

The Epistemological Perspectives on Action Research¹

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Abstract

Gradually, action research (AR) is becoming one of the major methods employed in education research inquiries. Many researchers and practitioners are enjoying the convenient and flexible dimensions of this relatively new approach, which include being rich, open, dynamic, situation-based, and participatory—dimensions that improve instructional practice based on real learning contexts and experiences. AR advocates also emphasize its constructivist foundations and professional development benefits, both of which have become major foci for many teachers. On the other hand, some critics believe that AR does not effectively follow the requirements for scientific inquiry in education research, disparaging its philosophy, rationale, and tools as well as stressing its limitations. Beyond the debate about the use of quantitative and qualitative methodologies in education research, these critiques specifically address a crucial, yet ignored issue. Hence, this paper reports on an in-depth epistemological analysis of AR with respect to three dominant research paradigms; positivism, post-positivism, and interpretivism (anti-positivism).

Keywords: Action Research, Epistemological Analysis, Positivism, Post-positivism, Interpretivism, Education research

1. Introduction

Research paradigms and their philosophical reflections on applications have been relied upon as fundamental scientific and intellectual support for the accountability of methods and approaches in empirical studies in both the natural and social sciences. Should an imaginary line be drawn from objectivism to subjectivism, the positivist paradigm would be located on the extreme objectivist side while interpretivism would find its place on the opposite point of the continuum. Throughout this range, many research methodologies, whether quantitative or qualitative, have been positioned and beyond that, applied and analyzed, accordingly. Consequently, any research methodology should be discussed epistemologically to diminish its primitives, improve its applicability, and define its dimensions and borders, in order to be considered as a rigorous methodology. For instance, action research (AR) has been considered a famous contemporary method especially in education studies, due to its practical benefits for teachers, whereas it lacks adequate epistemological analysis according to research paradigms. Hence, this paper attempts to analyze action research with respect to three overarching research paradigms: positivism, post-positivism, and interpretivism. In order to analyze action research as a method of scientific inquiry with respect to these three paradigms, first, these paradigms are described in terms of their backgrounds, foundations, and relationships with and applications in the field of education. Beyond the identification and description of these three

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research paradigms, this epistemological analysis needs exhaustive information on action research. Armed with this, it is possible to understand action research from the perspective of these paradigms. The present paper provides fundamental information on the background, foundations and applications of action research within the context of education. This is followed by a direct and on-target analysis of action research with regard to each of three paradigms. Finally, the paper concludes with a discussion of the further contributions of action research.

2. Positivism

In the 18th and 19th centuries in Europe the natural sciences (e.g., physics, biology, chemistry) underwent a significant transformation. Developments in the natural sciences were reflected in social and political life, eventually leading Europe to become the center of civilization. Inspired by the success of the natural sciences, French philosopher Auguste Comte adapted the methodology of the natural sciences for use in the social sciences. He called his theory “positivism”. Similar to the utmost motive of the natural sciences, that is, to “reach the laws”, the natural purpose of positivist inquiry was to reach the laws of human behavior. Thus, positivism was defined as a scientific methodology that aimed to reach the laws of human behavior and social life (Cary, 1988; Kincheloe, & Tobin, 2009; Onwuegbuzie, 2000; Yu, 2001).

Starting in the late 19th century and throughout most of the first half of the 20th century positivism was the dominant paradigm in the social sciences. The main purpose of positivism is to reach objective truth, facts, and laws. In order to reach objective truth, the methodology in use has to be objective, too. Therefore, methodology is regarded as the tool that enables us to attain objective truth. The facts can be reached only if the correct methodology is followed; thus, the positivist approach depends on the following assumptions:

1. Objective and extrinsic truth (i.e., facts and laws) exists.
2. The purpose of science is to reach objective and extrinsic facts. The truth can be reached through the accumulation of data gathered via scientific method.
3. It is hardly possible to grasp the holistic reality. Therefore, the whole is to be broken into understandable pieces and should be worked on accordingly. Once the cause-effect association is reached among those pieces, then, it can be generalized to the whole.
4. Scientists can be objective about the phenomenon on which they work and can determine objectivity through positivist scientific methodology.
5. Facts that are reached through the scientific inquiry independent of both time and space can be generalized.
6. Science provides an opportunity to understand, explain and control events and objects. Thus, science can be leveraged for the improvement of humanity (Comte, 2001).

The most important part of positivism is methodology. The objectivity of the researcher and the data collection devices are key to successful positivist research because subjective items change in time and space. Positivism claims that scientific methodology enables scientists to separate personal values from facts. One should isolate oneself from the phenomenon on which he-she is working in order to be objective. Following this dictate, the scientist can attain objectivity. In positivist research, the scientist is an outsider who does not experience the phenomenon on which he is working (Brannick & Coghlan, 2007; Marshall, 1989; Peca, 2000). “This assumption provides an opportunity to control variables and set experiments” (Lor, 2011, p. 17). The positivist researcher controls variables and applies experiments to test the reality of a theory or gather data to about variables expected to be related to attainment of a linear cause-and-effect relationship. In addition, the objectivity of data collection devices is necessary and can be established through validity and reliability processes (Brannick & Coghlan, 2007). Consequently, in the positivist approach, once the aforementioned objectivity is established, results derived from the study can be generalized and everyone can benefit from them since they are considered true regardless of time and space (Nobli & Eaker, 1987).

Typically, behaviorist methodologies such as experimental studies on classical and operant conditioning and social learning provide the best examples of the positivistic approach in education

research. In those experiences, the control and manipulation of variables are essential. Results are also considered independent of the impacts of time and space and therefore may be generalized as principles in education. For example, the basic conclusion of operant conditioning is that the frequency of a behavior increases if it is reinforced and decreases if it is punished may be generalized as a principle and is still taught in educational psychology. This principle is widely used in schools all around the world.

The positivist approach acquired its methods from social and education research and consists of the following steps:

1. Creating an hypothesis.
2. Establishing variables (sampling) and measurement devices.
3. Data collection.
4. Data analysis.
5. Conclusion (Xining, 2002).

The methodology is important because it systematizes education research endeavors and thereby frames steps and carefully structures the study. In doing so, it provides an anchor for education researchers, prohibiting them from confusion about how to conduct research. Also, the critique of the positivist methodology gave rise to the birth of other approaches. As mentioned earlier, the positivist research provides researchers with principles and tools such as reinforcement, punishment, and modeling. These should not be considered as laws, however, because they are not valid in every situation.

Since the 1950s the reductionist nature of positivism has been criticized. The positivist approach ignores the complexity of social matters and interactions, trying to explain them via a one-dimensional linear cause-and-effect bond. Positivist research conducted in laboratory settings is difficult to generalize to actual classrooms and schools.

3. Post-positivism

The first traces of post-positivism can be found in the early works of 20th- century anthropologists. The nature of the phenomena being studied led anthropologists to challenge the positivist methodology and create their own. "In the 1920's and 1930's, like ethnography began to emanate from the sociologists at the University of Chicago" (Cary, 1988, p. 18). The period of post-positivism offered an alternate method of scientific inquiry. In the 1950's and 1960's, post-positivism matured enough to challenge positivism (Onwuegbuzie, 2000) as a scientific methodology that aims to understand social phenomena as holistically as possible. Therefore, it accepts the complexity of any social phenomenon. According to the post-positivist approach, to study a complex phenomenon, the possibilities, multiple points-of-view and perspectives, and different variables that may affect the proceeding of the whole have to be emphasized (Lor, 2011).

The post-positivist approach as a research paradigm was first used in anthropological studies. Anthropological studies revealed that the western point-of-view and western cultural values are not universally valid. This led to alternative thinking over social problems rather than just imposing one objective truth. Post-positivists criticized positivists for using science as a social, political weapon to dictate ideas, values, and assumptions of hegemonic powers as facts to the general public. Therefore, post-positivist research began with anthropological research, trying to empower research participants (Lor, 2011; Yang, 2006; Yu, 2001).

Starting with the 1960's, the civil rights movement in the United States fostered use of the post-positivist approach in education research. There was a need to transform schools into institutions in which more democratic and humanitarian values are embraced and serve the best interests of society rather than government. The best way to learn about the best interests of society was to ask the society itself. Thus, society became a partner in research. Stakeholders in educational life include teachers, administrators, parents, and students, all of whom became partners in the research process, too. More to the point, since qualitative research methods were more suitable when including all education actors in the research process as equal partners, post-positivist research acquired

qualitative methods of inquiry. Thus, during this period studies were conducted to transform the educational system and change schools (Çakır, 2012; Wonacott, 2001; Yang, 2006; Yu, 2001).

According to post-positivism, scientific endeavor can provide conditional knowledge which can be used to improve conditions. Following are the basic assumptions of the post-positivist approach:

1. Objective and extrinsic reality (i.e., facts and laws) exist.
2. Objective and extrinsic reality cannot be obtained by the researcher. First, scientific methodology cannot be objective because the scientist is also part of the methodology. The scientist cannot be objective because he/she is a person born in a culture in which s/he acquired certain cultural values, education, and political views; these external factors have an impact on the formation of scientists as human beings. Scientists, in turn examine their own assumptions, interests, acceptations, and attitudes. Therefore, they will affect every step of the scientific endeavor. Second, social issues are complex and interrelated, making it impossible not to control all variables that interact with each other. Third, everything is subjected to evolution and change and nothing is stable; therefore, it is not possible to reach stable facts and laws that are universal.
3. The purpose of post-positivist inquiry is to get close to the facts as much as possible and during this voyage, to reach conditional facts that help people to solve practical life problems. Therefore, post-positivist conclusions are not laws but conditional realities that can be valid for a period of time in a given society.
4. Reality is complex; in order to acquire as comprehensive a grasp on reality as possible, the post-positivist researcher should gather data from multiple sources. Moreover, the researcher is expected to collaborate with the participants of his-her research (Lor, 2011; Morris, 1999; Yang, 2006; Yu, 2001).

Post-positivist inquiry does not claim universal generalizability; however, it aims to gain an in-depth understanding of the phenomenon under study. In order to gather in-depth data, besides standardized research techniques, qualitative techniques such as interviews, tape-records, natural observation, and diaries are used. This process is called triangulation and helps with validity issues by preventing potential error and bias (Elliott, 2007; Lor, 2011). It becomes possible to gain insight about every group experiment in a phenomenon, offering a better understanding of the situations and problems experienced by those who are part of the system being examined. It becomes easier to develop solutions that fit the special needs of the situation and society. In-depth data from different sources enable understanding of the complex web of interactions among variables, providing a better chance for improvement (Lor, 2011; Morris, 1999).

Furthermore, in the post-positivist research paradigm, the investigator should not be seen as a superior authority who can manipulate participants as he-she wishes. The post-positivist approach regards the researcher as a learner who has to be flexible, open-minded, self-reflexive and self-critical. Although the post-positivist researcher reaches a conclusion, this conclusion may be regarded as a temporary station in an ongoing evolution of social reality (Ryan, 2006). Therefore, a conclusion in post-positivist research turns out to be a beginning phase in other post-positivist research.

Nevertheless, the foundational assumption of post-positivism is problematic. Post-positivists claim that extrinsic and objective facts cannot be obtained, that is, there are no existing facts and laws. However, quite the reverse of this notion is true—objective facts cannot be obtained (a law itself). Also, even though great effort and time have been spent on post-positivist research, the generalizability of results is questionable because the studies focus on situational, conditional, and cultural contexts, thus making the conclusions more conditional and temporary.

4. Interpretivism

Interpretivism is a school of thought that concentrates the meaning of social interactions. This approach claims that social reality is different than natural reality because the subjects of social reality are human beings and their relations with each other. Hence, the interpretivist research aims

to gain an understanding of the meaning of social realities for those experiencing them (Noblit & Eaker, 1987). In contrast with positivism, the interpretist approach is subjective.

Moreover, unlike post-positivist inquiry, interpretivist research does not recruit standardized research methodologies; rather, it provides room to deploy less structured techniques such as ethnographical methods, hermeneutics, and phenomenology (Lor, 2011). Beyond that, interpretivists are against the usage of standardized research techniques because they defend the impossibility of objectivity. During the research process the subject and the researcher simultaneously change through their interaction; the achieved results are considered the products of this interaction. Lor (2011, p. 19) stated that, "the knowledge that results from the process is not universally valid but contextual and restricted to the particular time of the interaction."

Hence, the interpretivist approach depends on the following assumptions:

1. There are no objective and extrinsic facts in social life.
2. Every individual has his-her dispositions, acceptances, assumptions, values and prior knowledge through which he-she constructs his-her own reality. Therefore, everyone has their own unique conceptualization of the concepts that they experience.
3. The researcher is a part of what is being researched; therefore, the researcher and what is being researched are inseparable. The researcher affects and is affected by the social phenomenon that he-she is examining. As a result, the research process is a co-evaluation of the researcher and the phenomenon that is being worked on (Brannick, & Coghlan, 2007; Shank, 1993; Xining, 2002).
4. How people interpret and make sense of their world has to be understood well in order to gain insight into why people behave the way they behave and why social institutions, customs, beliefs function in the way they function.

Based on the above assumptions, interpretivism emphasizes individualization in education. The interpretivist approach asserted that individual differences exist in learning. Every single learner has his-her own strengths and weaknesses. A central curriculum that does not consider individual needs, interests, and characteristics is not a good curriculum. These types of curricula function as a tool to impose the hegemonic values of a system. Therefore, this paradigm embraces a decentralized education system that considers the needs of all groups in society and also focuses on individuals, interests, needs, talents and tendencies during the education process. Personalized system of instruction (PSI), which was popular in the 1970s in the U.S., is an example of the interpretivist impact on the education system. In PSI the learner works at his-her own pace on the subject s/he wishes to learn (Doyle & Reitzung, 1993; Wilis, 2007). With the individualization of education, decision-makers began to consider conditions, needs, and interests of different groups of society. Also it triggers continuous modification and renewal by schools because conditions, needs and interests are dynamic and open to change (Brannick, & Coghlan, 2007; Shank, 1993; Xining, 2002). Consequently, interpretivism rejects the notion of objective facts and laws and therefore does not have generalization issues. It only tries to explain and solve the current situation—anything beyond the current situation is out of its scope.

5. Action Research

The historical foundations of action research can be traced back to the pre-World War II era. Kurt Lewin is widely viewed as the pioneer of action research during this period. The purpose of action research was to apply social theories developed in the social sciences and evaluate their effectiveness by using experimental methods; thus, action research began to function as a bridge between scholarly theories and applications in real life. The second rise of action research took place in the UK in the early 1970's in the field of educational and curriculum research. The aim was to develop better curricula for schools to increase the effectiveness of education by giving teachers a research role. Starting with this period, action research began to rely more on post-positivist and interpretivist methodology (Carr, 2006; Somekh & Zeichner, 2009;).

Action research aims to understand ongoing applications and interventions that have been developed to improve it. It is a democratic approach that promotes the development of humanitarian values and application in society. It purports to improve progressive applications in society so that individual welfare, individual freedom and humanistic development are accepted as mainstream phenomena (Bargal, 2008).

5.1 Foundations of Action Research

There are traces of positivism and post-positivism in action research. However, it can be classified as a post-positivist mode of inquiry due to its conditional nature. Action research embraces the following principles:

1. It is not possible to reach objective and extrinsic facts. However there is a social reality that is agreed upon and accepted as social facts which make daily lives possible. People live in accordance with the social facts on which there is consensus.
2. Action research is a way to improve social applications, especially educational applications, through research. The purpose of inquiry is not to reach universal facts and laws but rather to reach practical information that will help to improve the effectiveness of the application. Therefore, it mainly involves small-scale and long-term inquiries.
3. The subject of research should not be scientists' individual curiosities but problems that practitioners encounter when applying curricula. Thus, science can contribute to the betterment of society.
4. Academic researchers and practitioners are not isolated poles. Practitioners can also work as researchers. In action research, practitioners are the best researchers because their knowledge is a significant knowledge base.
5. In action research, participants in social programs are also equal partners in research and have the right to join in the preparation and/or improvement process of programs. Action research requires collaboration of all parties related to the applications, such as students, parents and administrators, and the community. Thus, the data gathered by action researchers can reflect different sides of the problem, providing a more holistic grasp of the issue. In turn, the researcher can develop interventions that would include a wider range of solutions.
6. Theoretically, there is no end for action research because social issues are dynamic and in that dynamic structure problems arise all the time. Therefore, the intervention that is applied may solve some problems but new ones will appear and new interventions will be needed. The process is somewhat akin to continuing to tailor a dress while you are wearing it because you are changing (Brannick, & Coghlan, 2007; Noblit, & Eaker, 1987; Philips, & Carr, 2009; Thiollent, 2011).

Action research can be conducted to find appropriate solutions to social problems and especially educational problems; therefore, they are long term and continuous. Action starts with an everyday problem encountered by a teacher. The teacher does not have to develop an hypothesis about the problem because doing so can limit the teacher's options and narrow his/her perceptions of the phenomenon. Rather, he-she gathers data on the problem from different sources related to the problem. From these data, the teacher tries to derive a reason for the problem. Starting with the question, action research usually follows these steps:

1. Problem formulation. To formulate a problem a researcher (teacher) should search for common patterns and features that are preventing improvement. Once the pattern is recognized the researcher can formulate research questions. "Research questions should be as narrow, as specific and as researchable as possible (Ross-Fisher, 2008, p. 162). For example: "Will the use of graphic organizers help improve my tenth-grade students' performance on social studies unit tests (Ross-Fisher, 2008, p. 162)?"
2. Review related literature. Literature review is conducted for two reasons. The first is to see similar situations and solutions. If any of those solutions are suitable for the problem at

hand, the information will save time. The second is to deepen theoretical understanding of the problem, making it easier for the investigator to formulate a operational definition.

3. Data collection. Interviews, written surveys, journals, videotape and photography, student works, observational checklists and questionnaires can be used in data collection. Quasi-experimental design can also be deployed.
4. Data analysis. Data analysis aims to figure out the core of the problem. In order to achieve this data gathered through different sources via the collaboration of all parties have to be examined carefully. This examination enables the researcher to derive common themes (problems) shared by most of the parties.
5. Reporting and sharing results and action planning. Themes and problems that are derived through data analysis lead to the development of interventions. Results of data analyses are to be shared with all parties; thus, all parties can contribute to the intervention which will affect them (Feldman, 2007; Gillies, 2009; Ross-Fisher, 2008; Thomas, 2011; & West, 2011).

Action research is a spiraling process—interventions can give rise to new questions for other action research. In fact, reflection on the entire experience near the end of an action research project is an important component of action research. “Thus, knowledge derived from practice and practice is informed by knowledge in an ongoing process” (West, 2011, p. 91).

5.2 Action Research and Positivism

Action research does not reject positivism altogether. It may make use of positivist research techniques (i.e., quasi-experimental design). On the other hand, positivism’s major criticism for action research is its lack of objectivity. According to positivism, the researcher can and should separate himself from what is being researched. Thus, data collection and analyses processes would not be affected by a researcher’s prejudices, acceptances or tendencies. However, in action research practitioners are also researchers. More to the point, positivism claims that insiders are also part of the phenomenon being investigated; therefore, they are too far from being objective. Therefore, it is possible for the action researcher to show tendencies that would have an impact on results. Third, a dual role will put too much burden on teachers that they may not overcome. “Doing research alone can be challenging due to lack of enough time, small numbers of subjects, too many variables to control for, difficulty randomizing subjects, inappropriate instruments or lack of support from administrators” (Martindale & Tomlin, 2010, p. 14). Finally, a small number of participants is a threat to external validity. According to positivism, all these dimensions of action research harm objectivity and therefore the validity and generalizability of the study (Brannick, & Coghlan, 2007; Martindale, & Tomlin, 2010; Kock, McQueen, & Scott, 1997).

Perspectives and understanding of action research on the above-mentioned issues differ from the positivist paradigm’s characteristics. According to action research, objectivity is not necessary in conducting a valid study since there are other ways to establish validity beyond objectivity. The action researcher should be an open-minded person who embraces democracy and applies it in his life. Therefore, relations between the action researcher and the teacher and students, parents, administrators, and other parties in education should be mutually honest, open, and equal (Brannick, & Coghlan, 2007; Feldman, 2007). The action researcher attempts to prepare a clear and detailed description of how and why data were collected and share this information with participants. This kind of relationship will facilitate the data collection process for the action researcher and enable him-her to gain in-depth data.

Also, action research views being an insider as an advantage rather than disadvantage because the insider is native to the setting and thus better able to establish connections needed to conduct a study (taking permission, arranging necessary equipment, reaching students, parents etc.); insiders have insights from the lived experiences. On the other hand, positivist education research is usually conducted by scientists who are outsiders and have never been an actual teacher. Therefore, findings and conclusions from these studies usually are not used in classrooms nor are they related the issues lived by teachers in their classrooms. Scientists may ignore the needs of practical school life and

classroom applications, whereas the purpose of action research is to improve educational applications by solving problems in the curriculum. Teachers are the ones applying curricula and education programs—therefore, it is easier for them to recognize problems with the application (Feldman, 2007; Brannick, & Coghlan, 2007; Mckernan, 2006; Thomas, 2011).

But the action researcher has to be aware that his own perspective is not intrinsically better than the perspective of others. The investigator has to be self-critical to avert any preventable impacts from his social, cultural, political, and educative background. The researcher should not act like an authority figure who assumes he knows better than the practitioners and tells them what to do and how to do it. S/he should be self-reflective in every step of the inquiry. This will enable him/her to develop meta-awareness about the process. Thus, the action researcher can continuously evaluate the process and himself. The researcher and teacher roles are constantly under review so that the researcher should be reflective on his own applications, ideas and acceptances (Brannick, & Coghlan, 2007; Dick, Stringer, & Huxham, 2009; Feldman, 2007; Philips and Carr, 2009).

Action research has recruited the triangulation process to support validity. The teacher action researcher gathers data from different sources such as students, parents, administration and the community and in doing so embraces different perspectives, unlike the fundamentals of positivism. The data gathered from different sources compensate for each other's errors. Thus, action research seeks to attain a more complete picture for the researcher of the phenomena that eventually lead to better intervention (Afify, 2007; Kock, McQueen, & Scott, 1997).

Although the action researcher has low control over the environment, this should not be a disadvantage since the teachers themselves are a variable in this environment. Their interaction with students and with class in general is dynamic, complex and changing; therefore, it cannot be stabilized and controlled as with laboratory experiments. Therefore, action research is conducted in a natural teaching-learning environment rather than the artificial environments prepared for experiments (Kock, McQueen, and Scott, 1997).

5.3 Action Research, Post-positivism and Interpretivism

Many characteristics of action research overlap with post-positivist and interpretivist paradigms, such as being against the superior status of research over participants and claiming to seek the improvement of social conditions by creating a more democratic, free and humanitarian social environment. Action research methods value devices such as the interview and observations to gather data, just as both the post-positivist and interpretivist approaches do. Also, triangulation techniques are widely used in action research as encouraged by the post-positivist perspective to provide a wider perspective and support validity (Elliot, 2007; Lor, 2011; Philips, & Carr, 2009; Thiollent, 2011).

However, despite the aforementioned common grounds, only in action research does the researcher begin to conduct research as a practitioner and participant. Therefore, the interest of the practitioner is in the initiation of the research process. In post-positivist and interpretivist perspectives, the researcher can be an outsider (at least at the beginning) who seeks to learn and understand (Cary, 1988).

As stated earlier, action research is educative—its main purpose is to improve educational practice. Therefore, results should have practical value (also known as workability). Action research is long term yet does not wait until its completion before applying an intervention. In doing otherwise, they would use their workability. On the other hand, post-positivist applications, such as anthropological studies, do not always seek practicality. Also, there can be very long intervals such as five-ten years between the beginning and end of studies. Everything may change before a study is finished; in this case an intervention with validity at the beginning may not be practical anymore (Afify, 2007; Feldman, 2007). Since the classroom is a very dynamic environment, teachers need practical solutions almost every day. Therefore, the workability and flexibility of action research can be very beneficial to teachers who seek to improve their teaching.

Furthermore, unlike interpretivist approaches and applications, action research makes use of standardized research techniques necessary to the purpose of a particular study. For example, an

action researcher/teacher can conduct a quasi-experiment to measure the impact of an intervention developed by him/her. Also, action research can use questionnaires or standardized tests to gather data. Thus, action research reaches for a richer variety of data (Baum, MacDougall, & Smith, 2006; Philips & Carr, 2009; Xining, 2002).

Another point between interpretivism and action research is the nature of facts. According to interpretivists there are no extrinsic, objective facts—every single person has their own conceptualizations. These conceptualizations are molded by conditions and individual interactions with those conditions. In every situation the conceptualization of fact is subject to change. Therefore, the results and conclusions of interpretivist research are valid only for a certain time and people. An individual who has not been involved cannot benefit from results and conclusions of interpretivist research. However, action research claims that social facts are not completely knowable because social processes are dynamic and changing. However in this dynamic structure people reach consensus on some key issues for a relatively long time. Consensus and common values and applications enables an orderly social life. Action research is not as individualistic as the interpretivist paradigm. Also, people who are not involved in the research process can benefit from the results and conclusions of action research (Chain, 2011; Peca, 2000).

6. Concluding Remarks on Action Research

The most prominent contribution of action research to education is in giving teachers a researcher role. Action research provides teachers with a methodology for conducting their own studies in their classrooms and schools. Rather than being only a practitioner of curricula and programs developed by others, the teacher engages in research on the curriculum and programs being applied, thereby empowering them. This would include teachers in the curriculum development process. Being involved would increase the responsibility and motivation of teachers to apply the curriculum and engage in better teaching. Since teachers are now part of curriculum development and can see that they can make a difference, they can contribute to the development of their own profession (Baum, MacDougall, & Smith, 2006; Bellman, Bywood, & Dale, 2003; Chain, 2011; Philips & Carr, 2009). Further, teachers should continuously follow the literature so that their knowledge and skills are up-to-date with respect to their field. Consequently, action research increases the effectiveness of teaching and learning through interventions (Chain, 2011; Philips & Carr, 2009; Thompson, 2011).

Moreover, action research seeks conditional knowledge; therefore, it is not possible to generalize its results. However, this does not mean that information derived from action research cannot be used by or for the benefit of other teachers. Action research reports are systematic tools to use in the dissemination of useful information derived from practice. The teacher/researcher can share their experiences with their colleagues, just like doctors sharing treatment methods and tactics used in individual cases. Teachers can reach different solutions; action research enables them to publish these solutions and archive these in a systematic way. Through systematic reporting and archiving, action research provides a valuable resource for teachers. Further, action research enables the transfer of experience among teachers. Teachers can benefit from each others' ideas and applications to improve their own practices (Afify, 2007; Baum, MacDougall, & Smith, 2006; Bellman, Bywood, & Dale, 2003; Philips & Carr, 2009).

Action research enables teachers to collaborate and share their knowledge, ideas, and points-of-view with each other. Sharing ideas and striving for improvement creates synergy in the school and thereby positively affects its performance. This synergy also contributes to building a harmonious social atmosphere in the school. In addition, the participatory nature of action research promotes a culture of democracy in schools. In action research there is no hierarchical order between researcher and participants. The researcher sees participants as equal partners because, just like the researcher, participants are also part of the program being applied. Participants' engagement in the decision-making process facilitates the application of interventions because participants are part of the decisions for which they will be responsible. This increases the motivation level of participants

(Baum, MacDougall, & Smith, 2006; Bellman, Bywood, & Dale, 2003; Chain, 2011; Philips & Carr, 2009).

Furthermore, the action research method provides more suitable perspectives and tools in some particular fields of education such as early childhood education. It is well known that the assessment and evaluation of young children in the classroom in particular and conducting a scientific inquiry involving children is more difficult since they are not competent survey or test takers (due to limited attention spans), and they are not always aware of consequences. This makes it even more difficult for early childhood educators to examine the outcomes of education and thus lessens their work on program and curriculum improvement. However, action research as an ongoing method with suitable data collection techniques makes it possible for teachers to analyze students' level and progress and re-shape their curriculum and program effectively.

In conclusion, in addition to effects on instructional activities, action research enables teachers to work as researchers, too. As practitioners of curriculum and educational programs teachers are also a variable in education settings. The teaching process is a dynamic, humane process. People have the ability to change and improve the environment and conditions in which they live—and in the case of education, in which they are educated. In the quest to improve the effectiveness of educational programs practitioner/researchers are very valuable because they “live” the problems preventing effectiveness in the curriculum or program. As a result, they are in the best position to develop the best solutions to situations.

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