preparation of citizens for involvement in decision making about public issues, rather than the teaching of the structures of social science disciplines as its thrust. It was argued, however (Shaver & Oliver, 1968), that the concept of structure could be extended to citizenship education. Using the three-fold definition of a discipline proposed by Schwab (1962, 1964), such a structure would include:

> (1) Subject or field--making and affecting policy decisions . . .;
>
> (2) Substantive concepts--those useful in describing and understanding the issues and the context in which decisions about them must be made; and,
>
> (3) Syntactical, or methodological, concepts--those useful in arriving at rationally justified policy decisions. (Shaver & Oliver, 1968, p. 332)

The point was not that the social sciences, including history, have nothing to contribute to the recognition and understanding of public issues or to the inquiry strategies for dealing with such issues. It was, rather, that the narrowness of the social scientist's intellectual frame, with its empirical focus, might taken alone actually block rather than facilitate the consideration of public issues, in part because the definition and resolution of conflicts between basic values are central to policy decisions. A structure based on citizen decision-making as an educational goal allowed recognition that other subject areas, such as the arts, the humanities (including literature and philosophy), legal studies, and journalism, might be epistemologically pertinent.

The New Social Studies movement faltered for a number of reasons, including students' lack of excitement about a discovery process based on academicians' views of their disciplines (Shaver, in press), and the social studies curriculum in the United States has persisted largely unaffected by either the structure of the disciplines approach or the structure of citizenship approach (e.g., Shaver et al., 1980). Recently, however, Longstreet (1990) reiterated the need for continuing consideration of the epistemology of social studies as an area of knowledge distinct from the social science (including history) disciplines. Her comments came in a review of the then-forthcoming piece by Fullinwider (1991) in which he analyzed the adequacy of social science knowledge-building for citizenship education.

Fullinwider (1991) focused in particular on "mainstream, predictive" social scientists (who would likely be labeled by Guba [1990] as positivist or postpositivist), whose ambition is to be like natural scientists. Based on the necessity of resolving conflicts over value definitions and priorities in coming to adequately justified decisions about public issues, Fullinwider argued that such social science does not provide an adequate epistemological basis for knowing about the issues with which citizens should deal.

As an example of the shortcomings of social science epistemology for citizens' decision-making, Fullinwider considered the controversy over legalizing abortion. He noted that although the debate contributes to "shaping the social, moral, and political meaning of abortion" (p. 20), social scientists define the value issue in terms of factual claims about the disputants rather than as claims about abortion itself. That is, the subject is changed "from 'the truth about abortion' to 'the truth about the seeker-after-the-truth about abortion'" (p. 20).

In contrast, an appropriate epistemology for social studies would focus discussion of the meaning of or truth about abortion on the examination of "ideas of murder, death, killing, self-defense, vulnerable and innocent life, personhood, autonomy, self-determination, and responsibility to others" (p. 20). In short, knowing about the crucial issues facing society must involve more than factual information about the persons involved in a controversy or about its social, political, or economic context; such knowing must go beyond social science knowledge to the consideration of values and commitments. Note, however, that the admonition about the evaluative limitations of "mainstream" social science for understanding societal issues is not necessarily an argument for critical theory--with its emphasis on desocialization and personal empowerment in the context of economic and sexist repression--as the centering epistemological position for social science education.

Calling attention to the relevance of the presumed aims of social science education is a counter to the "epistemological fallacy" (Martin, 1981) that analysis of social science structures is a sufficient basis for deciding what to include in or omit from the curriculum. Theory of knowledge must be conjoined with thought about purpose in order to come to adequately justified decisions about curricular content and instruction. Moreover, this excursion into the nonempirical facets of epistemology has relevance as well for the other usage distinguished earlier in this paper--that is, epistemology as learning.

Epistemology as Learning

The distinction between epistemology as knowledge building and as learning is not philosophically clearcut (see, e.g., Erickson, 1987; Glasersfeld, 1984; Petrie, 1981), as is evident in Popper's (1979) fluctuation between knowledge building and individual learning in his discussion of evolutionary epistemology.

Nevertheless, the separate examination of assumptions about how students learn is a crucial element of teacher preparation, especially because so much of instruction in the social sciences (at least in the United States) seems to reflect the assumption that learning best takes place through the memorization and recitation of the words of textbooks and teachers.

As noted earlier, a link between epistemology-as-knowledge-building and epistemology-as-learning can be found in the use of the term constructivism--referring to the individual construction of reality. As discussed earlier, in knowledge-building epistemology, constructivism is the position that reality exists only through th mental constructions of individuals. In the epistemology-as-learning sense, constructivism is the belief that individuals learn as they wrestle cognitively with problems of concern to them; meaning, therefore, cannot be conveyed from teacher to student but must be developed by the individual learner--a position of such philosophers as Dewey (1916) and Scheffler (1965, p. 55) long before constructivism became a catch term. Constructivism, which has had its major initial thrust in science education (e.g., Resnick, 1983; Saunders, 1992), is based on the Piagetian perspective that concepts and schemata are constructed by individuals to maintain cognitive equilibrium as they encounter discrepant sensory information and respond through assimilation (incorporating new information into existing cognitive structures) or accommodation (modifying structures to be consistent with new data).

The constructivist presumption that the individual must be an active participant in his or her own learning is a potentially potent antidote to current dysfunctional educational practice. A major caveat is necessary, however. Constructivism, with its roots in Piagetian developmental psychology and its development under the rubric of cognitive science (Bruner, 1990; Resnick,

1983), tends to ignore essential elements of social concepts.

Perhaps because of its initial applications in science education, constructivism is focused on learning about what and how the world is, cognitively. Indeed, Piaget's developmental work was based on the assumption that children's reactions to social phenomenon are parallel to their reactions to physical phenomenon. However, a person, child, or adult who related to people in the same way as he or she did to physical objects would likely be considered to be severely disturbed, perhaps autistic (Vandenberg, 1991).

Social knowledge is more than cognitive understanding. As noted earlier, social science that excludes valuing and emotions as factors in knowing provides too narrow an epistemological perspective for social science education, especially if citizenship education is a purpose. Similarly, the cognitively oriented constructivist learning epistemology provides too limited a foundation for social science education--especially, but not exclusively, in the context of citizenship education.

Emotion, feeling, and empathy are essential to understanding the human condition. In that context, Eisner (1992) contends that although emotion and feeling "can cloud vision, impair thought," cognition without emotion and feeling is also inadequate. For example, to exclude feeling from consideration of a human relationship "is to miss what may very well be its most critical features" (p. 593). From that premise, art (including literature) is a crucial form of experience for developing social understanding. However, the potential noncognitive contributions of the arts to learning in social science education have been largely ignored (Eisner, 1991).

Similarly missing from the constructivist-epistemological learning model is the recognition that social concepts develop in the context of the human

experience that involves not only emotively based interpersonal relationships but questions about the very meaning of human existence (Vandenberg, 1991). Existential concerns--for example, the human struggle to comprehend and cope with death--are not captured by Piagetian psychology. Death poses deep questions because it goes to the core of existence; although death can be treated cognitively in the context of concept development, its meaning in human-existence terms involves much more than cognitive understanding. Death can be studied with emotional detachment as a scientific concept, but to do so, to ignore the personal, existential implications, is to eviscerate its meaning.

Social concepts such as poverty and ethnicity also have powerful existential elements, and social science education focused only on concepts-as-cognitive-constructions will miss those crucial elements of social understanding. For example, conceiving of poverty only in terms of such descriptors as income and educational level, or ethnicity only in terms of minority group numbers and descriptive cultural differences, without some sense of the individual existential meaning for those who live daily in the circumstances of poverty or suffer discrimination based on their ethnicity, will lead to sparse understanding. Knowing is more than conceptual knowledge when the subject area is social; an appropriate conceptualization of learning for a citizenship-based curriculum must go beyond the narrowing focus of constructivism on concepts as cognition.

Conclusion

Epistemology, both as theory of knowledge and theory of learning, is an essential element in the knowledge base for social science teachers. The current focus on the knowledge base for teaching should be accompanied by concern with helping social science teachers to be thoughtful about the epistemological

elements in the frames of reference that they bring to their teacher education programs, about the varying epistemological orientations within and across the social sciences, and about their assumptions as to how students best learn.

On an abstract level, most teacher educators acknowledge that although content and pedagogical knowledge are important, more important is the development of reflective practitioners (Schön, 1983, 1987), sound reasoners (Shulman, 1987a, b), or teacher philosophers (Shaver & Strong, 1982), who are prepared to explicate and examine their assumptions and the implications for teaching. That is, teacher educators tend to agree that the primary aim of teacher education should be to develop a "foundation of judgment and reasoning" for teaching decisions, not to teach behavior (Shulman, 1987b, p. 478).

A necessary precursor to the appropriate involvement of prospective teachers in the consideration of the epistemological elements in their frames of reference and the implications for how they teach children and youth is careful reflection on those same matters by those responsible for teacher preparation. That reflection should include consideration of the discontinuities between theories of learning and practice, not only in schools but in university teacher-education programs. The applicability to teacher education of Dewey's (1916, 1933) emphasis on active involvement and direct experience as a basis for thinking and learning has been largely ignored (Shaver & Strong, 1982). Similarly, although constructivist epistemology is as applicable to teacher education as to the education of children (Erickson, 1987), much of teacher education is conducted as if teachers can be given meaning, with no need for them to "reconceptualize subject matter and pedagogical strategies as they engage in the slow process of conceptual change" (Novak, 1987, p. 1).

If it is accepted that personal experience is necessary to produce the

disequilibrium (or in Dewey's, 1933, terms, the "felt problem") that results in learning, then the timing of teacher education programs must be reconsidered. Schön (1987) noted that architectural students often seemed to lack the necessary practice-based experiences upon which to reflect, suggesting that the most appropriate time for helping them to be more thoughtful practitioners would be "not at the beginning of a student's professional career, but in the midst of it, as a form of continuing education" (p. 342). Similarly, the limited experience of practice teaching during a college education does not provide an adequate experiential basis for engagement in the deep issues of teaching (Shaver, 1983). Continuing education is essential, but exposure to more content knowledge will not suffice.

Teaching decisions, like decisions about social issues, involve moral issues, questions about the societal purposes of education but also questions of value, empathy, and existential meaning for students and teachers. An adequate "epistemology of practice", or approach to knowing about practice, must be more than a positivist-based "technical rationality", that is, "instrumental problem-solving [supposedly] made rigorous by the application of scientific theory and technique" (Schön, 1983, p. 21; Sockett, 1987). As with an epistemology for social studies, an adequate epistemology of practice in social science education must encompass truth as more than cognitive comprehension and verification.

Discussions of epistemology and the education of social science teachers should always be cast in the context of purpose. Questions to be examined include: What does the society expect from its schools? Should teacher educators always strive to produce teachers who will meet, rather than challenge, those expectations? More specifically, is practice based on an epistemology of critical rationality exclusively preferable to an epistemology of technical

rationality (see, e.g., Banks & Parker, 1990)? Such questions are among the many challenges raised for social-science teacher educators by the consideration of epistemology as a factor in social science teaching.

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