# Instructionism and Constructivism: Reconciling Two Very Good Ideas

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## Abstract

Instructionism refers to educational practices that are teacher-focused, skill-based, product-oriented, non-interactive, and highly prescribed. Constructivism refers to educational practices that are student-focused, meaning-based, process-oriented, interactive, and responsive to student interest. There is disagreement regarding which curricular orientation best serves the educational needs of children. Evaluative outcome research is contradictory and the superiority of either instructional orientation has not been clearly established. A combination of instructional methods may ultimately prove most beneficial. For example, intensely teacher-mediated lessons could be sprinkled throughout the school day, thereby minimizing teacher and student mechanization while maximizing student achievement gains. Instructionist-constructivism would promote systematic instruction within a context of individual meaning and personal interest. For example, skills such as spelling and grammar, rather than taught in isolation, could be embedded in meaningful literacy activities. Extreme and exclusionary instructional methods may be the ultimate threat to effective education.

# Instructionism and Constructivism: Reconciling Two Very Good Ideas

All educational practices are based upon philosophical assumptions regarding the nature of students and the mechanisms that give rise to human learning (Ernest, 1995; Gergen, 1995). Instructionism refers to a collection of educational practices that are teacher-focused, skill-based, product-oriented, non-interactive, and highly prescribed (Jonassen, 1996). In contrast, constructivism refers to a collection of educational practices that are student-focused, meaning-based, process-oriented, interactive, and responsive to student personal interests and needs (Goodman, 1998; Honebein, 1996). Instructionism and constructivism reflect polarized assumptions regarding the nature of human learning (Jonassen, 1991). Before it can be argued that two apparently contradictory instructional orientations are, in fact, highly compatible, review of the philosophical assumptions that give rise to instructionist and constructivist praxis is required.

## Epistemology: The Nature of Human Knowledge

Epistemology is the branch of philosophy that deals with the origin, nature, and limits of human knowledge. There are two basic epistemological orientations, objective and subjective (von Glasersfeld, 1995a). An objective perspective holds that knowledge is absolute, separate from the knower, and corresponding to a knowable, external reality. Knowledge is stable because the essential properties of objects are knowable and relatively permanent. The important assumptions of objectivism are that the world is real, structured, and that that structure can be taught and learned (Rorty, 1991). Objectivism posits that the purpose of the human mind is to mirror objective reality via thought processes. The meaning that is produced by thought is external to the thinker and is determined by the structure of the real external world (Steffe & Gale, 1995). In this philosophical tradition, knowledge represents a real world that is assumed to

exist separate and independent of the knower; knowledge is considered true only if it correctly reflects that independent external world (Gross, Levitt, & Lewis, 1996).

In direct contrast to objectivism, a subjective perspective maintains that knowledge is part of the knower and relative to unique individual experiences (Phillips, 1995). The subjectivist view holds that knowledge and reality do not have an objective or absolute value. Reality “is made up of the network of things and relationships that we rely on in our living, and on which, we believe, others rely on, too" (von Glasersfeld, 1995a, p. 7). The knower interprets and constructs reality based on personal experience and private interaction with a subjective environment. Subjectivism “breaks with convention and develops a theory of knowledge in which knowledge does not reflect an objective, ontological reality but exclusively an ordering and organization of a world constituted by our experience" (von Glasersfeld, 1984, p. 24). Rather than defining truth as a match to reality, the focus is on viability. To the subjectivist, concepts, facts, and information are “viable if they prove adequate in the contexts in which they were created" (von Glasersfeld, 1995a, p. 7).

Objectivism and subjectivism are conceptualized as extremes on an epistemological continuum (Johnson, 1993; Rorty, 1991). These two contrasting epistemological assumptions, although frequently renamed, have characterized philosophical discourse since the nature of human knowledge was first debated (Wilson, 1997). Indeed, various philosophical treatises, academic disciplines, and all educational practice can be dichotomized on the basis of these two fundamental philosophical assumptions regarding the structure and mechanism of knowledge. Currently, as well as historically, the practices of education have corresponded, to varying degrees, to either a static, passive view of knowledge or an adaptive and active view (Prawat,

1996). Epistemological assumptions inform, justify, and sustain all educational endeavors (Gergen, 1995; Martinez, Sauleda, & Guenter, 2001).

## From Epistemology to Educational Practice: Instructionism

Educational application of objectivism is referred to as *instructionism*. In contemporary educational contexts, instructionism is the term used to describe teacher-centered, teacher-controlled, outcome-driven, highly structured, and non-interactive instructional practices (DynaGloss, 1998). Instructionism has been referred to as *systematic teaching*, *explicit teaching*, *direct teaching*, and *active teaching* (Schug, Tarver, & Western, 2001), terms that emphasize teacher, as opposed to student, behavior (Jonassen, 1996). Because the content of instruction and the content of knowledge are assumed to be isomorphic (Driscoll & Rowley, 1997), teachers are conceptualized as transmitters of objective reality; students are viewed as passive receptors of knowledge. Since learning outcomes are objective and standardized (Kazdin, 2001), instruction is directed toward efficient movement of skills and knowledge from the teacher to the student, often in the form of drill, practice, and rote memorization. Instructionists focus on detailed lesson preparation, on teacher organization and management, and on teacher communication and effectiveness (Adams & Engelmann, 1996; Kameenui & Carnine, 1998).

When children fail to learn in school, instructional characteristics, not student characteristics, are assumed to be the cause (Adams & Engelmann, 1996). Engelmann and Carnine (1991) point out that children “are perfectly capable of learning anything that we can teach ... We know that the intellectual crippling of children is caused by faulty instruction -- not by faulty children” (p. 376). Instructionists claim that they succeed where other educational approaches fail, most notably with students with learning and behavioral challenges (Swanson, 2001). Driscoll and Rowley (1997) summarize instructionism in terms of: 1) identification of

student prerequisite or entry-level skills, 2) determination of the most effective methods of knowledge transmission, and 3) formation of evaluative strategies that detect "problems of transmission that must be corrected for the instruction to be deemed effective" (p. 313). While there are many classroom applications of instructionism, a particularly notable example is *direct instruction*.

## Instructionism Applied: Direct Instruction

Direct instruction emerged from Siegfried Engelmann's early work on beginning literacy (Bereiter & Engelmann, 1966) and resulted in a programmed instructional package published under the trade name DISTAR (Direct Instruction System for Teaching and Remediation; Engelmann & Carnine, 1991). Over the past decades, the term direct instruction evolved to include educational practices that generally adhere to Engelmann's initial emphasis on well developed and carefully planned lessons designed around small learning increments and clearly defined and prescribed teaching tasks (Swanson, 2001). Originally associated with attempts to improve the educational outcomes of disadvantaged learners, during the past 40 years, direct instruction has been applied to teaching elementary through secondary language, reading, mathematics, higher-order thinking and reasoning skills, written composition, science, and social studies (Adams & Engelmann, 1996; Kameenui & Carnine, 1998).

Direct instruction applies a basic set of instructional principles. First, all skills and concepts are broken into subskills or small component skills that are taught in isolation (Kameenui & Carnine, 1998). Advocates of direct instruction maintain that specific underlying skills are prerequisite to school learning (Hallahan, Kauffman, & Lloyd, 1999; Stickland, 1998). The goal of sound instruction is to identify and efficiently teach these prerequisite subskills. For example, proponents of direct instruction endorse the teaching of alphabet sounds as an essential

prerequisite literacy skill. The aim of direct phonics teaching is to make explicit to students the alphabetic principle. As Byrne (1996) observed, “it might be prudent to tell children directly about the alphabetic principle since it appears unwise to rely on their discovery of it themselves. The apparent relative success of programs that do … support the wisdom of direct instruction" (p. 424).

Each of these identified prerequisite subskills is taught and re-taught until students achieve a high level of mastery (Adams & Engelmann, 1996). The assumption is that mastery of prerequisite skills is necessary to the development of more complex skills and that partial or incomplete learning accumulates over time to result in inadequate patterns of skills and knowledge. Binder (1996) claimed that:

> Educational programs will be more effective in the long run if they produce a more focused, but truly mastered, repertoire rather than a broad but fragile repertoire. The latter might be said to characterize the usual educational approach in America, which introduces but never ensures mastery of a broad range of skills and knowledge. (p.179)

Direct instruction, then, is summarized as a systematic set of procedures for: 1) determining students learning requirements, 2) enhancing the efficacy of the learning environment, and 3) monitoring student curricular progress so that instruction can be improved and corresponding learning outcomes maximized (Schweinhart, & Weikart, 1997). Direct instruction reflects instructionist assumptions -- lessons are teacher-controlled, prescriptive, and focused on observable student achievement outcomes. In stark contrast to objectivist assumptions and direct instruction are subjectivist assumptions and constructivist instruction.

## From Epistemology to Educational Practice: Constructivism

Educational application of subjectivism is referred to as *constructivism*. In contemporary educational contexts, constructivism is the term used to describe student-centered, student-controlled, process-driven, loosely structured, and highly interactive instructional practices (Ernest, 1995; Prawat, 1996; von Glasersfeld, 1996). Constructivism defines learning as a process of active knowledge construction and not as passive knowledge absorption (Reigeluth, 1999; von Glasersfeld, 1995b). Rather than absorbing information and ideas presented by teachers, or internalizing skills through rote memorization, constructivism posits that students construct or create their own knowledge (Phillips, 1995). Students assimilate new information into pre-existing mental structures, and modify personal interpretation in light of new information and experience (Jonassen, Davidson, Collins, Campbell, & Haag, 1995). "From the constructivist perspective, learning is not a stimulus-response phenomenon. It requires self-regulation and the building of conceptual structures through reflection and abstraction" (von Glasersfeld, 1995a, p.14).

For constructivists, the emphasis is on learning processes as opposed to learning products. The process by which a student determines a particular answer is more important than retrieval of objective solutions. Student error is viewed as a mechanism of gaining insight into how the student organizes his/her experiential world (Smith & Elley, 1995). In fact, the term error is largely incompatible with the constructivist perspective because such terminology implies that an objective reality exits by which responses or individual interpretations can be deemed correct or incorrect (Fosnot, 1996). Thus the notion of multiplicity is central to constructivism, that is, there are multiple representations of reality, none of which is automatically or necessarily superior or inferior to the others (von Glasersfeld, 1996).

Constructivism has enjoyed an element of educational popularity in recent years (Martinez et al., 2001; Phillips, 1995; Reigeluth, 1999). Although various interpretations and applications exist, constructivist instruction and constructivist classrooms are characterized by authenticity and a focus on students (Jonassen et al., 1995). Constructivist classrooms attempt to create real-world environments in which learning is relevant (Honebein, 1996). Instructional focus is on realistic approaches to solving real-world problems. The teacher is conceptualized as a facilitator of student understanding as opposed to a transmitter of knowledge. The role of the teacher is not to dispense knowledge but to provide students with opportunities and incentives to make meaning (von Glasersfeld, 1996). Mayer (1996) described the teacher as *guide* and the learner as *sense maker*.

Ernest (1995) summarized constructivist education in terms of sensitivity toward and attentiveness to learner's previous constructions, attention to metacognition and strategic self-regulation by learners, and awareness of the importance of social contexts in learning or creating meaning. While there are many classroom applications of constructivism, a particularly salient example is whole language. Whole language clearly illustrates the epistemological assumptions of subjectivism and exemplifies corresponding instructional practice.

## Constructivism Applied: Whole Language Instruction

Whole language represents a philosophy of curriculum manifest in literacy instruction (Ediger, 2001; Fink, 1996). It is based on the assumption that children learn only that which is meaningful, necessary, and useful in the context of personal experience (Boran & Comber, 2001). Oral language, for example, is not acquired in contrived and artificial practice situations; language is learned in meaningful regular exchanges with responsive communicative partners

(Goodman, 1998). Students learn to read and write via the same mechanisms -- in meaningful shared communication.

A whole language curriculum regards the learner as a partner in conversation and a maker and seeker of meaning (Goldberg, 1992). Whole language teachers support student effort to communicate as opposed to directing student language usage (Boran & Comber, 2001). With each language encounter, whether oral or written, the child constructs knowledge about the world, the function of symbols, and communication strategies. Whole language teachers provoke, elicit, and demonstrate communication exchanges within and beyond the classroom (Fisher, 1991). Whole language curriculum immerses students in situations requiring authentic oral and written language use (Smith & Elley, 1995).

Error is inherent in the processes of learning language. Teachers who endorse whole language encourage the processes of language acquisition by finding meaning in children's oral and written attempts to communicate. What instructionists define as error in need of correction (Engelmann, Hanner, & Johnson, 1989), constructivists define as spelling invention intended to communicate (Boran & Comber, 2001). Rather than correcting and prescribing exactness, student inventive and explorative usage of written language is celebrated for its contribution to communication and its attempt to construct meaning (Fink, 1996). With the support of teachers, students' spoken and written experiments ultimately assist in locating and learning conventional language usage.

Whole language instruction is summarized in terms of fundamental practices that exemplify constructivism (Boran & Comber, 2001; Smith & Elley, 1995). First, whole language is holistic. Instruction does not fracture content into subskills but, rather, presents material in whole forms because meaning is most apparent in the whole rather than the parts (McIntyre &

Pressley, 1996). Whole language is based on a positive view of human learners. The metaphor is not one of rats pressing levers for food pellets or machines responding in predicable ways to teacher transmissions. Whole language teachers view children as individuals with dignity, autonomy, emotions, motivation, curiosity, personal needs, and free will (Martinez et al., 2001). Learning occurs in authentic contexts when it is functional for learners (Krashen, 1999). Learning is empowerment; prescribed curricula and prescribed instruction are dehumanizing and shift power from people to material (Goodman, 1998). Whole language instructors believe in the developmental nature of learning which builds on learners' prior knowledge and experience (Ediger, 2001; Fisher, 1991).

The epistemological assumptions upon which whole language is based and which illustrate the essential features of constructivism appear true and enlightened, in the opinion of some (Krashen, 1999). Direct instruction, on the other hand, has been referred to as “ugly but effective” (Schug et al., 2001, p. 4). Direct instruction and other extreme forms of objectivism are often interpreted in negative terms, perhaps because underlying assumptions paint a mechanistic portrait of human learning (Martinez et al., 2001). Subjectivists argue that personal feelings and individual interpretations are the only legitimate reality; if teachers feel good about constructivist instruction, they should use it. In contrast, objectivists claim that measurable student achievement gains are the only legitimate criteria by which to judge instructional effectiveness.

## Instructionism versus Constructivism: The Effectiveness Debate

Extensive theoretical, empirical, and practical attention has focused on the processes of learning and the most effective methods of instruction (Adams & Engelmann, 1996; Ediger, 2001; Snow, Burns, & Griffin, 1998; Taylor, 1998). Such interest and activity can be

dichotomized in terms of instructionism (i.e., skill-based approaches) and constructivism (i.e., meaning-based approaches). On the one hand, the position that skill is prerequisite to meaning; on the other hand, the position that meaning is prerequisite to skill. Evaluative research methodologies provide a set of empirical strategies for determination of instructional effectiveness. From an epistemological perspective, however, such methodologies are not without controversy (Johnson, 1993).

Evaluative outcome research methodologies favor instructionism as opposed to constructivism (Johnson, 1991). Instructionism is generally more compatible with scientific inquiry than is constructivism. The philosophical basis of constructivism is that reality is personal and subjective. Such a position constitutes the antithesis of conventional science (Gross et al., 1996). Science is based on the assumption that an objective reality exists and that it is knowable and governed by discernable rules. Thus, science itself is objectivist in its fundamental assumptions. Instructionist researchers, such as those who investigate direct instruction and other skills-based curricular approaches, are more likely to use science to establish the effectiveness of instructional methods. This may account for the abundance of evaluative studies focused on skills-based instructionist approaches (Carlson & Francis, 2002; Rosenshine, 2002; Snow et al., 1998; Swanson, 2001) and the relatively modest number of rigorous evaluative studies focused on meaning-based constructivist approaches.

In contrast to instructionists who define student success in terms of objective measurable outcomes, constructivists argue for meaningful analysis that do not reduce literacy to decoding and do not limit learning outcomes to prescribed responses on standardized tests of achievement (Krashen, 1999). For constructivists, legitimate evaluation focuses on the subjective experience of learners (Morrow, 1992). Constructivists argue that instructional efficacy is measured in the

joy of student learning as opposed to the number of words correctly decoded (Fisher, 1991). Constructivists, such as those who endorse whole language, claim that their assumptions are consistent with personal experience and that objective evaluative criteria reduce and trivialize human learning outcomes (Taylor, 1998). To some, constructivist concepts such as meaning, community, connectedness, conversation, and authenticity are personally attractive and intuitively accurate. Constructivists claim, in some cases, that the value and correctness of instructional approaches such as whole language are apparent in practice and obvious in the motivation of students (Boran & Comber, 2001). Indeed, empirical studies have established the instructional effectiveness of whole language (Krashen, 2001; Smith & Elley, 1995). In comparing skill-based and whole language instructional effectiveness for at-risk students, Dahl and Freppon (1995) explained the whole language advantage in terms of increased student motivation to engage in literacy activities.

Although not all would agree (MacIver & Kemper, 2002a; Swanson, 2001), the effectiveness research does not reveal an obvious superiority of either instructional paradigm. Numerous studies report significant reading improvement associated with constructivist meaning-based approaches for students generally (Krashen, 1999) and for at-risk students particularly (Manning, Manning, & Long, 1989; Morrow, 1992). Correspondingly, numerous studies report significant reading improvement associated with instructionist skill-based approaches for students generally (Carlson & Francis, 2002; Herman et al., 1999) and for at-risk students particularly (Gersten, 1985; O'Brien & Ware, 2002). In comparing instructionist and constructivist approaches, many studies fail to find significant differences in student achievement (Jeynes & Littell, 2000; Krashen, 2001). When such undifferentiating findings do not support the

conceptual orientation of the researchers, a variety of creative explanations are provided. As MacIver and Kemper (2002b) conclude:

> Future research, based on a well-established implementation (rather than the problem-filled early years of implementation experienced by these 6 schools) might uncover significant effects that were not evident at the time this article was written. DI [direct instruction] appears to be a viable option for raising student reading achievement, even if this study has not yielded evidence that DI performs significantly better than other reading curricula. (p. 197)

Conventional science, apparently, cannot resolve the instructionist-constructivist effectiveness debate. On the one hand, scientific inquiry favors the objectivity of instructionism and discriminates against any position that does not support the existence of objective reality (Taylor, 1998). On the other hand, practitioners often favor instructional approaches that foster student motivation and facilitate authentic personal involvement. Furthermore, science has not consistently established the effectiveness of instructionism nor consistently established the inferiority of constructivism. A meta-analysis establishes the superiority of direct instruction (Jeynes & Littell, 2000), but the analysis is reportedly flawed and the results grossly misinterpreted (Krashen, 2001). Perhaps such seemingly irresolvable empirical controversy and pedagogical confusion suggest that there is truth and legitimate instructional value in both curricular approaches.

## Reconciling Instructionism and Constructivism

What is the core value of constructivism? Terms such as *meaningful learning* and *student-centered instruction* are dogma and are not useful in daily classroom practice. *Active student involvement*, *student interest and motivation*, and *student personal satisfaction with*

*learning* may be the core benefits of constructivist education (Dahl & Freppon, 1995; Fisher, 1991). Both teachers and students are drawn to instructional methods in which students take responsibility for learning, in which students are highly motivated to learn, and which recognize the humanity of teaching and learning (Hogan & Peterson, 2001; Martinez et al., 2001). And yet, direct instruction, while mechanistic and thereby, to some, dehumanizing (Johnson, 1998), is highly effective in facilitating student skill acquisition (Carlson & Francis, 2002; Kameenui & Carnine, 1998).

How can a curricular orientation that is intuitively rejected by many teachers (i.e., instructionism) yield positive student learning outcomes? What is the core value of instructionism? Terms such as *prescribed*, *systematic, efficient*, and *teacher-controlled* are dogma and are not useful in daily classroom practice. *Student time-on-task*, *teacher organization*, *teacher corrective feedback*, and *specific learning objectives* may be the fundamental strengths of instructionist education (Hoover & Fabian, 2000; Swanson, 2001). In light of the teacher effectiveness research, the instructionist focus on teachers, as opposed to the constructivist focus on students, is prudent (Kemp & Hall, 1992).

Teacher effectiveness research follows a simple methodology (Braskamp, Brandenburg, & Ory, 1984). Groups of students are compared in terms of indicators of school success, for example, performance on standardized tests of academic achievement. Students who score high on outcome measures are compared with students who score low on outcome measures. Holding constant student characteristics such familial income and cognitive development (Millman, 1997), a relatively consistent pattern of teacher behavior is associated with higher student achievement (Donovan, Bransford, & Pellegrino, 1999). Teacher behaviors associated with positive student learning outcomes (i.e., systematic teaching procedures, specific corrective

feedback to students, frequent review of material, orderly classrooms, and explicit explanations of concepts) are typical of instructionist teachers (Kemp & Hall, 1992; Wenglinsky, 2000). With respect to measurable, objective, standardized learning outcomes, the value of instructionism and the importance of teacher instructional behavior are beyond debate (Carlson & Francis, 2002; Schug et al., 2001)

How then can the beauty of constructivism be reconciled with the utility of instructionism? From an epistemological perspective, human knowledge is both objective and subjective. There is an objective reality that is shared; communication occurs and knowledge accumulates (Gross et al., 1996). But reality is also subjective, personal, and private; communication is often partial and meaning is situation-specific (Steffe & Gale, 1995). There is an accumulated body of human knowledge (i.e., curriculum) that students must acquire to function in the shared objective world. But it is also true that student personal experience, interpretation, and response to curriculum are individual, subjective, and unique. Instructional practices that spring from a moderate position on the epistemological continuum equally reflect instructionist and constructivist pedagogy.

An obvious application of instructionist-constructivism would be the intermittent application of various instructional strategies. Intensely teacher-mediated strategies such as direct instruction could be sprinkled throughout the school day, thereby minimizing teacher and student mechanization. Short periods of highly teacher-controlled instruction could be applied to rotating small groups of students while the remainder of the class engages in self-directed and self-selected learning activities. In daily lesson planning, teachers might consider a variety of instructional approaches (Hoover & Fabian, 2000). Excessive self-selection and extended thematic approaches, often associated with constructivism (Honebein, 1996), may contribute to

off-task student behavior. Teacher-control, group response, and clear learning criteria, often associated with instructionism (Snow et al., 1998), may be motivating to students, if not excessive and exclusive.

Instructionist-constructivism would focus on systematic instruction within a context of individual student meaning and personal student interest. For example, skills such as spelling and grammar, rather than being taught in isolation, are embedded in meaningful literacy activities. In this context, teaching specific skills is a consequence of student need where meaning and comprehension are emphasized (Strickland, 1998). Instructionist-constructivist teaching might involve specific skill instruction, including phonics, embedded in enjoyable and meaningful reading and writing experiences. Thus, students are explicitly taught discrete skills while simultaneously experiencing interesting stories and writing activities (Snow et al., 1998). Penmanship, spelling, and sentence structure become important and meaningful to children when they are writing letters to someone with whom clear communication and a good impression are essential, such as Santa (Hogan & Peterson, 2001).

There is increasing concern that epistemological controversy and its practical consequence, disagreement regarding the nature of ideal instruction, are consuming researcher and practitioner resources (Ediger, 2001). In isolation from each other, objectivism and subjectivism equally provide a partial understanding of human learning. In isolation from each other, instructionism and constructivism equally provide a restricted curricular orientation. “The insistence on a single strategy bears the hallmark of academic educators who are isolated in their own theoretical models” (Baines & Stanley, 2000, p. 327). There is not unidirectional causation between skill and meaning; the relationship is spiral and reciprocal.

The ultimate contribution of epistemological extremists may reside in recognition of the necessity of balance. Extreme and exclusionary instructionism or constructivism may be the ultimate threat to effective education.

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