

# *Paradigm Parallel Pedagogy: The Significance of Parallel Paradigms*

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**ABSTRACT:** Paradigm pedagogy incorporates the ontological (question of reality), epistemological (question of relationship), and methodological (question of process) structures of research paradigms onto teaching and the classroom. This multifaceted perspective relates the characteristics of the research paradigms of positivism, interpretivism, and critical theory to teacher pedagogy, initiating innovative discussions about teaching and teacher education.

**RÉSUMÉ:** La pédagogie du paradigme comprend les structures ontologiques (question de réalité), épistémologiques (question de logique), et méthodologiques (question d'organisation) de recherche de paradigmes en enseignement et pour la classe. Cette perspective, à facettes multiples, rapproche les caractéristiques de la recherche des paradigmes du positivisme, de l'interprétivisme et de la théorie critique à la pédagogie de l'enseignant, amorçant ainsi, des discussions innovatrices sur l'enseignement et sur l'éducation du professeur.

## *The Significance of Parallel Paradigms*

What is a paradigm and how does it connect to teacher education? A paradigm is a model with particular constructs. It is a "basic set of beliefs that guides action" (Guba, 1990, p.17). Taken further, a paradigm in the sense of teaching might be that place where the teacher feels a connection between beliefs in how children learn and classroom practices. At times, this connection is skewed. In fact, there is considerable research that illustrates a contradiction between what teachers believe and their actions in the classroom (Brooks & Brooks, 1993; Cooney, 1985; Thompson, 1984). For example, after an introduction to theories of constructivism, many teachers embrace constructivist pedagogy. Still, there are some

teachers who, although compelled by the power of constructivist teaching, refuse to implement constructivist pedagogy (Brooks & Brooks, 1993). In keeping with the theme of contradiction, teacher education itself consists of a number of conflicting practices of knowledge construction. Varying paradigms of teacher education – curriculum studies, educational foundations, teaching studies, and educational psychology – each contain their own internal rules and processes for solving problems and issues prominent in the field of education (Smith & Zantiotis, 1989).

Paradigms of research, on the other hand, seem to be more connected. If you ask a researcher what guides their selection of research paradigms, you would expect to hear, “the question.” There is a strong correlation between the researcher’s goals for research and the methods by which to reach those goals. This is evidenced by the research methodologists who support situational drive for methods as opposed to paradigmatic constructs (e.g., Bryman, 1988; Firestone, 1990; Patton, 1990; Pitmen & Maxwell, 1992). With respect to research, paradigms hold governance to the relationships and actions within our research. The paradigms within the broader perspectives of qualitative and quantitative research determine the ontological (the nature of our reality), epistemological (our knowledge of the world through the relationship between inquirer and the known), and methodological (our method of gaining knowledge) perspectives on the issue or question of the study.

Researchers from both qualitative and quantitative perspectives are concerned with the point of view of a particular research study (Denzin & Lincoln, 1994). Many researchers have chosen to use a variety of research perspectives and occasionally dip into research paradigms that are different from those they have used before. The assumptions made prior to research, determine the perspective: qualitative or quantitative. For example, if your goal were to find generalizable knowledge or to make predictions from your research, your perspective would be quantitative (Glesne & Peshkin, 1992). Once you know what perspective you would like to work through, the methods and research role follow. As an example, if your research question is asking whether a particular event elicits a particular response, you may use an experimental design. Similarly, if you are investigating the life of an exceptional student and how her experiences and life history has molded her, you might elect to do a case study. Of course, these are simplistic examples, but the point is that our questions guide our perspectives and our perspectives lead

us to our paradigms of study. However, what guides our questions? I believe it is our world-view. I will define world-view as the lens through which we view our world. This lens affects our perspective. Eyeglasses have a similar effect. Lenses in eyeglasses can either improve your sight or diminish your sight. If you are far sighted, you may need glasses to read. However, those same glasses could prevent you from seeing objects that are further away. Similarly, the lens of your world-view could limit your sight in a particular situation and may require an adjustment. If we constantly ask questions that presume an objective reality, our perspective will consistently be quantitative/positivistic.

This also applies to pedagogy. Through our world-views come our paradigms of teaching and thus our questions. Because of this, it is imperative to bring world-views to the forefront in education. The guiding question (parallel to research) would be, our question guides our teaching. However, what constitutes the question in teaching? White (1995) writes that the important questions of teachers and instruction focus on how children learn and what theories a teacher holds in high priority. Fenstermacher and Soltis (1998) write that the two questions that determine the approach teachers adopt focus on what students need to know and how we, as a society, qualify teachers. I submit that the questions in teaching are much more complex. The questions involve issues of reality of both content, institutional roles, and professional roles, educational relationships (teacher-to-student, student-to-content, and teacher-to-content), and methodology (the means of transferring or creating knowledge, depending on your world-view). The questions of teaching are multifaceted and emergent. Is it our curriculum, "How can my students best learn this material?" On the other hand, could our personal perspectives provide a basis for our question about teaching and learning, "How do I believe I can best teach these students?" Still, the situation could provide a basis for the question, "What is best for this group of students, or this particular concept?" The complexity of the question of teaching yields a need for a multifaceted look at teaching.

Our pedagogy will reflect our paradigm/world-view (Kaplan, 1991; Peterson, Fennema, Carpenter, & Loef, 1989). What teachers believe to be the reality in a classroom or with a group of students, directly influences our methods of teaching. Similarly, teacher's epistemological view affects pedagogy. Therefore, how do we address issues of world-view within teacher education? My proposal is to

promote awareness of the possibilities of the varying world-views of teaching through the introduction of what I will call paradigm parallel pedagogy. Paradigm parallel pedagogy is a delineation of various aspects of pedagogy that parallel specific perspectives of research paradigms. Those perspectives are ontology, epistemology, and methodology. Paradigm parallel pedagogy combines the "ologies" of the research paradigm and three research paradigms: positivist, interpretivist, and critical theorist with issues of education. Paradigm parallel pedagogy provides teachers with a defined representation of pedagogy that can be referenced and can provide guidance given the teachers' question. Paradigm parallel pedagogy is in matrix form; with multiple perspectives involving ontological, epistemological, and methodological definitions of three paradigms: positivism, interpretivism, and critical theory.

As researchers and educators, there has been a great deal of research connecting instructional design to traditional positions on learning: behavioral, cognitive, and constructivist (Ertmer & Newby, 1993; Case & Bereiter, 1984; Cooper, 1993; Richardson, 1996). Alternatively, by questioning the development of our world-views and thus the connection of these world-views to our pedagogy, I am initiating conversation about pedagogical parallel of teachers not with these traditional categories, but rather with the ideologies of the research paradigms; positivism, interpretivism, and critical theory. While pedagogy, motivated by the belief in a particular position on learning, focuses strictly on the development of knowledge, paradigm parallel pedagogy borrows from paradigms of research and uses a three-faceted view of teaching. The complexities of the research paradigms, allows for the multiple issues relating to pedagogical decisions in the classroom. Unlike the tenets of positions of learning, the research paradigms reflect the perspectives of ontology – the nature of reality and therefore, what can be known; epistemology – the nature of the relationship between the knower or would-be knower and what can be known; and methodology – the method of inquiry (Guba & Lincoln, 1994).

Fenstermacher and Soltis (1998) define three approaches to teaching: the Executive approach, the Therapist approach, and the Liberationist approach. They introduce a formula to "keep the significant features of each approach from being lost in the details of the discussion" (p. 8). The formula includes the following variables: teacher, teaches (the action), student, content, and purpose. While each of the three approaches touches on the various variables, the

approaches highlight a particular variable and have different purposes. The executive approach emphasizes what the teacher does; the therapist approach focuses on what the student chooses to become; and at the heart of the liberationist approach is disciplined-based content (Fenstermacher & Soltis, 1998). In addition, the approaches have different purposes: executive- learner's acquisition of knowledge, therapists – learner's development as an authentic person, and liberationist – focus on content. While Fenstermacher and Soltis stress the idea of movement from approach to approach, they lack a more systematic discussion of the factors within each approach that could be definitions of pedagogical ontology, epistemology, and methodology. If our questions about our teaching change, can the solutions be found in paradigms of pedagogy that are currently out in the educational community?

The lenses of the research paradigms can shed an interesting light on the field of teaching in general and teacher education. By viewing pedagogy from this multifaceted perspective, we can provide a varying and more complete picture of pedagogical practices for current and perspective teachers. Typically, teaching and learning is focused on how students learn. Not only should we be concerned with the question of how students learn (epistemology), but we should also be concerned with the ontological and methodological perspectives that relate to the epistemological question. When we do this, we are better situated to learn more about the issues of teacher education and research those issues at a different level.

In comparing the principles of the research paradigms and the accompanying pedagogical paradigm parallels, I will concentrate on the paradigms of positivism, interpretivism, and critical theory. There are many definitions and variations of these paradigms (e.g., Glesne & Peshkin, 1992; Denzin & Lincoln, 1994; Schwandt, 1994). However, I have limited myself to the three mentioned above. I will define the paradigms by first examining the writings of Guba and Lincoln (1994). I will then relate the paradigms to the study of education, specifically, pedagogy.

### *Research Paradigms*

It is imperative to define the research paradigms before applying them to pedagogy. As I define the paradigms, I will assume the following definitions:

*Ontology*: What is the form and nature of reality and, therefore, what is that there can be known about it?

*Epistemology:* What is the nature of the relationship between the knower or the would-be-knower and what can be known?

*Methodology:* How can the inquirer (would-be-knower) go about finding out whatever he or she believes can be known? (Guba & Lincoln, 1994, p. 108)

I am aware that there are many interpretations each of the paradigms. I am also aware that these definitions vary greatly dependent upon the author and his or her particular methodological frame. Nevertheless, I will use the guiding principles of Guba and Lincoln (1994) for the purposes of this comparison.

In what follows, I will make every effort to present the paradigms from an impartial view and thus avoid any bias. However, if you are from a particular world-view, you likely will see this effort as futile. Still, my intent is to minimize a hierarchical perspective of the varying paradigms. If paradigm parallel pedagogy is brought to perspective teachers in a manner that does not imply a purposeful upward travel (consist with hierarchical presentations of pedagogy) from one paradigm to another, then the teacher would be more likely to select pedagogy that aligns with that which is most representative rather than that which is from the "right," socially and historically named, paradigm; whether that be positivist, interpretivist, or critical. I will therefore attempt to outline the complex ideals of research ideology to provide a foundation for the paradigm parallel pedagogy perspective.

### *Positivism*

The positivist paradigm maintains a binary focus of ontology. In the positivist paradigm, knowledge or truth, is objective, either right (a point, which in a square is always a right angle) or wrong (in this context, not right or a line segment). This relates to the immutable reality of the positivist paradigm as suggested by Guba and Lincoln (1994). The positivist manner of research study has distinct and complete rules. These rules govern the internal and external validity of a study (Denzin & Lincoln, 1994). Similarly, the experimental structure of many studies from within this frame, have definite conditions that yield quality results.

With respect to epistemology, the variables and conditions of a study within the positivist frame are vital. You cannot count one variable of a study without having to change many other components of the study. This relates to the epistemological definition of the positivist paradigm by Guba and Lincoln (1994) that states, "When

influence in either direction (threat to validity) is recognized, or even suspected, various strategies are followed to reduce or eliminate it" (p. 110). The objective nature of the positivist epistemology requires concrete tangible laws. More concretely, if you wish to conduct a study from the positivist frame, you must accept neutrally as an ideal and work to remain unbiased and excluded from the variables pertaining to that study.

The methodology of the positivist paradigm is thus, deliberately restrictive. This is evidenced by Guba and Lincoln's (1994) definition of the positivist methodology in that it, has a priori procedure, "hypotheses [that] are stated in prepositional form and subjected to empirical test to verify them" (p. 110). A study within this frame is constructed to eliminate all bias that may taint the results of the study. It is said that qualitative researchers within this paradigm must be passionately dispassionate about their research.

### *Interpretivism*

Unlike positivism, the interpretivist paradigm realizes no one truth. Truth can be distinct from any one particular perspective but perspectives can yield differing truths. The ontology of the interpretivist (constructivist) paradigm according to Guba and Lincoln (1994) is one of, "multiple, intangible mental constructions, socially and experientially based ... elements are often shared among individuals" (p. 110). More concretely, within the interpretivist frame, the reality is relative. Each researcher has a distinct view of the study and thus, the results.

The epistemology of the interpretivist paradigm is similar to that of critical theory. The interpretivist relationship between the knower and the would-be-knower is interactive. Unlike the critical theory epistemology, though, the interpretivist relationship appears to have no specific political agenda. The findings of an interpretive investigation are "literally created" (Guba & Lincoln, 1994, p. 111), or emergent. There are multiple ways of investigating an issue in the interpretivist approach. Unlike the positivist approach, interpretivist studies acknowledge and even welcome admission of researcher bias. The premise is that although an effort is made to limit bias, bias can never be truly eliminated. Perspectives of both the researcher and the participants are addressed openly in an interpretivist study.

The methodology of the interpretivist approach is instrumental, where individual constructions are elicited through interaction, "between and among" (Guba & Lincoln, 1994, p. 111), the

investigator and the respondent aimed at reconstruction of formerly constructed ideas. In the interpretivist approach, the outcome of an investigation can be drastically different depending on the emergent nature of the investigation. In other words, the outcome by design envelops the social interaction and thus includes the perspectives of the researcher and/or participants.

### *Critical Theory*

The ontology of the critical theory approach consists of situated structures of historical realism that are limiting and confining (Guba & Lincoln, 1994). In short, and similar to the ontology of positivism, there is a dominant construction of reality that perpetuates inequality. While critical theorists would hesitate to declare one truth, it does acknowledge principle structures that define a reality that is historically based in social interaction among humans.

Like the epistemology of interpretivism, the critical theorist is transactional, meaning the knower and the would-be-knower are interactively linked (Guba & Lincoln, 1994). They work together (praxis) to promote social change. The goal of the critical theorist is emancipation. Once emancipated, the previously marginalized yields to a new marginalized group. And a new historical perspective on reality and relationships is founded.

The methodology of the critical theory approach requires communication; a dialectical nature intended to transform unawareness and historically constructed restrictions (Guba & Lincoln, 1994). The intent of this methodology is to evoke change for the marginalized community or individual. The intent for change in the critical perspective is ever-present.

### *Paradigm Parallel Pedagogy*

How does this relate to pedagogy? I have adjusted the definitions of ontology, epistemology, and methodology to fit the connection with pedagogy. In these definitions, I am using the parameters of Guba and Lincoln's (1994) definitions along with my symbolic interpretation of the paradigms. My experiences in the conventional views of instructional design and pedagogy influence my symbolic interpretation. My symbols come from my reading of constructivist, cognitive, and behavioral teaching perspectives. These perspectives on teaching and instructional design are evident in research (Richardson, 1996; Hwang, 1996; Case & Bereiter, 1984). Still, it cannot be ignored that my constructions are generated from and

influenced by the ideologies of the research paradigms and the applications of these ideologies on pedagogy. Through this, I have developed Table 1 to indicate the various perspective of teaching as they relate to ontology, epistemology, and methodology.

Table 1. *Paradigm Pedagogy Definitions*

	<i>Ontology</i>	<i>Epistemology</i>	<i>Methodology</i>
<i>Definition</i>	What is the nature of the reality of the delivery of content concepts and student learning and discipline?	What is the relationship between the teacher and the student?	How do the students in the class seek out knowledge?  What is the delivery method of the teacher?
<i>Positivism</i>	<ul style="list-style-type: none"> <li>• product over process</li> <li>• masterable content</li> <li>• content knowledge stressed</li> </ul>	<ul style="list-style-type: none"> <li>• teacher is a giver of knowledge</li> <li>• students are passive recipients</li> </ul>	<ul style="list-style-type: none"> <li>• teacher directed</li> <li>• objective assessments</li> <li>• knowledge is given</li> </ul>
<i>Interpretivism</i>	<ul style="list-style-type: none"> <li>• process over product</li> <li>• unlimited content</li> <li>• individualism stressed</li> </ul>	<ul style="list-style-type: none"> <li>• teacher-as-facilitator</li> <li>• student directed learning</li> <li>• teacher encourages student-taught lessons</li> </ul>	<ul style="list-style-type: none"> <li>• student directed</li> <li>• subjective assessments</li> <li>• knowledge is constructed</li> </ul>
<i>Critical Theory</i>	<ul style="list-style-type: none"> <li>• process / product shared</li> <li>• content and society impose inequalities</li> <li>• emancipatory ideas stressed</li> </ul>	<ul style="list-style-type: none"> <li>• teacher-as-coach</li> <li>• teacher is higher knower but encourages students to follow their lead</li> </ul>	<ul style="list-style-type: none"> <li>• teacher and student directed</li> <li>• objective, subjective, &amp; alternative assessments</li> <li>• knowledge is accessible</li> </ul>

### *Ontology*

First, the ontology of parallel paradigm pedagogy concerns truth or the existence of truth, the truth of content knowledge and the truth of classroom and teacher. Truth concerning content knowledge stems from the origin of the content. Is there one truth or a multitude of truths? Is there no truth or is the truth of the content ever changing? Or, is truth historically based?

As in a positivist research paradigm, in the positivist classroom, truth exists: one truth. There is a right and a wrong; there is no gray. Value in the classroom comes from product not process. The teacher and content is absolute. The truth of the content comes from above, a superior knower. In the case of the classroom, the superior knower is the teacher. In the case of the content, the superior knower is the established truths in the field. Positivist pedagogy with respect to ontology is that action which is binary in nature. Positivist pedagogy with respect to ontology is focused on outcomes, responses, determined to be true or otherwise falling within the constraints of either the teacher-created absolutes or the content-constructed absolutes. In other words, there is a *right* to aspire to and that is the goal of the classroom/teacher.

In an interpretivist classroom, reality of issues and content ideas are debatable. The how and why of mathematics as content is valued and the process outweighs the product. Truth is fuzzy and subjective. This travel of truth and changing nature is clear in both the teacher and the content. The content is seen as ever changing and ever challenged. Challenge, both to teacher and content is expected, perhaps encouraged. Interpretivist pedagogy with respect to ontology is focused on blurred lines, questioning of truths, and debates of limits. This occurs through a lack of control both by the teacher and by the constraints of convention content focus. In other words, questioning is the goal of the classroom/teacher.

In the critical theorist classroom, there is a truth and the truth is what is to overcome. The fact that the truth is limiting to those involved is the driving force in a critical theorist's classroom. Truth of content is oppressive in many aspects and challenged. In the case of the teacher, the truth is guiding. The focus is liberation from restrictions of content, history, and society. The predominant issue in a critical theory classroom is emancipation, realizing that obstacles exist and working to overcome them. Critical theory pedagogy with respect to ontology is focused on action, a movement from oppression to emancipation. In other words, the liberation of all

students to overcome the limiting forces of self and content is the goal of the classroom/teacher.

### *Epistemology*

The epistemology of parallel paradigm pedagogy concerns relationships, relationships between teacher and student and student and content knowledge. How are the relationships in the classroom stated or implied? Is the relationship consistent or changing?

In a positivist classroom, there is an expert-novice relationship with the teacher at the top. Knowledge flows downward. The teacher is the giver of knowledge and the students receive what is given. In the case of the classroom, the expert in the classroom is the teacher. Questions regarding content are addressed to the teacher with the expectation that the teacher will deliver the expected content knowledge expertise. Positivist pedagogy with respect to epistemology is focused on rules of play. There are specific rules governing the interaction of teacher and student and student to student. Because of this, disciplinary problems are thought to be few. Although the realities of the classroom may show otherwise. This is due to the explicit directions and expectations of students. Similarly, there are rules of content that must be followed to provide a desired outcome: content knowledge. In other words, there is an aspiration of consistency that allows for little ambiguity with respect to student behaviors and outcomes of those behaviors. With respect to the more traditional definitions of epistemology (how students learn), the epistemology of pedagogy within the positivist frame aligns with behaviorist theories of learning.

In the interpretivist classroom, there is a horizontal relationship between teacher and student, a give and take. The teacher is a facilitator of knowledge and the students work to find, create, or discover knowledge. The teacher sees the students as a working partner in education. In the case of the classroom, the experts in the classroom are the students; we will call them "experts in training." Questions regarding content are addressed with a search for possible answers, and quite possibly, a new set of questions. Interpretivist pedagogy with respect to epistemology is focused on play and interplay. There are few specific rules explicit or implied, which govern the interaction of teacher and student and student to student. Because of this, classrooms tend to be noisy and there is a great deal of movement. In other words, there is an aspiration of investigation that allows for much ambiguity with respect to content knowledge.

With respect to the more traditional definitions of epistemology, the epistemology of pedagogy within the interpretivist frame aligns with constructivist theories of learning.

In the critical theorist classroom, like the positivist classroom, the relationship is vertical where the teacher is a higher knower, but the working relationship, like in the interpretivist classroom, is cooperative and its purpose is to elevate the student to the teachers' level of understanding. The teacher is focused on students and social conditions that limit each student's success. In the case of the classroom, the expert in the classroom is the teacher. However, the goal is for the teacher to coach the students to this higher level of knowing of the social reality of inequality. Questions regarding content are addressed to the teacher with the teacher providing opportunities and means for the students to find socially just solutions on their own. Critical theory pedagogy with respect to epistemology is focused on the awareness of socially and historically imposed rules of play. The oppressive nature of the rules governing content and social positioning, drive the teacher and classes' action. Students are expected to follow the lead of the teacher in the emancipator actions of knowledge acquisition, to limit restraints on what they can know and how they can know it. In other words, there is an aspiration of liberation that drives the actions of the teacher. With respect to the more traditional definitions of epistemology, the epistemology of pedagogy within the positivist frame aligns with critical pedagogy theories of learning.

### *Methodology*

Third, the methodological equivalent of paradigm parallel pedagogy concerns the processes of teaching and learning, the method of delivery. The methodological frame determines how the learning takes place and its delivery.

In the positivist classroom, the students are elevated to a higher level of knowledge by the teacher's understanding of the concepts being studied. In the positivist classroom, the students are recipients of knowledge. The teacher gives knowledge in more traditional ways, specifically lecture. There is little student interaction in the classroom. The teacher determines the path and the manner to travel that path. Teachers who are teaching from a positivist frame use objective assessment: multiple choice tests, restrictive response items, worksheets, and timed activities. Positivist pedagogy with respect to methodology is planned, organized, and consistent. The

focus of positivist pedagogy with respect to assessments and the instructional methods is measurable outcomes. The means of obtaining the optimal, measurable outcomes from a positivistic perspective is direct instruction and objective testing.

In the interpretivist classroom, the students are elevated to a higher level of knowledge by collaborating with the teacher. In the interpretivist classroom, the students seek out knowledge and the teacher guides this discovery. Knowledge is obtained by student direction. Additionally, knowledge differs with each student. There is a focus on student-directed learning and the teacher is simply a facilitator. The teacher guides the direction of the students, but the students are the travelers. Assessments are individualized. Teachers who are teaching from an interpretivist frame typically use subjective, alternative assessment: portfolios, presentations, and cooperative groups. Interpretivist pedagogy with respect to methodology is emergent, active, and individual. The focus of interpretivist pedagogy with respect to assessments and the instructional methods is individual growth. The means of obtaining the optimal, individual growth is experiential, student-directed learning and subjective assessments.

In the critical theorist classroom, the students are elevated to a higher level of knowledge by the teacher's understanding of the obstacles that must be overcome. Knowledge is obtained through erosion of limitations imposed by society and the world of the content. This break down of limitations liberates the students to reach their highest potential. The teacher creates lessons that are relative to the student's lives and struggles that obstruct higher knowledge. Methods of instruction can be teacher directed or student directed but with a clear intent to address issues of oppression to the particular student culture. The historical and cultural limitations imposed on students determine the path and the manner to travel that path. Teachers who are teaching from a critical theorist perspective use both objective and subjective assessment, each including issues of history, politics, and the restrictive nature of some content areas. Student projects, group and individual, created to increase student investigation of historical, gender, economic, and political perspectives of content and schooling are encouraged. Critical theory pedagogy with respect to methodology is planned, transformative, and emancipatory. The focus of critical theorist pedagogy with respect to assessments and the instructional methods is change. The means of obtaining the optimal, liberatory change from

a critical theorist perspective is a combination of direct and indirect instruction and objective and subjective assessments.

### *Paradigm Parallel Placement*

Teachers travel from one world-view to another. In keeping with the earlier analogy, we wear different glasses (or none at all) for different situations. This trekking is dependent upon many variables such as but not limited to: content, culture of the classroom, and past experiences of the teacher. It is important to clarify that there can be travel between paradigmatic (positivist, interpretivist, and critical theorist) world-views. This movement emphasizes that not only can a teacher act from many views, but also that she or he can be within two or all three world-views at a single moment. With a single action, a teacher can be both a positivist and an interpretivist. Similarly, he or she can make pedagogical decisions that fall within the parameters of all three ideologies. Those of us who believe we are constructivist teachers or feminist teachers may debate this hypothesis. Are we, though, truly homogeneous in our ontological, epistemological, and methodological alliance to these world-views?

### *Conclusion*

Many have written about instructional design issues regarding behaviorism and constructivism (Hwang, 1996; Richardson, 1996; Case & Bereiter, 1984). Some have even gone so far as to say that the two persuasions in instructional design can be complimentary (Hwang, 1996). Indeed, combining the tenets of these learning perspectives will allow for an option to the traditional. Nevertheless, this combined perspective still limits the study to knowledge construction.

Similarly, some suggest integration of paradigms within research. One such suggestion is that, "rather than believing that one must choose to align with one paradigm or another, I advocate a paradigm of choices" (Patton, 1990, p. 38). If the question truly guides the paradigm of research, then we should be open to working through alternative paradigms. Again, this is mute if we are consistently asking questions that can only be answered from a particular paradigm. In this case, should we encourage different questions? In connection to pedagogy, should we look at different questions that can be answered from a variety of teaching paradigms?

Paradigm parallel pedagogy allows us to examine pedagogy in a multifaceted perspective. If we look at pedagogy from this more

complex venue, we see alternatives to teaching that are not visible from a traditional lens. Although beliefs influence methodology, the awareness of the various perspectives of pedagogy that paradigm parallel pedagogy provides could lead to conversation about the possibility of combining methodologies that extends the possibilities for teachers and teacher pedagogy. What are those views that we hold close and can we or do we want to investigate pedagogies from different paradigms?

In teacher education specifically, the knowledge of paradigm pedagogy provides possible structure for personal philosophies of education. While teacher educators believe critical inspection of a priori beliefs on teaching are commonly viewed as important, this inspection is rarely pursued (Boote, 2001). If teacher educators expect to provide opportunities for their students to critically reflect on their beliefs, and thus practices of teaching, the delineation of pedagogy within the paradigm parallel provides a medium. By investigating pedagogy through the paradigm parallel, preservice and inservice teachers can look at the intricacies of their field and make conscious efforts to travel among the pedagogies to reach a larger student audience and better meet the multifarious demands of teaching. This awareness to paradigm parallel pedagogy could promote different questions of teaching that would lead to a broader teaching philosophy including multiple views. They can use methods of pedagogy similar to the methods of research and make decisions about pedagogy reflective of their questions. As with research, the teacher's ontological, epistemological, and methodological decisions could be based on the question of the moment. To fully realize the power of this vision of pedagogy, it is vital to recognize the differences and attributes of each of the perspectives: positivism, interpretivism, and critical theory.

### *Implications for Research*

Should we or can we blend the ideals of the paradigms to create a new situated pedagogy and in doing so, integrate the theories of learning? Would doing this extend pedagogical research beyond what has already been studied? Where are teachers with respect to an overlying paradigmatic view? This writing focuses on the use of pedagogical paradigm parallels with the varying ideologies of the paradigms of positivism, interpretivism, and critical theory in the study of education. This work leads to questioning homogeneity of pedagogy and provides a venue that could guide research in a more

complex view of pedagogy by working through the paradigms.

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