# The Nature of Educational Research

Simon G. Gillett

March 14, 2011

Abstract

The paper is in two parts. The first part of the paper is a critique of current methodology in educational research: scientific, critical and interpretive. The ontological and epistemological assumptions of those methodologies are described from the standpoint of John Searle's analytic philosophy. In the second part two research papers with different research methodologies were identified (Kumaravadivelu, 2001; Lee, Yoon, & Lee, 2009) and their research methods were critiqued. Special attention was given to the results and discussion section of those educational research papers. Ethics and author's agenda were identified as important to data generated by research in education.

## Introduction: Classrooms, Exams and E-learning

Richard Pring, in his book on the philosophy of education research, says that philosophy should be seen as educational research (Pring, 2004). This paper uses the philosophy of John Searle to understand the language of educational research. I apply some of Searle's tools and analysis to critique the nature of educational research. Searle has published extensively on the philosophy of language, mind and society (Searle, 2008). His rational explanations of the nature of language, mind and society analyze educational researchers' ontological and epistemological premises and research data. Searle explained epistemological as that which relates to knowledge and ontological as that which relates to being. He explained how we get from noises that we make with our mouths to complex speech acts such as love songs, declarations of independence and marriage vows. Searle argued that social reality is objective because of those speech acts and he answered how we get objective knowledge of something that may be subjective.

Objective and subjective are systematically ambiguous between a reading that is ontological and a reading that is epistemological. For example, it is an objective fact that Vincent van Gogh died in France. It is subjective that van Gogh is a better painter than Gauguin. In an epistemic sense, these claims can be settled independent of people's attitudes: those are objective. Those claims that depend on people's opinions and attitudes are subjective, however. The basis for that distinction is a much more fundamental distinction in ontology, between modes of existence. Some entities exist only in as far as they are experienced by a subject: pain, tickles, itches, thoughts and feelings generally are ontologically subjective because they exist only in so far as they are experienced by a human or animal subject. Most things in the world are not subjective, like books, classrooms, examinations, or, as Searle says, mountains, molecules, galaxies, rain falling in Devon. Those are all *ontologically objective*.

The nature of educational research is a social and institutional reality that only exists because people have a certain set of attitudes towards it and in that sense it's ontologically subjective. However, educational research, teaching and maybe TESOL have an epistemologically objective reality: classrooms, books, examinations, e-learning and so on. If we extend objective reality from mountains, molecules and galaxies to educational research about, for example, e-learning, we should enough have objective, universal knowledge that the possibility of knowledge is no longer a problem (Searle, 2008, p. 1).

Part 1 analyzes research methods from their ontological and epistemological foundations and in Part 2 analyzes the methods of Kumaravadivelu and Lee *et al.* (henceforth Lee), as epistemologically subjective and ontologically subjective. Those authors do not speak of objective truths, such as those truths about classrooms, books and examinations and e-learning. The interpretivist methodology that Kumaravadivelu chooses when writing about the post-method condition is a subjective attitude towards educational research that forgets ontology entirely, even about subjective itches, tickles, thoughts and feelings. Lee's scientific and positivist methodology of e-learning in education is also ontologically subjective.

PART 1

## Analysis of Research Methodology

Educational researchers do not make observer-independent claims with the authority of what John Searle names socially-constituted objective reality. The main methodologies of educational research - scientific, critical and interpretive - each have their own strengths and weaknesses. Each and every research methodology fails to deal exclusively with the ontologically objective and many fall into the trap of describing the epistemologically subjective (itches, tickles, thoughts and feelings) as epistemologically objective. The researcher in education can only but describe his (or her) own itches, tickles, thoughts and feelings. The researcher of education can not be ontologically objective. There are no truths in educational research, but there are speech acts. Those speech acts reflect the social reality in which the educational researcher finds him (or her) self.

As Chomsky said the study of language can provide some glimmerings of understanding of rule-governed behavior and the possibilities for free and creative action within the framework of a system of rules that in part, at least, reflects intrinsic properties of human mental organization (Chomsky, 2008). Educational research does have a place in a world that is described by epistemologically subjective humans - even when those humans make ontological claims about their subjectivity. Those ontological claims are the basis for our glimmerings of understanding and possibility of free and creative action.

Part One critically discusses three contrasting research methodologies. I will critique them. In turn, each will be contrasted based on its (and some of its advocates') contribution towards an understanding of educational research. The reasons for those methodologies' claims of ontological objectivity will not be passed. Examples of papers in each methodology do not pass because current educational research's nature cannot definitively gainsay epistemological subjectivity.

## Scientific Methodology

Scientific research papers are in many ways similar to positivist research papers. Positivist assumptions are such that there is a single reality

that can be revealed and that that reality will not be contested by fair-minded individuals. Part of this can be studied and the whole reality is the sum of those parts. It is possible, according to the scientific research paradigm, to study this objectively and independently of the researcher. The results of that research will apply in other places, at other times. Cause and effect in scientific inquiry can be distinguished. Finally, scientists claim their research to be value-free (Lincoln & Guba, 1985).

Berliner makes a distinction between easy-to-do science such as physics, chemistry and geology and hard-to-do science, such as educational research (Berliner, 2002). Educational research is hard for three reasons: the power of context, the ubiquity of interactions and the problem of "decade by findings" interactions. All of those (most especially the first and last) are about the epistemic subjectivity of educational research.

The power of context means the enormous number and power of the contexts within which human beings find themselves (Berliner, 2002). Scientists have great trouble, for example, in speaking about school life. Context is the reason that qualitative inquiry has become so important in educational research. Scientific demands of prediction and control of phenomena cannot be replicated because the conditions under which the educational researcher-as-scientist operates are neither predictable nor controllable. Compared to describing mountains or galaxies or molecules, which are ontologically objective, the social context of education is not ontologically objective.

Rowbottom and Aiston call the scientific methodology in contemporary educational research a "myth" (Rowbottom & Aiston, 2006). Their criticism is directed specifically at a book that speaks about educational research (Cohen, Manion, & Morrison, 2007) in which Rowbottom and Aiston find two faults with the subjectivity that scientists wrongfully deny and call on the philosophy of Karl Popper to sharpen their criticism.

Karl Popper is famous for the verification principle, the principle that truth (in an epistemic sense) is impossible: there are no subject matters, no branches of learning - or rather, of inquiry: there are only problems, and the urge to solve them. This is positivism, or an affirmation of epistemic objectivity. For example, if two people are looking at Mont Blanc, then each person will see it entirely differently and may report a different mountain, especially if seen in different seasons. Indeed, without knowing the name of the mountain, neither may call the mountain Mont Blanc.

Rowbottom and Aiston speak of an example of the No Child Left Behind Act, a piece of legislation from the United States as their Mont Blanc. They criticize the legislation of scientific method in educational research in the United States. The claim is that the No Child Left Behind Act narrowly defines science-based evidence at the federal level. Consequently, they say, it works to discipline educational research (Rowbottom & Aiston, 2006) in spite of its subjective nature.

Scientific methodology not only works to promote ontological objectivity, it unfortunately also seeks to deny epistemic subjectivity. Cohen polarizes an objectivist methodology to social science from a subjectivist methodology with ontological objectivity and epistemological subjectivity (Cohen, et al., 2007). The tools of science according to Cohen *et al.* preclude

the possibility of any scientist adopting an objective methodology, as shown in this table:

| The Subjectivist Approach to Social Science | | | | The Objectivist Approach to Social Science |
|---|---|---|---|---|
| Nominalism | < | Ontology | > | Realism |
| Anti-positivism | < | Epistemology | > | Positivism |
| Voluntarism | < | Human Nature | > | Determinism |
| Idiographic | < | Methodology | > | Nomothetic |

Table 1. A Scheme for Analyzing Assumptions about the Nature of Social Science (Cohen, et al., 2007, p. 7)

A problem with the methodology described in the above table is that it has a restrictive view of proper scientific method with respect to what counts as good evidence on which to base policy. The No Child Left Behind Act may not work for the United States for example, but it may work in the United Kingdom, just as a description of a molecule ($O_2$) may be accurate, but only for one type of molecule. The scientific methodology is not suitable for educational research in *isolation*.

A scientific methodology has many useful techniques however, such as statistical significance. To get around the problem, the population may be limited, or non-inferential statistics may be used with links to interpretive designs. The scientific methodology also derives support from probability. Lee's paper speaks well of how it does so, in Part Two.

## Critical Methodology

The critical methodology is neither uniquely ontological nor epistemological. It combines some of the elements of both into a social framework. If presupposes the existence of human beings with subjective epistemology striving to defend a resolutely a deontological world. Its strength is that same defense, because critical methodology defends the complexity of subjective epistemologies.

To a critical educational researcher, all the boxes in Table 1 are equal and should be defended equally, the philosophical premise behind each is equal, none is better than another; all are the equal. To her (or him) there are many ways to describe a book, a classroom, a qualification and each of these are ontologically objective. The emergent picture of those descriptions is paradigmatic of the nature of critical educational research. An example of a critical system is an educational system, such as a national education system. That system is non-linear, recursive, self-organized, co-evolutionary and emergent (Waldrop, 1992). Typically complexity theory is seen as part of critical method, but confusingly calls itself complexity science.

Slattery claims to deliberately confound people who disagree with him (Slattery, 1997). His avowal of the postmodern method is subjectivist *ad absurdum*, I think, because his method is epistemologically subjectivist, even atomistic. Slattery cannot define his subject. He leaves his reader in confusion

by calling educational research at various times postmodern, critical, and representational.

Another avowed scholar of the critical method in educational researcher has similar problems in recognizing the unmanageable explosion in epistemic subjectivity in that method. Leonardo names educational research more than a dozen different names in a single article (Leonardo, 2004). To him educational research is dualism, authoritarianism, sociological theory, race and ethnic theory, cultural theory, literary theory, social theory (Leonardo, 2004, p. 11), feminism, nationalism, postmodernism, materialism, determinism, pragmatism, structuralism, capitalism (Leonardo, 2004, p. 12), racism (Leonardo, 2004, p. 13), socialism, reductivism, or essentialism (Leonardo, 2004, p. 15). The confusion this profusion of nouns engenders is typical of a nominalist critical method with too much subjectivity.

According to Searle critical theorists come to lack ontological objectivity because they do not pay attention to the speech act (Searle, 2008). The profusion of epistemic subjectivity has a lack of social status because most educational researchers do not *speak* about them. Critical methodologies do not have epistemic objectivity; they do not exist like classrooms or books. Critical theorists have no understanding of what Searle calls social ontology (Searle, 2008). We cannot engage meaningfully in English with critical theorists because they do not speak of molecules and Mont Blanc.

In TESOL educational research, critical theorists are insufficiently embedded in national education curricula to attempt objectivity. Most TESOL educational research is thoroughly subjective. It favors the negative over the positive. Why critical educational researchers fail at objectivity needs research.

## Interpretive Methodology

Criticism may be directed with ease at interpretive methodology and those who use the interpretive methodology in educational research. Much interpretive methodology uses jargon in preference to quantitative methodology (Garrick, 1999). The primary weakness of the interpretive method is thus the same as that of the critical method: epistemological subjectivity and nominalism. There is a profusion of language in the interpretive methodology that makes the English difficult to understand even in tabular form.

| **Predict** | **Understand** | **Emancipate** | **Deconstruct** |
|---|---|---|---|
| positivism | interpretive / phenomenological | critical | poststructural |
| | naturalistic | neo-Marxist | postmodern |
| | constructivist | feminist | diaspora |
| | hermeneutic | minoritarian | |
| | symbolic interaction | praxis oriented | |
| | micro ethnography | Freirean participatory | |

Table 2. Interpretive methodology. (Garrick, 1999, p. 154).

Each of these boxes is practically impossible to define because for a practicing teacher these are not useful terms (itches, tickles, thoughts and feelings) in educational research. A practicing teacher uses books, classrooms, exams and e-learning, and so on, to teach and research. She (or he) does not talk about the abstract nouns in Table 2.

The power of language is explored in the field of interpretive, qualitative health research in paper by Ceci, Limacher and McLeod (Ceci, Limacher, & McLeod, 2002). The authors claim that the many nouns of interpretive methods are beneficial to research in nursing. The epistemology of language is explored, or how the letters that make up the word classroom, or book, or exam come to signify the ontologically and socially objective object.[1] Ceci *et al.* do not answer for us the letters that make up feminist, or minoritarian, or critical, because they cannot.

We can criticize interpretive methodology for not having collective recognition or acceptance. Whilst interpretive research aims to generate meaning of socially constructed, negotiated and shared meanings, the interpretive researcher doesn't have sufficient status for her epistemological subjective representations to be ontologically objective. In short, the problem for the interpretive researcher is a coherent meaning of knowledge.

Interpretive researchers aim to understand how people make sense of and experience their social, cultural and material worlds. For interpretive researchers, the social world is not real like those mountains, molecules or galaxies, but it is constructed through personal perceptions and experiences. Rather than simply perceiving our individual circumstances, each person makes sense of them within a cultural framework of socially constructed and shared meanings. Our beliefs and interpretations of our social, cultural and materials worlds (but not those itches, tickles and feelings) influence our behaviors in the world (and vice versa).

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[1] To explain how this comes about I will return to Searle's explanation of speech acts. We make something into money, or somebody into prime minister, or something into a country by according it a status. It has the status of money, or a prime minister, or a country. This country seems to me to be typical of institutional facts. Those facts require the operation of an institution in order that they should exist.

Epistemologically objective things are typically subjected according to a certain kind of rule: a constitutive rule. It can be distinguished from a regulative rule. A regulative rule is do *x*, or do *y*, so in England, a regulative rule is *drive on the left*. But constitutive rules don't just regulate, they create the very possibility of the activity that they regulate. For example in chess the rules don't just take regulative effect with pieces of wood moving around. You have to have rules where such-and-such counts as a legal knight move, such-and-such counts as checkmate, such-and-such counts as castling on the king's side. Those rules have a structure

*x* counts as *y*, in context *c*

Human institutions consist in sets of constitutive rules. For something to exist as an institutional fact it has to be created by an operation of that structure, for example money, property, a University of Exeter. Human beings, according to Searle, have this remarkable capacity to create a class of functions where the function can only be performed because people assign a status to the person or object. By virtue of the collective recognition or acceptance of that status the object can perform the function.

A branch of interpretive research called structuralism regards the world as a collection of systems of law-governed relationships. Post-structuralists and post-modernists see the world as incoherent and discontinuous. Structuralists continually create and re-create worlds as dynamic meaning systems. Those can change over time, with experience and in different contexts. Meanings and interpretations are continuously negotiated in dialogue with others in light of macro and micro systems and influences. The social world is not just waiting for us to interpret, it has already been interpreted and experienced by others in unique and different ways, *pace* Crotty (Crotty, 1998).

For example, translating between languages poses an problem for interpreted knowledge because the original is already privileged. To quote from Rousseau in French (the source) and English (the translation) serves the French source language:

> *Tout est bien sortant des mains de l'Auteur des choses, tout dégénère entre les mains de l'homme (Rousseau, 1926).*
> *[God makes all things good, but man makes them degenerate.]*

The ontological position of the French language supersedes the ontological position of the English, because the translation (the author's) depends on the French. Interpretive researchers have a difficult time with the question of multi-lingualism. The social context that we all have, those itches, tickles, thoughts and feelings speak a more powerful answer to interpretive methodology than any ontological subjectivity (such as my translation). Who finally chooses the language? what do we makes of silences? whose voices are heard?

# PART 2

## Methods of Mixed Research: two case studies

The methodologies of educational research discussed use quantitative and qualitative methods. In this second part I present a case study whose objective is to clarify and simplify those methodologies and explore what is meaningful language for the English speaker.[2] The first article on e-learning, explores whether e-learning can join nouns like paper or exam as those nouns spoken by educators. I say that e-learning can join those nouns with the same ontology as mountains, molecules and galaxies, because if teachers and educational researchers can use language with social ontology (Mont Blanc and molecules of $O_2$) in teaching and research, then the methodology should be correct, I think. The case studies of two current educational research papers was created within a mixed quantitative method and qualitative method model (Greene, 2005; Johnson & Onwuefbuzie, 2004). Two identified research papers were:

- Learners' acceptance of e-learning in South Korea: Theories and Results, by Byeon-Chan Lee, Jeong-Ok Yoon and In Lee, Computers and Education, volume 53, 2009, pp. 1320-1329.
- Towards a Postmethod Pedagogy, Towards a Postmethod Pedagogy, by B. Kumaravadivelu, TESOL Quarterly, Volume 35, Issue 4, Winter 2001, pp. 537-560.

## Learners' acceptance of e-learning in South Korea: Theories and Results, by Byeon-Chan Lee, Jeong-Ok Yoon and In Lee, Computers and Education, volume 53, 2009, pp. 1320-1329.

[2] I may clarify the strengths and weaknesses of critical, interpretive and scientific methodologies.

Lee was epistemologically subjective, but acted as though ontologically objective. To be absolutely clear about the latter: Lee is *not* ontologically objective. In order to be ontologically objective, Lee's research findings would have to be afforded the social status of recognized social reality like social reality Searle speaks of in his theory of speech acts (Searle, 2008) and constructed socially by speech acts.

Lee's paper described electronic learning (e-learning) in South Korea (henceforth Korea) within a posited technology acceptance model (TAM) through empirical description of a growing area (Lee, et al., 2009). Two hundred and fifty students at a comprehensive university in Korea were surveyed. All students had participated in at least one e-learning class offered in one of five disciplines: accounting, business administration, management information systems, taxation and tourism. Their asynchronous e-learning included online lecture notes, online quizzes, online announcements, online assignments, electronic student-student and student-instructor communication, audio and video streaming, and threaded discussions. Their synchronous e-learning included chat and video conferencing (Lee, et al., 2009). Of two hundred and fifty students who returned surveys, two hundred and fourteen made valid responses. The surveys were statistically analyzed, measuring factors affecting e-learning such as instructor characteristics, teaching materials, perceived usefulness, perceived ease of use and intention to use e-learning. Lee concludes that instructor characteristics and teaching materials were the predictors of the perceived usefulness of e-learning, and perceived usefulness and playfulness were the predictors of the intention to use e-learning.

A structured survey was used by Lee. Other kinds of survey are available, for example (Cohen, et al., 2007, p. 206):

- Opinion Polls
- Test Scores
- Student Preferences
- Reading surveys

Not a single kind of survey about e-learning can be epistemologically objective. E-learning may study the epistemologically objective, however. Lee's paper's strength is that e-learning is a new methodology to gainsay epistemic subjectivity.

Lee claimed that the results of an experimental study were very consistent with earlier studies of e-learning in other countries, proved "the universal nature of the learners' perceptions and behavior towards e-learning" (Lee, et al., 2009). That claim to universality is the first criticism I will make of this research paper. Lee deduced from the specific to the general, or universal. All positivist research deduces in the same way, because the scientifically inclined researcher prefers to make bold universal claims about knowledge.

Knowledge produced from this research is too abstract and general for direct application to specific local situations and contexts. Lee's paper surveyed two hundred and fifty students in Korea, however these students probably had access to e-learning facilities that were far in advance of other countries, for example Japan (Latchem, Jung, Aoki, & Ozkul, 2008). Korea,

with a population of nearly forty-eight million, has two hundred and six universities, seventy-eight percent of which are private, one hundred and fifty-eight colleges, ninety percent of which are private and seventeen virtual universities, all of which are private. Just over eighty-two of high school leavers go on to higher education. Over fifty-eight percent enter the universities, nine percent enter the job market, less than one percent join the military and the remaining eight percent cram to repeat their entrance examinations (Latchem, et al., 2008).

Results from Lee's research may be too abstract for direct application to specific individuals. All the students surveyed in this paper were business administration students, but the experiences of students studying for degrees in business administration, whilst important, may not generalize for students studying for degrees in other subjects. A nursing major, for example, probably has less competence with computers; every surveyed individual must be subjective.

Lee's categories may not reflect local contexts. Their measurements of instructor characteristics, usefulness, and ease of use in particular were not necessarily relevant, or replicable, to educational researchers in another country. Ease of use is a special problem for this kind of research, because it depends largely on the amount of technical support available. Where this is not available, Lee's conclusion that ease of use had little causal effect on students' intention to use e-learning would not be relevant.

So far Lee's analysis shows a lack of socially constituted knowledge. Nobody would speak about e-learning in the way that mountains, molecules and galaxies are spoken of, or books and examinations are spoken of by educators. We should remember that Lee's purpose is to *research* a new methodology, namely the construction of a social reality that is mediated by the internet. Whether he achieved that goal depends on making e-learning an object with the same epistemic reality as books or mountains. His method is certainly unique.

A third criticism of this study concerns the theory used to generate Lee's conclusions: the TAM (Ajzen & Fishbein, 1977; Davis, Bagozzi, & Warshaw, 1989; Oliver, 1980). Lee's hypotheses that six factors (instructor characteristics, teaching materials, design of learning contents, learners' ease of use, learners' usefulness and playfulness) positively affected learners' intention to use e-learning may not be relevant elsewhere. Their model is probably irrelevant to someone who has been using computers since they were in elementary school, because that person would probably use e-learning regardless of their instructor's characteristics. Furthermore, the model is extremely complex and had six hypotheses which do not lend themselves to epistemological objectivity.

The fourth and final criticism of the research methodology used by Lee is that these researchers may have missed out on phenomena occurring because of the focus on theory or hypothesis testing rather than on theory or hypothesis generation. Also known as the confirmation bias, Lee may be criticized for having decided on their conclusion before testing, or putting the cart before the horse. In the introduction to the paper Lee state "e-learning has further facilitated the wide adoption of learner-centered education [...] due to the potential educational and cost benefits" (Lee, et al., 2009) Lee confirmed their bias towards the veracity of that statement in the literature

review ("E-learning has become an indispensible part in the competitive educational services market" (p. 1321), and the hypothesis ("x positively affects y" (p. 1322). This research methodology conflates the claim of ontologically objective educational benefits to epistemologically subjective learner-centered education and forgets that x may only count as y in a context c, *pace* Searle.

## Towards a Postmethod Pedagogy, Towards a Postmethod Pedagogy, by B. Kumaravadivelu, TESOL Quarterly, Volume 35, Issue 4, Winter 2001, pp. 537-560.

In the second case study, Kumaravadivelu took interpretive methodology to a logical conclusion in his paper on post-method pedagogy (Kumaravadivelu, 2001). Post-method was conceived in reaction to the effort to develop a natural science of the social. His interpretive methodology looked for culturally derived and historically situated interpretations of epistemology. As Weber says of interpretive researchers:

> Interpretivism considers the individual and his action as the basic unit, as its 'atom'. In this approach the individual is also the upper limit and the sole carrier of meaningful conduct. [...] In general, for sociology, such concepts as *state, association, feudalism* and the like designate certain categories of human interaction (Weber, 1970, p. 55).

Kumaravadivelu followed that tradition. As Professor of Applied Linguistics and TESOL at San José State University he was (and continues to be) a well-known figure whose applied research receives considerable attention. Basic research, on the other hand, may receive less attention than applied research because applied research may appear to produce more immediate and practical results.

Kumaravadivelu's vision of a three dimensional system of particularity, practicality and possibility is a pragmatist vision which promotes incremental change rather than more fundamental, structural or, as criticalist research a revolutionary change in society (Kumaravadivelu, 2001, p. 537). His transformative-emancipatory vision failed to focus on for whom the pragmatic solution is useful.

Knowledge produced by Kumaravadivelu may not generalize to other people or other settings. He mentions settings in South Africa, Europe, the USA, Sri Lanka, Palestine, Canada, without admitting findings from those places may be unique to the relatively few people included. An example would be Asia, about which he seems to have little knowledge and with which he seems to have insufficient familiarity. If he had mentioned that there are as many learners of English in China as native speakers globally, he may have been less prone to promote the individual *cause célèbre* (Kumaravadivelu, 1994).

The results of Kumaravadivelu's research may not be ethical and may be more easily influenced by the researcher's personal biases and idiosyncrasies (Kumaravadivelu, 2003). In seeking to problematize TESOL research, he created the condition where ethical researchers may be alienated from the legitimate findings of their research. For example, by

criticizing stereotypes he ignores those teachers and researchers who teach away from their homes, preferring to speak about what it's like to live in California, where there are comparatively few English teachers.

It is difficult to make quantitative predictions from interpretive research and Kumaravadivelu is no exception. Kumaravadivelu made neither mention of research subjects, nor of hypothesis or data. Consequently it is very difficult for him to test hypotheses or theories. Again in contrast with a scientific method, which requires the explicit mention of a hypothesis (and perhaps a null hypothesis) his method offers no testable data.

A final critique of Kumaravadivelu's interpretive methodology is that it may have lower credibility with some administrators and commissioners of educational research. For example ministries of education who employ many teachers of TESOL may be interested in finding out about their investment in TESOL training and would require data about their teachers. Whilst Kumaravadivelu claimed to represent a post-method pedagogy for teachers and teacher educators, a supervisor with responsibility for those same teachers and teacher educators would likely not be interested in his representations. A senior educator may well prefer data that is particular to a given educational setting, such as country specific data (Jeon, 2009).

Ethical considerations are Kumaravadivelu's principal shortcoming. His work failed on many ethical standards which apply universally to every piece of educational research. Kumaradivelu's interpretation of applied linguistics can be no exception. Kumaradivelu's work is unethical.

First, he stated that pedagogy is subject to method (Kumaravadivelu, 1994) and that a post-method pedagogy is a particularity (Kumaravadivelu, 2001, p. 538) that is to say "language pedagogy, to be relevant, must be sensitive to a particular group of teachers teaching a particular group of learners pursuing a particular set of goals within a particular institutional context embedded in a particular socio-cultural milieu" (Kumaravadivelu, 2001, p. 538). According to the British Educational Research Association research that particularity is not ethical, because educational researchers must accord due respect to all methodologies and related methods (B. E. R. Association, 2004b, p. 13). Kumaravadivelu was unethical, because he rejects method in favor of pedagogy. All teachers in fact use method when planning a lesson, when designing a curriculum, when specifying a syllabus, when preparing materials, when strategizing instruction, when assessing, when testing, or when grading.

Two more ontologically subjective nouns are said by Kumaravadivelu to describe the post-method condition. Those are practicality and possibility. Neither of these is ethical either, because those may involve deceptive practices (B. E. R. Association, 2004a, p. 6). Where Kumaravadivelu claimed that pedagogy is implicated in relations of power and dominance and is implemented to create and sustain social inequalities he openly flouted an ethic of respect for "persons involved directly or indirectly in the research they are undertaking, regardless of age, sex, race, religion, political beliefs and lifestyle" (B. E. R. Association, 2004a, p. 6).

Critiquing interpretive papers from ethical standards is especially easy with Kumaravadivelu because he problematized his method. As an interpretive researcher he found creativity in conflict. He asked eleven questions in the discussion section of his paper where a positivist paper would

have discussed whether the data confirms or denies the hypothesis. Interpretive research has no hypothesis, nor data (Kumaravadivelu, 2001, pp. 555-556). Nevertheless, against guidelines from the British Educational Research Association Kumaravadively presented a conclusion as introduction and ignored the aspirations of educational researchers.

The ethical dubiousness of Kumaravadivelu's work is because it was not ontological objective; his language was like the content of Table 2, above. It was far too complex to be practical for educational researchers whose language uses nouns such as books, mountains, e-learning and tickles.

## Discussion: Ethics and Epistemic Objectivity

The methods and methodologies discussed have strengths and weaknesses, offering opportunities, inflicting threats, as evidenced by the comparative case studies of Lee's scientific and Kumaradivelu's interpretive methodologies. Moreover, mixing qualitative and quantitative, scientific, critical and interpretive methodologies and methods is no easy task.

Positivism has been the victim of this debate (Clegg, 2005; Howe, 2009; MacLure, 2005) that has been yearning for ontological objectivity. Unfortunately the debate seems unlikely to yield consensus in educational research. There are too many paradigms, too much epistemological diversity (Moss et al., 2009).

As we saw above, Lee presented his results as epistemologically and ontologically objective. He did this with statistics and the authority of Cronbach's alpha, Eigenvalues and variances. These are powerful tools for the educational researcher that may guarantee a certain quality of research that may be absent from non-quantitative research. For that reason, statistical analysis is highly desirable as the method most probably to achieve what Searle names socially-constituted reality.

Fortunately educational research *is* united in its attempt to be ethical. Organizations such as the British Educational Research Association and the American Educational Research Association publish ethical guidelines for educational research. How researchers justify the good quality of their research has several methods in common (Cresswell, 2009; Nolen & Van der Putten, 2007):

1. The research must be ethical, for all researchers.
2. Research will not use language or words that are biased against persons because of gender, sexual orientation, racial or ethnic group, disability or age.
3. The research will involve the potential of suppressing, falsifying, or inventing findings to meet a researcher's or an audience's needs; these must be denied.
4. In planning a study, it is important to anticipate the repercussions of conducting the research on certain audiences and not to misuse the results to advantage one group.

5. An important issue in writing a scholarly manuscript is not to exploit the labor of colleagues and to provide authorship to individuals who substantially contribute to publication
6. It is important to release details of the research with the study design so that readers can determine for themselves the credibility of the study.

It is vitally important that educational researchers reflect on their research so that it is not only sound scientifically but that makes it a positive contribution to the educational enterprise (A. E. R. Association, 1992, p. 1). Ethical standards can epistemologically objective and educational research can (and must) comply with standards of ethics and education. That conclusion was validated when Lee's object (e-learning) became ethical, epistemologically objective lexicon along with books, classrooms and exams.

First, educational research must apply to all researchers, which means that all three authors are subject to the same ethical standards. There is no stated ethical position made by Lee. Only educational attainment standards were mentioned - and then only to make the claim that South Korea has high educational standards (Lee, et al., 2009, p. 1320).

Next, research ought not to use language or words that are biased against persons because of gender, sexual orientation, racial or ethnic group, disability or age. Lee's stance on the issue of gender was not entirely clear, because their research subjects were majority male: sixty percent (Lee, et al., 2009, p. 1325). Since the subjects were all students of the author's studying with the author as teacher however, Lee can probably be cleared of discriminatory language charges.

Educational research has the possibility of unethically promoting the author's research needs. Proving it, however is very difficult. It is likely, since Lee made explicit their hypothesis and published their data that their research is ethical and did not promote research needs (Lee, et al., 2009, p. 1324). For educational research to be ethical all authors and contributors should be given authorship. Lee's paper had three authors (Byoung-Chan Lee, Jeong-Ok Yoon and In Lee) who have been given co-authorship. The first two authors work with a university in South Korea and the latter works with a university in the United States. Probably these authors all contributed in a meaningful way to the research. Therefore, this educational research probably meets ethical standards.

Kumaravadivelu confused post-method for interpretive methodology. He would have nothing to say about Mont Blanc, nor even about itches, tickles, thoughts and feelings. Lee, by contrast, probably would have. However, even if neither could speak about either of those, probably Lee could speak ethically about examinations, e-learning or other ethically and epistemologically objective objects.

## Conclusion

The nature of educational research is characterized by a plurality of methodologies. We discussed and critiqued three prominent methodologies (scientific, critical and interpretive) based on their ontology and epistemology.

John Searle's philosophy of speech acts was an analytic tool to analyze the nature of educational research. Each methodology was subjective ontologically because the nouns of each methodology were not those spoken (book, exam, classroom, e-learning, $O_2$) by teaching educational researchers. Also, each methodology uses a mixture of qualitative and qualitative methods with the objective of producing ethical, if not statistical educational research. Ontological research may lead to quantitative data and epistemological research may lead to qualitative data, but further research is required.

## Bibliography


Ajzen, I., & Fishbein, M. (1977). ATTITUDE-BEHAVIOR RELATIONS - THEORETICAL-ANALYSIS AND REVIEW OF EMPIRICAL-RESEARCH. [Review]. *Psychological Bulletin, 84*(5), 888-918.

Association, A. E. R. (1992). Research Ethics: Ethical Standards, from http://www.aera.net/AboutAERA/Default.aspx?menu_id=90&id=717

Association, B. E. R. (2004a). Revised Ethical Guidelines for Educational Research.

Association, B. E. R. (2004b). Revised Ethical Guidelines for Educational Research *Misconduct* (Vol. 46).

Berliner, D. C. (2002). Educational Research: The Hardest Science of All. *Educational Researcher, 31*(8), 18 - 20.

Ceci, C., Limacher, L. H., & McLeod, D. L. (2002). Language and power: Ascribing legitimacy to interpretive research. [Article]. *Qualitative Health Research, 12*(5), 713-720.

Chomsky, N. (2008). *Language and Freedom*: The Bodley Head.

Clegg, S. (2005). Evidence-based practice in educational research: a critical realist critique of systematic review. [Article]. *British Journal of Sociology of Education, 26*(3), 415-428. doi: 10.1080/01425690500128932

Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education* (6th ed.). Abingdon: Routledge.

Cresswell, J. W. (2009). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches: Sage Publications.

Crotty, M. (1998). *The Foundations of Social Research: Meaning and Perspective in the Research Process*: Sage Publications.

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). USER ACCEPTANCE OF COMPUTER-TECHNOLOGY - A COMPARISON OF 2 THEORETICAL-MODELS. [Article]. *Management Science, 35*(8), 982-1003.

Garrick, J. (1999). Doubting the philosophical assumptions of interpretive research. *International Journal of Qualitative Studies in Education, 12*(2), 147-156.

Greene, J. C. (2005). The generative potential of mixed methods inquiry. *International Journal of Research & Method in Education, 28*(2), 207-211.

Howe, K. R. (2009). Positivist Dogmas, Rhetoric, and the Education Science Question. [Article]. *Educational Researcher, 38*(6), 428-440. doi: 10.3102/0013189x09342003

Jeon, M. (2009). Globalization and native English speakers in English Programme in Korea (EPIK). [Article]. *Language Culture and Curriculum, 22*(3), 231-243. doi: 10.1080/07908310903388933

Johnson, R. B., & Onwuefbuzie, A. J. (2004). Mixed Methods Research: A Research Paradigm Whose Time Has Come. *Educational Researcher, 33*(7), 14-26.

Kumaravadivelu, B. (1994). THE POSTMETHOD CONDITION - (E)MERGING STRATEGIES FOR 2ND/FOREIGN LANGUAGE TEACHING. [Article]. *Tesol Quarterly, 28*(1), 27-48.

Kumaravadivelu, B. (2001). Toward a postmethod pedagogy. [Article]. *Tesol Quarterly, 35*(4), 537-560.

Kumaravadivelu, B. (2003). Problematizing cultural stereotypes in TESOL. [Editorial Material]. *Tesol Quarterly, 37*(4), 709-719.

Latchem, C., Jung, I., Aoki, K., & Ozkul, A. E. (2008). The tortoise and the hare enigma in e-transformation in Japanese and Korean higher education. [Article]. *British Journal of Educational Technology, 39*(4), 610-630. doi: 10.1111/j.1467-8535.2007.00771.x

Lee, B. C., Yoon, J. O., & Lee, I. (2009). Learners' acceptance of e-learning in South Korea: Theories and results. *Computers & Education, 53*(4), 1320-1329. doi: 10.1016/j.compedu.2009.06.014

Leonardo, Z. (2004). Critical Social Theory and Transformative Knowledge: The Functions of Criticism in Quality Education. *Educational Researcher, 33*(6), 11-18.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry*. Beverly Hills, California: Sage Publications, Inc.

MacLure, M. (2005). 'Clarity bordering on stupidity': where's the quality in systematic review? [Review]. *Journal of Education Policy, 20*(4), 393-416. doi: 10.1080/02680930500131801

Moss, P. A., Phillips, D. C., Erickson, F. D., Floden, R. E., Lather, P. A., & Schneider, B. L. (2009). Learning From Our Differences: A Dialogue Across Perspectives on Quality in Education Research. [Article]. *Educational Researcher, 38*(7), 501-517. doi: 10.3102/0013189x09348351

Nolen, A. L., & Van der Putten, J. (2007). Action Research in Education: Addressing Gaps in Ethical Principles and Practices. *Educational Researcher, 36*(7), 401-407.

Oliver, R. L. (1980). A COGNITIVE MODEL OF THE ANTECEDENTS AND CONSEQUENCES OF SATISFACTION DECISIONS. [Article]. *Journal of Marketing Research, 17*(4), 460-469.

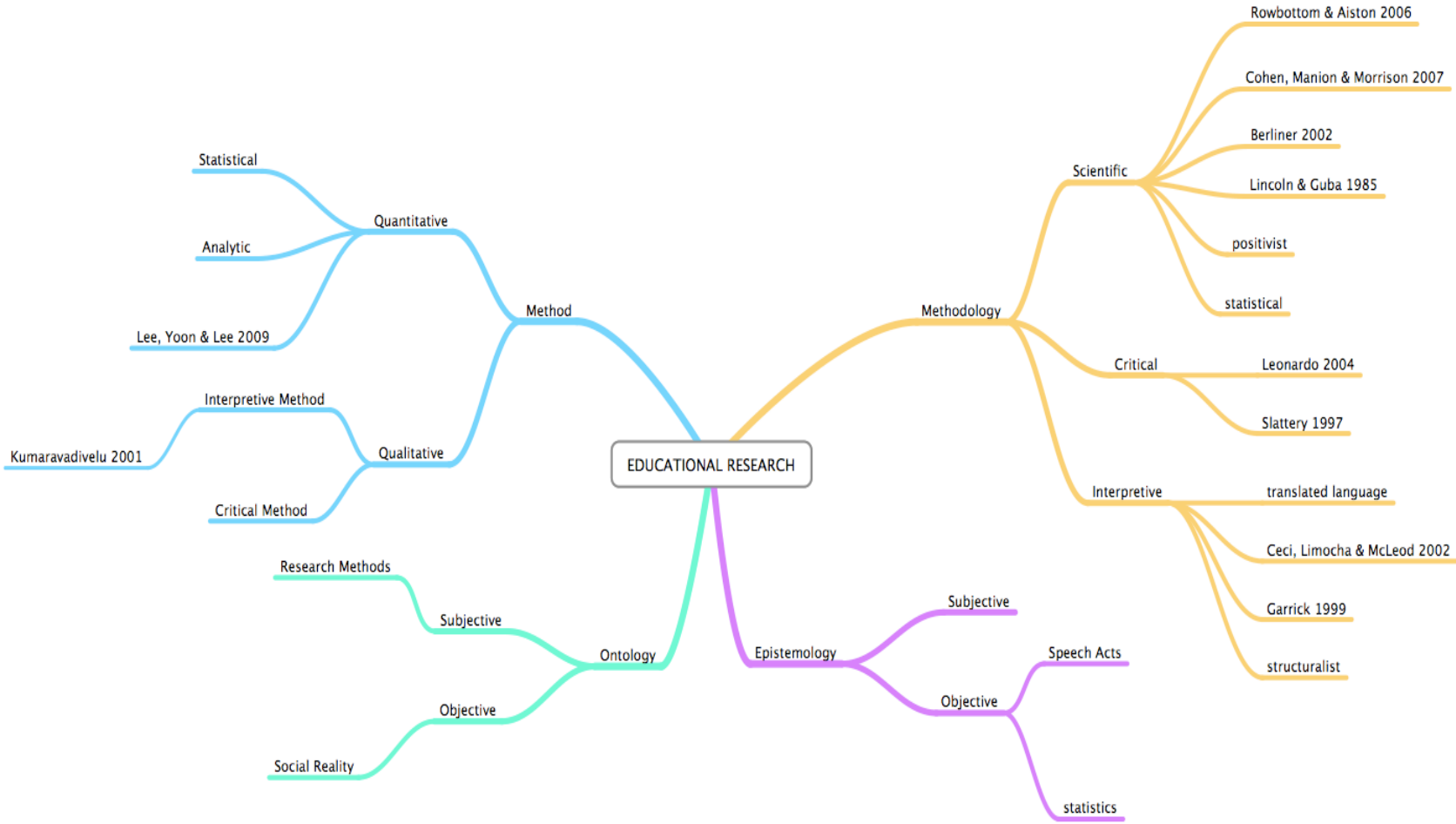
Pring, R. (2004). *Philosophy of Educational Research* (Second edition. ed.). London and New York: Continuum.

Rousseau, J.-J. (1926). *Rousseau's Emile or treatise on education*. New York: Appleton.

Rowbottom, D. P., & Aiston, S. J. (2006). The myth of 'scientific method' in contemporary educational research. [Article]. *Journal of Philosophy of Education, 40*(2), 137-156.
Searle, J. R. (2008). Philosophy in a New Century. Cambridge: Cambridge University Press.
Slattery, P. (1997). *Postmodern Curriculum Research and Alternative Forms of Data Presentation*. Curriculum & Pedagogy Institute. University of Alberta. Alberta.
Waldrop, M. M. (1992). *Complexity : the emerging science at the edge of order and chaos*. New York ; London: Simon & Schuster.
Weber, M. (1970). *Essays in Sociology*: Routledge.

## Appendix

Mind Map of Paper


EDUCATIONAL RESEARCH
Method
Quantitative
Statistical
Analytic
Lee, Yoon & Lee 2009
Qualitative
Interpretive Method
Kumaravadivelu 2001
Critical Method
Ontology
Subjective
Research Methods
Objective
Social Reality
Epistemology
Subjective
Objective
Speech Acts
statistics
Methodology
Scientific
Rowbottom & Aiston 2006
Cohen, Manion & Morrison 2007
Berliner 2002
Lincoln & Guba 1985
positivist
statistical
Critical
Leonardo 2004
Slattery 1997
Interpretive
translated language
Ceci, Limocha & McLeod 2002
Garrick 1999
structuralist