



**Essay**

**Choices of Methodology for Cooperative Education Researchers**

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Research in cooperative education is dominated by quantitative means of inquiry with few qualitative studies reported in the literature. In this paper the advantages and disadvantages of qualitative and quantitative methodologies are described. It is proposed that the choice of methodology should be driven by the research questions or objectives rather than any preference for a given methodology. In particular, it is recommended that researchers should consider the use of qualitative or combined-methodology means of inquiry. An overview of reports of qualitative-based inquiries in cooperative education is provided to support this proposal. The literature reveals that researchers utilized qualitative means of inquiry when they wished to ascertain subjective views, such as perceptions of placement experiences, and when greater depth of inquiry was required. To help facilitate the development of qualitative means of inquiry in cooperative education research, we describe how trustworthiness may be maintained and provide guidelines for conducting interviews and interview technique. (*Asia-Pacific Journal of Cooperative Education*, 2000, 1(1), 1-8).

*Keywords:* methodology, qualitative, quantitative.

**Introduction**

The importance of research for cooperative education practitioners was highlighted at the 11th biennial World Association for Cooperative Education (WACE) conference held in Washington in July 1999, in which it was claimed there exists a great need for more research, but ostensibly there is little evidence that much research is in fact being done (Rowe, Ricks, & Varty, 1999). Other authors have expressed similar sentiments (see, e.g., Ricks, Cutt, Branton, Loken, & Van Gyn, 1993). A number of reasons have been suggested for this somewhat depressing situation, with the lack of time for research considered as probably the major impediment (Rowe et al., 1999). Other reasons proffered include the suggestion that many staff being placement coordinators rather than academic faculty with training in education, lack access to research funding, graduate students and the support structures that make meaningful research practical in other academic disciplines (Ricks & Mark, 1997). Ricks and Mark observed that many practitioners conduct inquiries, yet ostensibly do not equate their work with research, feeling that such inquiries are markedly inferior to "orthodox scientific world views" (p. 47) as to what constitutes

research. Consequently, with little time to undertake research, and lacking confidence and research skills, it is perhaps not surprising that practitioners are not prolific publishers of research.

The context of the researcher provides a framework for research practice; the practice of cooperative education comprises securing and supporting student work placements. Placement coordinators are faced with a number of logistical difficulties in order to achieve these aims; this forms the context for many cooperative education researchers. This concern with highly pragmatic outcomes provides a focus for research activity; practitioners are well positioned to conduct *action-research*. Action-research comprises research initiated by teachers or other education practitioners, conducted within the environment of the practitioner, typically small-scale, and highly contextually based (Denzin & Lincoln, 1998). Such studies are commonly concerned with pragmatic outcomes such as improving learning, gaining a deeper understanding of classroom practice or situated learning (Keeves, 1998). Action research is concerned with engaging in one's own action and others in a self-reflective manner, gathering data and using these data to inform educational practice; being situational it is usually, though not always, collaborative (Reason, 1994). It commonly involves the implementation of an intervention

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aimed at improving practice or learning. Whatever the context, the purpose of action research is to add to the practitioner's functional knowledge of the phenomena he or she deals with (Cohen & Manion, 1994). Given the role most cooperative education researchers fulfill, viz., securing and supporting placements, it is evident why action research represents a compelling framework for research in the field of cooperative education.

Other than the focus and scale of research activity, action research does not differ significantly from other research frameworks. The researcher-practitioner is faced with the same issues of research design: namely, definition of the research objective or question, design of the study, identification of sources of evidence, collection of evidence, and data analysis and interpretation (Burns, 1994; Keeves & Alagumalai, 1998).

Research design may prove problematic for many practitioners. However, the authors believe that cooperative education practitioners should consider conducting action-research; in particular it is our belief that qualitative means of inquiry are well suited to research inquiries in cooperative education. We came into action research from a background in the physical sciences and our research activity in our disciplines (chemistry and earth sciences) was based on an empirical-positivist view of knowledge acquisition and a quantitative methodology. It is fair to say that we harbored some reservations about qualitative means of inquiry; chief amongst these were concerns about the reliability and validity of qualitative research and the ability to generalize findings to other settings; what is referred to as the *trustworthiness* of an inquiry (Guba & Lincoln, 1989).

An analysis of research reports presented in the literature reveals that during the 1990s less than 5% of research inquiries in cooperative education utilized qualitative means of inquiry; similarly, analysis of papers presented at the WACE conference in Washington in 1999, revealed that only 10 papers, or about 7%, of the inquires used a qualitative or combined-methodological approach. Hence, it seems that research has been dominated by quantitative-based research studies. This is in marked contrast to, for example, science education research that is now dominated by qualitative or combined-methodology inquiries (White, 1997).

We believe that other cooperative education practitioners (or researchers) may share our early concerns about this methodology resulting in a perception that qualitative studies are in some measure inferior to quantitative-based studies. Consequently, in this paper we describe qualitative means of inquiry and address the concerns identified above. We begin with an overview of the development of qualitative research in education and discussion of the merits of the both quantitative and qualitative approaches. This is followed by a description of qualitative studies in cooperative education that utilized qualitative or combined-methodological approaches. In view of the paucity of qualitative inquiries, we discuss the issue of trustworthiness, and provide some guidelines for interview technique.

## Historical Development of Qualitative Research in Education

Research in education and other areas of inquiry can be conducted within a number of competing paradigms. Paradigms are belief systems that are based on ontological, epistemological and methodological assumptions (Cohen & Manion, 1994; Lincoln & Guba, 1985; Patton, 1990). Guba and Lincoln (1994) state that a paradigm

May be viewed as a set of basic beliefs (or metaphysics) that deals with the ultimate or first principles. It represents a *worldview* that defines, for the holder, the nature of the 'world', the individual's place in it, and the range of possible relationships to that world and its parts [original italics]. (p. 107)

Alternative paradigms include positivism, post-positivism, critical theory and constructivism. These belief systems are essentially acts of faith and it is important to realize that no construction is or can be considered incontrovertibly right "advocates of any particular construction must rely on *persuasiveness* and *utility* rather than *proof* in arguing their position [original italics]" (Guba & Lincoln, 1994, p. 108). The question as to what is the form or nature of reality or what is there that can be known is referred to as ontology (Chinn & Brewer, 1993; Cohen & Manion, 1994; Leplin, 1994). Conventional or realist ontological beliefs assert that a single independent reality exists outside the reference frame of the observer, or as Boyd (1994a, p. 97) states "reality is prior to thought". This reality is immutable and conforms to natural laws—many of which possess the nature of cause and effect. The relativist ontology contrasts with the realist ontology in that it asserts that there exist multiple, socially constructed realities. For the relativist view, there is no causal relationship and mental construction precedes observation (Boyd, 1994a, 1994b; Nussbaum, 1989). Truth is considered to be the construct that possesses the greatest "power with which the information is understood and used" (Guba & Lincoln, 1989, p. 84).

The relationship between the knower and the known is the question of epistemology. In other words, epistemology is the pursuit of an answer to the question "how can we be sure we know what we know?" (Guba & Lincoln, 1989, p. 83). Guba and Lincoln believe that the "response to the epistemological question depends on the prior response given to the ontological question" (p. 88). For example, if one subscribes to conventional realist ontology, one is likely to be a dualist-objectivist in epistemology (Linn, Songer, & Lewis, 1991). Constructivists ascribe to a transactional and subjectivist epistemology; that is, they believe that the findings of an inquiry are literally created by the investigator. In the words of Schwandt (1994, p. 125), "constructivists are deeply committed to the contrary view [of realists] that what we take to be objective knowledge and truth is the result of perspective. Knowledge and truth are created, not discovered by mind".

Methodology addresses the issue of how we go about finding out whatever it is that we believe we know or can come to know (Guba & Lincoln, 1989, 1994; Schwandt,

1994). The answer to the methodological question is dependent upon an individual's stance on the ontological and epistemological questions. For example, positivists rely on inquiry that is experimental and manipulative, in which questions or hypotheses are stated and are evaluated by empirical testing. In this approach careful control of experimental conditions is necessary to prevent outcomes being subject to extraneous influences. In contrast, in the methodology used by constructivists, constructions under inquiry are elicited by interaction between the investigator and participants.

Research in education since the turn of the century has been dominated by the use of a quantitative methodological approach based on positivism, utilizing the power of mathematical analysis to establish general laws and principles (Denzin & Lincoln, 1998; Rossman & Wilson, 1985). Gradual recognition of the differences between scientific and educational research led to increasing interest in a qualitative methodological approach with its foundations in ethnography using data gathering tools such as unobtrusive observation, participant observation and in-depth interviews. Changes in the methodology of education research can be traced to the development of the constructivist paradigm, which in turn had its origins in changes to scientific thinking that occurred in the twentieth century (Nussbaum, 1989). Chief amongst these, were drastic changes in the ideas of modern physics that started to undermine the prevailing positivist belief that science could make absolutist claims, in other words, that once knowledge is acquired it can be described in absolutist terms such as true or proven. Work by Karl Popper (1959) raised questions about the possibility of ever proving or confirming knowledge. This led to the proposal that knowledge was not discovered but was instead the result of *construction* by the human mind. Unlike positivism, which claimed that observation came before theory, constructivism presupposes that theory precedes observation and that observations can be selected and conducted only through theoretical expectations. Therefore, our own constructed theories determine how we perceive the world (Driver, 1989). A similar paradigm shift took place in psychology where for decades following the 1920s behaviorism dominated. Behaviorism is a school of thought that emphasizes the passivity of the mind, with information from the environment providing an input that is directly transmitted to, and accumulated by, the individual (Gilbert & Watts, 1983). This resulted in the so-called cultural transmissive teaching approach or conduit model for instruction that became dominant in Western education (Pope & Gilbert, 1983; Tobin, Briscoe, & Holman, 1990). However, in-depth investigations of learning of abstract conceptions in the physical sciences in particular, revealed that many students held ideas about fundamental concepts that were in disagreement with that intended by teachers (Pfundt & Duit, 1994, 1997). Consequently, curriculum design and teaching practice has in recent times moved to a more constructivist-informed approach that takes students prior learning into account and seeks to help students form mental constructions that are in agreement with commonly agreed views and anticipated learning outcomes.

### Choosing a Research Methodology for Inquiries

Education research is typically conducted within a given paradigm. However, researchers are not necessarily required to choose between methodological approaches. Indeed, Guba and Lincoln (1989) believe "both quantitative and qualitative methods may be used appropriately with any research paradigm" (p. 105) and Shulman (1997) points out qualitative inquiries typically utilize a variety of data gathering tools, and can include quantitative tools such as survey instruments. The principal difference between a qualitative approach and a purely quantitative approach is that the former, with its roots in constructivism, *recognizes the significance of subjective experience* and in general is characterized by greater depth (Wolcott, 1997b). In recent times there have been a number of calls for the use of a combined methodological approach to research in science education (Denzin, 1970; Fraser, 1991, 1994; Reichardt & Cook, 1979). However, the two methodological approaches have their origins in different paradigms and are derived from opposing theoretical and philosophical perspectives: consequently, some authors argue that they are incompatible and should not be combined (e.g., Burrell & Morgan, 1979; Smith, 1983). Other authors have argued against this stance, maintaining that the paradigm argument is essentially irrelevant. Rather, qualitative and quantitative methodological approaches are investigating the same thing, and the difference is essentially one of choice of data collection tools (Cizek, 1995; Goodwin & Goodwin, 1984).

Quantitative and qualitative means of inquiry each possesses advantages and disadvantages (Peshkin, 1993). As Patton (1990) points out "the advantage of the quantitative approach is that it is possible to measure the reactions of many subjects to a limited set of questions, thus facilitating comparison and statistical aggregation of data" (p. 165). In contrast to quantitative inquires; a qualitative approach typically produces a wealth of detailed data about a much smaller number of people and cases. Hence, depending on the issue of interest, researchers may find it more useful to carry out an in-depth investigation using fewer subjects, in order to gain greater detail about specific issues. In contrast, the purpose of most quantitative inquires is to afford greater confidence in the generalization of the research findings. The validity of such generalizations is highly dependent on the sampling process employed. Because programs in cooperative education are highly variable in nature (see, e.g., Eames & Rowe, 1996), this may mean the generalization of the findings of an inquiry based on one institution, or in one country, to an international audience is tenuous. We discuss this issue in greater detail later when we describe the means necessary to confirm the trustworthiness of qualitative inquiries. The choice of methodology often comes down to a trade-off between breadth and depth.

In fact there are a number of potential advantages of combining quantitative and qualitative methodologies (Fraser, 1991, 1995; Reichardt & Cook, 1979). Educational research differs from science and discipline-based research in that it has multiple purposes, being interested in both processes and outcomes. Thus, analysis of monitoring, impact assessment, and causal explanation represents a

broad range of tasks most efficiently achieved by a combination of methodologies. Furthermore, quantitative and qualitative approaches build upon each other. For example, choosing a statistical model to fit the data, interpreting the output results, and generalizing the findings to their settings, all rely on qualitative knowledge; "quite simply, researchers cannot benefit from the use of numbers if they do not know, in common sense terms, what the numbers mean" (Reichardt & Cook, 1979, p. 23). In addition, data triangulation, the gathering of data from different sources affords more confidence in the interpretation of the data (Denzin & Lincoln, 1998; Mathison, 1988). The use of a combined methodological approach is clearly challenging for researchers, including researchers in cooperative education, but this strategy is gradually gaining momentum in education (e.g., Blumenfeld & Meece, 1988; Fraser, 1991, 1994; Gogolin & Swartz, 1992; Shulman, 1997) and science education research (White 1997).

The issue of choice of methodology for research in cooperative education, like other areas of inquiry is best resolved by considering the more fundamental issue of research design (Shulman, 1997; White, 1997). Patton (1990) asserts that it is the research question or goal that should dictate which methodology, or if a combination of methodologies, is appropriate.

Which research design is best? Which strategy will provide the most useful information to decision makers? There is no simple, immediate, and universal answer to that question. The answer in each case will depend on what intended users want to know, the purpose of the study, the funds available, the political context, and the interest/abilities/biases of the researchers. (pp. 95-96)

Thus, some research questions will be readily answered using qualitative means, others quantitative, and some will be best addressed using a combination of the two. What is necessary is appropriate research design. That is, researchers need to decide what information is most needed and most useful in a given inquiry, and then to employ those tools best suited to producing the needed information.

### **Using Qualitative Means of Inquiry for Research in Cooperative Education: Some Results from the Literature**

Research in cooperative education utilizing qualitative means of inquiry has focused on obtaining an increased depth of understanding of subjective perceptions that students and employers hold of work experience. Studies involving students' perceptions include; perceptions of the advantages and disadvantages of international placements (Coll & Chapman, 1999, in press), perceptions on whether the qualities needed for meaningful employment is provided by cooperative education (Huber & Tegart, 1996), articulated beliefs of changes accrued during placements (Van Gyn & Hendy, 1999), employers and students' perceptions of workplace performance (Hoskyn, 1999), perceptions of career direction (Comerford, 1999),

perceptions of protégés' views regarding the characteristics of the mentoring process in placements (Van Gyn & Ricks, 1997), mentors' value in teacher training as a result of pre-service work experience (Thuynsma, 1999), and desired learning outcomes from work placements (Langford & Lockart, 1999). These studies utilized interviews as a key data-gathering tool, allowing the researcher to probe stakeholders' views in depth. For example, Coll and Chapman's (1999, in press) study of students' perceptions of international placements revealed a large number of concerns that placement coordinators were unaware of. The use of an interview approach, however, established that whilst such issues were of concern, the benefits accrued from an international placement, although numerically less, far outweighed the difficulties. A survey instrument may thus have created a misconception that students were overall unhappy with overseas placements.

A number of studies employed a combined-methodological approach, typically questionnaires accompanied by in-depth semi-structured interviews. These studies drew on qualitative tools to prove deeper understanding of trends or issues identified from quantitative data obtained from survey instruments. For example, Eames's (1999) study of learning as a social process based on situated social-cognition, cooperative education learning processes as a result of self-efficacy for graduates (Linn, P., 1999), the identification of the crucial factors required to build a quality workforce from an examination of the important relationships between the students' industry experience, employer satisfaction and career progression following graduation (Comerford, 1999). Likewise to the qualitative studies reported above, the use of interviews in conjunction with surveys provided greater depth of understanding. For instance, Eames (1999) study revealed that many students held ill-formed views as to what constitutes science, or technology, and were unsure of how their enculturation into the workforce might occur.

### **Establishing the Trustworthiness of a Qualitative Inquiry**

Researchers unfamiliar with qualitative research may find it difficult to understand how researchers can be confident about the quality of the data, interpretation of data, and ability to generalize research findings. Four criteria have been proposed for qualitative inquiries in order to judge the *trustworthiness* of the inquiry; *credibility*, *dependability*, *confirmability*, and *transferability* (Altheide & Johnson, 1994; Guba & Lincoln, 1989).

Credibility represents an assessment of the isomorphism between constructed realities, that is, a match between the constructed realities (Guba & Lincoln, 1994). Matching is enhanced by prolonged engagement, persistent observation, peer debriefing, negative case analysis, member checks, and progressive subjectivity. Prolonged engagement provides an opportunity to establish good rapport and trust with participants, allowing the researcher to overcome the effects of misinformation or presented fronts. Persistent observation allows the researcher to identify characteristics and elements in the inquiry that are most relevant to the issue under inquiry. Peer debriefing helps the investigator to understand his or her own posture and values and their role in the

inquiry. Negative case analysis involves revising the hypothesis in the light of hindsight; in other words, an inquiry is seen as a dynamic rather than static process. Member checks, that is, the process of negotiation with stakeholders (i.e., all the participants), provides participants with the opportunity to offer additional information to that gained from, for example, interviews, and allows participants the opportunity to confirm individual data. Progressive subjectivity, the process of monitoring the researchers' own developing construction, serves to remind the inquirer that inquiries are best considered joint investigations between researcher and participants (Bell, J. 1993; Burns, 1994; Denzin & Lincoln, 1998).

Dependability is concerned with the stability of data over time (Cronbach & Suppes, 1969). Methodological changes and shifts in construction are common in qualitative inquiries, and are not considered to impact adversely on dependability. In contrast they are seen as an integral part of the inquiry process indicating increasing maturity of the inquiry. What is critical is that the changes and shifts in constructions are identified and described fully. Similarly, confirmability seeks to ensure that the results of an inquiry have not been subject to influence by the investigator and is enhanced when the raw data and process used to compress them are made available to scrutiny by the reader, thus providing an audit trail.

Transferability considers the extent to which the findings of one study can be applied to other situations; what is termed generalizability in quantitative inquires (Lemke, 1998). In quantitative inquiries, generalizability is strongly dependant on sample selection, specifically on the randomness of the sample (Carver, 1978, 1993). Typically a target population is identified and a selection of participants made via a random sampling procedure or some more efficient variation such as stratified random sampling (Saikali & Jain, 1997; Wiersma, 1991). However, for qualitative inquiries the onus is shifted from the inquirer to receiver (Bell, J. 1993; Geertz, 1973) Thus the qualitative inquirer describes the context of the inquiry and provides a detailed, or so-called thick description, of methodology and interpretation: it is then up to the reader to decide if the findings are relevant or pertinent to their own situation (Burns, 1994; Merriam, 1988).

Triangulation involves the gathering of information from a number of sources to crosscheck and then to assess the authenticity of individual accounts. By comparing and contrasting one source of information with another the researcher is able to produce a more comprehensive and balanced inquiry in response to the research question or objective. This approach not only provides more information about the validity of an inquiry but aids in interpretation in that it affords the investigators an opportunity to "solve the problem of rival causal factors" (Denzin, 1970, p. 26). There are three possible outcomes of triangulation in educational research—convergence, inconsistency, and contradiction (Mathison, 1988). The historical goal of triangulation has been convergence, that is, the data provide consistent evidence for a particular conclusion. Inconsistency occurs when one data set does not confirm the findings of another set, but does not completely contradict it either.

Contradiction occurs when the data disagree to such an extent that it is not possible to provide a plausible explanation. These latter two outcomes are often not perceived favourably since sometimes researchers feel that they cast doubt on the validity of the study or require greater imagination to devise plausible explanations for contrary data. However, lack of convergence provides different perspectives that may ultimately produce a deeper understanding of the research questions or goals. Because of this, each of the three outcomes of triangulation can have real value for research in education and cooperative education (Denzin & Lincoln, 1998; Guba & Lincoln, 1994).

### Conducting Interviews in Qualitative Research Inquiries

The interview is a key tool in the armory of the qualitative researcher. However, conducting interviews is a complex and demanding task. There is a large literature on the conducting of interviews (see, e.g., Denzin & Lincoln, 1998; Jaeger, 1997). Here we provide a brief description of the most common means of conducting interviews.

There are three approaches to conducting interviews; the *informal conversational interview*, the *general interview guide approach*, and the *standardized open-ended interview* (Fontana & Frey, 1998; Erickson, 1998). These approaches differ in the extent to which the interview questions are determined and are standardized before the interview occurs.

The informal conversational interview, as the name implies, is relaxed in nature, and the generation of questions is spontaneous arising from natural conversational flow. This approach is common in ethnographic inquiries where it is usually combined with participant-observation and fieldwork (Wolcott, 1997b). Such inquiries frequently involve multiple interviews and are of long duration, months or even years (e.g., Wolcott, 1997a). The same participant may be interviewed on many different occasions, and for multiple participant inquiries the questions asked and data gathered will be different for each individual interviewed. The interviewer has the advantage of maximum flexibility, and can modify questions depending on the context of the investigation. The main advantage of the use of an informal interview approach is the depth of information gathered compared with other more structured approaches. There are, however, a number of disadvantages to the approach. Since data collection is less systematic, analysis may prove problematic. In addition, because interviews are often conducted in the field, audiotaping may not be practical—thus it is usually necessary to take extensive field notes.

The general interview guide approach, also referred to as the *partially- or semi-structured interview approach*, is more structured in nature than the informal conversational interview and involves outlining a set of issues that are to be explored before interviewing begins (Wiersma, 1991). There is not necessarily a set order to the questions, and the specific wording used varies from participant to participant. The interview guide serves as a form of checklist to ensure that all relevant topics are covered. There is still a considerable degree of flexibility retained in this approach, but the use of the interview guide helps to make the data gathering more systematic, facilitating analysis.

The standardized open-ended interview is the most structured of the three interview approaches and resembles a verbal questionnaire. There is little flexibility, the emphasis is on minimizing interviewer influence—thus data analysis is more straightforward. Variation among interviewers is minimized allowing for multiple interviewers, and because the interview is so highly focused, interview time is minimized. Such advantages are also realized by the use of written questionnaires (Fraser, 1991). The advantage a standardized open-ended interview holds over a self-completion questionnaire is that despite its relatively structured approach, some flexibility is retained, for example, participants have the opportunity to clarify ambiguity in questions.

A common characteristic of all three interview approaches is that they are more flexible than written questionnaires and afford the participants the opportunity to express their own views and perceptions in their own words, that is, the response is open-ended, and not confined to set predetermined categories. In practice, a given inquiry may employ a number of interview approaches.

### Interview Technique

Expert interviewers have identified a number of key techniques needed to obtain high quality data, chief among these is the need to achieve a relaxed atmosphere in which the respondent is free to state his or her own views (Bell, B. Osborne, & Tasker, 1985; Posner & Gertzog, 1982; White & Gunstone, 1992). Good technique involves the interviewer saying as little as possible, just sufficient to keep the conversation moving, that is, "interested listening that rewards the respondent's participation but does not evaluate the responses" (Fontana & Frey, 1994, p. 364). Any responses from the interviewer should be non-judgmental and non-committal—neither admonishing nor praising. The interview needs to proceed at an appropriate pace. If the questions are presented too slowly, the respondent may become flustered and feel that they are expected to know more than they have said, if questioning is too rapid, respondents may feel that their opinions are not valued and resort to monosyllabic responses. Finally, the interviewer must follow up areas of uncertainty or ambiguity with appropriate exploratory questions.

An important part of good interview technique is good question design, "good questions should, at a minimum, be open-ended, neutral, singular, and clear" (Patton, 1990, p. 295). Genuinely open-ended questions are those that contain neither explicit nor implicit predetermined response categories, but allow the respondent to "select from among that person's full repertoire of possible responses" (Patton, 1990, p. 296). Dichotomous response questions requiring a simple yes or no answer are best avoided as they can turn the interview into an interrogation, inhibiting in-depth answers. Patton suggests caution in the use of presupposition questions, but points out that used properly they can add considerably to the depth of response—for example, by increasing the likelihood of gleaning more detail. One of the fundamental rules in qualitative interviewing is to ask clear, unambiguous questions, avoiding jargon and terminology

that may be unfamiliar to the interviewee. One way of reducing ambiguity is to ask singular questions; in this way, the interviewee is not confused about which question to answer and the researcher will have much less difficulty in the interpretation of interview data.

### Summary and Conclusions

In this paper we described historical developments in educational research and methodological options for researchers in cooperative education. Research inquiries in cooperative education have been and still are dominated by the use of a quantitative methodology with few qualitative or combined-methodological approaches reported. White (1997) reported that research in science education has moved from "controlled laboratory-style experiments to lengthy observations and descriptions" (p. 215), going on to point out that education research has moved to become more relevant to practice. Recent studies have illustrated the benefits qualitative research can provide for researchers in cooperative education. It is our view that researchers and practitioners should likewise consider the use of a qualitative methodology, or if their research goals dictate, a combined-methodology approach. In order to facilitate this objective, we have described some facets of interviewing and the necessary measures to ensure qualitative inquiries remain trustworthy in nature. In discussing these issues, it is our hope that cooperative education practitioners or researchers, who may have felt inhibited in conducting qualitative research, may cast aside these inhibitions and reap the benefits of being involved in what we have found to be a valuable means of inquiry.

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