Action Research in Education:

a call for action

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Contents

Table of Contents

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Foreword

Action Research, as an emergent phenomenon, best illuminates the dynamic relationship between the social sciences and society. It is in this mode of research, the position of the social scientist is challenged as a privileged observer, analyst, and critic. This book, "Action Research: A Call for Action" is aimed to provide new corners to Action Research with the different approaches, introducing the history, philosophy, methodologies, ethical considerations and tools of action research. The more appropriate and productive ways of using Action Research in social science research and the clear discussion of the relationship between action research and the conventional modes of research are the unique features of the book .

Moreover, this book gives all that are needed to know about action research and how it can help oneself to become a self-reflective practitioner cum researcher. It provides the ideas and frameworks to understand action research, in combination with practical guidelines to go through the practicalities and complexities of doing action research in one's own context. Drawing from the various theories and concepts of Action Research, it helps the teacher researcher how to conduct action research studies step-by-step in their classrooms. The authors have embellished the book with numerous concrete illustrations to make the steps in action process sound. The contents position this book as a fundamental component of teaching and helps the readers not only acquire the skills to conduct quality studies, but also how to make it a part of everyday teaching practice. As a complete resource, it is a perfect companion for students and researcher-practitioners in any research setting in education.

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Preface

Action research is a professional improvement strategy. Competent teachers need to ensure that they take a natural pause, to involve themselves in professional inquiry to reflect and plan for change to face the new trends in teaching-learning process. It hones their skills and brings out refinement and upgradation, thereby resulting in fluidity in practice. It is an important step towards reassessing the teachers' roles in renovating one's professional development as it is a continuous process.

This book on A*ction Research in Education: A call for action* includes an extensive material to facilitate novice researchers in designing their slice of inquiry and change the conventional mindset of education. Teachers who practice action research with fellow experts and encourage students in their learning along with professional development, make a difference.

The authors who have penned their chapters referred to a range of articles and reports to present the experience of others to empower rich experience in action research. This book includes step by step process to guide the budding action researchers, to refine their questions, to launch their research, to develop quick and efficient practical solutions and to share their findings. It prepares the minds of teachers and budding researchers to favour changes with concerned observation. This book expands its guidance for data collection. The ethical

considerations which add to the power for the practitioners' research is also dealt in detail.

A separate unit has been focused on call for action, which details reporting with real world significance. The transformative potential of an action research benefits teachers and students.

This book is aimed to weed out all confusions in prospective researchers and to incorporate the dynamic ways in embracing action research in the field of education.

- B. William Dharma Raja
V. Sasikala

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- Authors

CHAPTER ONE

What is Action Research?

Schooling plays an important part in the life of any individual. Reflecting its memories often call anybody to go back to relive those unbridled joyous childhood days. Curious and successful teachers have influenced not just the learning of students but their personality on the whole. The long term impact of school probably relies upon the effective and ineffective teachers in schools. The lacunae arise when the teachers and students participate in teaching learning activities as endured and not treasured. While teachers complain it as lack of support from community, administrators, inadequate facilities, parents' wrong perceptions, students argue it as teachers' failure to grab their attention, monotonous preaching of lectures and lack of quality teachers.

Action research has the power to bridge these differences in the learning environment where a teacher can reflect on the classroom strategies and create an exciting growth oriented environment replacing the routine process and avoiding stagnation. An ambitious teacher with a source of insight can climb up the mountain of despair and design the change required for the transformation of defeatist school to propitious environment which is marked

with new habits of mind, new forms of collegial interaction and creation of a climate and culture that supports true professionalism. Action research is not just a magical cure, but a strategic scientific method bringing transformation in all that ails education.

Action research is a dynamic process where teachers find continuous opportunities to improve their educational practices. In this process, teachers analyze and understand the students' needs in a better way through interaction, reflect it and enhance their professional development. This approach also empowers the teachers in resolving the problems such as access, enrolment, retention and learning, and helps in achieving the educational goals envisioned by the nation. The significant aspect of this research lies in its power to bring transformational changes in the quality of teacher and teaching-learning process in the whole educational set-up. Teacher who adopts a systematic and orderly way to observe, explore and define course of action for real school or classroom situation, could be entitled as reflective practitioner (Johnson, 2012).

Holistic development of students is the goal of education. Practitioners' desire and involvement in research is inculcated through the culture of action research at all educational levels (primary, secondary and tertiary) which foster and propagate professionalism and implementation of the curriculum in a better way by the teachers. Innovations in educational organization are not possible without research. Government extends its financial aids through various funding agencies to encourage teachers

embark on researches to improve their teaching practice and to enhance the students' learning process.

Origin of Action Research

History of action research traces back to 1940's. The first identifiable starting point for action research was laid by John Collier, who was the commissioner of Indian Affairs from 1933-1945 (Susan Noffke, 1997). Kurt Lewin (1890-1947), who is often referred as the originator of action research, was the first to apply psychological ideas to practical endeavours. His action research revealed that by means of developing social relationship of groups and within groups one could sustain communication and cooperation. Lewin also included action research for minority groups to overcome the forces of exploitation and colonialization. Kurt Lewin, set out his first ideas on what he named as 'action research' in about 1934 (Marrow, 1969). After a series of practical experiences in 1940, he concluded action research as "No action without research; no research without action". In the 1950s, Stephen Corey in USA applied action research in educational circles, specifically by the teaching profession, to research into educational issues and advanced it in his book *Action research to improve school practices* (1953).

In Britain, action research was initiated by Schools Council's Humanities Curriculum Project (1962-1972) and following it Elliot and Adelman (1976) examined their classroom practice by applying action research method as a teaching project. But in late 1950, due to much focus on

other research methods, action research lost its popularity and faced a decline. Later in 1970s a well-known proponent Lawrence Stenhouse through his work 'An introduction to curriculum research and development' appealed action research as a supporter of teachers and higher education personnel for bringing in fruitful development theory in the practice of teaching and in the field of curriculum. Stephen focused action research as an emancipatory research with intellectual, moral and spiritual autonomy (Koshy, 2009).

In Australia, an active researcher named Stephen Kemmis influenced the world by evoking a practical outlook on action research with a participatory and critical focus. The action research legitimized teachers' efforts to rethink about their practice and explore their own ideas through hands on experience about their own practice eliminating the stereotyped research on learning. This self-inquiry research gained momentum worldwide and has been recognized as a potential source contributor of knowledge and theories across various disciplines. From the day of its origin, its adoption in various disciplines to sustain itself as action research has been developed and has also brought some changes in its basic tenants. From participatory, it bloomed to cooperative inquiry and action science.

A significant contribution of action research in the field of education is the development of democratic teaching practice in par with the normal life style of teacher and students. In this fast changing world, one could see the growing interest of action research as a research

methodology across world. The potential of action research in producing applied knowledge as per situation context is well explored in the educational field by all educationalists, teachers, policy makers and administrators (Koshy, 2009).

Action Research - Defined

"Our schools cannot keep up with the life they are supposed to sustain and improve unless teachers, pupils, supervisors, administrators and school patrons continuously examine what they are doing, individually and in groups. They should use their imaginations creatively and constructively to identify the practices that must be changed to meet the needs and demands of modern life. "Courageously try out those practices that give letter promise and methodically and systematically gather evidence to test their worth" (Stephen M. Corey).

Kemmis and McTaggart (1988) define action research as a 'form of collective reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own social or educational practices, as well as their understanding of these practices and the situations in which these practices are carried out'. Carr and Kemmis (1986) describe action research as 'a deliberative process for emancipating practitioners from the often unseen constraints of assumptions, habit, precedent, coercion and ideology'. In the words of Rapoport (1970) 'action research aims to contribute both to the practice concerns of people in an immediate problematic situation and to the goals of social science by joint collaboration

within a mutually acceptable ethical framework'. McTherie says, "Action research is an organized investigative activity, aimed towards the study and constructive change of given endeavour by individual or group concerned with change and improvement". In the words of Sara Blackwell, 'Research concerned with school problems carried on by school personnel to improve school practice is action research'. According to Corey, "Action research is a process for studying problem by part owners scientifically to take decision for improving their current practices."

Action Research: Connotation

In simple terms, action research has two constructs, the first is 'action' and the second is 'research' which exhibits the links between them (Hall & Keynes, 2005). 'Research without action and action without research is quite impossible' is the uniqueness of action research and distinguishes it from other forms of conventional inquiries. It bridges the gap between theory and practice while addressing the practical problems. Action research is conducted in diverse contexts like social sciences, organization, administration, management and education by means of learning through action and reflection (Mc Niff & Whitehead, 2002). Action research is a process where systematic integration of theory, application and evaluation is involved (Reason & Bradbury, 2001). The evaluation process of action research is based on the importance of educational decisions and adjusting practices on making best use of its usefulness (Raja & Rajathi, 2005). It could also

be described as an approach with common sense, in terms of personal as well as professional development, as it enables the practitioners to investigate and evaluate their own work and create new theories for their practice (McNiff & Whitehead, 2005). This school improvement strategy investigates the problems by the practitioners themself to take decisions for improving their current practices (Corey, 1949).

'Teacher research' or 'Practitioner research' is the term often interchangeably used for 'action research' (Johnston, 2005). It could also be described as an organized inquiry which aims to study and develop a constructive change for progress and improvement in the given endeavour by the individual or a group. Teachers or administrators reflect their problematic situation and choose the most effective teaching strategy to suit their situation and hence called as situational research, as it focuses on one particular or specific situation. In general, action research could be termed as application of common sense or good management. Kemmis and Mc Tagger (1988) view action research as a collaborative process of practitioners who work with a shared concern. Action research enables researchers to self-reflect their practice to orient positive changes in their practice (Holter & Frabutt, 2012).

A classroom is a place where multiple opportunities are congregated for the success of students. The teachers are facilitators in demonstrating these opportunities for their enhancement in learning and understanding. The teachers push their students as engaged learners by greater

understanding of their learning style. Examining and understanding the learning process, along with the support of the teacher, enables them to flourish in all areas of their academic career. Determining the ways and means to enhance the lives of students in an educational setup is considered to be the main goal of action research (Mills, 2011). Students who are participants and leaders of a classroom environment are motivated and engaged to become successful learners.

Action Research: Aims

Improvement in practice rather than production of knowledge is the fundamental aim of action research. This aim conditions and sub-ordinates the production and utilization of knowledge. The practitioner's capacity for handling and discriminating complex human situations before judging paves the way for improvement in practice. This aims to make practical judgement on concrete situations. 'It informs professional judgement and thereby develops practical wisdom, i.e. the capacity to discern the right course of action when confronted with complex and problematic states of affairs' (Elliott, 1991).

- *Focus towards improvement of school on whole.* Action research envisages a positive dimension to the regular teaching practice by encouraging and assisting teachers in conduction of action research and to bring effective social and educational changes in their immediate environment as well as in the spheres of influence.

- *Bring effective personal / professional practice of teachers.* The teacher's involvement in the process of action research reveals the professional and personal development of the participants. The proactive and responsible behaviour of teachers bring in effective changes in their academic and personal career.
- *Provide research opportunities to faculty as a prelude to research projects.* The expertise of teachers through action research enables them to collaborate with other staff members to solicit for specific projects.
- *Make an upsurge in community engagement and research profile of the faculty*. Engaging in projects in collaboration with schools/ educators raises the community engagement profile of the faculty and also provides opportunity for both faculty members and students to become involved in research projects for higher degree and/ or for publication purposes.
- *Provide stakeholders with opportunities for research.* The students, parents, administrators, teachers and other stakeholders are provided an opportunity to work in collaboration with teachers to improve the educational practice.

Action Research: Objectives

The main objectives of action research are:

- To bring an advancement in the infrastructural components and working conditions of a school;

- To cultivate research vigour and scientific attitude among teachers;
- To motivate the teachers to address the students' problems in a scientific way;
- To promote a democratic environment where teachers and students together understand and solve their problems;
- To bring excellence in educational institutions;
- To develop the ability and understanding among administrators to improve and modify school conditions with a scientific outlook;
- To eradicate the existing static and conservative school environment;
- To generate a healthy school environment for effective learning;
- To elevate the level of aspiration and performance of the students;
- To improve the current practices in the schools;
- To confiscate the notion that professional researchers can only conduct educational research;
- To enable the regular teachers and administrators to utilize the research method;
- To stimulate the confidence among the practitioners to involve in research to solve their academic problems;
- To create consciousness about the problems and application of the research methods for immediate solutions among the student teachers;

- To inculcate cooperation and democratic values among the schools or the educational personnel in their work;
- To instill the desire and needed attitude among the school personnel to bring excellence in their work; and
- To create a conducive learning environment for effective teaching and learning.

Dimensions of Action Research

Education acts as a vehicle for social advancement and an instrument through which social forces are perpetuated to build a new social order. Action research recognizes and addresses the educational responses to profound structural changes in society. Action research has long been a part of research in education as well as in various social science fields. Literatures divulge the difference in process and procedure from fundamental and applied research. Action research promotes opportunities to improve their learning environment and their own practice, in educational situations through self-inquiry. It could be an individual or collaborative research among teachers or in partnership with university researchers.

Epistemology of action research enables us to have a cross section of action research. Action research addresses the epistemological questions of: Who can be the knower? Which counts as legitimate knowledge? and What kind of things can be known? Its vision is unpinned with a notion

to care for lives of children who form the future society. It explores the grass-root knowledge to construct the education system in recognition with the globalization and neo – liberal polices of education. Based on the extensive review and research, Noffke (1997) prescribed three dimensions for action research to reveal the multiple layers of assumptions, purposes and practices that entangle it. These dimensions emphasize complexities and interconnectedness across themselves. They are: *professional, personal* and *political*.

Professional

In the early 20th century, while there was a struggle among the feminist in Europe and USA scholars in creating a form of research which connects social struggle and solving social problems, action research emerged with a potential to enhance the science of education and status of professionals who involved in teaching learning process. A research by and with teacher forms the highlighting feature of action research. The context and nature of action research develop the knowledge base to reframe the nature of teaching with conscious and contrasting efforts, and highlighting the professional deliberations throughout the educational process. Action research focuses on building the body of knowledge about educational practice along with the conception of teaching based on self-reflecting practice which articulates it as a knowledge generating activity. Thus a transformation in the educational research was embodied through established link between theory and practice, which underpinned professional development of teachers.

Professionalism of a teacher is clearly emphasized by his/ her potential to produce new knowledge. Teacher's voice form a significant strand in generating vision for educational practice. Professional dimension of action research signifies the core understanding of bridging the theory and practice and generating new ways of understanding practice rather than mere production of knowledge base for teaching. Action research enhances the professional quality of teachers and the status of profession to support the changing demands of qualified teachers.

Personal

The core form of this action research lies when an individual examines his own practice for improving it. The distinct aspect of this personal dimension of action research is its impact on the personal growth of the teacher conceived with inquiry. The goal of action research for a teacher is to learn and dive in knowledge generating process. According to Abraham Shumsky, action research is a form of self-development where the teachers understand themselves and explore more to work better (Noffke & Somekh, 2010). Further as per the view of Hilda Taba, action research not only influences the problem solving ability but also equips the teachers with required skills. Action research impacts on personal growth when:

- Teachers engage in research;
- Work as individual vs collaborative in nature; and
- Individual participation or conduction in action research process.

Another important aspect of action research is that it advances the notion of teacher's personal empowerment. Academic dialogues among colleagues regarding personal beliefs on pedagogical practices also facilitate improved self-esteem and self-concept among the practitioners. Self-study of teaching through their past experience leads to personal and professional emancipation. Involvement in action research also provides rich insights into progress in character and nature of individuals. Individuals act as learners and start applying scientific principles for solving issues at hand. Teachers become adept in making adjustments to tackle learner's needs, systemic problems and gains more satisfaction in their profession. Critical understanding of complex situation based on reflection is imbibed. Impelled with reflective thinking skills, the teachers start to search for knowledge beyond immediate and individual experience. Visible raised aspiration among the teachers develops an integrated approach to analyze and evaluate all the actions pertained to their control. Working systematically through a circle of planning, action and fact-finding is applied in personal life too.

The teacher takes up decisive decisions based on the critical analyzes on the data collected in their own teaching experience about their own students and classroom situations which make them an empowered decision maker. Teacher brings her own unique expertise, talents, and creativity into the classroom situation where it is implemented along with the instructional programs for bringing better learning outcomes. The risk taking nature of

the teacher to try with new strategies widens the creativity and thought flow for new changes. The originality and diversified thinking skills are allowed to spread its wings with teacher as change maker. This action research approach brings a change in the standard top-down, administrator-driven leadership and induces for collaborative leadership. The leadership skills of these individuals are quite valued and individuals are encouraged to take on different roles (e.g., facilitator, supporter, and mentor).

Political

Political dimension of action research highlights a new purpose though it is also embedded in the personal and professional dimensions. In the political perspective, action research searches for solution to bring democratic practices in education system and there by promoting it in the society. It attempts to:

- solve the social problems;
- redress social inequalities;
- develops collaborative process;
- create democratic process; and
- leverage social change.

Thus action research focuses to work on social and economic justice in local community. It is deeply concerned with marginalized people and stay deeply connected with social struggles. It also challenges the political economy of knowledge and knowledge generation process and engulfs itself not as a sole tool for professional development but as a

tool for exploring research methods for social and economic struggles. During 1980s and 1990s, educational action research works were deeply tied with political dimensions. It reflected through included efforts to find solution for gender inequity, racial discriminations, etc., that prevailed in educational set up. The democratic impulse in action research was enhanced through development of social theories. Embracing social justice in educational situation took the agenda of accounting for local and global manifestation of oppressed. It's the impetus from community reform some effective action research projects have focused for school reforms. Specific courses and modified curriculum included teaching of research skills to empower the students to apply their research skills to address their concerns that exist outside the educational settings too.

All these dimensions reveal that familiarizing with research skills does not provide a mean to deal with current issues but also to face the life issues in a longer haul. These also enable the sense of civic participation in building a democratic, social and political development of a nation. The action research knowledge and experience push everyone to think beyond classroom environment and connect the societal situations and is intended to serve for its enrichment. Collaboration which is central to action research empowers the people to reach each other and work towards change.

Principles of Action Research

Action research is a systematic investigation on the self-practice for the teachers' professional development. Its uniqueness emanates from the set of principles that guide it. Winter (1989) gives comprehensive overview of six key principles.

Reflexive critique

Evidence based inquiry is conducted to form judgements. This process of inquiry has its roots from self-awareness and situational understanding with personal filters in a social location. It reveals what is factual and true through the process of self-reflection of one's own perceptual bias. The reflexivity insists on framing judgements exclusively based on the personal experiences and not on universal theories. The practitioner with his dual role as researcher reflects on the issues and process and makes explicit interpretations, assumptions with a critical view to make some conclusions. The process of self-criticism fosters improvement in future cycles. A document about the situation, such as written, oral, video transcripts or official documents will make implicit claims to be authoritative. The successful reflection and critique by the practitioners about the action taken form a basic constituting principle in an action research.

Dialectical critique

Truth is brought to light through the process of discussion and scrutinizing. Dialectical critique refers to the dialog between the practitioners and the participants.

In educational action research, it means the teacher and the students. Thus the reality is understood on the basis of the relationship between the phenomenon and its context, and between the elements constituting the phenomenon. The discussion with the students or the participants helps the teacher or the practitioner for better understanding of the social reality and validates any research. The unstable element of the action, opposing phenomenon involved in the plan, and an adverse aspect that hinders improvement could be shared through interaction, which further enables the scope and insight for further improvement.

Collaborative resource

Action research process is never individualistic in nature. The action plan itself calls for the collaboration with colleagues, administrators and students in particular. Student participants in an action research project can also become co-researchers of it. This principle of collaborative resource enables and presupposes that every individual's ideas which are used for the development of the action plan are given equal significance and considered as a potential resource. It strives to avoid the skewing of credibility stemming from the prior status of an idea-holder. It especially gives an acknowledgement for all the minds worked in collaboration to contribute for the betterment of educational practices.

Risk

A practitioner involves in action research when he does not feel happy or desires to bring improvement in his practice.

The newly designed action research to be implemented in place of previously established ways of doing things emanates a kind of psychic fears in the researcher. Testing the workability of the new plan by practitioners involves risk, but without taking challenges in hand, no development or progress is possible. Any action researcher should cross this risk, feel and try for new solutions and improvement when one finds a lacunae in the current practices. In some situations, the ego could stem among colleagues in workplace by one's interpretations, ideas and judgments. Initiators of action research should apply this risk taking principle and support the new ideas and battle the fears and invite participation and show their readiness to such research in a voluntary basis.

Plural structure

The nature of the action research due to its collaborative quality embodies for a multiplicity of views, commentaries and critiques, which in turn leads to changes in action plans and interpretations. Thus a plurality while reporting an action research is inevitable. This plural structure in action research accounts for many explicit commentaries and their contradicting views with a range of options for the action to be executed. Hence, instead of final conclusion, the entire process reporting with the ongoing discussions among collaborators enables a perfect report for action research.

Theory, practice, transformation

Continuous transformation is made through the practice of action research. Here the theory informs a new practice and

it refines and contributes for the development of a new theory. Any action is planned based on idea with implicitly held assumptions, theories and hypotheses and the theoretical knowledge being enhanced by the findings of research. When explicit judgments are given empirically proved action, it deduces the farthing in the formation of theory. The ensuing practical applications that follow are subjected to further analysis, in a transformative cycle that continuously alternates emphasis between theory and practice.

Components of Action Research

Borgia and Schuler describe the components of action research as 'Five Cs' - *Commitment, Collaboration, Concern, Consideration* and *Change*.

Commitment

Action research is a time consuming process. The dedication and commitment of the researcher and participant is a pre-requisite of this process. The participants must be provided with enough time to think, understand and come to conclusions regarding their participation in the research process. The researcher must inquire and observe practice and evolve with new strategies suitable to the situation. They should be made aware of the new strategies to be tried and must be prepared to endure the process throughout the research with willingness. The acquaintance with the fellow participants, the analysis and the duration of the research are the important aspects of the research process. If it is one year, the participant must have to accept it with full

commitment and sincerity. The reflection, documentation and interpretation process should align with literature review, which also involves the researchers' patience and sincere efforts. The participants must be involved with the informed consent explaining the time duration. The observation by the researcher should be done with the permission of the participant. Commitment towards time factor should be given due consideration with care by the participants before giving consent to participate in action research.

Collaboration

Egalitarian and democratic environment prevails in action research, providing that every member contributes and has equal play in reaching the goal. Every member co-operates and functions in co-ordination with each other. The cyclic process of action research enables and ensures the sharing of expertise and changing roles among its members to attain shared objective of the project. The members constructively explore new ideas, actively listen to others' views in order to reflect upon it and credit the contribution towards solving or attaining the goal.

Concern

Action research which is interpretive in nature depends on the support group which comprises of people with close association and with common attributes, knowledge base and good conversational exchange. Such relationships are vulnerable as well as risk taking to some extent but the trust

that exists between the team and value that underpins the project, forms the basic component of an action research.

Consideration

Action research for professional development and enrichment depends mostly on the critical review of one's own practice. The mindful reflection with care and consideration develops a pattern for positive change in the professional actions. Reflection process should be focused with critical examination of the practical theories, values and real time practices. The practices should be examined reflectively and reflexively to enable and encourage continuous learning and development.

Change

Growth, improvement and development in life is not possible without change. Change is ongoing and the only consonance in human life. Teacher should be ready to drive reform efforts, adopt changes, and modify teaching practices, to be a dynamic, competent and effective teacher. The diverse changes in social, economic and technological fields call for monitoring and evaluating the real classroom practices to understand the existing theories of changes and develop a system that connects with them. Thus teachers, to remain effective, have to continue and progress along with the changes in the world.

Faces of Action Research

Action research is practitioner's research, which applies evidence-based approach for providing well supported environment. Also it acts as an ideal tool for management of change and maintaining quality human relationships (Nunes & McPherson, 2003). Zuber-Skerritt (1982) identifies action research as critical collaborative enquiry by which reflective practitioners, self-evaluate their own practices and engage in *problem solving* activity in *participation* with other colleagues. Practitioners find their way towards improvement by overcoming the constraints. Action research, because of its flexible nature, adopts and modifies itself in accordance with the changing needs of the exploring situation (Dick, 2000). Action research which is practical and participative tries to resolve the problems of its participants and seeks ways to improve the practice. It is a problem solving technique applying scientific methods. The cycle of action research is ongoing, based on critical reflection to build on professional development. It is methodologically eclectic. It gives a practical perspective of the work at hand enabling an enhanced chance towards positive change. The intention of action research is to attain sustainable transformation and emancipation in any educational or social settings.

The three features associated with action research, identified by Kemmis and Mc Tagger (1988) are: i) the practitioner is the researcher; ii) the research is collaborative; and iii) the output of the research is a change.

Figure 1.1
Characteristics of Action Research

The four essential characteristics of a pure action research identified by McDonough and McDonough (1997) are: Participant-driven and reflective; Collaborative; Context specific; and Improvement of practice. Action research is focused on practical aspects where the educators dynamically research their own practice employing a plan of action to be shared with educational community (Creswell, 2005).

Other descriptors of action research based on literature are given below:

- It is an *enhancer of the competencies* of the practitioners. It equips the practitioners to approach a problem with a clear vision and chart down ways to tackle them.
- *Collaborative* nature of action research assures the recognition for everyone's view and perception in

understanding a particular situation. For instance, the problem faced by practitioners in a specific environment or situation, if seen persisting in another similar environment namely school can collaborate together in finding solutions. It also empowers the individuals who work with the motive to improve their practice to work in collaboration with stakeholders in this research activity.

- This teacher's research follows a kind of *experimental model of inquiry* where all the participants (teachers/ colleagues/ administrators/ students/ pare nts) involved in the study, act in co-ordination and collaboration to contribute for the research in hand.
- Action research is *formative* in nature and aims to enhance the prevailing situation by solving immediate problems. It seeks to diagnose the problematic situation to understand the underlying factors that root the issue especially in class, school or community.
- Action research involves *reflective critique* which acts as a guiding principle for the researchers to be aware of their own perceptual biases and their own practices. This involvement of teachers also assists them in restructuring the existing system.
- Though action research adopts *systematic and scientific processes*, it does not enforce rigorous rules to be followed during the process of research. In this research, the data are collected, analyzed, and

presented in a systematic way with enormous freedom for the researcher.

- *Context specific* nature of action research prevents the researcher from finding solutions to generalized issues. It aims more in finding remedy for a problematic situation, specific to particular class, school, or situation. Narrow focus of action research makes its results less applicable for others in a generalized context. The interventions tested through this are small scale that it fits only to the specific context. This context nature is a unique characteristic of action research.
- The applicability of *mixed method* (*both quantitative and qualitative methodologies)* is an encouraging factor of action research. But, commonly it is qualitative in nature, as it includes more of verbal aspects rather than quantifying with numbers. As it investigates on problems and issues which are not easily measured and suitable for empirical analysis, it is also interpretative in feature. So, action research facilitates the adoption of simple and suitable method that suits the project (or problem or issue) identified in the classroom by the researcher.
- Action research is based on a *subjective epistemology* where the actual reality is the product of mind or product of individual consciousness. It neglects the existence of real structures in social world and believes in reality as a subjective social construction.

- The *responsive* character of action research enables to reflect and respond to every finding of the previous cycle and adapt *flexibility* in plan of action in accordance with it. The researcher emerges upon unbiased observation to enable further development.
- *Reflection* is a main aspect in the action research cycle. Reflection on the action plan enables the practitioner in the development of a new action which is also further researched and reflected. The outcome from each cycle forms the essence for designing the subsequent steps and events of any action research.

The *cyclic nature* of action research makes it a continuous ongoing process. One shot research is not possible, as

Figure 1.2

Action Research Cycle

one cycle emerges and leads to the second cycle, hence continuous. Thus, action research is an emergent process with dual cycle, an action cycle integrated with a research cycle and each cycle follows four steps such as planning, action, observation and reflection.

- The approach is *eclectic* in nature, which facilitates the researcher to combine various approaches and methodologies in research depending upon the goals and abilities of the participants. This research process adapts changes and modification to suit the requirement of the learners.
- The action research in due course of its process *contributes for the development of new theory*. The action research generates new ideas and perceptions which are validated and tested through repeated cycle of research taking up the role of a theory developer.
- Unlike other researches, action research is like an *open ended research*, it starts with concept and is conducted based on the perception or idea that has been generated through the experience of the practitioner, rather than with a fixed hypothesis.
- There are no specified norms and regulation as far as action research is concerned. This makes it *informal* in nature. It enables the researcher to frame his own guidelines. The framework of which is right and which is wrong, is all decided by the researcher.

- The essential aspect of action research is its *self-evaluative* nature. Its step-wise progress is keenly noticed and constantly checked by means of self-evaluation by the researcher.
- Most of the action researches are planned for *classrooms or small groups*. Local issues are prime concern of action research. Here, the issue is diagnosed by real practitioners to make a deliberate plan in response to it, to be implemented. Its scope flinches from individual development, later gradually to the large scale improvement.
- Though both inductive and deductive reasoning be drawn upon for action research, it also seems to be *abductive* (Pierce, 1940). The inferences of action research are simple explanations derived from observations. Observation leads to plausible conclusions. The actions are guided by the plausible hypotheses, developed to explain the observations and guides the next follow-up plan where it is tested immediately through action.

Action research which is *action oriented* proceeds with an intention to introduce new changes. The change or improvement emerges as result of researchers' understanding, evaluation and reflection of the situation at every stage of the cycle. The domino effect of collaborative action researches though responsive to the situation and local in nature, could also be extended with multiple studies. Action research, builds its theory, methods and action plan gradually as the research is in process. As the

action research cycle moves, the understanding increases, and influences change in methods and plan of action. This, extended support for emerging new research designs and facilitating modifications during the course of research, is yet another distinguishing feature of action research.

In action research, no hypothesis is tested or proved, nothing is compared or contrasted to check or determine the best, no experimentation to support hypotheses, but the ultimate goal is to understand the situation for making enhancement. This feature of action research divests it from the notions of other conventional researches. Though, action research has its limitation with generalizability of its finding, the series of snapshots with various nuances in the existing practices create a vivid view of what exactly is going on, which in turn, enables a teacher to design desired changes in their curriculum and transactional strategies. Thus, enabling professional growth with constant engagement in intellectual pursuits leads to a progressive learning environment.

Difference between Action Research & Conventional Research

Research conducts diligent investigation and arrives with a solution to the problem. Analyzing and interpreting a problem in a systematic way and discovering new truths and facts hidden behind it is called a research. These purposeful attempts help in gaining answers which are objective, valid and reliable. Action research, distinguishes itself from other conventional research in its framework with dual goal of interest towards research and interest in

solving immediate problem. It applies systematic inquiry based on critical reflection of the existing practice with active participation in a changing situation to enhance the lives of children. It also exhibits a direct link with professional growth and development of a teacher. The comparison of action research with conventional research based on various facets is depicted in Table 1.1.

Table 1.1

Difference between Action Research and Conventional Research

Facet	Action Research	Conventional Research
Focus	To bring practical change through improvement in existing school and classroom teaching learning process	The aim is to testing a theory. To ascertain new truth and facts and build new theories and contribute the fund of knowledge
Goal	Knowledge to apply in local situation	Knowledge that is generalizable
Investigator	Practitioners with or without training in research can conduct this research. The person has a direct link or association with the problem. Academic qualification is not a condition or prerequisite for this research. In educational action research it may be the teachers, principal, and administrator.	Scientists, professionals or specialists in respective field with proper training involve in this research. Extensive training is required for the researcher. Academic qualification is a pre requisite and the investigator should have completed post-graduation in the concerned subject. May or may not have a direct link with the problem but must have a specialization in the field.

Facet	Action Research	Conventional Research
Method of identifying the problem	Problems or goals currently faced	Review of previous research
Problem	The problem is very narrow, localized and practical. The field workers or practitioners himself can select and finalize the problem. There is no requirement of an external approval for the selection.	The problem is concerned with and relates to the broad field of social science. The researcher select the topic of his interest but final approval should be by the external experts.
Hypothesis	Based on the problem an action hypothesis is formulated and tested for one time.	A rationale forms the base in the formulation of the hypotheses but hypothesis is not a must for all types' of research. Many hypotheses could be tested in one design of research.
Design	The flexible design of action research enables the investigator to bring in changes according to his convenience.	Rigidity in design does not allow for any changes or modification. The researcher should have a strong

Facet	Action Research	Conventional Research
	The design embraces less rigorous steps and measuring tools. Looser procedures, that modifications could be made during the study.	practical and theoretical foundation. The rigorous steps, methods and techniques are followed in the process of research.
Review of literature	Broad survey of review is not essential. The reviews to understand concept or to collect the facts which are necessary to study the selected problem could be done	An in-depth review of previous studies and recent researches conducted in the selected area forms the base for the conceptual framework, gap identification and significance of the study.
Method	In real life situation, any preferred method, qualitative, quantitative, descriptive and narrative is used	Statistical analysis and quantitative methods are used with proper adoption of systematic research
Place of research	Classroom or an educational institution where the problem exists	Well-equipped lab to test or conduct of the research
Sampling	Sampling is not a big consideration in action research. Generally non-probability	Sampling forms the basis of this research. Probability sampling technique is

Facet	Action Research	Conventional Research
	sampling techniques are used and the researcher may prefer accidental purposive or incidental sample in accordance with the problem. Mostly the students of a class or school form the sample of action research.	employed. The researcher utilizing his knowledge and skill in sampling technique opt for the appropriate technique and picks out the true representative from the population.
Sampling approach	Students or clients with whom the researcher works	Random or representative sampling
Time frame	Quick and short	Long time frame
Data collection	The observation of practitioners and teacher made tests could serve as tools for collecting required data in action research. In case of availability of any standardized tool it could also be used but it is not a must.	The standardized tests are preferred in collecting data. Even if such tools are not available the researcher should construct a self-made tool with reliability and validity.
Data analysis	Simple or non-parametric statistical techniques are applied to the process of	Parametric statistical techniques are applied in the analyzing process to

Facet	Action Research	Conventional Research
	data analysis to derive with results such as – percentage, mean, mode, S. D. and graphical representation The main focus is to derive with a solution for the problem. Thus it is focused on practical but not statistical significance. With raw data it could be done.	develop an exact knowledge and understanding of problem. The hypothesis is tested and based on the evidences or data analysis, the acceptance or rejection of it is determined.
Measurement procedure	Convenient measures or standardized tests	Evaluate and pretest measures
Report	Non-technical language could be used in action research	The report must be technical to be with standards.
Application of results	Emphasis on practical significance	Emphasis on theoretical significance
Conclusions	The results or findings conceive a solution or a remedial measure for	New theory or fact or knowledge is derived with the conclusions. The

Facet	Action Research	Conventional Research
	improving the current practices. The conclusions derived are localized and mostly not applicable in other situations or generalizable. Hence, its contribution towards the fund of knowledge is not considered.	formed new interpretations are generalizable thus, its' a contribution to the existing fund of knowledge in the field studied.
Evaluation	The real practitioner or the investigator himself play the role of the evaluator in action research project. It aims at improvement in practice by the practitioners for an external to evaluate it.	The experts' team or panel of examiners will examine and evaluate the process and report and based on their remarks the research is considered as approved or rejected.
Finances	The fund for the conduct of action research is sponsored by extension department of NCERT but many a time it is met out by investigator himself or shared by the school administrators.	The national level and state level funding are extended for this research. The researchers are even allotted with JRF and SRF based on their eligibility. Social science projects are funded by

Facet	Action Research	Conventional Research
		ICSSR, NCERT, and other bodies. Financial assistance is also extended to institutions and university teachers by UGC for their research work. Sometimes investigator himself bears the expenses of his research.
Training	The knowledge and skill for conducting action research is embedded and honed among prospective teachers through teacher training, B.Ed and MEd programed conducted by DIET and colleges of education. The universities and other extension departments and projects organize workshops to empower in service teachers in action research projects.	The teacher education course curriculum includes a compulsory paper on research methodology and statistics to ensure basic knowledge and understanding of research among the teachers. Conducting a research and submission of a dissertation is mandatory for the completion of these courses as it enhances the skills with practical experience for research work.

Thus action research, which is narrow in focus and small scale in nature, emphasizes real practical problem researched by practitioners, for practitioners. Improvement in educational practice is the main aim of action research. It adopts a cyclic process in solving the problem in terms of local applicability but not in terms of universal validity.

Areas of Action Research in Education

Educational problems are resolved with immediate solutions through action research. Many educational problems originate within the school or educational institution. Therefore the problem of action research in education is confined with the following fields:-

Teaching practices

This area for research pertains to actual classroom set up. Teaching is a challenging activity with diverse learners. The teachers' challenges begins with choosing the best instructional technology, it may be the methods, teaching aids, home assignment or other resources that best fit the students of his/ her classroom. Changing trend in teaching calls for teachers to come up with innovative ideas or strategies to make the class interesting. The level of students (primary, secondary and higher secondary) and their need on a particular subject also differs with their age and stage. In the present era, the teacher's role has been changed to guide and facilitator where quality of teacher pupil relationship is viewed with much focus. Teaching a

particular subject in accordance to various levels of students with aroused interest of the students is yet another area where action research is required. The dynamic role of teacher as destiny makers fosters a bundle of areas which calls for action research.

Behavioural problems

Ascertaining the readiness for learning among the students is primary focus under this area. The ultimate aim of education is to bring desirable change in behaviour among the students. Children sometimes learn disruptive behaviours and teachers being second parents are in a position to correct the deviant behaviour. Adolescence is an age of stress and storms, in which the youngsters' potential and energy could be wasted in conduct disorder and involvement in anti-social element which may invite delinquent behaviours. The problems pertaining to this aspect fall under this field.

Curricular and co-curricular activities

The problems and challenges in gaining the positive experiences planned for the students by the school through curricular and co-curricular aspects for being better citizens are confronted in this area. Co-curricular activities form an integral part of curriculum.

Administration and organization

Providing a healthy school environment for the students is a need of the hour. The administration responsibility has broader context right from recruiting teachers, designing the

environment conducive for learning, infrastructure that suits the age and level of students for the overall development of school culture. The finding of solutions to all administrative problems by means of systematic inquiry defines a quality educational institution.

Evaluation

Evaluation is an important part of the teaching process. Recent developments in technology have brought new modes of evaluation in practice. Valid and reliable evaluation will determine the success of the teaching learning process. The quantitative terms in evaluation have turned into grading system and continuous comprehensive evaluation is in process. The changed perspective on academic performance and focus on holistic development in children calls for new evaluation styles to be discovered and tested. The problems pertaining to testing also fall under this area.

CHAPTER TWO

Why Action Research?

Educational action research embraces a cyclic approach to bring innovation in practice by adopting various strategies and methods to implement change and reflects upon it for further improvement. This pragmatic and emancipatory approach contributes professional development and empowers the teachers to meet the problems and needs demanded by practical situation (Eilks, 2018). It connects research and practice by transferring the role of teachers to classroom researchers. Action research serves as a powerful and useful model for practitioner's research. In a simple form, the self-reflective enquiry assists the participants to understand and improve the rationality and justice of their situation and practices (Carr & Kemmis, 1986). Gaining insight and planning action accordingly is the essence of action research. Action research can be done focusing on a specific context or situation. The researchers who conduct the research can play a dual role as participants too. The flexibility in this research encourages continuous evaluation and modifications while the research is in process. Unlike all the application researches, which test the previously formulated theory, this action research can itself provide opportunities to evolve theories. The

action which leads to an open-ended outcome results in bringing new and creative stories.

Adapting to changes right from the base level leads to improvement and solving an active problem. Action research neglects dogmatic approach and adopts an experimental and tentative approach building upon facts and evidences anchoring a continuous and reality based change process. The experimental approach adopted in action research is a highlight for this process where the impact or effectiveness of the change is evaluated and reflected for enhancement.

Decentralization and democratization in decision making through collaboration and coordination with colleagues and other participants is also an advantageous aspect of action research. It permits the researcher to identify local problems that arise in his own practice area and solve them with the support of the students, administrators and colleagues. It also revitalizes the entire learning process and professional competence of the teacher. The involvement of practitioner in action research assists the educators to gain rich experience in empirical practices (Marton, Cheung & Chan, 2019).

Action research process broadens the thinking of educators and widens their perspective and approach towards the students' problems. According to Pine (1981), action research facilitates the educators to attempt upon myriad of ways with open mindedness and innovative ideas in addressing the problems in teaching, learning and

decision making processes. Involvement and participation in action research process not only solves the students' learning and achievement problems but also enhances teachers' engagement and thinking skills. It promotes and encourages the teachers to read, discuss and review more literature and analyze their practical problems in line with it to draw solutions. Creative teachers' novel ideas are applied for empirical testing. Practitioners cultivate a desire for lifelong learning process and rely on themselves with confidence in making any decisions on instruction and curriculum (Lesha, 2014). Communication, collaboration and co-operation among the colleagues and administrators are enriched. Action research also kindles the sense of efficacy among teachers along with a positive attitude towards professional development and process of change (Simmons, 1995).

According to Fraenkel, Wallen and Hyun (2011), action research is an easy and simplest form of research which any teacher, even with less training and research skills, can attempt for. The scope of action research is also wider that it could be researched on any kind of problem related to any grade—primary or secondary or higher secondary or higher education level (Thanh, 2015). The quality enhancement of teaching-learning process is the ultimate aim of this research. It also helps the teachers enrich their strategies and teaching techniques to suit students' needs and requirements. It also empowers teachers as researchers and to focus upon grass root level problems. Action research

also contributes small local community researchers to solve local problems in a scientific way.

Bassey (1998) describes that the strength of action research lies in its transferability of its findings to other similar situations by overcoming its shortcomings of impossibility to generalize the findings. This small scale research is also valid and reliable as it is scrutinized by the administrators and self-reflected by the practitioners in due course of research which is described as discursive consciousness by Elliott (1991). Participatory and collaborative nature of action research in social and educational process ultimately enhances the professional community on the whole.

The focus of action research is highly practical and relevant for existing educational situations. The flexibility in choosing of methods like qualitative, quantitative or mixed method as per the problem of study creates a possibility to gain in-depth knowledge of the problem. For instance, a teacher to create interest among the students, while teaching vague subject, tries to change the teaching style, by taking to a field trip or by giving practical experience, role modeling etc., which encourages active students' participation. In action research, the teacher applies one strategy at a time to check and determine the empirical evidences and identifies the change through which a better outcome is made possible. The practitioner gets a thorough report of the change adopted and could judge its effects with the help of the colleagues based on the improvement that has occurred in due course. If no supportive evidence is

gathered, a change of action could be made to elicit better results. Hence, by means of action research, outcome and process is evaluated for improving the situation.

Action research is considered as a worthwhile pursuit for educators due to diversified reasons. Ideally action research provides with a method to dig into existing process and emerge with better answers. Effective teachers with a desire to learn more contribute more look for ways to update themselves with changing world scenario.

Core Benefits of Action Research

Action research is obviously used in the field of education to improve teaching practice It is provides teachers an opportunity to explore different methods and bring effectiveness in teaching. Involving in action research action research enables a teacher to introspect his/ her competence in teaching. The core benefits of action research are discussed as follows:

Fuels professional development

Action research is a professional improvement strategy (McNiff, 1984). It develops a positive perception and builds confidence in teachers as they proceed with evidence for their teaching practice and decisions. A competent teacher is influenced with enhanced thinking skills, self-efficacy, and attitudes towards the process of change. This collaborative approach also induces the teacher to share knowledge they

have gained with their colleagues by creating a collegial and collaborative environment.

Promotes collaborative environment

Action research teams up the teachers together and allows them to discuss their own teaching styles and strategies and share their thoughts, which in turn develops a stronger relationship. It is through the action research, there is a visible increase in sharing and collaboration across departments, disciplines, grade levels, and schools.

Manages change in school environment

Unlike other researches, action research focuses in solving local and grass root issues. In action research, the teachers tend to focus on specific problem or practice and evaluate it in iteration, which ensures time for reflection and replanning in accordance with need and requirement. In this ever changing world, action research makes the teacher gets prepared for changes as worthy of extra attention – review of literature to solve specific problem, to compare/ contrast the situation to evaluate success and to draw conclusions. In action research, the situation context problems are focused and questions are answered with scientific procedure. Thus learning based on review and scientific approach to local-context problems develops professional growth and enables change manageable school culture and system.

Reflects on own practice

Action research, a self-reflective practice, enables the researcher to have a critique view on his own teaching practice to bring progressive change. It provides the teacher with an opportunity to evaluate their existing practice in an informal manner. Learning outcome of students determines the success of teaching which provides a chance to practitioners to evaluate themselves in schools in an informal manner. It is conducted to investigate what effect their teaching has on the students' learning process, how they could work better with other teachers. In short, action research helps reflect how a teacher can work towards changing the whole institution as a better place for learning.

Improves communication

Educators discuss their questions with others and learn from others' expertise. The team collaboration within the school environment or in district brings together many professionals with common goal or purpose towards progress. A study (Little, 1981) revealed that teachers have a positive impact in the patterns of collegiality, communication and networking, when they share and interact with other teachers. Individuals who involve themselves in action research are more prone to changes and easily adaptable and open minded to accept new creative and innovative ideas easily.

Stringer (2004) states that action research is not an objective and generalizable research, yet holds its uniqueness from every day actions of teachers. This research

mostly adopts the qualitative routine to gain great clarity and understanding of the question, problem or issue under investigation. In action research, the researcher does the role of facilitator, resource person, and catalyst which helps the participants in understanding the essence of the research and ensures to support in every action moving towards resolving the problem. It forms a tool for new insightful learning in schools and classrooms. A significant feature is that action research lays claim to the professional development in education. In words of Mills, action research encourages changes in schools and districts by fostering a democratic kind of approach to education. It also empowers the individuals for collaborative effort in the process of testing new ideas and solving problems. Teachers develop a deep understanding of their own practice and improve their practice in concrete ways.

Caveats of Action Research

India's former President Dr A P JAbdul Kalam remarked "Excellence is a continuous process not an accident". Teaching without reflection is mere waste of time. A teacher has to ignite the desire for learning among the students. Developing a passion towards learning among students at grass root level with compassion is a prime duty of educators. Teachers who are second parents keep continuously monitoring their teaching and analyzing the learning designs in order to bring progress in students learning. To familiarize and equip them, with the theoretical knowledge and required skills for conducting an action

research, it is included as a component in their teacher preparation training curriculum itself.

Any research is not exempted from limitation. Action researchers also envision a few challenges and problems in their journey of research and reporting. The institutional circumstances and conditions pave the way for the conduction of action research by teachers. Practitioners and stakeholders of action research often, encounter several recurring problems with regards to their exploration journey towards improvement of their profile. Many limitations are common among conventional research and action research. Unlike the university professors, school teachers are not given encouragements or academic credit for their involvement in conduction research activities. In general, teachers' research is not even considered for promotions or employment purposes. In schools, researches are not given its due considerations instead considered as a peripheral objective of teaching learning process. Some schools go to the extent to consider such research as a threat to their school norms and conventions, and exhibit active resistance.

The major constraining factors of action research in an educational setting identified by McKeran (1993) are lack of time, lack of resources, school organizational features and lack of research skills. Borg (2013) lists the barriers that complicate the process of teacher-research as teachers' lack of awareness, belief and skill in research, non-collaborative school culture, lack of teacher motivation, limited

availability of resources, limited funds, unsupportive leadership and political issues.

An action research conducted by practitioners is a continuous on-going process, where the researcher continuously reflects on the results for further researching, until the remedy or solution is derived. This recurring nature shoots-up many caveats and difficulties for the researchers.

Other Practical Issues

Action research which is inquiry based research in the context based focuses on focuses on improvement in quality of the educational institution and performance of teacher. Yet, have some practical issues which are outlined below:

Limited opportunities

School teachers are provided with limited opportunities to engage in critically reflective activities with regard to their teaching practice. To involve them in this professional development activity in a complex and challenging setting requires self -inquiry skills. The restrictions and criticism from the administrators and colleagues considered to be a vital issue faced by researcher in the process of this systematic reflective approach. Action research viewed as a collaborative process where a shared concern is essential (Kemmis & McTaggart, 1988). The non-cooperative environment filled with criticism and limited opportunities are felt in many real life situations.

Additional workload

Sometimes for a teacher action research adds a pile of work apart from other academic duties. An action research could be done only in vacant time and sometimes this turns out to be a least priority of many teachers.

Broader focus

Action research, initiated to solve a specific problem in due course, extends with multiple problems pertaining to it. Researching on one aspect, may reveal a link of interconnectedness with various aspects which are mutually influential in nature. When a researcher tries to focus on all problems and moves along with the arising issues, the research is left in crossroads. The researchers' concentration on branching problems makes research problem broader. Due to it, the focus on chosen problem gets deviated and hinders progress in research and remains unsolved.

Lack of time

Some researchers choose broad areas due to ignorance or out of curiosity, which makes it impossible to be completed within the time frame. The framed timeline of research gets clashed with the regular classroom activities like examination, assignment submissions and evaluation etc. Managing with research steps and duties of the school remains a tough job for teachers. Maintaining a balance between these two, as a teacher is an area of acute difficulty. Thus teaching duties and concentrating on student's regular classroom activities intervene and create intervals in the

research activities and cause hindrance in completion of the research.

Limited local support

The teachers are the least encouraged and supported by local authorities, administrators of the institution in their endeavours towards action research. Gaining support from the principals' for conduction of action research remains a greater challenge for many teachers. The collaborative nature of action research is realized in its process, enduring it without the colleagues support obstacles the continuation of the research activity. The importance of action research is the least recognized by local personnel remains a major problem for it.

Limited support for dissemination of research

Action research results have to be disseminated to colleagues to make the research more sensible and productive. The local administrators' hesitation in approving the research extends with denied support and opportunities for dissemination of its results with other teachers within the same institution. Though findings of action research are less useful for other institution, its utility in the same institution is great. The negligence of the authorities of the same institution towards dissemination of the research finding ends up the purpose of research meaningless.

Lack of material resources and monetary funds

Action research is a system improvement strategy where updating in teaching methods, aids and application of technological gadget is demanded. The researching with the available resources could only serve limited purpose. The teachers face economic issues in purchasing the materials required for the research. Lack of financial aid from administrators, also prevent the teachers from involving in action research projects. The novice action researchers are exempted from receiving any fund from the government, which curbs their curiosity.

Lack of research skills

Teachers, though have been provided with a knowledge base of action research in their training programmes, lack in practical research skills. This makes them less confident and creates doubt in them to start with an action research project. Action research is a systematic enquiry which involves research rigour. Practitioners with less exposure in research develop anxiety about their research skills and stay away from it.

Suggestions for bettering the Action Research Practices

An action research involves many practical constraints, which pull down a practitioner from involving in it. Here are a few practical ideas or suggestions for action researchers, which will act as a guide that enable the researchers to anticipate hurdles and challenges and overcome them effectively.

Staying small and staying focused

Stay small and stay focused is a principle to be followed by action researcher to overcome vital practical issues in conducting the research. Teachers should stay focused in a specific area of their concern. Only manageable problems should be scrutinized for action research by the practitioners and stakeholders. Narrowing down the problem could illuminate possible solutions. The phenomenon of interest of the researcher is to be focused intently. Other problems which branch out of it should be ignored or left unfocused. A researcher should try to understand the problem in hand and put the others on hold. Concentrating on one aspect helps in understanding the nature of the problem and stay focused. The researcher can hold other identified problem areas, to be focused in their new research projects.

Identification of clear research question

The researcher should be reasonably clear about the research questions formulated for the research. The research questions guide the researcher in choosing the research design, appropriate methods and tools to seek answers for these questions. Only clear goal and objectives give vivid plan for successful completion of the research process without any hurdles.

Setting a realistic goal

The researcher while planning for action research itself has to set goals which are practical, feasible and realistic in nature. Change or improvement from small area within a system can lead to sustainable development. A practitioner can bring change or improvement by modifying an area

constitute in his work context and not on others' area. This understanding enables in relying upon realistic goals which could be attained.

Careful planning

Systematic planning involving scientific process is essential for a successful action research. The action researcher must start his research with well-defined objectives and proper planning. The researcher should prepare a proposal for his research and get it evaluated with experts to serve as a guide throughout the research.

Adopting a realistic timescale

To stay on time with research, the researcher has to set a timescale. The timescale has to be prepared anticipating the academic work barriers in mind. The setting of time scale without conflicting with regular classroom tasks like examination, corrections etc. help in completion of research within the time frame. Aim to set time limits, realistic enough to cope with unpredictability. The researcher could set two time limits, first as an ideal timescale, which might be potentially achievable if no hindrances are there; and a second one set with more generous time limit, which indicates the maximum time for achieving the goals through research. Gantt chart could be used by the researcher for proper planning and checking upon their progress in research.

Involving others

Action research is collaborative in nature, which encourages involvement of others in research process. No individual can achieve success, without the co-operation of other colleagues. So the researcher should influence other teachers to involve in action research. The colleagues could be invited as research participants, or to serve as observers to provide criticisms and suggestions. The other teachers could also act as validators who critically scrutinize the process to ensure the quality of its conclusions.

Ensuing a good ethical practice

The action researcher must follow the ethical standards to ensure quality research work. The research must be guided with moral principles and values. The widely accepted aspects of doing ethical action research like getting informed consent from participants, equality, respect, equity in treatment etc. (elaborated in further chapter) must be adhered by the researcher. Researcher role modeling with ethics will also be reciprocated by the participants.

Feeling the essence of learning, not on the outcomes of action

Teachers' research is a tool for professional growth and development yet the researcher's focus should be on bringing improvement in the learning situation rather than self-motives. The researcher should not concentrate more on the outcomes of the research. The researcher should critically reflect his learning, and consider others' criticism to bring positive modifications in the action plan. The

success of an action research lies in enhanced learning or improvement in existing situation.

Action research is a valuable exercise for teachers to undertake. It seeks active involvement of teachers to address the areas of concern or redress. Action researchers aim for transformation from unsatisfactory situations to satisfactory ones. Being aware of the caveats or constraints before starting with the research, helps the researcher make cautious plans which make the research process go smoothly. Overlooking the potentially disturbing problems, hindrances and challenges with special knowledge and technical skills enable worthwhile professional development activity for teachers.

CHAPTER THREE

Who is An Action Researcher?

Action research is appropriate only for practitioners who are entangled with the vigour to improve their practices and working condition. Action research propels an individual forward towards development, improvement and progress his career. So, when the question of who can involve in action research is raised, it is shoot back as one who is with enquiry and inquisitive mind and has the ability to self-reflect their performance and work dynamics. It comprises of all, who applies scientific and systematic methods to bring in an immediate solution to a pressing problem, all workers who involve themselves in community and professional development.

Action research can be undertaken by practitioners in any field, who work to bring radical change in their regular teaching practice, teachers who design new strategies to motivate learners and researchers, who reckon on applied research to solve local and specific problems. Professionalism and situation call for inquisitive evaluation over the happenings in classroom or school environment involves the practitioners in carrying out action research. Educational research is a systematic exploration of the best and innovative practices and alternative strategies by

educators which work the best with students and teachers. Action research entails comfortable scholarly handshake with teachers with rigour of real research to impact upon the educational community. One grapples with action research to answer the academic questions that linger in their academic world. A site based investigation could be designed, analyzed and shared by a classroom teacher, administrators of schools, district educational heads. This rigorously planned self-directed and self-reflective research activity by the practitioners provide framework for the professional growth and valuable contribution to the literature.

Action research is a kind of applied research done by practicing teachers, who are diligently working with students in classroom. While other researches are done by scholars mostly among the unknown subject group and does not necessarily relate with real life situation, action researches are conducted by academic elites. In action research the teachers, conduct scrupulous investigation on the familiar subjects in congruence with realities of the classroom. Teachers in classroom are expected to imbibe desirable behavioural modification in cognition, affective and psychomotor of students by means of conduction of action research. Research in this view, is collaboratively reserved for revered teachers at school / college / university levels, administrators and teacher educators to bring in adaption, which are unique in context and circumstance of each educational institution. The educators, a group of educators or the educational administrators

together or individually drip down the curtain to expose the challenges in determining the links between effective teaching practice and students learning. They focus intentionally on specific problems, address questions and issues that are faced in their teaching learning process. The site based action research adds more sense in the field of research as it involves meaningful observation of the closest by the scholars, experts and professional teachers (Parson, Hewson, Adrian, & Day, 2013). The functionaries, in the field of education who focus on their operational areas where they are entitled with the functional responsibility can involve in action research.

Roles of an Action Researcher

'He who does not research has nothing to teach' (Proverb)

The dual role played by teachers as a practitioner and researcher is highly encouraged and valued for educational transformation in the twenty first century. Teachers, who confine themselves with mere teaching, based on instructions framed by external experts could not be professionally competent. Educators pursue opportunities to grow professionally and keep themselves up-to-date, engaged in classroom research. Action research is a self-emancipation process which enables the teachers to ignite changes to improve educational process in collaboration with stakeholders (colleagues, students and parents). Practitioners' intrinsic motivation towards teaching enables them to redesign the existing situation, in order to adapt

and support students' individual differences (in development, learning styles, strengths and needs) through action research. Leading the way, reflective practitioner rethinks every aspect of their profession towards enhancement. Action researcher holds the responsibility of solving the social and academic problem at the grassroots level through research. Action researcher's multifaceted role reveals the active engagement of practitioner to provide meaningful and progressively challenging learning experience. Through action research, the teachers reinvent themselves and the education process to serve better for student community.

Figure 3.1

Roles of an Action Researcher

Teachers' identity has been conceptualized in different ways while embracing action research. The multiple roles

taken up by action researcher in the journey of enquiry are briefed as:

Planner

The first phase of the action research cycle shifts the role of the researcher to a planner. The prime role of an action researcher is to lay down the action plan. It comprises of planning for the process, by having a control over the time, human resources and logistics. The researcher collaborates with stakeholders to identify the needs and evolve with a plan. The researcher, being a strategist evolves a realistic plan with effective utilization of available resources in real situation. He outlines all the activities for the course of action. Problems which hinder the overall goals are also assessed. The researcher anticipates the hurdles and challenges, and design the process accordingly. The researcher also ensures that the needs of the community are reflected in the action plan.

Leader

Action researcher takes the credit for identifying the problem for action research. Leading the situation towards improvement is the prime activity of the researcher. The professional expertise and judgement of the researcher helps in recognizing the problem with a clear focus on educational improvement. The investigator pinpoints the gaps that exist in the educational ecosystem and work for its improvement. The action researcher as an effective leader has a clear vision of the research. Being democratic and setting ethical standards for research, he/ she builds

credibility among the research participants. As a tactful leader he/ she manages to provide a comfortable environment to the participants in the research situation. The passion, commitment, courage and confidence of the practitioner make him an effective leader throughout the action research.

Catalyzer

An action researcher provokes enhancement in existing situation by means of bringing positive changes in the lives of young people in their academic and life career through action research. The main purpose of the researcher as catalyst is not just interpreting reality but bringing change. Being placed in the center of research process, he/ she configures the cognition of the individuals. The contribution of the researcher revives the systematic enquiry in finding solution to the persisting problem. The teacher, as a researcher, catalyzes the classroom situation, to suit the requirement of diverse learners. As an effective catalyst, the practitioner plans the research to build the quality of education. Action researcher manages all the complex situations and the research activities in an organized way. The researcher tries hard to master teaching competencies and new strategies through action research in order to be the catalytic agents in the field of education. The researchers' also models as mantle of moral principles to the participants by observing ethical and moral principles in their research activity.

Facilitator

The main aim of this role is to support the participants in understanding the aim and objective of the research and assist them in maintaining group dynamics. The action researcher assumes the role of a facilitator and comforts the participants involved in research without any hurdle. While implementing the action plan, researcher provides all the resources for research and monitors the progress and encourages the students to solve their problems. As a facilitator, an action researcher acts with empathy and observes the subjects' perception while participating in the research. During the course of action research, comfort of the students in getting along the process is facilitated by the researcher. Action research enables the practitioner, to adapt new ways of teaching to help the students manage their learning or behavioural problems.

Teacher

Every teacher is an active researcher. The teacher takes up the responsibility to have an insight into the problem by reflecting his/ her own practices and bringing changes in teaching and learning practice. Teachers, as instructional leaders, imperatively analyze the existing practice and identify the aspects to be changed in order to have control over their professional practice. As a teacher, they stay flexible and prepare the plan of action with regard to the needs and abilities of the students.

Designer

The planning ensures the success of an action plan. The researcher designs the entire teaching learning scenario. The daily plan, schedule, strategy to be adopted, step wise action plan is tailored in the research as per the opinion of the researcher. The researcher's innovative ideas, thoughts are reflected throughout the research process. Instructional materials, learning materials, modules used for research are decided and designed as per the vision of the researcher. The researcher constructs the research activities according to the nature and age of the students. From initial step of planning for action research to dissemination of findings are all designed deliberately by the researcher.

Listener

A sensible listening is an important aspect for an action researcher. In action research, from the inception stage till the completion of research, the researcher must lend his ears to gather information to reflect upon it. While implementing the action plan, the researcher has to be absolutely open, to hear the views, opinion and criticism of others, either positive or negative. The researcher has to give an opportunity for the participants to express their feedback and real observations over the strategies adopted in the action plan. The researcher should stay focused and patiently listen to all dialogues, conversations and interactions that happen in the research setting. Active involvement of researcher could only make him/ her aware of the real situation and plan for modifications accordingly. The researcher should work in collaboration with stake

holders, where he/ she should intensely lend his/ her ears to the collaborators' opinion.

A good researcher has to gather information / data, analyze them and proceed with conclusions. Stakeholders' opinion on research plans also ensures validity of the investigation. Listening, builds relationships, solves problem, ensures understanding, resolves conflicts and improves accuracy. Hence the action researcher must also be an effective listener.

Observer

Teacher-researchers' act as observers of their own research. In action research, observation is the most common qualitative technique used to derive data. An action researcher has to shift his role as a stringent observer, throughout the action research process. The participants need not always express their views regarding the modalities, coziness and intensity of the plan verbally. So, the verbal and non-verbal signals of the participants have to be noted through keen observation and considered by the researcher. Criticisms, shared through comments and interactions among the participants and colleagues could reveal various minute details regarding the organization of activities and barriers of research. Hence, the researcher has to involve himself/ herself in direct and indirect observations to identify them for thoughtfully reflecting on it. In action research, the researcher also observes the changes in attitude, behaviour and sometimes the total personality, for which he/ she must be an active observer.

Synthesizer

Synthesizer is one who collects minute details through various techniques and fusing them together to form meaningful outcomes. The action researcher accumulates all information collected for research and synthesizes them to draw conclusions. The qualitative data collected from the participants, interactions with the students and colleagues and feedback through observations are synthesised by the researcher with his own personal experience. The synthesised data assist the researcher in reflecting upon to provide ceiling for further development. Thus the synthesising of details and data gathered are combined and critically reflected by the researcher.

Reporter

Reporting is a crucial step in action research, where the findings are exposed to academic community. The researcher's role as a reporter is significant in action research. The efforts taken by the researcher as planner, leader, facilitator, observer, and synthesiser is all encompassed into one, when the researcher shifts his role as a reporter. Entire research process is reported with findings to ensure the success of the research in reaching its goal or objective. Action researcher reports the research findings through written report or oral presentations. The main aim of action research is solving the persisting problem in the classroom situation. Sharing its report to the other community helps in saving time and energy of many practitioners, who faces similar problems in their field. The action research adds to the existing fund of knowledge.

Hence the action researcher as a reporter does a noble role of taking the findings and interpretations to wider audience.

When an action researcher, interplays the above mentioned roles in a justified way, he/ she could emanate as an effective practitioner. The quality of teaching and learning could eventually be enhanced through teachers' transformation as action researchers. A teacher with professional competence along with rigorous research skills could design a progressive learning environment. Encouragement given to practitioners by government, administrators to conduct such action research could lead to practical changes in educational setting.

CHAPTER FOUR

Ethical Reflections for an Action Researcher

Educational research when involves human participants raise unique issues of ethical, legal, social and political significance. The primary objective that counts for research ethics is to give protection to the human participants who are involved in the research activity (Palaskar, 2018). Ethical principles guide the researchers to conduct and monitor whether the research adheres to ethical practices. It prevents research from deception and ensures the validity of the research. Research ethics fills in a sense of responsibility among researchers and makes it easy to fix responsibility in case of misconduct.

Primarily instigations of human exploitation have created an alarming call for advancement in research ethics. Nuremberg Code is commonly cited as the first document to govern the conduct of human research. Ethical dilemmas form an intrinsic part of action research. Teachers or practitioners engaging in reflective practices could anticipate a wide range of ethical issues (Banegas & Castro, 2015). Action research's vital role in democratizing educational inquiry makes it evident for practitioners to gain appropriate ethical guidelines (Noffke & Somekh,

2010). This chapter focuses on creating robust ethical awareness among practitioners to enhance the quality of their enquiry.

Burns (2010) describes action research as the ideas of reflective practice, where teacher serves as a researcher. In others words, action research explores on the teaching practice, self-reflected with a critical eye and systematic approach (Nelson, 2013). The action research propels an intervention deliberately, when a problem arises to promote changes for betterment in practices. According to Hopkins (2002), it is the procedure where a substantive act is put under a research procedure to discipline it by means of enquiry and personal attempt in their transformation journey towards improvement and reform. The development of workable standards of framework for action research ethics gets complicated with the central role played by insiders' stance and personal engagement of the practitioners (Noffke & Somekh, 2010). The ethical review of action research can be challenging for action researchers and research ethics committees (Gelling & Giddings, 2011). Action research which tracks, anticipates and supports personal and academic problems of students could also have dangers and distortions. Realizing them, a call for ethical norms to guide either qualitative or quantitative academic modes of inquiry has become the focus.

In action research, insiders and stakeholders try to answer the intrinsic questions driven by inquiry either alone or in collaboration with their colleagues or administrators. This research stance of researcher playing dual role and

his/ her responsibility to continue his relationships and responsibilities after the completion of the project remain as a hamstring. Ethical standards can untangle many knotty challenges of action researchers. The ethical guidance review board governs the standards of conduct of any scientific researches. The action research where a complicated combination of human beings like students, parents, practitioners and administrators are involved should be reviewed by an ethics committee to ensure the upholding of ethical standards. In the discussion of the ethical principles of beneficence, justice and autonomy are central to ethical review.

Institutional Ethics Board

Educational practices in any form and facet should be conducted in an ethical manner. Schools and universities of many countries have set up Institutional Ethics Board (IEB) to review and approve all research proposals. The strength and independency of this board enable it to act as a guardian and safeguard the interest of the researcher, research participants, institution and society at large. It gives prime concern for the welfare, rights, beliefs, customs and cultural heritage of the participants involved in research, both individually and collectively (Campbell & Smith, 2007). Action research which is often viewed as practical research conducted by the practitioners to investigate on their own teaching and students' learning, has its own unique ethical issues, which has received only less attention. Teaching is redefined as a practice which is

centered on inquiry (Grossman, 2005). Hence, to enhance the knowledge of teachers and to have a deeper understanding on action research methodologies for analyzing their classroom practices in future, pre-service teacher education programmes have included courses on action research methodologies. Action researchers can do exemplary contribution in their instructional curriculum designing and in other practice field through this process of reflection (Sutter, 2006).

Action research with its grounding in traditional mode of enquiry should also concern for ethical review. Though this situational research is a spot research reviewed by external committees, thinking in line with the insider's situation could not be reflected by universal protocols. Yet, the power of personal commitment to build democratic classrooms demonstrated with care and respect has revealed many human stories to this world. Creating a democratic climate can enable even the student participants in the decision making process of all phases of research to execute an effective research model.

Ethical Principles

Educational action research, being one of the valuable tools to generate innovative ideas, new knowledge, diverse practical solutions and strategies in response to emerging issues in the field of education (Nolen & Putten, 2007) should concentrate on these commonly recognized principles which are germane to research ethics.

The commonly recognized principles include the following. They are:

Minimizing harm

Unlike other researches, action research participants are exclusively young minds of human beings. The practitioners sometimes work with their colleagues or higher authority personnel in collaboration which hurdles their role as a researcher. The testing strategy or idea may likely affect the participants. Harm in a three dimensional view is addressed here. It may not only refer to the physical harm but also includes financial, reputational or psychological harm. The researcher can conform it by tapping himself a question that, whether there is a way to justify or to get an excuse for the harm that is caused by the research to the involvers. In teachers' research, which is enmeshed in the context of classroom environment, the teacher should include the students in the process for the noble cause of learning and throwing light on their own learning without exposing them to any kind of harm (MacLean & Mohr, 1999).

Respecting autonomy

Voluntary involvement of participants and collaborators are essential in an action research. It ensures the respect for their autonomy and fuller participation with their mind and soul in the process of research (Burton & Barlett, 2005). They can be provided liberal and conducive environment where freedom, independency and autonomy are guaranteed. The participants must be free to withdraw at any point of time without any consequences. The words of Cochran-

Smith and Lytle (2007) warn that "in our enthusiasm for the idea of inquiry, we urge and in some ways impose this perspective". Acceptance in participation with willingness even if he/ she is a student reveals the inclusion of respect to every individual. It is important to discuss their coercion and interest in taking part in research in planning stage itself so as to avoid or minimize their presence. The dual role of the researchers as well as the practitioners may not be a threatening factor for the students to be a participant in the action research process. Any kind of deception is often ruled out by the application of this principle. The practitioners have the right to devote their own time and effort for research, but do not have the right to demand cooperation of others. Hence compulsion in any means is a hamper to ethics.

Responsibility

The ethics should be adhered to while the researcher plays dual or multiple roles as a teacher, student, administrator, collaborator in action research. In the classroom, the teaching activities and research activities should combine and merge together without any complexity to the students. The ethical question arises in demarcating the line of whether the research supports or interferes the practitioners' professional career. Role ambiguity and role conflicts are often a unique issue for practitioners' research. The neglect of the primary responsibility of engaging students in classroom lining up with his/ her research activities to observe or write filed notes and viewing the students as mere data for research are some ethically

deviant flinches. The teacher focuses on professional development and may sometimes trounce the teaching objectives. The responsibilities of a teacher should be balanced with the researchers' inquiry into a practitioner's research.

Anonymity

As an ethical standard, it is the responsibility and obligation of the researcher to preserve the anonymity (or protecting the confidentiality) of the student participants in classroom inquiry. The breach of confidentiality in the secured data is an ethical issue. It can occur at any stage of the research process involving data collection, processing, storing and dissemination. Especially in internet based research, the efforts to protect the confidentiality is a complex issue (Anderson & Kanuka, 2003). A central feature of any research is to disseminate it to scientific community, to provide descriptions and explanations to fund knowledge. Though while sharing the research in wide forums, anonymity is completely not possible. The researcher should discuss regarding the anonymity before disclosing their data. Students could have pseudonyms instead of their real names. The irony is that at times, the anonymity may violate another ethical principle of credit for intellectual property (Anderson, 1998). It is also claimed that hiding the original or changing the names of participants may affect the rich description or profound local knowledge assessed through the action research as it loses its context contribution. If the student work is credited for a good cause, or awarded for excellence, or recognized by any organization or

community, this anonymity will raise questions on either protection or credibility.

Actions and social justice

Action research signals new strength and engaged action in positive construction of a community inside and outside the school. Any action in action research is confined to ethical standards as it reminds that the professionals, who involve in it are nation builders and just cannot tolerate any injustice or risk for any social issue. The teachers' research is a small version or small scale of trial for a new instruction with wider social context and diverse learners and individual differences in mind. It is also an engaged action to tease out ethical issues prevalent in the schools. The racialism bullying on communal basis is also voiced. It works on uplift of certain tribal community or unnoticed or unanswered problems that are prevailing in the educational field. Its vital contribution should seek to understand the error patterns in society, strengths and support that a teacher might build on. After research, the results and implications should be discussed in academic community to adopt for better changes.

Voluntary informed consent

Ethical consideration calls for the practitioner to inform the students, parents, colleagues or any human subjects involved as participants for the inquiry. The actual data to be collected, photographs and video recordings must be informed with prior notice. To make accurate ethical results, the individuals must give written consent to take part in

research. If the subject is minor then their parents' consent is considered to be important. If the data is to be revealed to the real world, then whether to maintain anonymity or to reveal their credibility or identity must be discussed with the participants. Genuine voluntary consent enables for clear information. According to Articles 12 and 13 of UN Convention on Rights of the Child (1989), when the research objective is to scrutinize on behaviour, then the intentions behind the research should also be clearly explained (Baumfield, Hall, & Wall, 2013). The participants or their guardians have the right to be informed regarding the risks and potential consequences that the participants will have to encounter as a result of participating in this inquiry process (AERA, 2000). Implementation of complete transparency could only claim for truly informed consent. The participants must also be given permission to get dropped out of the research at any point of time. The researcher should abide by democratic values and never force or threaten the subjects to get involved and continue in the research process.

Offering reciprocity

Researchers need to think about giving appropriate incentives or even a bribe that can reach the young children and sometimes even grown up children while getting their data for the research purpose. Since the participants spend their valuable time in filling the questionnaire or sharing and allow the researcher to access the data with full cooperation, such offerings will make sense for their contribution (Baumfield, Hall, & Wall, 2013). But care has to

be taken that offering incentives should not in any way impact the outcome of the research. This offering reciprocity for the information they provide just helps in faster collection of data or improving the rate of collection of data.

Equitable treatment of participants

It may be argued that the various individuals and groups that a researcher comes into contact within the course of research should be treated equally, in the sense that no-one is unjustly favoured or discriminated against. These principles do not exhaust all the ethical concerns relevant to social research, but they are probably the main ones. There is now quite a large number of literature on ethics in educational research and a much larger one relating to social scientific work generally.

Sustainability

An action research project aims at improving the existing good practice or to transform a challenging environment into an approachable landscape and also to assess whether the action research is continual, calling for the ethical concern. Action research focuses on improvement with small investments and new strategies. This localized initiative should trigger for long lasting practices. The funding agencies which extend its fund for any action research also confirm whether the action plan could be continued after the stopping of fund. A teacher's approved success of a practice should not be abandoned after the completion of the research. As it is teachers' research, all teachers must exhibit co-responsibility and involvement in

taking the exploration further and not returning to previous old practices. The action research, if involved with an external facilitator from university, should be sustained in the process even after their return after the completion of the research. These sustainability concerns must be concentrated in the planning stage of the research itself.

Ethicality cannot be divorced from quality in professional practice especially in teaching, and learning process. Through action research, learners and teachers create a direct and positive impact on the teaching and learning process, the real meaning of a successful action research lies when it is conducted earnestly, honestly, backed with teachers and learners' interests, and constant awareness of ethical dilemmas around agents' actions and decisions. Respecting every participant with respect and treating them with dignity and care for the promotion of their welfare comprises the ethical standards. Maintenance of personal and covenant relationship among the researcher and the participant definitely upsurge mutual benefit for both of them. Anticipating ethical issues, action researchers prepare to establish a sincere and respectful dialogue to handle all the participants. The ethical consideration takes its place throughout the iterative process right from recruiting participants, engagement in process, interpretation and dissemination.

CHAPTER FIVE

A Spectrum of Action Research

Action research assists the educators in diagnosing the problems or weaknesses that prevail in organizational, academic or instructional situations by developing practical solutions quickly and efficiently through designing and adopting required research methods among the wide variety of evaluative, investigative and analytical methods. It also provides an opportunity for the educators to apply programs or educational strategies to improve themselves. The ultimate goal of this research is the creation of simple and novel practices in the iterative teaching learning process and leads to better result for schools, teachers or the entire set up. This school reform strategy is typically conducted as an extension activity designed to boost up educational performance, teaching strategies or academic support in educational institutions. Any action done collaboratively focused to promote social change could also be referred as action research (Schneider, 2012). Action research in education not only involves collecting information regarding current educational set-up and outcomes, but also it analyzes them and develops an action plan to improve it and follow-up the developments

after the execution of new plan and formulate conclusions based on it (Vanbaren, 2019).

Action research designs, based upon the focus and nature of the problem could be classified into four main types. They are:

- Individual research
- Collaborative research
- School-wide research
- District-wide research

Individual research

This type of research is conducted by a single teacher within his/ her classroom teaching. It is designed to analyze and bring reform in any one specific task. A teacher can adopt his/ her own personal experience to arrive with strategies to overcome the weakness or lacuna in the teaching or students' performance. For example, if a history teacher adopts a peer tutoring method for a month and analyzes the results after the implementation of peer tutoring for finding its usefulness is called as individual action research. Classroom management, application of instructional strategies, utilization of teaching materials, or addressing students' academic problems are some of the problems that a teacher could face in his/ her regular classroom teaching. When a teacher focuses on studying one single problem or issue and engages individually in seeking solution to that problem with or without the support from the colleagues or administrators is called as individual teacher research.

Teacher performs a research on an evident problem in the classroom and addresses it on individual basis with the integral support from the principal, colleagues or parents of the students. Along with the direct involvement of a teacher in brainstorming the problem, she/ he could utilize the knowledge and support educators at the school or district site for the occurrence of more successful teacher researchers. Universities and other educational agencies at district and state level can provide professional development related programs to equip such teachers to share and reflect upon the needs for an individual teacher researcher and provide venues for sharing and disseminating the results of successful action research (Ferrance, 2000). This research extends an opportunity to every single teacher to become more skilled and flexible educator. Teacher analyses a first order reflection of his/ her own practice and challenges to implement changes in curriculum by themselves. Individual research emanates both change and development at levels of practice and therefore dialectically related (Walker, 1993).

Downside of individual research: The main drawback of this individual research is that its results may not have the scope to be shared with others unless the teacher herself disseminates it either through formal presentation in conference/ seminar or written document for journals or newsletter or at least as a presentation in faculty meeting. It is not in the reach for several teachers who work concurrently on the same problem thus calling for a waste of energy and resources.

Collaborative research

Collaborative action research revolves on a specific topic investigated by more than one person. In Collaborative action research, every participant is given opportunity to challenge each other's thinking (Kemmis & McTaggart, 1988). A new strategy is intended to derive solution by a group of people. This research is often reaped with more benefits than individual research as it calls for collaboration of many people (Vanbaren, 2019). It is also referred as collegial inquiry (Cunningham, 2011). A common problem or classroom issue that is shared by a group of several teachers is addressed and focused (Lesha, 2014). This research fosters a joint effort and collaborative action of teachers in resolving a particular issue. These teachers may be supported by individuals outside the school, such as a university or community partner (Ferrance, 2000).

The teachers can together approach the problem in different ways like, all the co-teachers of one classroom may focus on specific group of students, teachers teaming together to resolve grade issue of a particular class, testing an instructional practice grouping with educational agency or university personnel, group of teachers working in same institution studying the same instructional concern etc. The main advantage of this research is its opportunity to share dialogue of findings to many. Mutual instructional issues are addressed by all teachers collaboratively to promote group development (Chen, 2018). Here the team of educators come together with many questions to redesign teaching methods, curriculum, solve problems as a mean to

bring enhancement (Cunningham, 2011). An interesting aspect of this is its collaborative nature which recognizes and honours other's expertise. It builds commitment and develops intellectual perseverance among the educators and contributes for sustainable growth of the teaching learning process. Sharing their thinking among the learned to make wise decisions giving due consideration to others' perspectives serves for deepened understanding to improve the quality. Students' success depends on the collaborative analysis of their teachers in designing effective research based on instructional practices.

Schools have adopted a restructuring in their professional system by extending the opportunities for collaborative inquiry, and reflection among its practitioners driven by students' data. It provides opportunities for:

- All co-teachers of a same class work together to resolve a common problem.
- Grade level issues could be addressed by a team of teachers.
- Teachers of a school, teachers working in various schools of same district, educational agencies or university could study and inquire on an issue or instructional practice.

Hence, this type of research encourages collaboration at all levels with a common motive to bring professional enhancement and quality learning.

School-wide research

Common problem attributed within a school environment is the focus of this research. When a school-wide problem is approached with the support of the administrators, coordinators and teaching personnel with a motive to bring a wide change in school climate, it can be classified as school-wide research.

Successful school-wide action research is directly related to initiatives present within the school improvement plan (Lesha, 2014). The entire staff work together applying scientific approach to the problems affecting the school such as low academic performance, lack of parental involvement, organizational structure or decision making structure in administration and frame reforms and implement changes as a reform initiative to exterminate the problem and increase performance. Team effort and individual contributions attribute in overcoming the school problems (Ferrance, 2000). Thus the school-wide action research is a school reform initiative. Based on the school data, problems are identified and the team of school narrow down and question, and then gather related data, and decide on a plan of action.

District-wide research

District-wide research is wider and community based in nature. This research is complex and requires utilization of wide resources in its process for a common motive. The organizational problems or performance issues of a particular district is addressed by entire district. The teacher

or school representatives from various schools of the district collaborate together in resolving their issues and involve in decision making process to improve the situation (VanBaren, 2019). A district may choose to address a problem common to several schools or one of the organizational managements.

The main downsides of this research is its documentation requirements (communication) so as to keep all the personals involved in a loop, and the ability to keep the process in motion. The other problems include a fair commitment in collecting data and finishing their assignments within the time frame or deadlines. On the positive side, involvement of multiple constituent groups to resolve and inquire problems, definitely paves way for creating genuine stakeholders with perseverance for change (Ferrance, 2000).

Table 5.1
Types of Research – Ferrance (2000)

Facet	Individual teacher research	Collaborative action research	School-wide action research	District-wide action research
Focus	Specific issue inside a classroom. It may be based on classroom management, instructional strategies, students' learning problems.	Common issue of a Single classroom or several classrooms.	Issue within a school or area of collective interest.	Issue that pertain in various schools of a district. District issue may be academic performance, Organizational structures etc.
Possible Support needed	Coach/ mentor Access to technology Assistance with data organization and analysis	Substitute teachers Release time Close link with administrators	School commitment Leadership Communication External partners	District commitment Facilitator Recorder Communication or documentation with external partners

Facet	Individual teacher research	Collaborative action research	School-wide action research	District-wide action research
Potential Impact	Curriculum Instruction Assessment	Curriculum Instruction Assessment Policy	Potential to impact school restructuring and change policy Parent involvement Evaluation of programs	Allocation of resources Professional development activities Organizational structures policy
Side effects	Practice informed by data Information not always shared	Improved collegiality Formation of partnerships	Improved collegiality, collaboration, and communication Team building Disagreements on process	Improved collegiality, collaboration, and communication Team building Disagreements on process shared vision

The foundation of educational action research was laid by the writings of John Dewey, the great American educational philosopher of the 1920s and 30s, who believed that community related problems have to be paid attention by professional educators by developing a curriculum that concentrates on social problems and resolving community related problems. According to Creswell (2011), action research is of two types. They are: *Practical action research* and *Participatory action research.*

Action research is a small scale project where the local classroom problems are inquired by the teachers. In words of Lesha (2014) practical action research "seeks to enhance the practice of education through the systematic study of a local problem". It is where immediate practical issues are addressed promptly by the practitioners of the institution within the limited resources available. Participatory action research is conducted on a large scale, which has broader application and of contributory in nature. Participatory action research is usually implemented in larger scale to improve the quality of the organisation on the whole through collaborative efforts. It focuses to emancipate or change the educational practice in progressive phase (Lesha, 2014).

The action research literature provides categorisation which highlights different kinds, in terms of goals, scope and processes. White (1999) described three modes of research: explanatory, interpretive, and critical. Based on terms of the goal, Berg (2001) thinks that there are three modes of action research:

- Technical (scientific/ collaborative)
- Practical (mutual collaborative/ deliberative)
- Emancipating (enhancing/ critical).

Carr and Kemmis (1986) also suggest that action research can be differentiated into three clearly distinct types: "technical", "practical" and "emancipatory". The emancipatory aspect is central to many understandings of action research. Grundy (1982), drawing on Habermas, distinguished between technical, practical and emancipatory action research – a distinction which was further developed in Carr & Kemmis (1986). Gay et al., (2006) also suggests two main types of action research: critical action research and practical action research. Critical action research is action research in which the goal is liberating individuals through knowledge gathering. For this reason, it is also known as emancipatory action research.

Figure 5.1

Grundy's Three Modes of Action Research

Source: Eilks, Ingo. (2007). From Technical to Emancipatory Action Research – A Six Year Case Study on Science Teachers Involved in a Cooperative Curriculum Development Project.

***Technical action research** (Technical/Scientific/Collaborative)*

Technical action research is a problem solving model of action research. It resolves the problem and brings answer

to the questions jointly posed by the schools and universities. The aim of this type of action research is to bring in an effective educational practice. It applies a fix it approach, where the researcher implements a solution, strategy or practice which is found by others to effect an improvement (Tripp, 2005). The teachers and participants of research act as co-opted and depend greatly on the research facilitator (Nelson, 2013). In words of Berg (2001), its goal is "to test a particular intervention based on a pre-specified theoretical framework". The research fosters a change, improvement and effective practices deemed with empirical evidence. In technical action research, the researchers determine the framework and direct the research process with an authoritative figure (Mc Kernan, 1996).

As this model is oriented only towards solving the problem and not inclined in understanding the root cause of the problem, this model is less valued compared to other models such as practical and emancipatory models (Cortes, 2013). University and other administrative personnel who are indirectly concerned with the practical situation, try and design solution to the prevailing problem in school sectors with the help of teachers by including them in solution finding process. They produce valuable changes in practice from where the teachers can pursue more intensive analysis.

Technical action research aims for greater efficiency or effectiveness. A good example is the teacher's application of centrally developed project or programme or approach in his/ her practical field following the same method to expect the same as far as possible. If the arena of human action is

technical, then empirical and hypothetical-deductive modes of inquiry are appropriate (Habermas, 1987).

Practical action research *(Practical /Mutual Collaborative / Deliberative)*

Practical action research goes beyond technical matters. It involves co-operative relationships between practitioners and external facilitators. The potential problems are identified by the researchers and practitioners as a team along with their causes. Its approach is very flexible that any change could be adopted any time of research process. It aims to develop professional wisdom and its criteria for improvement may change because these are seen as 'problematic and open to development through self-reflection' i.e. not imposed, from outside. Berg (2001) "seeks to improve practice-and-service delivery". If it is practical (i.e., social knowledge), then interpretive or hermeneutic approaches are warranted (Hebermas, 1987). Practical action research emphasizes the "how-to" approach to the process of action research.

Emancipatory action research *(Emancipating /Enhancing / Critical Science)*

Emancipatory action research is the most promising among all the three modes. It empowers teachers and enables them to solve their problems on their own. It assists the "practitioners in lifting their veil of clouded understandings, and help them to better understand fundamental problems by raising their collective consciousness" (Berg, 2001). Among the various approaches of action research, the most appropriate intension of action research is the focus of

emancipatory action research. Action research which is primarily designed to bring progress in the capacities of the researched subjects in order to solve problems, develop skills (including professional skills), increase their chances of self-determination, and to have more influence on the functioning and decision-making processes of organizations and institutions from the context in which they act (Boog, 2003). If it is emancipatory in nature, critical approaches are appropriate, (Habermas, 1987).

Emancipatory action research aims to emancipate participants from their old tradition, precedents, bureaucratic habits, irrational, unjustified, coercion or self-deception (Carr & Kemmis 1986). It has huge potential for helping teachers in reducing their deficits and enhances their strengths in their practices and to contribute towards their professional development. Significant feature of this research is that it resides wholly within functioning of the group and not with the external facilitator or not with any individuals within the group. Emancipatory research is a research perspective of producing knowledge that can be of benefit to disadvantaged people.

Carr and Kemmis (1986) declared that emancipatory action research best embodies the values of a critical educational science. It has the potential to change the old institutional process of schooling which is just focused on academic performance and make it more 'educational' and sensible by developing the knowledge, values and capacities of individuals and to socialise by means of self-development, self-expression and self-determination.

Table 5.2

Modes of Action Research & Its Potential Characteristics - based on Grundy, 1982 (adopted from Laudonia et al., 2018 & Carr and Kemmis 1986)

Facet	Technical (facilitator-centered) action research	Practical (interactive, collaborative, participatory) action research	Emancipatory (teacher-centered) action research
	(1)	(2)	(3)
Perspective:			
McCutcheon & Jurg (1990)	Positivist perspective	Interpretive perspective	A critical science perspective
Kemmis & Mc Taggert (1990)	Collective	Self-reflective	Enquiry
McKernan (1991)	Scientific technical viewof problem solving	Practical deliberative action research	Critical emancipatory action research
Approach:			
Holter & Schwartz-Barcott (1993)	Technical collaborative approach	Mutual collaborative approach	Enhancement approach

Facet	Technical action research	Practical action research	Emancipatory action research
Aim	Effectiveness/ efficiency of practice- professional development	as (1) above- Practitioners' understanding- transformation of their consciousness	as (1) and (2) above- Participants' emancipation from the dictates of tradition, self-deception, coercion- their critique of bureaucratic systematisation Transformation of the organisation or system
Philosophical base	Natural Sciences	Hermenutics	Critical and enhancive
Nature of reality	Measurable	Multiple, holistic constructed	Inter-related with social and political power structures
Nature of problem	Pre-defined (problem posing)	Defined in context (problem solving)	Defined in context in relation to emerging values (problematizing)

Facet	Technical action research	Practical action research	Emancipatory action research
Status of knowledge	Separate, deductive	Inductive, theory producing	Inductive, theory producing, emancipatory participatory
Nature of understanding	Events explained in terms of real causes and simultaneous effects	Events described in terms of interaction between the external context and individual thinking	Events understood in terms of political, social and economic constraints to improved conditions
Purpose of research	Discover 'laws' of underlying reality	Discover the meanings people make of actions	Understand what impedes more democratic and equal practices
Change outcomes	Change is value-free and short-lived	Change is value-bounded and dependent on individuals involved	Change is value-relative and leads to ongoing emancipation

Facet	Technical action research	Practical action research	Emancipatory action research
Methods	Scientific and quantitative methods	Utilising case study and description to contribute to educational and curriculum theory	Critical, constructivist and dialectical methodologies
Facilitator's role	Outside 'expert'	Socratic role, encouraging participation and self-reflection	Process moderator (responsibility shared equally by participants)
Research interest	Initiated from outside the classroom	Jointly negotiated by the teacher(s) and external expert(s)	Initiated by the teacher
Classroom action	Operated by the teacher(s)	Operated by the teacher(s)	Operated by the teacher teacher

Facet	Technical action research	Practical action research	Emancipatory action research
Data collection and evaluation	Mostly done by external accompanying facilitator(s)	Done either by the external person(s), teacher(s), or jointly together	Operated by the teacher
Implications for action	Suggested by an external facilitator	Jointly negotiated by the teacher(s) and external expert(s)	Decided by the teacher

In words of Boog (2003) 'Action research is designed to improve the researched subjects' capacities to solve problems, develop skills (including professional skills), increase their chances of self-determination, and to have more influence on the functioning and decision-making processes of organizations and institutions from the context in which they act'. Action research, since its origin has the intention of emancipation through stripping away the non-essential aspects in the problem situation. It fosters expanded thinking and focus towards larger purposes. This idealized mode also leads to an increase in considering possible solutions which emanates long term development and evolution (Banathy, 1996).

CHAPTER SIX

Models of Action Research

Teachers' research, with its transformative potential, acts as a viable form of professional development (Borg, 2015). The practitioners as researchers develop a cumulative body of knowledge for change (Auriacombe, 2015). They organize their endeavors to develop methods and techniques to solve practical problems. Epitome of action research is empowering people to improve their situation (Lewin, 1946). Despite the fact that, Lewin is attributed as father of action research and described a cyclic process, Collier was the first to use the term in an academic publication (Ahmed, 2009). Churchman (1979) furthered its development by introducing the idea of reflexivity. Hegel, pinpointed the significance of rigorous critical self-reflection in its evaluation process. Insertion of iterative learning and feedback process by researchers was insisted by Churchman. The dialectic process of knowledge generation pointed out by Susman & Evered (1978) emphasized understanding of the whole first and then its parts.

Since its origin, action research has been applied & developed by various researchers in different fields. The flexible and practicability aspect of action research, has allowed the researchers to explore on the core model of this

process. Many researchers have made contributions to add and develop the theoretical framework. Hence, this chapter aims to provide a comprehensive understanding of various models developed in action research since its origin.

Kurt Lewin Model

Kurt Lewin, who is a pioneer of action research, is considered as the father of action research. He not only coined the term but also designed an action research model based on which his research is conducted. His model is an action reflecting cycle of planning, acting, observing and reflecting.

Figure 6.1

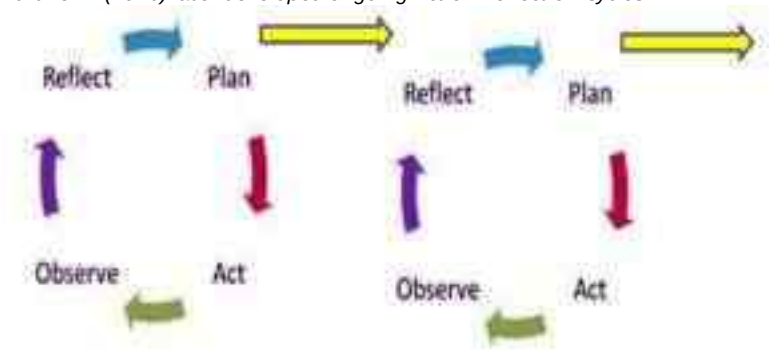
Kurt Lewin's Model (1946) Cyclic Process of Action Research

Source: https://hereflections.wordpress.com/2015/08/02/thinking-about-action-research-and-time/

The four definite stages of action research cycle developed by Lewin (1946) are: *reflect, plan, act* and *observe*. The practitioner self-*reflect* their own situation, teaching practice and problems in students learning. Then, based on

the problem the action researcher develops a *plan* or strategy to overcome the problem.

Figure 6.2
Kurt Levin (1946) later developed ongoing Action Reflection Cycles



Source: https://www.slideshare.net/YeeBeeChoo/tsl3133-topic-5-action-research- concepts-and-models

Once the plan is prepared and ready, the plan of action is implemented. All the activities of the plan are noted down with keen observation to frame conclusions. After analyzing the data, the results are calculated. The results are reflected by the researcher to determine the success of the research. When these four stages of reflection, planning, action and observation are completed, then it means a cycle 1 (fig 6.1) of action research is completed. After the completion of the cycle 1, the action researcher reviews the efficiency of the change in modality thus reflects on the cycles (fig 6.2) which are followed till 100% problems are solved. Thus, action research is a cyclic process. His approach involves a spiral of steps, 'each of which is composed of a circle of planning, action and fact-finding about the result of the action'.

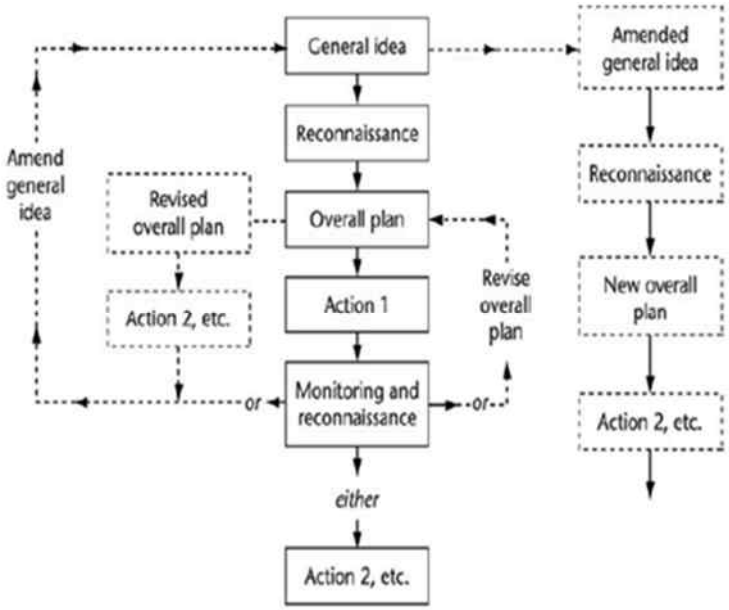
Figure 6.3
Lewin's Action Research Spiral Model

Source: https://infed.org/mobi/action-research/

Dave Ebbut's Model

Ebbut (1985) defined 'action research as a systematic study of educational practices by an individual or group of participants, self-reflecting their own practical actions with series of attempts to check upon its effectiveness'. He criticized that Lewin's spiral model does not provide a vivid picture for action research process. Emphasizing the significance of self-reflection in action research and with an aim to upgrade and bring improvement in Kemmis and McTaggert model of action research, Ebbutt developed a model for action research.

Figure 6.4
Dave Ebbut's Model



Source: https://usnpendbing.wordpress.com/2015/03/24/the-conceptual-framework-of-classroom-action-research/

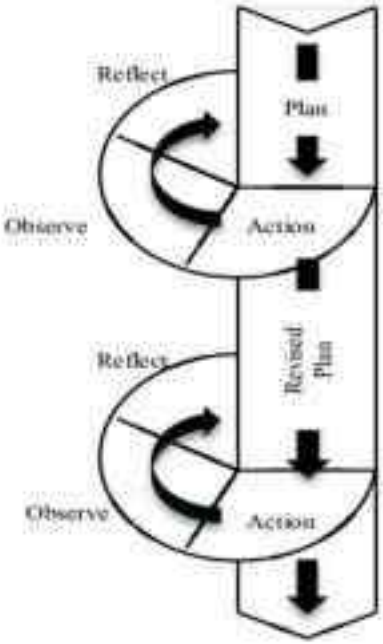
Ebbut's model consists of a series of successive cycles. This model enables and ensures the possibility of evaluation and gaining of feedback within every cycle and even between each cycle of action. Self-reflection at every stage or cycle helps the teacher progress towards improvement and solving students' problems and addressing the issues and challenges that arise in teaching learning process in a systematic way.

Kemmis and McTaggart Model

Similar to Lewin's model, an action research model with cyclic nature was devised by Kemmis and McTaggart (1988). In this typical research process, each cycle encompasses four steps and the reflection phase of each cycle leads the process to the next stage. Again the planning is done based on previous stage and embedded with action and reflection. Multiple but shorter cycles ensure the rigour of research.

Figure 6.5

Kemmis and McTaggart's Action Research Model (1988)



Source: Burns, A. (2010). Doing action research in English language teaching: A guide for practitioners. New York & London: Routledge

Since it's intended to bring change or improvement in the current situation the action research process expects agreement of commitment from the practitioners and beneficiaries. The most commonly cited version of action research cycle was devised by Kemmis and McTaggart (in Burns 1999). The four essential movements of it evolve from a reiterative and spiral or loop. It is also recurred as per the scope, purpose and outcome of the research. The dynamic and complementary action research process follows the four moments as follows:

Plan: Prior observation with critical and futuristic view is done by giving due recognition for real constraints before devising an action plan. Thus, the prospective action plan may encounter the difficulties and complement with materials needed and may provide potential to develop more effective plans to improve the existing practice or situation.

Action: It is a deliberate and controlled phase where the plan is in action. It is here the ideas in action is mediated to stay on track without deviations.

Observation: This is a responsive phase where appropriate techniques such as class notes, journals, interviews, questionnaires, snapshots, recordings and other supporting documents are utilized for data collection. An open eye and open minded observation is made to reveal the context of situation. Measurements are also exposed which leads for reflection (Arung, 2014)

Reflection: This is an evaluative and descriptive phase of action research. The challenges encountered in the first cycle are reflected critically with a notice on the positive observations and effect to form a basis for further improvements and actions. The evaluative and descriptive note on the previous cycle subsequently indulges through the succession of stages.

Thus, Kemmis and McTaggart's Model (1988) comprises the acts of planning, acting, observing, reflecting and re-planning in a self- reflective spiral model in order to give a vivid picture of the steps to be taken for improvement of the educational situation. The diagram reveals the systematic progress from one critical cycle to another.

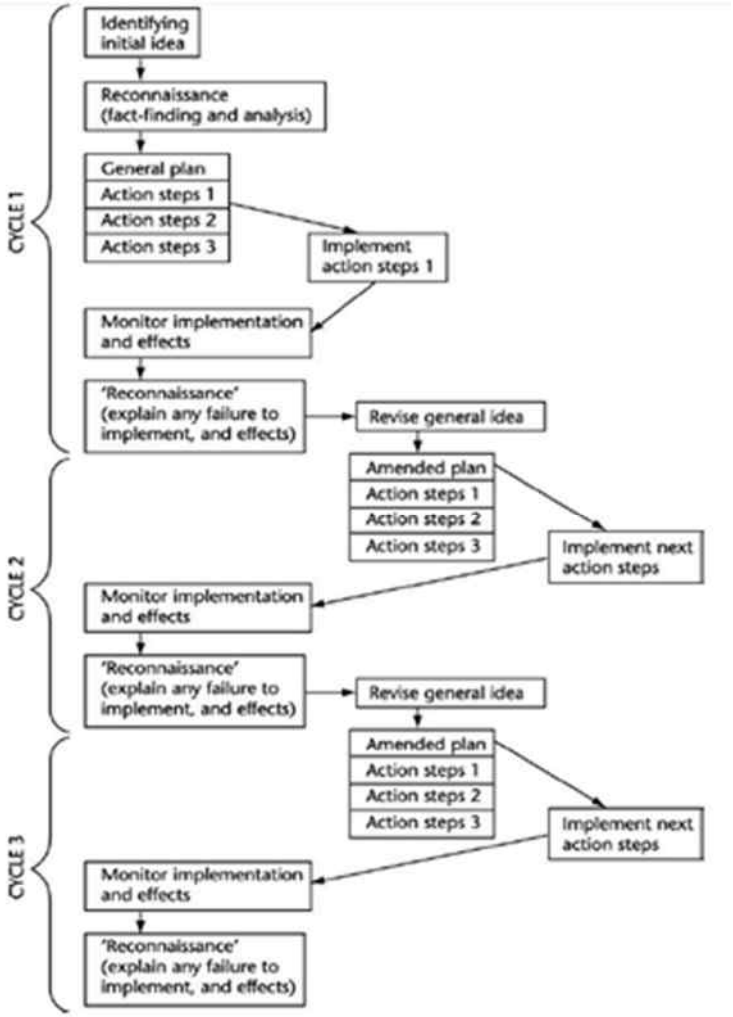
The feature that leads this spiral model is that it provides extended opportunities for in-depth analysis of the phenomenon under research during every cycle and consequently lays down for a better understanding of the problem under research. But this model is also criticized for its assumption that the completion of each cycle may be time consuming, or overlap and the initial plan may become obsolete in due course.

John Elliot Model

John Elliot is an active educator popularly known for his work on curriculum theorizing. Following Stenhouse tradition, he moved from an objective focus to a process focus in his curriculum theorizing.

Figure 6.6

A Revised Version of Lewin's Model of Action Research by Elliott (1991)



Source : https://www.researchgate.net/figure/A-Revised-Version-of-Lewins-Model-of-Action-Research-by-Elliott-1991_fig1_321795795

Although Elliott supports the basic action–reflection spiral of cycles of Lewin, like Kemmis he also presents his own critique: '*Although I think Lewin's model is an excellent basis for starting to think about what action research involves, it can . . . allow those who use it to assume that 'the general idea' can be fixed in advance, that 'reconnaissance' is merely fact-finding, and that 'implementation' is a fairly straightforward process*' (McNifff & White head, 2002).

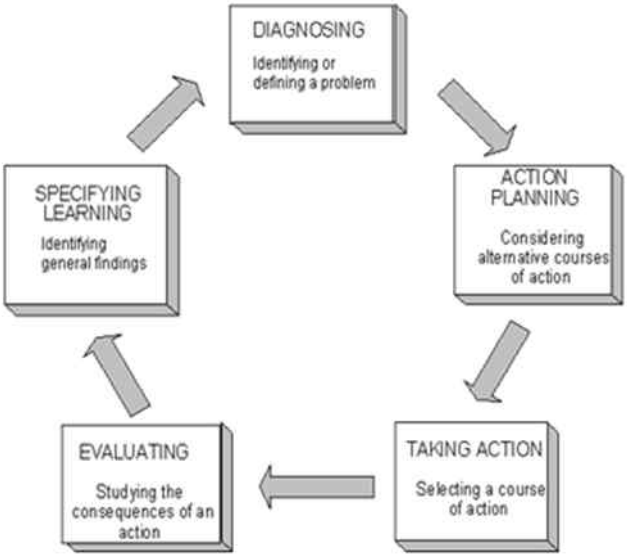
He argued that the general idea should be allowed to shift and stress the occurrence of reconnaissance in analysis and fact-finding phases and persist in entire spiral of activities. He put forth that evaluating an action must be proceeded only after monitoring extensive implementation of the action plan (Elliot, 1991). Hence he proceeded with the development of his own new model for action research.

Gerald Susman Model

Gerald Susman (1984) developed a more elaborate listing in which, within each research cycle, five distinguished phases are to be conducted.

Figure 6.7

Gerald Susman Action Research Model



(Adapted from Susman, Gerald I. (1983).Action Research: A Sociotechnical Systems Perspective. Ed. G. Morgan. London: Sage Publications, 95-113.

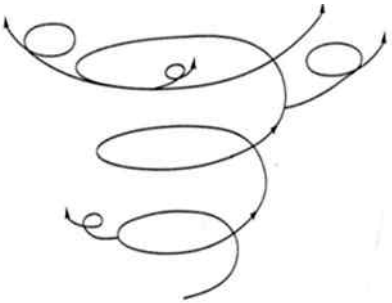
Initially, a problem is identified and data is collected for a more detailed diagnosis. This is followed by a collective postulation of several possible solutions, from which a single plan of action emerges and is implemented. Data on the results of the intervention are collected and analyzed, and the findings are interpreted in light of how successful the action has been. At this point, the problem is re-assessed and the process starts again and continues to evolve until the chosen problem is resolved (Yasmeen, 2008; Auriacombe, 2015).

Jean McNiff's Model

An abstract visual of action research model which reflects generative transformational evolutionary process was developed by Jean McNiffs's in 1984. The iterative spiral of spiral model portrays the exponential developmental process. The developmental capacity of it enables turning into new forms which are already latent within the present form.

Figure 6.8

McNiff (1988) Generative Transformational evolutionary process

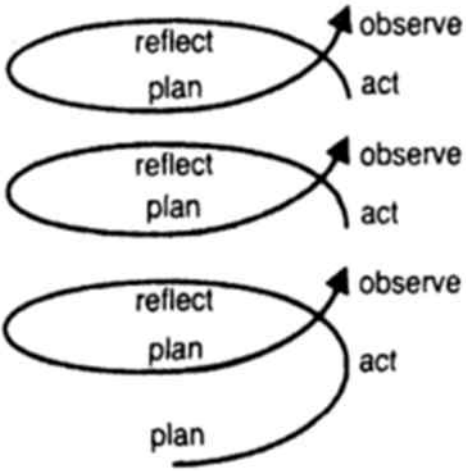


According to this model, the research which begins at one place has the possibility to end up in a different place which is entirely unexpected. Every aspect of the model is generative, transformational, evolutionary process where the process of development is in an expanding spiral. The folding and unfolding of spiral of action reflects within and back again into itself, attempts to communicate the idea of a reality. It enfolds all its previous manifestations yet constantly unfolds into new versions of itself, constantly in a state of balance within disequilibrium. McNiff was certain of uncertainty and disequilibrium. In action research terms

while focusing on one issue, it is also possible to address multiple issues, which goes in line with Plato's idea of holding together the one and the many.

Figure 6.9

An Aspect of the Original 1988 Diagram of a Generative Transformational Evolutionary Process

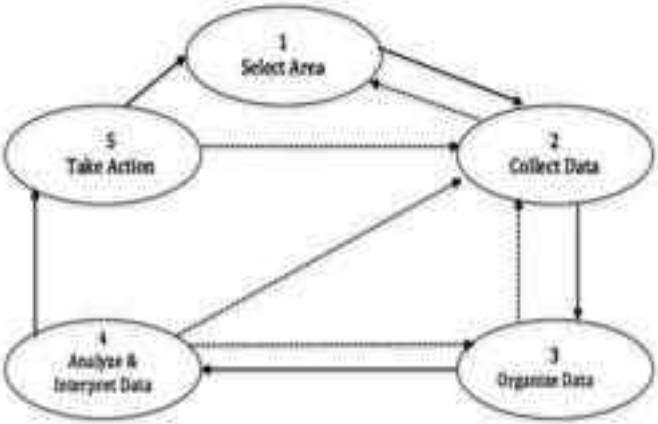


Emily Calhoun's (1994) Model

In Calhoun's action research model though process is not spiral in its appearance, it is built around cyclic notion. Continuous confrontation within the data is enabled through the routines within the structure (Calhoun, 1994). Five phases of inquiry, guides the movement within the routines. The primary direction of action research cycle is indicated through solid lines as per the numerical order. Refinement or clarification is warranted within the cycle through backward and forward movement which is indicated through dotted lines (Merlner, 2009). The phases also retrace, overlap, and sometimes revise earlier phases

before or making forward movements. This collective inquiry into teaching and its effects on students' learning is a cyclic process and can serve as a formative evaluation of initiatives (Calhoun, 1994).

Figure 6.10
Calhoun's Action Research model

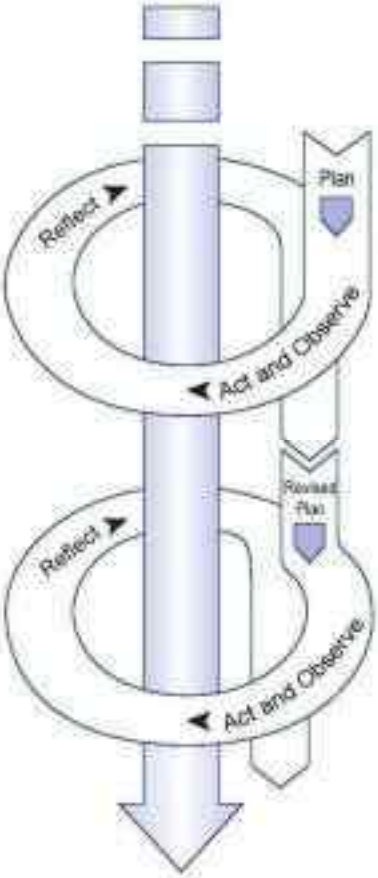


Source: Calhoun, F. E. (1994).How to Use Action Research in the Self-Renewing School.ASCD

Bachman's Spiral Model

Bachman proposed a spiral model of action research along with the notion of cyclical nature. It's a downward spiral where the participants follow the steps like gathering information, plan actions, observe and evaluate those actions to reflect upon it. The reflection primes for planning of a new cycle of spiral which is developed from the insights that gained through precious cycle.

Figure 6.11
Bachman's Spiral model of Action Research



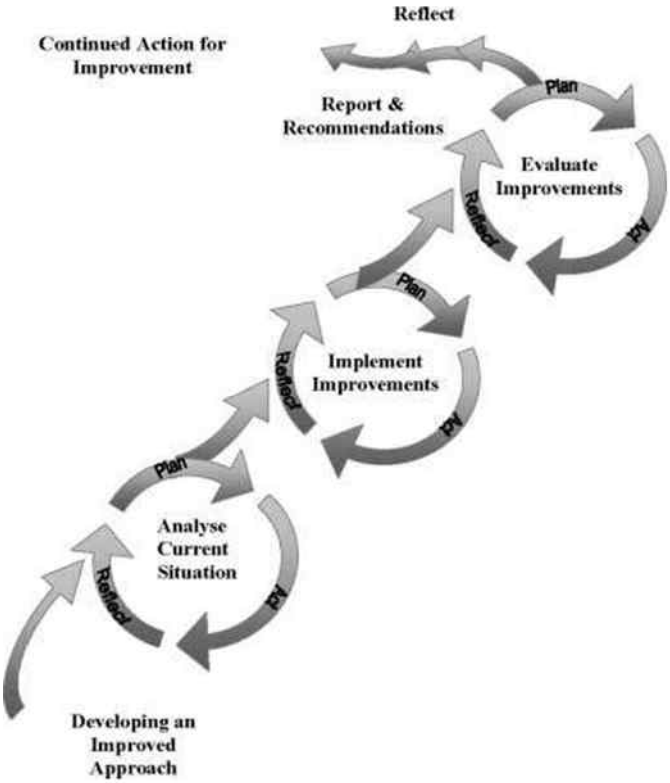
Source: Mertler 2009

Piggot-Irvine Model (2006)

Piggot-Irvine action research model depicts continued spiral nature for action research process. This spiral moves in upward direction. In the process, the four main steps are

planning, acting, observing and reflecting—through which are repeated in subsequent cycles.

Figure 6.12
Piggot-Irvine Action research model



Source: Mertler, 2009

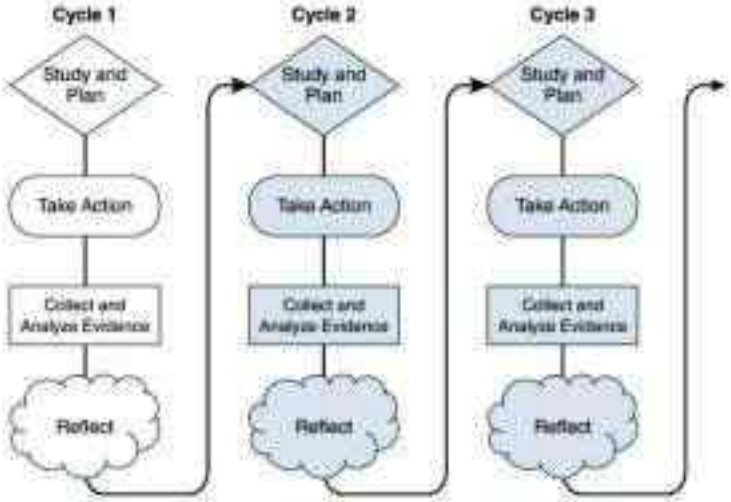
Riel's Spiral Model

Spiral model offered by Riels is actually a model to solve problems through action research. This model enables the participants to travel through a four step process within

every cycle. They include planning, taking action, collecting evidence and reflecting process in problem solving.

Figure 6.13

Riel's Action research Spiral Model



Source: https://methods.sagepub.com/images/virtual/actionresearch/10.4135_978148339 6484-fig6.jpg

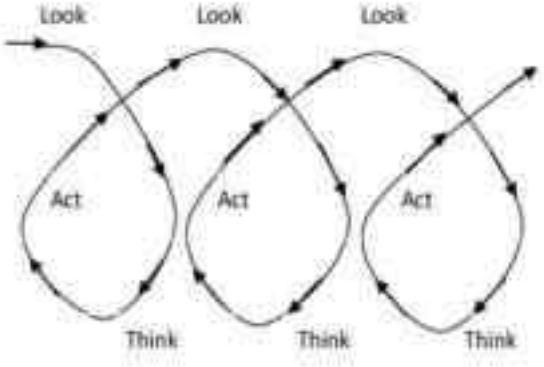
Stringer Helix Model

The simple but powerful framework of action research model developed by Stringer is commonly called as research helix or '*Look, Think, Act*,' model. It is presented in a linear format to indicate that phases of research are repeated overtime. This process of Stringer's action research enables teachers to keep in track and consider many aspects for finding effective solution in their work with students through a systematic routine (Nasrollahi, 2015). It is a collaborative approach where the actual means take

systematic action to solve a specific problem through inquiry or investigation.

Figure 6.14

The Action Research Cycle Broadens the Action Research Helix, Stringer 2004



Source: Hine, G.S.C.(2013). The importance of action research in teacher education programs. Issues in Educational Research, 23(2), 151-163. http://www.iier.org.au/iier23/hine.html

The three stages of this model flow in a helix pattern. In the 'Look' stage, all the information or data is gathered through careful observation. Looking and listening over the routine functioning of the classroom is essential for pinpointing the problem area and the root causes lying behind it. It also allows the teacher researcher to probe through student understanding, which is essential for teaching and learning process. Then proceed to second stage of 'Thinking' stage, where the action researchers take the role of analyzer and scrutinize the information to examine the elements and features of the phenomenon being studied. This stage determines the degree to which the teacher's objectives are met. It reveals the usefulness of action research with enough evidences and the benefits reaped by

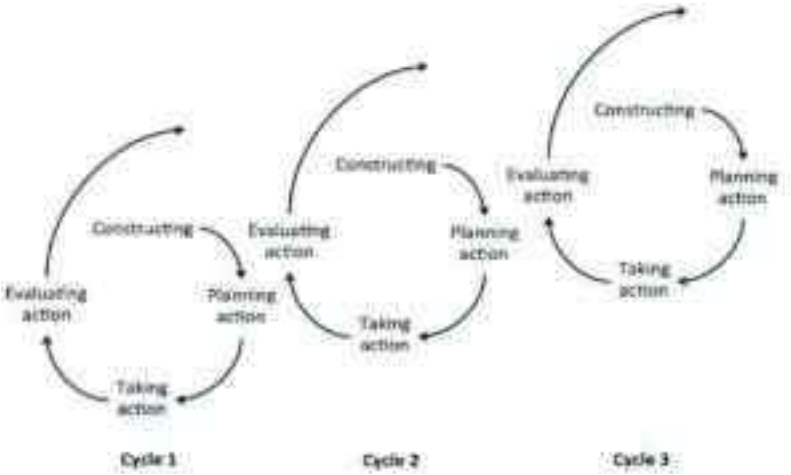
the students based on the assessment of their learning. This phase also allows brainstorming the variety of perspectives and new ideas among the teacher and other participants. In the final third stage, the researcher acts upon the strategy or newly formulated method to devise a solution to the issue or problem that is under investigation. In this 'Act' stage the newly formulated information is used to devise solutions to the issue being investigated. Thus the third phase of the Stringer's Action research cycle (Act), focused on evaluating the students' performance, and then providing feedback. According to Stringer (2008), this cycle is a common process of action research inquiry. When designing the study, researchers carefully refine the issues to be investigated, plan systematic processes of inquiry, and check the ethics and validity of the work. It's simple yet powerful framework.

Coglan & Brannick Model

The action research model specified by Coglan & Brannick, 2001 comprises a pre-step, context and purpose along with four fundamental steps: constructing, planning action, taking action and evaluating action. The exploration of this action research cycle needs a clear understanding of the four basic steps. The action research starts with seeking an understanding of the project.

Figure 6.15

Coglan & Brannick Spiral of Action Research Cycles



Source: Coglan & Brannick (2004)

Mills Model

After analyzing the major conceptual models of action research, Mills (2011) suggested this dialectic action research spiral model (Ivankova, 2015). This model consists of four phases:

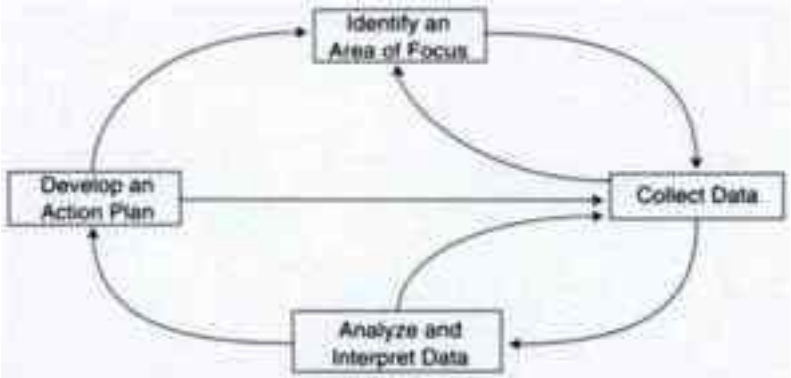
- Identifying an area of focus;
- Collecting data;
- Analyzing the data; and
- Developing an action plan.

This dialectical model of action research is more circular and when they are repeated, they become spiral. The circular movements in investigation are denoted with outside arrows while the inside arrows signify spiral

intervention of the practitioner. This model which is designed for teachers reflects the methodological steps that a teacher-researcher takes while conducting an action research. The first step of an action researcher will be identifying an area of focus. Next step is to collect the data followed by analysis and interpretation of data. Finally, an action plan identifying themes based on reconnaissance is developed in this process. This model was termed as dialectic due to its dynamic and responsive nature to adapt any situation (Mills, 2011). This model is a provocative and constructive way of reflecting the evaluating work of practitioner-researcher (Ivankova, 2015).

Fig 6.16

Mills Dialectic Action Research Spiral Model



Source : Ivankova, N.V.(2015). Mixed methods applications in action research from Methods to Community Action, Los Angels, USA: Sage

Many criticisms also arise for using diagrams for showing action research as a continuous process of development. Carter and Halsall (1998) stated it as an inadvertently promoting rigid approach to the flexible

action research. The tidy research cycle portrayed in models is not that tidy in its practice. Novice researchers may sometimes be misguided with the correct order due to the daunting and confusing appearance of some action research cycles.

Every aspect of action research revolves around an individual or small group within the social context with a view to improve the quality of action in it (Elliot, 1991). But sometimes it results in development of a new theory or refining the older one (Auriacombe, 2015). Action research in course of its cyclic process emanates different kinds of knowledge embracing practical and proportional knowledge. Most of the action research models consist of a cyclical four-step process of planning, taking action, evaluating the action and leading to further planning (Eriksson & Kovalainen, 2008). The difference with each action research approach is that equal weight is given to research, action and evaluation or reflection. An action researcher can opt for the model which influenced him or apt for his project. The researchers could also design their own model with the essence of basic model. Therefore action research falls within the pragmatic, realistic paradigm of the qualitative research realm (Eriksson & Kovalainen, 2008).

CHAPTER SEVEN

To Proceed an Action Research

Action research is a process by which practitioners try to guide, correct and evaluate their decisions and actions to solve their problems in a scientific way (Corey, 1953). It is a strategy widely applied in the field of education to bring research based innovations in practice that supports continuous professional growth (Eilks & Markic, 2011). Action research is a flexible research process that enables the researcher to draw out their own interpretation regarding the appropriateness of the research design. In words of Creswell (2005) "action research is a dynamic, flexible process…..no blueprint exists for how to proceed". The process of action research varies as per the perception of the researchers. It is not possible to claim that the researcher who outlined the major (four, five, six, seven or eight) steps in their action research is right and others who deviate from these steps are wrong. Non-existence of strict code (norms) forms a distinguishing feature of action research (Hien, 2009). Previous chapter highlighted the various pre-existing models of action research cycle, (some were cyclic, spiral, helix etc.) and this chapter defines a distinct and clear clarification between steps and number of

steps involved in a research depending upon the opinion of the researcher (Burns, 1999).

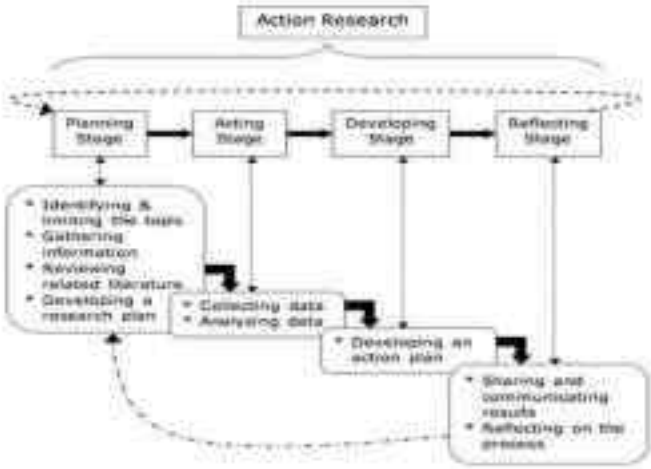
The basic pattern of action research process comprises of four steps - *Plan*, *Action, Observe* and *Reflect.* The process involves a series or form of steps along the pathway. These steps may be linear or branching. Sometimes one can create one's own pathways according to his/ her research (McNiff

Figure 7.1
Mertler's Steps of Action research

& Whitehead, 2010). Examining over specific steps that comprises action research process, in this chapter, the nine steps as per Mertler (2008) are considered and elaborated (Fig 7.1).

Mertler's action research steps provide a sequential guide for a researcher to follow during the action research process. the details structure of how these steps engulf the basic action research process is depicted in fig 7.2.

Figure 7.2
Action research Process (Mertler, 2009)



Planning Stage

The stages involved under the planning stage are:

- *Identify and limit the topic*
- *Gathering information*
- *Reviewing related literature*
- *Developing a research plan*

Identifying and limiting the topic

The challenging situation or issue which is significant for the practitioner, where he/ she practices must be identified. Issues which are meaningful, feasible within the time frame

and confined with the daily work issues are only considered to be valid to be chosen for inquiry. The researcher can self-reflect critically on his existing practice to inquire about the pressing problem in the classroom. The topic of research emerges from perceived dissatisfaction with the existing situation and with an idea to bring improvement in situation (Action research: Handbook for primary teachers, NCERT).

The topic of research may be a newly developed teaching strategy, or assessment instrument that wins practitioners' trust to bring improvement in the present situation. One could examine the dispositions in students' achievement, use of technology, student morale, parental involvement, attendance, etc., through action research. Brainstorming is a strategy that practitioners could utilize to identify and select the issue or problem to be studied. Topics could also be derived based on the discussions with colleagues, mentor or school administrative personals. Though many questions and problems pop up for investigation, the teacher has to limit them by asking the following questions:

- What is significance of the problem?
- Is the issue answerable?
- Is the problem small, focused and manageable?
- Whether the problem is new or challenging one?
- Is the problem linked with students learning process?
- When the research is done, will it instigate a change or induce improvement in present situation?

- Will the research on problem be feasible and practical?
- Does the expected result be innovative or useful?
- Is it possible to gather data relevant to the issue?

Once the idea or topic is conceived, then the feasibility of the problem and its uniqueness should be confirmed before defining the problem. The relevance of the problem to the professional career and availability of information needed to solve the problem should also be given due consideration before confirming the research topic. Whether the data relevant to the problem are achievable, the measurability of the outcomes and data collection tools are the criteria that should be taken into account before furthering into the research (Baumfield, Hall & Wall, 2013).

Only if the first stage of identifying the problem is done with care, it will limit other unwanted frustrations and false starts in the process of research. Before choosing a problem the thought process has to be made, whether the problem is worth for the time and energy spent on it through researching. Careful consideration based on criteria should be considered before investing time and energy in researching. The topic which is truly substantive, for which if solutions found will cause a positive impact or improvement in the present situation, is selected for inquiry. The topic identified in this first step is delimited to ensure feasibility and defined in this phase (Rao & Rao, 2006).

Gathering information

Before launching into the investigation, gathering of general information on the topic of consideration assists the researcher to have an informed choice about the focus of the study (Efron & Ravid, 2013). The identified problem based information is gathered to define that problem. Reconnaissance is the process of collecting preliminary information pertaining to a particular topic (Mills, 2007).

Involving in reconnaissance involves three forms of activities like self-reflection, description and explanation. Thus at this stage, once again the researcher self-reflects the problem again based on his ideas and views. Later, the action researcher can adopt simple tools and strategies like conversing or discussion with colleagues, administrators, parents and district personals in order to ensure appropriateness or significance of proposed research topic. These queries enquired with the stakeholders may throw spotlight about the problem and useful in gathering ideas, suggestions, and views from others who are also directly or indirectly connected with the problem. Skimming the teachers manuals, curricular records, cumulative records, academics performance records may assist in gaining additional information pertaining to the topic.

Pooling of detailed information with insight is a significant step, which helps in deciding upon the action needed to be taken. This process involves all the vehicles for collecting information from multiple sources of data to widen the scope of happenings in the specific situation (Hien, 2009). Hence formal involvement in reconnaissance

consumes time but it widens knowledge, nature and context based on understanding the issue or concept of the problem chosen for study (Mertler, 2008).

Reviewing the related literature

This step involves the review of the literature to study the existing source of information that could shed light on the topic identified and selected for research. Review of literature contributes by narrowing down the local area, to make it researchable. This in-depth knowledge of study enables to develop new strategies and identify promising practices. This information further lead the researcher to focus and plan for an action. The sources of information may be gained by reviewing professional books, journals, websites and teacher resource manuals, documents of schools, colleges or district wise (Creswall, 2005). This knowledge base traces the conceptual threads and provides guidelines for defining the problem, developing appropriate research design and for selecting legitimate instruments or techniques for collecting data (Mertler, 2008). The context specific and local nature of action research makes this step as loosely defined process, but this activity provides an opportunity to connect existing theory and research with real classroom situation. It makes the researcher aware of common strategies for maintaining and solving disciplinary management, instruction transitions, and class room management issues. It is in this step the research questions are framed.

Developing a research plan

Research methodology comprises research design and plans for collecting data in conventional research. This step inherent several decisions, on the part of the researcher regarding formulation of a research design for action research. The design emanates with the research questions or problems under investigation. The action researcher seeks to answer the questions or explores on a change process through the study. Thus entire design should form a guiding structure for constructing the answers for the questions put forth at the beginning of the study.

The teacher-researcher with their previous experience with the topic at hand, may state the research question and sub-questions, as research hypotheses. The measurability of the variables under study has a crucial role in deciding the method of the study. The action researcher has to come to a conclusion on what data is needed, who could provide them, how many has to be included and how to reach them to gain access to information (Creswell, 2005). These conclusions give a precise picture of whether quantitative, qualitative or mixed methods to be considered.

Action research is a systematic process, hence research design comprising of data collection process, decision on other elements like tool, samplings has to be determined before the implementation of the actual study (Johnson, 2008). The research ethics should also be considered at the planning stage itself. The researcher has to pay ardent watch over the issues of research ethics. Since, action research involves human beings, certain ethics dealing with moral

aspects frame the guidelines for it. Any participant has to sign a written consent for his participation and sharing of data. The due respect and protection has to be provided for all participants. Consideration must be paid to how participants involved in a study are treated, their level of honesty and openness afforded, and the manner in which results are reported. As Mills (2007) states, research ethics basically involves "doing the right thing" from a research perspective.

Acting Stage

This stage involves the following important process of '*Collecting data*' and '*Analysis of data*'.

Collecting the data

Research design followed by this step assists the researcher to determine the required instrument among the various tools to collect desired data. The researcher finalizes his decisions and determines the data collection technique to be applied based on the method and kind of information required for the study. Observation is a common technique to observe the participants involved in research process. Field notes, video recordings, interviews, are various tools used for collecting qualitative data from students, colleagues, administrators and parents. Survey using questionnaire could also be helpful in many ways in collecting information regarding attitude, opinion, etc from large scale population.

Some action researches make sense out of previously available data in anecdotal records. Checklist, rating scales, formal assessment that are routinely used by teachers also serve as data providers. However the researchers can design their own research tool, intervention packages, and instructional strategies efficiently for action research purposes. This encourages the teacher-researcher to triangulate the collected data. The process of relating or integrating multiple sources of data in order to establish their quality and accuracy is referred as triangulation. Both qualitative data and quantitative data are collected to reach the ultimate aim of research.

Analyzing the data

Analysis of data is not a separate entity step in action research as of traditional research. In practical terms, when a researcher reaches redundancy or data saturation, this step of analyzing data begins. At the first stage, the data gathered such as classroom data, review of current literature are all analyzed to identify a theme, category or pattern which influences for further data collection. For organizing the data, first it has to be arranged and organized in a legible way. Sorting the data according to objectives could be done by creating categories.

Some of the data could be analyzed without the use of statistics or technical assistance. The decision on type of data analysis is based on the choice of data—quantitative or qualitative. The application of analysis techniques are based on the research questions framed by the researcher.

Descriptive or inferential statistics is applied for analyzing quantitative data. The qualitative data are analyzed by enduring inductive process where data are examined to draw patterns and similarities. The objective and need of the researcher determines the application of analysis technique. Analyzing data in action research is less complex but detailed compared to formal researches. The analysis of action research data is typically more complex and detailed than in other, more formal research studies (Fraenkel & Wallen, 2003).

An action researcher need not get worried or frustrated on analyzing the data as most of them involve in creating categories. Data which are not quantifiable could be reviewed holistically and important elements or themes can be noted. The analyzed data should be interpreted to assist in developing an action plan. The ultimate goal of this analysis step is to interpret the raw data to meaningful dialogues and make decisions for teacher's understanding and improvement.

Developing Stage

This stage of action research embraces the process of 'Develop an action plan'

Developing an action plan

An action plan is formulated to implement change or improvement in the existing practice. It remains as an ultimate aim to develop an action plan for any action

research. The researcher designs a plan of action based on the analysis of the data collected and foundation knowledge gained through reviews. It is essential that in an action research, only one variable is considered at a time. Small scale intervention is a feature of action research. To avoid confusion in defining the effect of the intervention on the students, researcher avoids focusing on multiple concepts. Thus it is made easy to determine which action is responsible for the outcome. The new ideas and innovative thoughts of researchers are given a form of plan to solve the original problem. Perpetuating cyclic nature of action research makes the researcher continuously monitor, evaluate and revise the effectiveness of the action plan which is implemented. Documentation is planned throughout the implementation of action plan to gain accurate measures.

Reflecting Stage

This last stage involves the process of: *'Sharing and communicate the results'* and *'Reflecting the research process'*.

Share and communicate the results

An action research results may call for refinement in plans and emanate many research questions for furthering the process. Although it is not generalizable, the action research findings have to be disseminated with educational community at large, forming a significant step in the process. Although the action research problem is small scale intervention for small group in specified context it doesn't

mean for less utility. The results may in due course lead or evolve a new theory and instructional strategy beneficial to all educational setting. The knowledge gained has to be disseminated to the academic community. A teacher has to upgrade and ensure professional growth constantly looking ways and means to improve their practice. So the new knowledge created has to claim its link with the existing knowledge (McNiff & Whitehead, 2010). This could be done through engaging with literatures. Generation of a new theory also be possible and such finding has to be communicated for the benefit of others.

The results could be shared in various forms and methods both in formal and non-formal settings. The product of research could be shared with other teachers within the institution and across institution. Verbal forms of sharing may include conversations with academic community, faculty meetings, seminar presentations and reporting in souvenir, research journals and magazines etc. The writing or publication may lead to further analysis and interpretation which induce deeper understanding of the problem to act accordingly.

Johnson (2008) states that the most appreciative and appropriate audience for presentations of action research results is often the faculty members within the same institution. Individual dialogues of the researchers with their colleagues could also be a dissemination strategy. Reports displayed on school notice boards as posters could carry the results to students, others teachers, administrators and parents. At formal level, it could be transacted through

conferences, seminars, conventions which are organized at regional, state, national and international level. A mechanism through which these results could reach geographically broader audience is publications in research journals. The written version of the findings of research which is made available in public could spread faster to enforce empowerment and enhancement (McNiff & Whitehead, 2010).

Reflect on the research process

Action research is primarily action oriented. Its foundation lies on critical examination of one's own practice. Adopting a systematic reflection with critiques is an essential component and principles to be tracked in an action research. Reflection has to be pertained at the beginning and end of the action research cycle. This act of reflection enables the teacher or practitioner to review the previous practice and compare it with the post implementation of action plan to determine the effectiveness and modify needed revisions in the plan for future implementation.

The reflection is not an end process of action research cycle, since it is an ongoing process. An effective teacher continues to examine and critically reflects the practice in the teaching learning process. Apart from self-evaluation of one's own teaching, reflections based on learning outcomes, academic performance and students' feedback build a competent and professional teacher. This also ensures a revision, modification and improvement in their teaching strategies and instructional techniques utilized. Similarly

the action researcher should act as an active reflector of the happening now and then throughout the research process. The researcher can monitor and observe every step to make wise and appropriate decisions. They can frame adaptive decisions within the confinement of their educational practice and set up. In this manner, reflection which is a part is all the steps, is not to be considered as final step but a crucial step for the success of any action research project.

Thus action research process follows a series of varied steps as per the need of the researcher. Nunan (2001) frames seven steps for his action research cycle starting with Initiation (an issue that triggers for action research), Preliminary investigation (collection of data to understand nature and causes of the problem), Hypotheses (based on initial data an hypothesis is formulated), Intervention (devising a plan with new strategies), Evaluation (assessing the intervention for evaluating it), certain steps are repeated based on the reflection, Dissemination (ideas gained from the research are shared through publication) and the last step is Follow-up (alterative solutions are coined for the problem and cycle continues for investigation).

Burns (2005) argues action research as a series of 'interrelated experiences' which involves eleven identifiable and interactive phases. The framework of experiences are described as exploring, identifying, planning, collecting data, analyzing / reflecting, hypothesizing / speculating, intervening, observing, reporting, writing and presenting (Ramírez, 2004).

A simple process for action research is put forth by Lewin, Gay and Airasian (2003) with four basic steps i) Identifying topic or issue to study, ii) Collection of data related to the chosen topic or issue, iii) Analyzing and interpreting the collected data and iv) Carrying out the action plan.

The action research cycle outlined by Abdel-Fattah (2015) encompasses five phases:

Phase I - Identifying initial idea for the situation/ case study,
Phase II - Planning action/ intervention,
Phase III - Implementing action/ intervention,
Phase IV - Analyzing and evaluating on action and
Phase V - Reflecting on action

The procedure of action research as per Creswell (2005) is detailed as a series of eight steps where the first step determines whether action research is the best design to use, second step identifies the problem to study, third step locates the resources that help address the problem, fourth step enables the identification of information to be needed, fifth step collects data, sixth step analyses the collected data, seventh step develops action plan and eight step implements and reflects the plan.

In brief, the above suggested processes of action research vary from time to time and person to person according to their nature and need of their study. These give a basic, simple and elaborate overview of action research process based on various models. During the course of the

research, the researcher may discern the best set of steps suitable for his situation and sometimes less suitable to the educational setting. In such case, the researcher may evolve his/ her own research steps appropriate for the study. Rather than solving the pedagogical challenges or issues following the pre-determined steps haphazardly or blindly proposed by others, the researcher could conceptualize a different approach tailoring to the unique situation and needs of his/her students (Efron & Ravid, 2013).

CHAPTER EIGHT

Techniques of Eliciting Data

Action research starts from practical questions that fit in with the working condition of the teachers (Altrichter et al., 1993). Action research being a holistic approach for solving problems in real life situation, commonly prefers mixed method rather than a single method for collecting and analyzing data. Mixed method research examines the issue from different aspects and provides comprehensive answers to the research questions, through the integration of qualitative and quantitative methods (Ivankova, 2015).

Each action research project is designed for a specific set of circumstances and so it is unique. Methods of data collection are tailored to suit the circumstances. Action researchers tend to adopt a combination of qualitative and quantitative approaches for data collection process. The combination of potential tools of both methods allow statistically reliable information, obtained from numerical measurement to be backed up and enriched by information about the research participants' explanations. Thus, action research allows the usage of different research tools as per the aim and objective of the study.

Data Collection Process

The process of data collection involves four important steps, namely,

- *Create a data collection plan*
- *Learning how to collect data*
- *Building a valid and reliable data collection plan*
- *Building your knowledge about research methods – instruments*

Create a data collection plan

To create a data collection plan, first the researcher has to decide upon the kind of data collected to reveal the influence of actions in the research. Revisiting the research questions assists in choosing the set of procedure or tools that help gather data relevant to the project. Gathering data, without a data collection plan may lead to collection of wrong or irrelevant data, which are bloat and futile effort. Having a plan prior to data collection approaches, will lead to higher quality solutions. The data plan should answer the following questions:

- What is the aim of the research?
- How to demonstrate the research?
- What sort of data should be collected?
- How could the data be interpreted?

Learning how to collect data

This step enables the researcher to decide the type of data to be collected (whether quantitative data or qualitative data) and the ethical standards to be observed in collecting data. At this step, the researcher decides when and where to

collect the data, either in the beginning or at the end of the research. A proper oversight is gained on getting the consent of the participants, (Principal, colleagues, Parents, DIET, Students) before collecting the data.

Building a valid and reliable data collection plan

The researcher has to think upon the validity and reliability of the data to be collected while developing a data collection plan. The data collection plan must ensure the collection of data which:

- assures to measure exact outcome of the action implemented;
- represents reasonable and accurate reliable information while analyzed; and
- addresses the issues of accuracy and adequacy of representing what exactly happened in the research.

Thus, the data reports and summaries are planned to be prepared date-wise with signature of others (colleagues or participants) to ensure building up of credible, valid and reliable data sources, through integration of qualitative and quantitative approaches.

Building your knowledge about research methods – instruments

This step assists the researcher in sorting out research tools, which are valid, reliable and appropriate for the research. The assessments (or tools) which are newly developed for the research have to be validated and checked for reliability before collecting the data. The researcher has to search

wider among the previously existing standardized tools that suit the research project. The practitioners identify and locate instruments that assess learning or other related outcomes of the research.

Who Gathers Data?

First, the researcher negotiates with other collaborators to decide upon the data gatherers. Planning the personnel to be involved for data collection avoids any missing of important data. The following people could be utilized for gathering data about the actions. They are:

Interested observer

The people who are vested with real interest and curiosity to know the research process but not a participant could be made as an observer. The researcher could identify committed people, who could also support through their critical feedbacks and invite them to serve as observers.

Colleagues and research participants

Colleagues and participants of research could serve as data gatherers, as they are in central place in the research activity. The researcher could invite them to monitor and observe the actions to give a critical feedback on it. They could elicit vital data on whether the actions of the researcher had actually influenced their learning. Negative feedbacks could also serve as a powerful indicator to change direction and rethink for modification in the research plan.

The researcher himself

A teacher-researcher himself serves as the primary source of data. The researcher can monitor and gather data in a systematic way to elucidate the influence of the action on learning. Personally collected data should be authenticated with date and signature to strike down the suspicious claims, like personal bias and fabricated data. Multimedia technology with the consent of the participants could be used to have a closest thing to evidence the real live action.

How to Gather Data?

The scientific methodological framework of action research enables the researcher to approach the research through consistent utilization of quantitative and qualitative research tools. The most appropriate tool among the wide range of data gathering techniques is selected to collect multiple forms of data in order to establish credibility through triangulation process. The number of data collection strategies to be used depends upon the nature of research questions.

Taxonomy of Action Research Data Collection

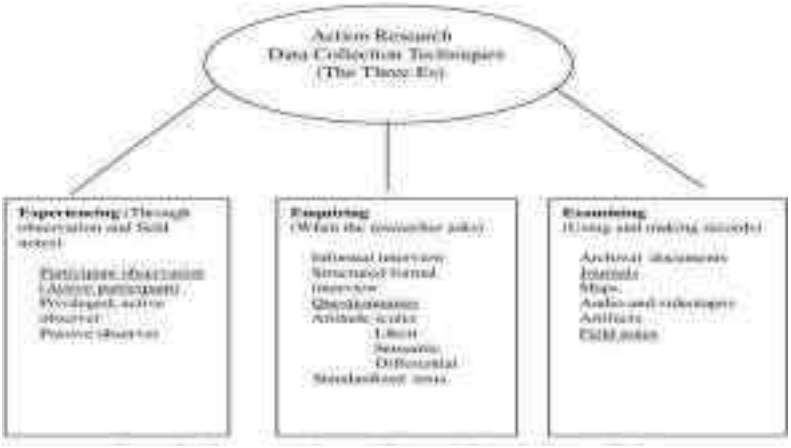
The three E's in data collecting techniques are Experiencing, Enquiring and Examining.

Experiencing

The experiences are saved as such, to extract vital information to assess the outcome of the research.

Figure 8.1

Taxonomy of Action Research Data Collection Techniques



Source: Creswel, J.W. (2002). Action Research: A guide for the Teacher Researcher, Pearson

Observation techniques are widely used by teacher researchers to document for systematic reflection. Happenings in real life situation or experience in the course of research are recorded through conscious observations. The occurrences in classroom or research setting relevant to research questions are recorded as field notes. Thus, the actual or real experience collected as evidences for the research is the first among the three E's of data collection.

Enquiring

Certain details which are not available overtly are also collected using probing techniques. The participants are enquired to elicit information pertaining to research objectives. In collaborative research, all the stake holders are

also brought under inquiry to record natural and original reflections (opinion or feedback) about the research. Data probing techniques like questionnaire and interviews are used to gather reliable and credible data. The assessments or tests are also conducted to enquire the knowledge level of the participants. The action research which aims to shape personality inquires attitude and behavioural factors through scales and inventories. The focused qualitative and quantitative aspects are examined holistically through inquiry or propping techniques.

Examining

Some records which are previously available in educational institution like cumulative records, admission records, academic performance records and artifacts are examined to claim supplementary information about the participants. The researcher could examine diaries, art works, social gram, mapping, field notes and derive with the details needed for the research.

Data Collection Techniques

The various data collecting techniques which are discussed based on categories of data, artifacts, observed data and inquiry data (Henricks, 2009).

Artifacts

Artifacts include various types of student work and other items created by the participants in an action research. Artifacts are available in many varieties and forms which

could be used based on the research questions. In action research, based on the individual who generates it, the artifacts could be classified as: *student generated artifacts; teacher generated artifacts;* and *archived.*

Table 8.1
Artifacts: Data Collection Strategies

Generator of Artifact	Artifact
Student	Assignment, performances, written assignments, standardized tests, artwork, teacher-made tests, projects, peer review, journals.
Teacher	Lesson plans, teacher journal, self-assessment, peer review
Archived	Computer generated reports, School records, Attendance register, cumulative record, documents

Source: Adapted from Hendricks, C. (2009). Improving schools through action research: A comprehensive guide for educators. Pearson Education

Student generated artifacts: There are many types of artifacts generated by students, which enables the measurement of their attainment in learning objectives or progress in academics and non-academic goals.

- Assessment like tests, examination either continuous or summative could provide valuable data for action research. Assessments made which are used during

the instructional process like quiz, assignment, home work, and worksheets serve as formative assessments. These assist in determining the effectiveness of an intervention in the research study. It also reveals the workability, practical issues of the intervention & provides opportunity to the researcher to reflect and alter it as necessary. Summative assessments like project, performance, teacher-made tests, and standardized tests are used to measure the instructional outcomes at the end of the research. To establish the effectiveness of the action research, assessment is designed by the researcher which provides quantitative data for research. In addition, when the research design comprises pre-test and post-test to measure the impact of the interventions or instructional treatment, the assessment is used to analyze it.

- Students' performance or artworks are considered when the research is focused on a skill development like, music, art, drawing, etc. Artwork can be used to measure both acquiring skills and changes in affective behaviours such as feeling, emotion and attitude.
- Students' journal could be used to prompt the students' perception about themselves and others. It also helps the researcher to locate or identify the problems for investigation. These journals at the other end serves as an assessment that denotes the changes in them after the intervention.

- A diary is a record (originally in hand written form) with discrete entries arranged by date reporting on what had happened, over the course of a day or other period. Students' diary can be effectively used as an action research tool and a researcher may get different kinds of information or data regarding the research problem.
- Self-assessment reports completed by students help the researcher and the student by revealing an evaluation of their own work and progress towards the research goal. The struggles of students identified by the researcher assist to engage in reflective planning and implement modifications in the intervention as necessary.
- Peer review enables a student to act as a reviewer, to evaluate the work of another student. This provides an opportunity, to give and receive feedback from peer group regarding their work and its progress. Additionally, it gives an exposure to each participant to view the co-participant's work as a model for comparison and to revise their own, in a positive direction. The researcher must ensure the artifact utilized in an action research, do indeed measure, what they intended to measure. Any assessment before applying in research setting has to be scrutinized for its alignment with the instructional material.

Teacher generated artifacts: When teachers are the study participants in an action research, these artifacts provide with enormous information to the researcher. Teacher generated artifacts include:

- Journal or diaries maintained by teachers act as good source of data to gauge both affective and behavioural information.
- Self-assessment of teachers assists in gaining information like teachers' perception, subject knowledge, strength and weakness by the teacher herself.
- Peer review among teachers, extends a valuable help to teachers by providing feedback from colleagues on various aspects of their teaching. This may be helpful in enhancing teacher effectiveness, curriculum planning, classroom management and organization of learning environment.
- Lesson plans produced by teachers serve as a great source for academic action researches. It enables the researcher to assess and evaluate how far the teachers had absorbed and incorporated the new instructional strategies or skills trained through the research.

Archived Artifacts: The documents or records maintained in the educational institutions are classified under the archived artifacts.

- School records like attendance, disciplinary actions, IQ records, retention rates and achievement scores provide ample sources of data regarding students.
- Documents like faculty minutes, board of studies meetings, PTA bulletins, other committee meeting minutes, circulars, handbooks can provide good sources of data for an action research conducted on organizational procedure or institutional culture. These records reveal the culture, goal, aim, climate, rules and regulations and administrative structure of the institution being investigated.
- Portfolio of teachers reveal information on personal data, skills, academic qualification and competencies of a teacher.

Observed data

The data which overtly reveal the real life experiences of the participants in a research setting are referred to as observable data. These data serve as an important source of information in an action research. While artifacts help in deciding upon the impact of the intervention, observational data helps in determining the factors in the context of setting, which caused the positive or negative impact of intervention in the research.

- *Observing* is the mainstay of action research (Burns, 1999). It is the process where one or more number of people is constantly involved to observe or record the occurrences in the research setting. The real life

situations are consciously noticed in an organized way to provide qualitative data. This technique includes careful watching and systematic recording of a particular setting (Mertler, 2009). Observation demands for proper planning and expert execution. Here, the researcher takes a participatory stance by immersing himself in the setting to observe he happenings without disturbing other's participants (Belyh, Feb 26, 2017). Observations help in revealing the true perception and attitude of the participants and how they changed over time. The ongoing observations also assist the researcher by spotting the complex issues that hinder or influence the effectiveness of research. An in-depth understanding of specific behaviours, reactions, or interactions leads to effective and ongoing reflective planning by the researcher. The researcher can remain as participant observer, or allot a person as non-participant observer to make notes throughout the study. Comparing the observations made by different individuals is referred as peer debriefing and acts as a check for biased observations.

- *Field notes* are observations of the classroom happening in a written form. The researcher records all the things that are seen, interesting and considered important for study. Field notes or observational records provide a comprehensive data about implementation of the intervention,

participants' response and other surprising events. Field notes are of three types. They are:

- Thick descriptions during intervention: It is a record of descriptions of ongoing classroom events. It engages the teacher as an effective recorder cum researcher mode during teaching. But it is many a time difficult for the teacher himself/ herself to record while involving in teaching. A colleague teacher could also be engaged to observe the teacher's class to make thick descriptions field not.
- Quick notes: The teacher while involving in teaching, may find it easy to make quick notes to hold her ideas, rather than thick descriptions. The teacher could maintain a file for every individual in the class or a common file, so that whenever an idea, observation or insight occurs during the day, it could be quickly recorded with date. This student's file serves as a good data collection technique for action research.
- Notes and reflections after: These notes refer to the recording made after the class or at the end of the day. Teacher jots down the observations calmly during the leisure time.

- *Narrative accounts* refer to a detailed report or essay of the event observed. It provides exhaustive contextual information of the research, for anyone, who is interested to know what had happened in the

research setting. A narrative account is a culmination of field notes made by the researcher then and there. It helps in jotting down the nuances of changes that happened as a result of intervention. Thus, providing a deep understanding of the change than a brief description of event is the main focus of narrative account.

- *Log or research journal* is a notebook that is used to record the impressions and ideas related to the research process. It is an effective way of keeping track of all the activities (Hendricks, 2009). Research journal describes every step of the research process. It also serves as an important source of information to organize every piece based on chronology. Time series is maintained in a log, to avoid missing of any detail. It may comprise information in various forms like, diagram, observation, analysis, quotes, students' comments, scores feeling, etc. Technological advancement enables usage of a tab or computer file to serve this purpose where editing, formatting, printing and sharing are made easily. Behaviour logs could also be designed with special focus to observe appropriate and inappropriate behaviours of students or participants.
- *Checklist* is a comprehensive list of entities prepared by the researcher such as behaviours, characteristics, attitudes, skills, etc., which are considered to be interested aspects of the investigation. It also ensures consistency and completeness in carrying out any

research. Checklists commonly present dichotomous set of response options. Unlike rating scale or questionnaire, this simply enables the teacher researcher to indicate whether the behaviour or trait observed is present or not present. It could be used quickly and easily by the practitioners, yet the data provided by this are not as detailed as of those resulting from a survey.

- *Tally sheets* are used to track the occurring frequencies of the various behaviour, traits and events. It reveals the exact number of times that behaviour was exhibited during the research. Checklist and tally sheets do the similar purpose in gathering information.
- *Audio-video recording* that contains both audio and video information, usually gained by utilizing a system that contains both a microphone and camera. The 21st century digital world is flooded with gadgets to make, store and retrieve the videos easier. It could be used as a tool to collect live information. The limitations, a researcher has while being observer, could be neutralized with these video recordings. Audio tapes alone could also be used to record voices or audio data.
- *Photograph* is a kind of tool that captures details a point-in-time reference (Hendricks, 2009). Though its utility is lesser than video recording, it is highly used in reporting and publication or presentation of research studies. Crucial moments can be captured

using photographs and served as evidences for many activities of the research process.

- *Organizational charts or maps* provide descriptive data of the research setting. It gives a layout picture of the environment (classroom, playground) where the research is conducted or held.
- *Multimedia data websites, blogs and internet exchange:* The digital age has made its own contribution through technological tools that assists in generating evidence and gathering information. Multimedia technologies support to view and record every action to reveal the live transformational actions to reflect on the actions that site for new learning. It also archives the powerful data as evidences to claim knowledge. The multimedia could also be used to share and communicate actions with research participants. Websites, blogs, e-mails and other forms of digital technologies help in communication with participants and also serve as digital record of data. Video diaries and visual narratives are being explored as potential multimedia tools to produce an explanatory account of the practice and live evidence for the improved situation.

Inquiry data

Certain information like knowledge, values, beliefs, past experiences, feeling, attitude, perception etc. are gathered from the participants which are of interest to the researcher

through inquiry. These data could assist the researcher to understand the participants' true feedback and perception towards the intervention and devise strategies accordingly. This also gives a vivid picture of the reasons behind the success or failure of an intervention in an action research.

- *Interview* is a process which is conducted with a set of standard oral questionnaire which the interviewer asks the interviewee with a motive to elicit facts or statements. Interview could be used to collect quantitative as well as qualitative data as per the need of the researcher. In action research, interview enables the researcher to get clarifications for some questions directly from the participants in personal one-on-one or face to face contact. Interview may occur through a structured or unstructured process.

  In structured interviews, the researcher pre-plans and be ready with specific, narrow and essential questions that guides the research. An unstructured interview proceeds on its own course, where the researcher is not much planned and asks broader questions sometimes irrelevant to the research too. Semi-structured interview lies between both structured and unstructured interview, where the researcher effectively plans a list of specific questions and then allows the participants to express their views freely about the research, which could add other useful information. Computer assisted personal interview, helps the researcher conduct face to face interview with participants to obtain data which could be entered

directly into database through the use of computer (Belyh, Feb 26, 2017). Verbal data are collected through interviews, which include their feedback, comments which are rich and valuable sources of data.

- *Focus group* is a technique which is also basically a form of interview, where discussion is held with a group of people with common goals. Focus group refers to an interview with group of people. It is also variously referred as focused interviews, group interviews, group depth interviews, group discussions (Merton, 1987). Focused discussions involve with a small number of participants talking about topics of special importance to the investigation under the direction of researcher/ moderator/ facilitator) (Amoakohene, 2004). It helps the researcher interview many participants at one time, thereby saving time and energy. Fontana and Frey (2000) describes focus group as 'data rich, flexible, stimulating to respondents, recall aiding, and cumulative and collaborative'. In focus group, the response of one participant can stimulate the others in recalling and sharing of important information. Thus building upon responses may result in much richer data, than collected through individual interviews.
- *Conference* encourages an in-depth conversation between the researcher and the participant relating to specific aspect of the research. In conjunction with the student work product, the researcher opens up a discussion and gathers information regarding the elements & strategies applied for the completion of the work by the student

through interaction. Conferencing may sound to be instructional yet, it is informational, where every minute details used by the student during the writing or activity accomplished are gathered.

- *Rating scale* refers to a scale with a set of points which describes varying degrees of the dimensions of an attribute being observed. Rating scale may be designed by the researcher to elicit information on either quantitative or qualitative attribute.

- *Surveys or Questionnaire* is a device consisting of series of questions dealing with some specific (psychological, social educational etc.) topic sent or given to an individual with the object of obtaining data for investigation. It is considered to be a good alternate for constraints faced in structured interview. The survey is aligned with the research questions. A questionnaire can be classified in terms of the nature of questions which are used. Questions may be close ended where the response is limited to given options or open ended where the participants are free to express their views about the topic. Web based or internet based survey could also be used where questionnaires are uploaded in a specific site and link is shared to the participants to accomplish their responses electronically.

- *Attitude scales* are also surveys used to gather data regarding the participants' affect, opinion, attitude and belief about their abilities and self-concept. It is also used to measure teachers' attitude (towards the

institution, school policy and intervention), parents' attitude (towards school rules, curriculum and administration) and students' attitude (towards teachers, teaching style, competence).

Collecting data for an action research is not a snapshot of a single incident like any other research. In action research, the focus should be laid on gathering every bit of information at different places overtime. The researcher should not rely upon one single data collection technique and have to choose at least three to four techniques to collect data. Utilization of right data collection techniques in an appropriate way will enable the collection of high quality data (which is unbiased, error free, valid and reliable) which on processing upshots with quality and resource intensive results.

CHAPTER NINE

Making Sense of Data

Analysing is a process where trends and instances are identified with a view to describe the action under investigation (McNiff & Whitehead, 2010). Analysing data is least well-defined yet it is a critical phase of teachers' research (Burns, 1999). Argriyis and Schon (1991) views that defining and meeting the standards with appropriate rigour, without sacrificing relevance is the challenging task for an action researcher. This chapter aims to present some perspectives and practical strategies in analysis of data for the novice action researchers.

Data elicited through various techniques are assembled and organized in such a way to make sense out of it. This step of analyzing the collected data also assists in identifying the key features of the issue investigated (Nasrollahi, 2015). The competence in analysis determines the strength of qualitative data. Sorting, categorizing and compiling of the collected data in a logical way is a pre-requisite to begin with the process of analysis. Most commonly, analysis of data involves:

- Examining and organizing the data;
- Synthesizing categories for analysis;

- Noting or finding emergent patterns or trends in data; and
- Interpreting patterns or trends.

Thus analysis refers to making some kind of sense to the data by identifying broad trends, patterns and characteristics or features across an event or a series of event. Action research aims to analyze the data and develop theories based on the interpretations in order to constantly feedback them into practice for enhancement (Burns, 1999).

Process of Data Analysis

In an action research process, data collection and data analysis are dynamic steps which are also inevitably overlapping, interrelated and recurring. Analyzing qualitative data is not as easy as analyzing of quantitative data. Miles and Huberman (1994) points out that, 'the strengths of qualitative data rest very centrally on the competence with which their analysis is carried out'. The reflexive nature of action research which is fluid and dynamic calls for analysis throughout the research process. Since the last step of action research is sharing and presenting the findings of action research with wider audience, Burns (1999) developed a framework to shape the analysis process as the following:

Assembling the data

The first step is to investigate the data collected over a period of research to categorize and assemble them in an

organized manner. This gives a clear starting point to begin with the analyzing process. At this initial stage of examining data, all the thoughts, ideas or impressions made have to be noted. At this stage of detailed analysis process, broad patterns encompassing all possible patterns are identified and categorized for narrowing down in future.

Coding the data

After having examined and assembling the data into broad categories, codes are developed to recognize specific patterns. Coding is a process where sincere attempts are made to reduce the vast collected data to more manageable categories such as concepts, themes or types. This coding is easy with closed questionnaires, where responses or behaviours may be assigned to a category relatively.

Comparing the data

After establishing patterns and coding of data, they are compared to detect whether any theme or pattern are repeated or developed across the data. The investigator may also discover hierarchies or sequences in data. The existing relationships and connections between the different sources of data are also identified. The frequencies of behaviour, occurrences or responses are also mapped to gain insight within the data. The data are displayed or visualized using simple descriptive techniques like tables, charts and graphs to help the audience understand frequency counts or percentage at a glance. The vital purpose of this phase is to describe and display the data rather than interpreting or explaining them.

Building interpretation

This phase of analysis process advances towards making sense out of the data. It moves ahead further from previous steps of mere describing, categorizing, coding and comparing of data. This phase instigates critical and creative thinking of the researcher to inquire on the newly emerging new or changing patterns, behaviours, attitude and concepts. The researcher chews and swallows the data as many times as possible to seek answers for the research questions. This phase enables to rethink about the previously established connections. This step also assists in elucidating the socio-cultural factors (big picture) that are underpinning the research that makes reflections on theoretical ideas. Collaboration and sharing dialogues with colleagues regarding the identified patterns lead to new discoveries or interpretations. It paves way for new insights besides surface descriptions.

Reporting the outcomes

This concluding stage of the analysis process promulgates the research findings and outcome to others. The various techniques to share the report of an action research are detailed in the forthcoming chapter. The report is well supported with evidences drawn out of the data, derived through systematic analysis. The scientific approach in collection of data and systematic analysis makes action research a distinguished process of investigation from other reflective process in teaching learning process. The interpretation reveals with empirical evidences, how the findings are related to the context and how the research

could be fed back into practice. Hence, analysis of data is the crowning step of any action research.

Techniques for Analyzing Data

Coding and tabulation of data are decided based on research questions and types of data collected for investigation. Qualitative techniques of data analysis are mostly applied in action research conducted in the field of education. Lincoln and Guba (1985) briefly outline the data analysis process as:

- Analyzing content
- Developing coding categories
- Analyzing classroom talks

Analyzing content

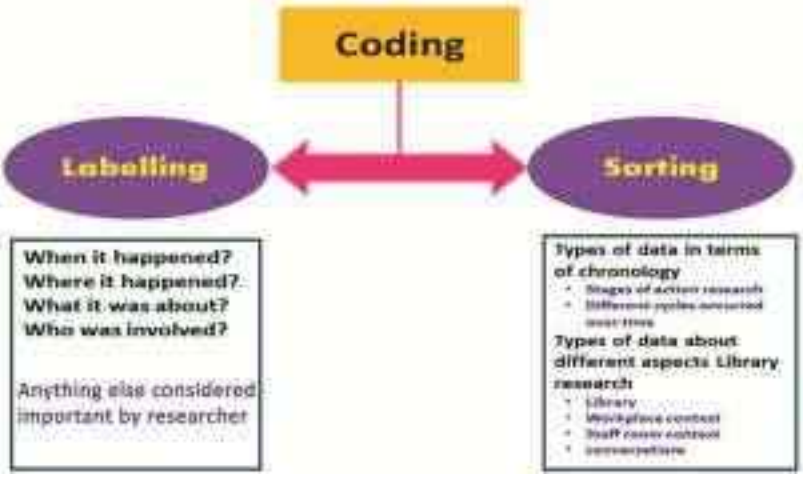
Analyzing the meaning of the structure and expression in message or communication which may be either in the form of document, video recording, film or observation of behaviour is referred as content analysis. Content analysis for data in written forms aims to uncover incidences from words, phrases or key themes. Acts such as gestures, movement, touching, and other visible dominating behaviours etc., are focused in content analysis for data obtained through observations. When these parameters or categories are fixed, the researcher counts and keenly observes and notes instances of these categories throughout the research process.

Setting up the most relevant coding categories is the most challenging aspect of content analysis. Coding process is easy only when the categories are well-defined in an unambiguous manner without any overlaps. Content analysis ensures the reliability of the analysis by enabling others to cross-check it based on researcher's way of classification of the data. The deep analysis of the content helps draw out insightful information like focus, language, tone, connections, projections, reactions and perspectives. The procedures commonly used in content analysis are: Identifying & defining all aspects of the content; Defining the key categories; Analyzing data to code the categories; and Quantifying the data and carrying out counts.

Developing coding categories

The open ended and free form responses in action research generate a large amount of qualitative data. The challenge that lies in front of the researcher is to deduce these data into meaningful interpretations. Descriptive data collected in an action research could be handled by developing codes using specific categories. Coding involves labelling and sorting (Mc Niff & Whitehead, 2010). Nature of the research questions, specific theoretical approaches that a researcher has adopted phrases, patterns of behaviour are numerous ways of arriving at coding categories. An action researcher for practical purposes has to be aware of wide range of coding categories.

Figure 9.1
Coding Categories



Bogdan and Biklen's family of codes' (1998), though not prescriptive, illustrates the various kinds of codes and procedure to accomplish categorization of data. The 'family of codes' is concerned with codes that pop-up from the data rather than those that are ordered according to a pre-existing scheme (Burns, 1999).

Setting / Context codes

Information regarding setting topic or subjects are considered in this category. The details of the context where research is held in alliance with its institutional descriptions help place the study in much broader context. The description of the setting could be gathered through brochures, yearbook, and pamphlets of the institution. The general statement about the class and course, made by the stakeholders (teachers, students and parents), who are

involved in the research is included for coding. Quantitative information like number of students, achievement scores, subjects of study, previous important records or performance, diversities of the class are also included in this category.

Situation codes

Information pertaining to the setting based on participants and other broad views of the setting is included in this category. It gives detailed information like, participants' perception, interest and view towards the topic of research. The aim and expectation that lies behind their participation in research is also delved. The data of different categories of participants — co-teachers, students, parents or teacher's aides could also be distinguished as per the need of the researcher. On the whole, this category reveals the definition of the participants about the setting and situation.

Perspectives held by subjects: Though this category is related to the previous one, this category focuses on the specific view of participants about the setting or topic of research. In this context, the particular aspect of the setting is considered rather than overall shared definition. It identifies:

- Opinion on the shared rules or norms of the project;
- Participants' view about the situation;
- Participants' perception about their placement in research;
- Factors that hinder participation; and
- Barriers in the setting.

The phrases or expressions of participants in response to these contexts are noted for coding.

Subjects' ways of thinking about people and objects

Participants' set of concept about the phenomenon in their setting, role of teacher, their preference in type of teacher behaviour are all included in this category. It also embraces:

- Participants' ways of thinking about each other and of outsiders in their setting;
- The teachers' definition about the students with regard to their proficiency, nationality, socio-economic background, personality and special learning needs; and
- The student's opinion about the instructional materials used in the setting.

Thus all the subjects' thinking and opinion on people and other objects involved in the research are identified & coded under this category.

Process codes

This process code through phrases and words, categories and identifies:

- Sequences of events;
- Changes over time;
- Shift from one status to another; and
- Changes in people, events and organization.

Process codes which include the time period, stages, phases, passages, steps, careers and chronology are considered as turning points or transitions. For example,

teacher-students relationship at different phase causes a distinct transition point in students' progress. These are used to classify and organize research events into various segments. The codes are based on the subject's classification. In class room context, the change or transition may be in the level of interest, learning outcome, attainment of skill etc.

Activity codes

The activities or behaviours of teachers and students that occur regularly within the research context are categorized under activity codes. They can include formal (class excursions, student seminar), as well as informal (playing games, break-time activities) activities that happen in the setting.

Event codes

This category codes the specific activities or events that happen rarely or occur once in participants' life time or in the research setting. These mark a significant place, as they attract and grab attention due to its infrequency in occurrence. The remarkable change in attitude, interest, and behaviour that has been made in academic career of the participants in setting is coded as the appreciable progress or development.

Strategy codes

The strategies, methods, techniques, and tactics that are consciously used in the setting to accomplish various activities are referred in this code. Strategies must be

identified from explicit statements or discussions with the participants rather than inferred. Teachers apply different strategies for teaching different components based on individual differences of students. Students also have their own strategies to understand topics that enhance their learning.

Relationship and social structure codes

The regular pattern in activity or behaviour that develops relationships within the group is noted in this code. The information of social relationships like cliques, friends, rivals, or mentors are all included under this category. The official role in social structure and in classrooms are also described and coded.

Analyzing classroom talks

Action research conducted in schools mostly depends on qualitative data analysis. Classroom discourses are considered as main unit for analysis. Apart from observation, audio-video recording of classroom interaction are also used for further analysis in classroom investigation. In qualitative analysis, the text is closely observed and noted to make patterns of interaction. Patterns in classroom interactions are identified based on:

- How the dialogues of classroom interaction are structured?
- Who initiates the topic?
- How does the teacher give task instructions?
- How students' errors are corrected?
- How feedback is provided?

Quantitative data like counting of instances of things which fall within the interest of researcher like:

- How many questions were posed by teacher?
- How many questions were put forth by student?

The utterance of questions by an individual student is also taken into account to have a detailed analysis.

Qualitative and quantitative data analysis for class room interaction could also be derived by following these guidelines: A comprehensive reading of the transcript should be done to identify all the keys and noteworthy features in the interaction. The researcher has to design the patterns to be observed based on the research question. Seeking answer to the research questions must be the main focus. Tables or bar charts have to be formed to count the number instances of patterns. Identifying excerpts from the main data could be used for illustrating the importance of pattern in the investigation. The reflection of information gained could be used for planning further cycles of research.

Breaking down the activities to make clearer focus on specific tasks, designing new teaching strategies or techniques could be planned and included in report of action research. Thus these data also provide new ideas to be formulated for further actions. Thus, the raw data collected through classroom talks could be synthesized and summarized through analysis into meaningful information.

Validity and Action Research

Research's quality and its acceptability are evaluated based on criterion of its validity. An action research in spite of its scientific and systematic approach is often challenged with queries for rigour and credibility. Action researcher's claim over its intervention for the outcome of investigation raises questions on its trustworthiness and internal validity. The generalizability of the result in other context or subject is the question often put forth for external validity of action research. The notions of action research that challenge validity are:

- Action research is a form of inquiry that aims to give explanations for events and activities only in specific context. It does not focus to establish any causal-relationships.
- It is highly local in nature. It is designed for selected subjects and specific phenomenon. Generalizing it for large population is entirely opposite to the purpose and aim of action research.

Yet, action research enables gaining insight details from specific situation, which may illuminate other issues and may be useful for other teaching situation. In collaborative action research, teachers from different places and perception work for a common theme. This may enlarge the depth and coverage of research area and provide a composite picture of an issue which may build up the possibility for generalization.

In educational research, qualitative researches have gained momentum in recent years. It paves way for the emergence of new concepts of validity. The immediate and local meaning of any action, defined as per the participants' point of view, is the basic criterion for validity. The concept of validity in action research, in qualitative research diverges with the academic concept of validity, with respect to its purpose and conditions laid in its investigation. Its purpose is focused to generate insight learning of problems in specific context.

Anderson (1998) has identified five criteria of validity with transformative nature which are best suited for action research. They are:

Democratic validity

The action research which extends true collaboration of teachers, administrators, students and parents' efforts and allows multiple perception which relates with criterion of democratic validity. Key criteria for this validity are:

- All the stakeholders should have a voice in the research;
- The outcome of the research should reap common or equal benefit for all the stakeholders; and
- Valid solutions which are local, relevant and applicable to the context.

Outcome validity

The criteria of outcome validity coincide with an action research when the implemented action results with a

successful outcome within the research context. An effective outcome does not only solve the problem under investigation, but also reframes the problem in such a way that it leads to new questions (Anderson, Herr, & Nihlen, 1994).). This validity hinges on process validity.

Process validity

The dependability and competency of the research are the key criterion of process validity. It demands on the comfortability of the participants in the process of research. It also insists for the utilization of different perspectives and different sources to observe the behaviour and event in order to derive with simple and unbiased interpretations. The adequacy in process, throughout the period of the research is the main concern of this process validity.

Catalytic validity

The research which enables the participants to have a deep understanding of the social realities in the existing situation and make changes within the context relates to the notion of this validity. This could be assessed by recounting the changes in role and perception of teachers and learners as a result of the research. It could also be addressed by comparing and monitoring the perception of problem by the participants of the research with other people in the research setting.

Dialogic validity

The criterion of dialogic validity is the same as the peer review process which is commonly used for any academic

research. In academic journals, the peer review committee looks into the value and ethics of the research article. Peer review in action research refers to the dialogue between the practitioners and the colleagues by means of collaborative enquiry or reflective dialogues. These academic transactions among the peers of teaching community monitor the value and goodness in the research process.

Though the above mentioned criterions are suggestive, they reflect the emerging status of action research. They also offer effective and alternative concepts of validity for action researchers for overcoming their research issues in teaching community.

Enhancing Trustworthiness in Action Research

The techniques that check on the trustworthiness of data in qualitative approach are also applied in action research. It also proves validating checks before making any kind of assertions based on the data. The main objective of using these techniques in action research is to test the trustworthiness of the gathered information and to proceed further with reflections based on them.

Triangulations

The most common and the best way for checking validity is triangulation. Its main aim is to collect data from different perspectives and sources on the issue or problem of the situation being studied. Triangulation in action research is defined as a technique which involves three dimensional

approach in viewing a teaching situation where the point of view of teacher, pupil and participant observer are all given due consideration (Elliott & Adelman, 1976). When similar outcomes are obtained by applying different data gathering techniques, the researcher could be confident about the analysis. Cohen and Manion (1994) also pinpoint that using a single method enables only a partial view of a complex social situation like classroom. Silverman (1993) argues, triangulation as comparison between the data collected through quantitative and qualitative tools in order to see whether they corroborate each other. In triangulation, when same or similar result is produced using different methods of investigation, then the data are considered to be possibly valid (Burns, 1999).

Triangulation is the main technique used to ensure analytical rigour. It cross-checks a phenomenon or a situation by gathering information from many informants and sources for comparing and contrasting them with one another to produce a full and balanced study (McNiff & Whitehead, 2002). In action research, the researchers avoid relying on single data gathering technique and apply multiple methods from different perspectives in order to gain rich and relevant information which are objective in nature.

Apart from using multiple methods of investigation, other forms of triangulation which are particularly considered in collaborative action research are: Time triangulation, Space triangulation, Investigator triangulation and Theoretical triangulation.

Time triangulation

This form of triangulation calls for cross sectional method in data collection at one point of time or to conduct a longitudinal study which extends over a period of time, to identify reliable factors that contribute in the change process.

Space triangulation

In this process, while research is conducted within one group, data are collected from different subgroups of people, in order to avoid the limitations of the study.

Investigator triangulation

In this technique, more than one observer is engaged to discern the same research setting. It assists in gaining more reliable observation without any bias.

Theoretical triangulation

This triangulation refers to the analysis of data from more than one perspective to study a context, phenomenon or academic situation.

Triangulation is valuable technique for enhancing validity. The difficulty in triangulation is the competence among teachers, colleagues and students in observing the classroom situation. However, triangulation emphasises on gathering information and perspectives from the various participants in the classroom situation. It is a valuable way of promoting academic dialogue among the practitioners and stakeholders. It also enhances the habit of students' inquiry into their own learning.

Other processes of validation

The other processes, apart from triangulation, which could be used for increasing the internal validity in action research, are briefly outlined below:

Self–validation or monitoring researcher bias

The researcher being a stringent critic of his own work should interrogate the assumptions of his own thinking. Maintaining reflexive diaries, philosophical bases of one's decisions about the data, discussions with other members of the research group are all considered valuable way to monitor the personal thinking process of the researcher (Burns, 1999). The researcher has the right to stick on to his own opinions, but giving due respect and honour to others' rights is also essential. So, the researchers have to cross check whether the values and ethics are abided at each point of research to claim knowledge (McNiff & Whitehead, 2002).

Colleagues' validation

In order to avoid self-delusion, factual errors or misinterpretations, the researchers could involve others to give honest feedback about the claims to knowledge:

Critical friend: In an action enquiry, the researcher could involve one or more friends who could criticize and point out real or potential flaws. They could assist through their advices and criticism and provide a fresh perspective for the research.

Validating group: The researcher could convene a group of members with a commitment to meet regularly and offer

feedback throughout the duration of the research. They assist in identifying instances deprived of stated values and provide valuable suggestions now and then. This could be a formal group which encloses clear reports on the strengths of the research and approves for researcher's claim of knowledge.

Academic validation: The formal report of an action research is recognized as addition to an existing body of knowledge. The academy which is the highest authority counts the research work on basis of academic rigour for claiming legitimate knowledge. The criteria and standards of judgement applied by the academy are those of technical rationality. Hence, an action research has to demonstrate internal methodological consistency to prevent it from getting rejected by the academy on technical grounds.

Member checks

This check is done by the actual participants or stakeholders of the action research (such as teachers, students, administrators & parents). The data analysis and interpretations are taken back to the participants after the research for their recognition. The level of support extended by the participants, for the findings of the research reveals the confidence of validity. This type of validity by the members of research is referred as 'member checks' or 'respondent validation' (Lincoln & Guba, 1985 in Burns, 1999).

Peer examinations

Peer examinations involve colleagues within the institution. Teaching colleagues with similar class profiles, or other members of the collaborative group, who are not actual participants, but knows the research situation well are involved in examining process. Debriefing by these peers regarding the research experience, findings and decisions may also be included as an integral part of the research. The comments of these non-involved professional peers on the finding and interpretations increase the validity of the research process. This peer examination is similar to member checks in all aspect, except that the peers involved here are not the real participants of the research setting.

Rival explanations and negative cases

The researcher compares the interpretations and explanations of the current research with a previously conducted research, which is superior or same with regard to objectives in the same field of research. The scanning for an alternate or rival research is to look for a supporting evidence which helps for increased confidence in the original and principal explanation. The real search for alternative explanation is also to identify negative cases which help in understanding the patterns and trends by considering the instances and cases that do not fit within the pattern. Thus scanning for an alternate or rival research to compare and contrast the interpretation and explanation with the current research is the criterion of this validity.

CHAPTER TEN

Preparing a Proposal

Action research is a form of applied research. One of the major objectives of it is to promote quality in education through scientific and systematic inquiry. The practitioners take the role of researchers and collaborate with stakeholders in identifying and resolving problems or issues concerning with access, equity, relevance and excellence at grass root levels. Its focus is to bring change in the real life or present situation towards uplift in all areas. The area of concern of action research is broad. It may include curricular and co-curricular activities, teaching practice, administration and organization, evaluation, cognitive, affective or psychomotor problems of student, which could be resolved through a well-designed research, especially, at micro-level or the grass root level functionaries. Apart from problem, enhancement aspects of concern, an action research brings improvement in infrastructure, increases enrollment and retention, enhances achievement of children, involves and encourages local community resources.

A research proposal is a work plan or a blueprint. It is a draft plan that sets out the main objectives and research design of the study to be carried out by the researcher. It

reveals the planned, organized and careful effort taken by the investigator to avoid any kind of misconception in future. It's a written statement of the research design that includes systematic outline of research methodology. It is an essential pre-required document to be formulated before the commencement of any research. This prospectus covers all the elements like, problem to be investigated, the methodology to be used, the duration of the study, its cost and time estimations.

It intends to convince others of the worthwhile research project in process. It communicates the basic requirements of the research project in detail and ensures a clear understanding of what to investigate. It also clarifies exact specification and objectives to everyone who is a part of the research. Its main utility is to keep the investigator on track and anticipate the constraints and limitations in advance. Proposal plays a vital role while applying for grant through funding agencies. Since receiving funding remains competitive, a quality proposal may contribute for a favourable consideration by the evaluation committees of any funding agency (Sidik, 2005).

The immediate step that a researcher has to be followed after selecting a problem is to prepare a research proposal. This pre-requisite measure provides a systematic plan of procedure for the researcher to follow in the process of research. It is a guide which helps the researcher to stay focused and accomplish the purpose of the proposed study without any kind of hindrance or distractions.

Structure for an Action Research Proposal

The main elements or typical structure for a proposal for an action research are detailed here under

i. Title

Like any other research, the proposed title of an action research should be precise, clearly worded and reflect the scope of the study. The title should not be long, but should provide all details like variables, samples, and methods involved in the study. The title must be catchy and attractive to gain the attention of the funding agencies or readers. The language used in a title should be professional in nature. It should be declarative in spirit by exposing the intent of the study.

ii. Introduction

This section introduces the main purpose of the study. The purpose of the study is either to solve a problem or an issue persisting in the teaching learning situation or to bring a change or improvement in an existing structure. It also reveals the nature of the problem based on a specific context. It also gives a theoretical overview of past research experiences on the problem that the researcher has chosen in hand to solve through investigation. It must establish a link between the educational significance and rationale of the study.

iii. Background of the study

The reasons that made the researcher to choose the study is recorded in this section. It's a kind of a narration of exact causes that arouse the selected problem and its negative impact on development of students in teaching learning situation. The psychological, physiological, sociological factors that contribute the problem is also brought under purview. This part highlights the information about the researcher, the subject taught and a general description of pupils and school or educational institution where the study is going to be conducted. The relevance of the problem is explained based on the current situation.

iv. Statement of the problem

This component explains the title of the proposed study in terms of its scope. It is often misperceived as exactly as the same of the title. This includes a statement that describes the chosen problem in alliance with present context. The focus of the problem or an issue or practice to be improved, it is check listed with the following:

- W*orkability:* whether the problem in hand is solvable.
- *Significanc*e - whether it is important to conduct the research on this problem.
- *Practicablity:* how much is it practical and applicable in any context / in our own school setup.
- *Control* - whether the researcher is in a position to control the situation. Whether the problem is within the locus of control, and involves teaching learning process.

- *Collaboration:* the colleagues, students, administrators, and other higher officials support for the project, with whom the researcher is going to work in collaboration for the present study has to be decided.
- *Relevance in educational institution:* whether the problem is applicable to the level of students, either at school level or college level.

These elements help in unfolding the rationale for choosing the problem too.

v. Significance and need of the problem

A clear indication regarding the influence of the study findings on educational theory and improving practice plays a significant role in the proposal of the study. The need and importance of undertaking the research could be highlighted by

- Spotlighting on research gap.
- Prioritising of the issue in social and educational context.
- Supporting statements that reveal the knowledge gap and information with regard to the proposed problem
- How the present study bridges the gap in literature and its utility in the field of education.

Thus the urgency of the study in alignment with justification fixes up the significance of the study.

vi. Definitions, limitation and delimitations

Definition

This section includes the operational definition proposed by the researcher on the variables under study. All the unusual terms which could be misinterpreted are defined. The researcher sets a frame of reference for his approach towards the problem through operational definitions. The variables included under the study are defined according to the perception of the researcher. Hence the readers or the agencies where the proposal is submitted for its approval could view the variables as per the researchers' guideline.

Limitations

Limitations are the conditions which are beyond the control of the researcher. These may cause certain restrictions on the process of research, findings of the study and their applications in other situations.

Delimitations

Delimitations denote the scope of the study. It reveals the boundary laid by the researcher in terms of the area of operation, population, and sample size etc. It also indicates that the study will not be extended beyond the mentioned areas.

vii. Objectives/Research questions

The objectives set the path towards the destination for a study. The objectives of the proposed study are coined in terms with the variable and nature of the study. It provides

focus and direction for the researcher to find answers to the specific questions derived for the study. It illuminates the researcher and ensures impartiality in the process of research in realizing the objectives of the study. To add strength to it, research questions should be framed in relevance with the research objectives. Therefore, research objectives should be stated based on the focus, action and achievement of the action plan. The questions developed should enable to 'breathe life' in the area focused in the research. The research questions should be in an open ended form to give a focus on the plan. The research questions also help in validating the workable plan that is developed by the researcher.

viii. The hypotheses

The hypothesis is a powerful tool in research process. It is precisely defined as a tentative or working solution to a problem. The hypothesis formulated may be rejected or retained based on the findings of the study. Hypothesis assists the researcher in choosing methodological procedures, analysis technique for the investigation. Sometimes, action research studies are merely focused just to have a check on the validity of facts, and proceed by analyzing them in logic way deviating from finding solutions to problems. So, the researcher may not formulate any hypothesis for such studies. Even if it is mentioned, it may be an explicit statement / question that explains the occurrence of action in the study and not a formal hypothesis to be tested.

ix. Review of related literature

The synthesis of previous researches facilitates to view the problem through the lens of others' experience. Both conceptual and research literature could serve this purpose. It enables a researcher to get familiar with the areas or aspects that are already known and problems which still remains unexplored or unfolded. The credible researches identified during reviews which are applicable could be included for the proposed study. This component demonstrates the review members regarding the awareness of the researcher on the most significant researches conducted in the selected area of research. The findings of others could also be utilized in the development of the action plan.

x. Likely outcome and benefits

Here in this section, a precise note on the likely outcome of the study and benefits in the context of the research has to be mentioned. Whether it is beneficial for school education or higher education level or teacher education needs is to be stated for the consideration of the reviewers, who evaluate the outcome of the study. Thus, a series of paragraphs predicting the significance of a research, based on the anticipated outcome could motivate the researcher and others to realize the need for conducting the research.

xi. Method and design

This section focuses on a discussion over the researcher methodology. It proposes the method to be used for the study, whether the researcher is going to make use of either

qualitative approach or quantitative approach or both is mentioned here. The sample that is purported for the study and its selection procedure is also described. The justification for the selection of particular sampling technique is also elaborated in detail. The testing and non-testing devices like psychological/ educational tests, questionnaire, rating scales, schedules, observation, and interview which are proposed by the researcher to gain effective relevant information is provided with a rationale. The techniques of data analysis are also discussed in this section. Statistical techniques supposed to be employed to derive answers for the research questions are also encompassed in this section. Description on the action plan, materials or system that is going to be utilized in the research should also be included in this section.

The process of utilization of the materials or how the intervention is going to be implemented to improve the pupils' practice should be elaborated in detail. It answers the question of: How and how long the action plan will be applied? and whether its duration is fixed within a time frame?. The plan for implementation of the action plan in current situation is also pre-assumed and proposed in this section. The connection between the literature review and actions is illuminated. This section is comprehensive of research method, data collection modes, action plan, analysis and interpretation techniques of the proposed study. Data analysis methods are chosen based on the type of data collected for the study.

xii. Time schedule

The researcher should prepare a realistic time schedule for the completion of the study. It acts like a check point to identify where the researcher at present in the process. The work schedule gives a clear picture on time periods, to be utilized for the preliminary preparation of field work, data collection, analysis of the data and report writing. Gantt chart could be utilized to prepare a work schedule of the research. The lagging point or where the researcher has to fasten his activities to stay as per work schedule is identifiable with the help of Gannt chart.

Figure 10.1
Gantt Chart

Source: Choo, Y. B. (March 2, 2018). Topic 7 Action Research Planning & Proposal, slide share https://www.slideshare.net/YeeBeeChoo/b3133-topic-7-action-research-planning-proposal

xiii. Budget schedule

The proposal must have a precise detail over the cost estimation in conducting the study. The researcher has to plan his budget based on realistic details. The researcher has to be prudent in spending only on things which are considered to be essential for the research. The research proposal which is submitted to Government agencies / Private/ Autonomous organizations for financial help must furnish the details of the finances, which are required by the researcher for the conduct of the study. The cost of the project is to be estimated in terms of proposed duration of the project and facilities needed. It may contain the following items:

- Junior Project Fellow with duration for which needed
- Travel expenses of the persons involved
- Purchase of books, research tools, etc.
- Expenses for development/ adaptation of research tools and materials
- Expenses for photocopying and printing of tools
- Hiring charges (computer, video recording, etc.)
- Preparation of report (draft and final)
- Contingency (stationery, postage, etc.)
- Overhead charges
- Printing of the Report (after getting clearance from the funding agency)

The head-wise budget break-up may be submitted in yearly installments.

xiv. References

The researcher is expected to give a list of all sources of the document/ research papers consulted in the due course of preparation of the proposal. The researcher should follow correct citations to avoid plagiarism. Finally citing all references in full compliance with anyone of the standard style is an essential step of an action research proposal.

Once the proposal is accepted, the researcher conducts the research, going through the appropriate steps discussed in the research design. Soon after the data are analyzed and conclusions are drawn from the findings, the investigator is ready to present the results of the research study and make suitable recommendations. This usually takes the form of a written report and is quite often followed up by an oral presentation.

CHAPTER ELEVEN

Reporting an Action Research

Action research report is a systematic write-up of the process including methodology, findings, discussions and conclusion. The researcher drafts an explanatory report to share the information to the academic community. The researcher observes certain conventions and practices to present a more elaborate and precise report on the findings of the research study. A detailed formal write-up adhered to definite style covering all aspects of the study including an abstract introduction, methodology, results and discussion, conclusions and recommendations, references etc. may be called a Research Report.

An action research report has to be written in a clear and concise way so that it guides other teachers in conducting their own action research project. This reporting is considered to be the last but an important step in the process of action research. The fluent arrangement of all the main elements in a simple language ensures automatic understanding of the content and appropriate form by any individual. This section sets out in detail about how to write a more formal action research report.

Eminence of Report Writing

The main purpose of report writing is to find a solution to the issue or problem faced by the practitioners in the field of education. Any action research to claim and ensure its place in the existing fund of knowledge has to be reported and published. The problems faced by teachers, principal and administrators vary from context. The report which is appropriate, critical and original has a crucial role in developing professionalism among teachers. The teachers who are exposed to an opportunity for reading previously conducted action research reports of different teachers can definitely conduct an effective action research. Hence, all the action researches after they are conducted have to be reported and shared to reach the educators. A research which is reported error free and technically accurate provides a vivid picture of the exact context of the situation. Thus reporting transmits the results of the research to a wider community.

Guiding Principles for Writing an action Research Report

An action research explains and demonstrates the pursuit of inquiry in the real time situation. Certain guidelines that an action researcher should follow while writing an action research report are:

- A well-defined report should be conclusive in nature;

- The text should be typed or word processed using double line or one and a half;
- Only appropriate and simple sentences must be used for writing the report;
- Report must be written to express, not to impress;
- When abbreviations are included in the report, ensure that the words are used in full form when it appears first in the document;
- Since the reports are written after the completion of research work, it should be written in past tense. Present tense could be used only while explaining the concepts and interpreting the tables in the document;
- Report has to be written in third person context only. Revealing of names, personal identity should be avoided in the report. The words like teacher, researcher, experimenter or investigator could be used for referring the person who conducts the research. The personalized words like I, You, We may be avoided. While mentioning the participants of the research, instead of using he, she, they, or their names, it is appropriate to use words like participants, subjects, students etc.
- An error free language is essential for a report. A report should be free from spelling and grammatical errors. For this, proof reading should be done before publishing the report;
- Each elements of the report should contain appropriate content relevant to the caption;

- Every table included in the report must contain its suitable title along its distinctive serial number;
- The numerical expressions of results should be confined expressing to two decimal points;
- Avoidance of complex and ambiguous expressions which mislead the findings like less, more, frequent, etc., in the report;
- Unethical data should be avoided;
- Maintenance of uniformity in the usage of technical words throughout the document is recommended. The words that are used in the beginning to refer a term or a person should be used throughout the report and avoid using any other similar word;
- Symbols used in reporting especially in statistics part should be case sensitive throughout the report;
- Avoid using cooking or assumed data inclusion in the report which is not actually done in the study;
- All tables and figures must be labelled clearly including cross reference of the source document;
- All quotations must be correctly referenced, including date of publication and page on which the quotation appears in the original;
- Citations and references must follow the approved institutional APA style. Foot notes could be avoided; and
- Important derived data which are not included in main body of content should be appended.

Reporting Format

Action research is a flexible research which allows the researcher to self-choose their research topic and create their own structure for conducting the study. Yet, National Council of Educational Research and Training (NCERT) provides certain guidelines of a structured format for reporting an action research, where main elements have to be included. The parts of a structured report are:

- Title page;
- Abstract;
- Content, including content of appendices,
- List of illustrations, figures and tables;
- Acknowledgements;
- Introduction;
- Body of text, organized as chapters or sections;
- References; and
- Appendices.

Components of report

The components of an action research report are portrayed in the Table 11.1.

Table 11.1
Components of an Action Research Report

I	Preliminary part	Title page Abstract Acknowledgement Table of content List of figures and tables
II	Main Body	Introduction Significance of the study Statement of the problem Objectives Hypotheses Delimitation Limitation Review of related literature Methodology Result and interpretation Conclusion
III	Supplementary Part	References Appendices

I. Preliminary part

The preliminary part or first part of the report is also referred as blue print of the report. Pagination of all the components of the preliminary part is done using roman numbers (i, ii, iii) and placed in the middle of the lower part of the page. It includes title page, abstract, acknowledgement, content, list of tables and figures etc.

Title page

The cover page of the report comprises of the following elements:

- Title of the study
- Name of the researcher
- Session of action research
- Name of school/ institution

A model cover page as shown below:

Enhancing Pronunciation in English through
Play-way Method

V. Thangam

2020

Department of Education
Manonmaniam Sundaranar University, Tirunelveli

Abstract

Abstract is a part of the report which in a glance reveals the readers, what the research is about and its significance. An abstract should be confined to about 250 - 450 words. It gives an overview of all the components such as aim, objective, method, sample, tool and result of the study. It is a simple and precise content written in present tense. Its essentials claim its importance to other researchers who are reviewing relevant literature for their studies. It is not a

descriptive or explanatory note but an extract of the outlines of the study. The succinct abstract is used by potential readers to determine whether to proceed with the detailed report or not. A rough rule of thumb of writing an abstract is

- An introductory sentence
- Identification of the subject population
- Specification of the research design
- Apparatus and data gathering procedures
- Summarizing the most important conclusions/ recommendations.

Acknowledgement

Expressing acknowledgement for persons who helped or provided assistance in completing the research work is a powerful way to display the gratitude for their support. Any support directly or indirectly gained by the researcher from various persons during the process of action research must be acknowledged. This is included under 'Acknowledgement' part.

Table of content

Content page is a crucial page that orients any reader. It gives a detailed list of what is included in the report. It throws light on how the research report is divided into meaningful sections or chapters. The page number mentioned in the contents help the reader make easy jumps around from section to section. Content page assists the researcher to organize his report and gives directions to the

reader. References and appendices are also mentioned along with other content. It serves as a roadmap of the document.

List of Tables & Figures

In addition to table of contents, a separate list of the tables and figures included in the main part of the report is maintained to identify and locate them with ease by the readers. It is necessary to show the content and the list of tables and figures along with their page number and serial number in the report.

II Main part

The report of an action research is small compared to conventional research reports. Hence instead of dividing them into chapters, it is divided into various headings to give precise, organized and readable format for the report. The main part of the report includes:

Introduction

It indicates what the report is about, its main focus and overall goals of the study. The factors from the experience of the researcher which instigated the interests for the inquiry are also brought to notice in this section. It stretches an overview of forth coming chapters and their contents. It may also refer a few review literatures that were identified by the researcher for the development of conceptual framework.

Context

It provides all background information that made the teacher choose the problem or issue for the study. The problem chosen for the study is described in relevance to its real life situation. Personal and situational context that created the problem in the classroom is explained. The role of the researcher, whether teacher or administrator is specified and how the problem is identified is also expressed in this context. Here an outline of sufficient information is provided to help readers to have a better understanding of why the research problem was considered important, and its potential relevance to future personnel and organizational development.

Review of related literature

This element gives the reader the necessary background to understand the studies in line with the investigations and findings of previous researchers. It also provides an idea of researcher's knowledge and awareness on the problem to be investigated.

Rationale

This section reveals the significance and the potential implications of the research.

Statement of the problem

It is general introduction for the study signifying the state of the problem in the current situation.

Significance of the study

The significant contribution of the research in the professional growth of the researcher, or impact it brought in the current teaching learning situation is indicated. How the present research contributes to the wider body of knowledge, beneficiaries of the research are all considered and listed to specify the significance of the study.

Objective(s)

It includes the general and specific aims of the study. It also includes the research questions for which answers are looked for through the inquiry.

Hypotheses

The tentative solutions for the problem framed on the basis of review of related studies.

Delimitations of the study

It is the exact boundary laid by the researcher for the action research.

Design of the study

This section gives the reader all the information regarding how exactly the research was designed and implemented. A complete step wise report of the research process is engulfed. It also generates detailed information over the procedure which can even help the reader to exactly replicate the research study with the new data. It elaborates on what type of research it is (qualitative, quantitative or mixed method).

Sampling procedures

The class where the researcher is currently teaching, the sample for the study, whether it is from a single class, or a single school or whether it is derived from various schools is clearly mentioned. Even if it is a single subject case study, it should be indicated in this section. The nature and sample size is also mentioned to have a crystal clear view of the sample. The sampling technique applied to derive the sample from the population is mentioned.

Instruments of data gathering

This section elaborates on the procedures used to obtain the data from the sample, including the forms or manner by which it was recorded.

Action plan (Modification in practice)

This part explains the action plan the researcher implemented for bringing modification and improvement in practice. It narrates the plan in a clear, systematic and coherent way. The main aspect of action research is the action plan that is used to bring improvement of change in the existing situation. The nuances of the new plan or intervention is detailed and described. How the plan was executed, monitored, how evidences were generated are presented under this heading. If a module is prepared, it is also included in the appendix for further clarification of its procedure.

Analysis

This part describes in detail how the collected data of the research was analyzed, decoded, categorized and patterned to derive with meaningful information that reflects the effectiveness or result of the plan of action implemented. The tables and graphical representation are used to provide a clarified picture of the analysis process and findings. It also reveals all the statistical and mathematical procedures used to analyze the collected data.

Findings and conclusion

This section condenses the key points of all the previous sections. It succinctly interprets the findings concerning the hypotheses. It also gives a discussion over the findings and reflections for the sustainability of the action plan that is implemented and empirically tested through this research work. The main part or first page of the report till the result & conclusion part should be paginated using Arabic numbers (1, 2, 3, …)

III Supplementary part

References

In the reference page, the title 'References' has to be placed in center position at the top of the page, with no underline or within quotation mark. Reference list cites all the works that are referred and are publically available. All the text in citations should be included in the references section. Reports may be rejected if it fails to observe technical conventions. So, strict application of APA style is advisable, which is also a prescribed format in the field of education.

Accurate, appropriate and complete references have to be enlisted for the reference of potential readers. Page numbers are avoided for reference part.

Appendices

Appendices give additional information and present the evidences for the research work. This is where significant raw data and derived data are presented. Every appendix has to be carefully arranged in an organized way with accurate labelling. A detailed description of the teaching unit has to be included in the appendix for an action research. Copies of research permission form, written assessments, surveys, questionnaire, interview questions, etc (forms used in the research or as a part of the curricular engagement) are appended. Any tables, figures, forms, or other materials that are not totally central to the analysis but that are needed to be included are placed in the Appendix.

Action researcher has the liberty to express the report in their own narrative choice. Some aspects like hypothesis could be avoided and introduction of new components which suits the study depends on the choice of the researcher. The above provided structure is standard but the flexible nature of action research enables the modification in structure without disturbing the clarity and coherence of the study.

A sample action research report in a blow by blow manner is given in the next chapter for the benefit of your perusal.

CHAPTER TWELVE

Action Research Report – A Sample

Untangling Lack of Attendance of Primary School Students through Counselling

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An Action Research Report submitted to the
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Chennai - 600 006

May 2005

1. Introduction

"Prevention is better than cure", a simple proverb that implies deep meaning could be applied in wider aspects. Action Research is one such aspect that aims at giving immediate solution to a problem forecasting the distant future. One of the immediate problems identified in schools is lack of regular attendance. Regular attendance at school is important for the well-being and future prospects of children. Progress at school can lead to a sense of achievement and growing self-confidence. Concern about attendance also demonstrates the level of care that a school has in relation to its pupils and is a sensitive indicator of morale in pupils and staff (Hallam, 2001).

The reasons pupils do not attend schools are diverse and complex. Because of this, there are no readymade solutions. Moreover, the different education systems prevailing in India also debars the implementation of what is successful in one school may not be successful in another. But, in institutions of all kinds, the levels of attendance, without dropouts are now accepted as a useful indicator of morale that measures the success of school ethos. Attendance was affected by poverty or economic reasons, poor health, a child too young to attend the school, migration of families, and a child induction into child labour and domestic help. In addition to this, the inter-relationship between the attitudes of parents and educational provisions are less transparent. This occurs when parents wish their child to attend the school but are unable to persuade him/ her to go. The best way is to respond to early indicator of potential absenteeism is through counseling the student and the parent.

According to Hallam (2001), there are three kinds of absence among the students: Serious absence (missing several days a week), Selective absence (missing odd lesson and single day) and Occasional absence (missing the occasional seasons).The subjects of the study fall on the third category - Occasional absence. So there is a need to keep the rights of the children in the minds of teachers who impart teaching in the classroom, by imbibing lively, interesting, and attractive student centric methods to reduce dropouts and make them to come to school regularly.

In addition to patterns of attendance in pupil groups the school should also consider the patterns in time e.g. days of the week, months, terms, and seasons before or after holidays. These help in identifying times, when absenteeism is more likely and accordingly preventive actions could be taken. Providing a reward system for good attendance and punctuality is not harmful and can help to improve both.

There is a strong link between poor attendance and poor literacy. The pupils having insufficient basic skills may likely show interest to participate in what is going on in their lessons. Persistent absentees can be regarded as pupils with special educational needs, which mean that a special programme can be tailored to meet the individuals' needs and requirements.

Action research is not only aiming at the solution of the problem but also oriented towards the improvement of the existing situation; the latter is the case in the present attempt. The investigator had an opportunity to visit the Panchayat Union Middle School, Murappanad, and Karungulam Union often, as it was one of the Training Centers for BRTEs and Teachers in Karungulam Union. So the investigator had intimacy with the teachers of that

school. While the investigator had an informal chatting with the teachers, one among the teachers was a teacher handling Standard IV and Standard VII, who informed about the two students in Standard IV and a student in Standard VII were not interested in coming to school regularly. At this juncture, the investigator guided that teacher to bring them to the classes regularly. Because of her effort, Standard VII student had been brought back to the school and he attended classes regularly, thereafter. So the investigators took an attempt to achieve regular attendance of the remaining two students from Standard IV.

2. Objectives of the Study

Objectives of the present study:

i. To know the present status of the attendance of the students studying in the sample school
ii. To find out the barriers and causes for the students' irregular attendance
iii. To explore the strategies for improving the students' attendance
iv. To confirm the improvement in attendance of the students after implementing the various strategies.

3. Probable Causes for the Problem

The investigator assumed the following as the causes for poor attendance of the sample students:

i. Availability of labour for children;
ii. Illiteracy of parents;
iii. Ignorance and negative attitude of parents towards education;
iv. Lack of parental enthusiasm;
v. Lack of play way activities in the classroom;
vi. Need of looking after their younger siblings;

vii. Need of looking after their age old grandparents;
viii. Assisting the parents in their house hold duties, and
ix. Supplementing the family income.

Among the above causes, dealing with the cause - "Illiteracy of parents" was not in the circle of influence of the investigators. Before carrying out the treatment, the investigators attempted to search the actual causes of the problem, so that, they could proceed in the right direction in solving the problem. By the Investigators' close observation and informal interview with the class teacher concerned, headmaster of the school, parents, and peer group and with the subjects themselves, the investigators derived the causes of the problem, which might be:

i. Availability of labour for children;
ii. Ignorance and negative attitude of parents towards education;
iii. Lack of parental enthusiasm;
iv. Lack of play way activities in the classroom;
v. Need of looking after their age old grandfather;
vi. Assisting the parents in their house hold duties and
vii. Supplementing the family income.

4. Probable Solutions to the Problem

For the identified probable causes, the following list of solutions was picked out by the investigators:

i. Motivational chat with the teachers stressing the importance of regular attendance of children;
ii. Giving counselling to the parents and students;
iii. Meeting the parents and having motivational talks with them;
iv. Thanking the parents in person for their co-operation;

v. Giving incentives like small gifts and badges for regular attendance and
vi. Making the class teacher to understand the relation between effective teaching strategy and school attendance of the students.

5. Hypotheses

The attendance of the sample students will be improved if

i. a motivational talk on the importance of regular attendance of students is held, with the class teacher concerned;
ii. the parents are given counselling to send their children to school regularly:
iii. the parents are given motivational talks on the importance of education:
iv. the sample students are given incentives on their coming to school and
v. play-way activities are infused in teaching.

6. Methodology

(a) Subjects for the study

In the Panchayat Union Middle School, Murappanad, Karungulam Union, there are 10 students in standard IV. Of them, two were not attending classes regularly. So those students were taken as subjects for the present study.

(b) Tools

Four different schedules viz., Class Teacher Interview Schedule, Sample Students Interview Schedule, Parents Interview Schedule and Peer Group Interview Schedule were developed by the investigators to identify the actual cause(s) for the irregular attendance of the sample students

and in turn to take remedial steps to improve their attendance.

(c) Interventions

First visit – Counselling to parents

During the first visit of the principal investigator, she could not find the sample students in their classroom. So, she and the co-investigator went to their house (both are twins) to enquire about them. Their age old grandfather told that they were in the paddy field along with their parents. When visited them in the field, the students were seen with their parents reaping the harvest. One of the students carried a large bundle of stalks on her head. Then the investigators had communicated with the parents on attendance issues. They justified their children's absence to school that they would reap well similar to two fully paid coolies. They added that their children did not go to school only during harvest time (month of March). The parents' wish was also to expect their children to help them at home and field during the time of harvest. But the investigators sincerely gave advises and counselling to the parents. They also wondered about the care and interest taken by the investigators. Finally, they gave their consent to send their children to school regularly instead using them for household and field works.

Second visit — Interview with the subjects

During the second visit also the sample students were absent to the classes. Hence the investigators visited the

sample students' house. But the children were not there. They were found in the ground nearby. When called, they came, said that, as their parents had to look after the harvesting field, they were asked to look after the household duties. But the children were ready to come with the investigators, as they had finished all their duties. The investigators counseled and interviewed them informally according to the interview schedule. The interview revealed that the hurdle for the poor attendance of the children was not due to the parents.

Third visit — Rewards to the responses (Mathematics)

This visit built hope in the principal investigator as the sample students were present. They were very active in their classroom deeds in par with their peers. The co-investigator was doing revision in mathematics for the annual examination. Believing that the interesting way of teaching would sustain the attendance of the subjects, the principal investigator took this as the chance and helped the students in doing revision. The investigators gave them a number of problems in the topic - *volume*. The students responded. The sample students were also very active in doing the sums. One of the sample students was very fast and her handwriting was also good, while the other was quite late in doing the sums and the co-investigator helped her. Then the principal investigator felicitated the class in general and the subjects taken for the study, in particular.

Fourth visit — Display of attendance

Sample students were present. Regular reviews of attendance were carried out. Displayed the works done by the sample students, based on their attendance in prominent places, to make the students aware of how many days they were present and what all the works done

by them. Students were involved in a play-way activity for teaching the concept of 'illness and the precautions to be taken' to avoid them. The winners were also awarded with a card of appreciation. Also the investigator gave them a picture of a tree with 31 fruits whereas the fruits to be coloured on the days of their attendance.

Fifth visit - Engaging in games

During this visit, the sample students were found in school. To sustain the subjects' attendance the investigators engaged the students in games. At the end, the subjects were encouraged to attend the classes regularly and the principal investigator read their willingness to come to school thereby changing the present attitude of their parent. This gave the investigators the progress of fulfilling the objectives of the present study.

Sixth visit – Play-way activities

The sample students were preparing for their annual mathematics examination. The investigator asked the class including sample students to tell the tables from 2 to l0. Most of the students were able to tell fluently only up to table 5. Hence the investigator taught tables 6-9 using play way activities table 6 by "Counting numbers and representing multiples of 6 by claps, table 7 by 7 up game, table 8 by counting beads 8 by 8, table 9 by counting numbers and representing multiples of 9 by running and touching the wall etc. Rewards like stickers, pens, pencils rubber and appreciation cards were awarded.

Seventh visit – Follow-up

Sample students were present. Met their parents and thanked them for their cooperation in sending their

children to school regularly. The students also gave their consent to come to school regularly

7. Data Analysis

The attendance of the sample students and the comparative analysis of attendance are given in the tables 1 and 2 respectively. Attendances of the subjects were made for two years 2003-04 & 2004-05.

Table 1
Percentage of Attendance of Students in 2003-04 & 2004-05

Month	2003-04				2004-05			
	No. of days Present		No. of working days	Avg % of Attendance	No. of days Present		No. of working days	Avg % of Attendance
	Subject 1	Subject 2			Subject 1	Subject 2		
June	15	15	22	75	18	20	21	91
July	18	19	22	84	16	18	21	81
Aug	14	14	19	74	16	14	22	75
Sep	16	16	20	80	12	14	15	87
Oct	11	11	20	60	12	12	20	60
Nov	11	11	19	58	11	11	20	55
Dec	10	10	18	56	16	13	18	81
Jan	10	10	19	53	16	16	20	80
Mar	7	7	20	35	8	8	22	36
Apr	17	17	21	81	17	17	19	90

Table 1 shows that the subjects paid 53% of attendance in the month of February, 35% of attendance in the month of March and 81% of attendance in the month of April in the year 2003 -2004 and again 80% of attendance in the month of February, 36% of attendance in the month of March and 90% of attendance in the month of April in the year 2004–05.

When comparing the attendance of the students it was found that an improvement was brought in the year 2004-05.

Table 2

Percentage of attendance of students in the Pre-treatment period and Treatment period – A Comparison

Month	2003-04			2004-05			
	Average attendance of the Subjects	Total No. of Working days	Average % of Attendance	Average attendance of the Subjects	Total No. of Working days	Average % of Attendance	Increase in Attendance (in %)
Pre-Treatment period	104.5	157	66.75	111.5	156	72.88	6.13
Treatment Period	34	60	56.33	41	61	68.67	12.34

Table 2 shows that the subjects improved their attendance about 6 percent in the pre-treatment period and about 12 percent in the treatment period in 2004 – 2005 over 2003 – 2004. Also there is an increase of about 6 percent of attendance in the treatment period over the pre-treatment period.

8. Findings

The findings of the study were:

i. In the pre-treatment period, there was an increase in attendance in the months of June, August,

September, December and January, compared to the two academic years; but in the months of July andNovember there was fall in attendance. But there was only increase in attendance in the treatment period from February to April.

ii. In the month of February, 2005 which fell in the treatment period, there was a maximum increase in attendance compared to the previous year, 2004.

iii. In 2003-04, the average attendance of the subjects for the months from February to April was 56.33% but that in the treatment period (2004-05) was 68.67%.

iv. There was increase in attendance by the subjects in the year 2004 — 2005 over 2003 — 2004, both in pre-treatment period and treatment period. The increase in the pre-treatment period was only 6% but it was 12% in the treatment period. So the treatment helped in increasing the attendance of the students.

v. As improvement in attendance was incurred, the strategy adopted by the investigators i.e., Counselling worked well in changing the attitude of the students as well as parents.

9. Net Gains of the Present Study

i. The students, who maintained poor attendance, taken for the study were brought back to school to keep regular attendance. So this action research contributed for achieving one of the major objectives of *Sarva Shiksha Abiyan* (SSA).

ii. Students were made aware of education.

iii. The study revealed new information that the subjects being twins, depended each other in their attendance to school. If one was having disinterest in coming to school, the sibling would also be affected. Anyhow

further studies are needed to confirm this information.

iv. Parents of the subjects taken for the study were made to understand the need of their children's education.

v. Teacher concerned and the other teachers of the school practically understood the sincere and scientific attempts of solving the problem of dropouts and irregular attendance of students.

vi. The treatment period gave input to the investigators and the teachers of the school concerned to take special care on the students not only on their studies but also on the attendance of the students.

vii. Being a teacher educator, the principal investigator reaped the fuller satisfaction of improving the attendance of two students and had firsthand experience with the procedure of saving the dropouts and child labours.

10. Conclusion

Equality among sex is the fundamental right in the constitution of India. The curriculum and training strategies in education for girls now demand more attention. Besides making education accessible more and more to girls among rural areas removing all gender discrimination and gender bias in school curriculum, text books and process of transaction is absolutely necessary. There is significant association between family income and dropout as the girls from low family income and drops out earlier and girls from high family income drops later.

There are reasons for dropouts as supplementing the family income, helping the parents in household activities, looking after the sibling, caring the age old parents, assisting

the parents in the field or in the working spot etc. which the parents actively encourage and are done with the acceptance of the parents. Hence this can be done well by counselling. There is also a need to develop will power and positive thinking among the students to progress in life. Though the government takes many steps to eradicate the dropouts, it is through counselling the seed is to be put in an individual to save him/ her from being a dropout. The teachers are to be oriented towards the better way of counselling the parents and students. The in-service trainings too add components like counselling and earning while learning is to be incorporated which may in turn strengthen the family income. Thus, the research was successful in improving the attendance and proved a useful educational experience of saving dropouts and child labours.

References

Khurana, M. (2001). How child friendly teachers should be in the classroom? *The Splash* (News letter of the child friendly school initiative). UNICEF: Dips Communication Centre.

National curriculum framework for school education. (2000). New Delhi: NCERT.

Subramanian, A. (2001) Drop-out of girls in schools. *Experiments in Education, 29*(7), 122-125.

Susan, H. (1996*). Improving school attendance.* Bangalore: Heinemana School Management.

CHAPTER THIRTEEN

Dissemination of Action Research

"If it wasn't published, it wasn't done" - E.H. Miller (1993)

Research is an explicit activity which includes framework designed for a specific problem, but it could be a guide to provide details in context of a wider knowledge translation (Grimshaw et al., 2012). In a democratic country, dissemination of the potential researches is vital to satisfy the curiosity and kindle the research vigour among the general public. Global competition had alarmed the need for quality teacher and so a teacher should improve her abilities and professionalism through knowledge management for the benefit of students. Educational wings have to be strengthened with professionally competent teachers facilitating knowledge sharing and management. Effective teachers should make themselves aware of the varied instructional strategies and engage continuously in instructional dialogue and reflective practices to bring massive change in students' performance. Research facilitates sustainable development and mediates effective instructional practices. The findings of any research

are comprehensive with the integration of teacher's needs and goals of school.

Action research is an activity that leverages knowledge which propels adaptive, innovative and creative teachers. The primary objective of this research is to enable a teacher to reflect upon his/ her actions. Advancement in knowledge, improvement in concrete situation and expansion of behavioural science methodology are the three goals proposed by Lewin for action research (Sommer, 2009). Teachers diagnose their lacunae in instructional strategies through student's feedback to enhance teaching process. A systematic enquiry is conducted to articulate the shortcomings of one's own teaching practice which is the focus of action research. Teacher's self-understanding and professional abilities are pruned to promote better school environment.

Sharing of Findings

Researchers should have an ethical obligation to take attempts to disseminate their research findings to the community. Sharing of imperative research findings could ensure cost effective strategies that indorse theoretically – informed approach with evidence. There prevails a lack of clarity among the action researchers as what represents dissemination.

Sharing the findings of teacher's research in public could bring professional, personal and political enhancement. Personally a person can self-evaluate his/ her

own thought process. It also augments development of critical capacity and strengthens professional judgement and facilitates management of change. The application of scientific principles in solving issues by a single teacher can positively impact on their colleagues. Hence it is considered as vital to showcase the contribution of a single teacher in public for the promotion of collaborative efforts in future. Encouragement of such professional dialogue could also bring forth and highlight the issues and outline the possible solutions based on real situation. The successful contribution of co-teacher will influence others to realize the hidden problems in the routine behaviour of students in classroom and to design new remedies.

The funding agencies expect and demand the grant holders to disseminate the findings of their research for the tangible benefit of students and professional growth of teachers. As far as educational research is concerned, it is a shared responsibility of funding agencies and the research investigator.

Professional conferences and seminars

Among the variety of approaches available to disseminate the research findings, professional conferences and seminars are common. Here the researcher can explain and narrate the entire research journey and receive feedback from the learned community. Reflections from participants may guide the action researchers to pursue additional studies and opt for better solution for a pressing academic problem. The visual appealing poster presentations could attract the

attendees of the professional gathering to reflect it in his/ her practice field. Knowledge transfer will be the greatest when these findings inspire others to adopt scientific approach to solve their immediate problems, thus providing path towards promotion of professional elites.

Journals

A research to reach wider population permanently must be published in referred journals. The action research which is published in a standard peer reviewed journal will definitely be a potential resource for practitioners. The review of ethical committee forms a basis for a well written protocol for publication for teachers and novice researchers. Ideally, scope of the journal could be given priority to suit the interest of the readers and the field of study. The three objectives of Lewin for dissemination could not be attained by adopting a single mode. Hence application of innovative strategies for dissemination is needed. An action researcher prefers technical journals to publish substantive articles so that they get reached to their colleagues and local community, while applied articles should be shared in periodicals read by practitioners which should be prioritized for the publication of applied research. Professional and Associational journal could be used to share articles which are designed for methodological improvement and induce reflective practice (Sommer, 2009).

Within institution / across institution

Researchers should not expect inevitable changes to happen immediately after the research results are published. Active

efforts have to be taken on the part of the researcher to exchange the knowledge gained to other practitioners, which is real dissemination. Sharing the scientific experience and evidential based solutions, boost improved practice by bridging the gap between research and real practical situation. The conventional methods of sharing the outcomes of research via publication are less effective for dissemination of the rich and localized knowledge of action research especially in the field of education. The networks connecting professional communities could rank first in dissemination of research and the most appropriate ways to share action research findings are disseminating them within the institute where the benefits are more and across institutions where the benefits could be extended.

Sustaining and continuous learning of teachers are key to excellence of an educational institution. Concrete empirical context based approach adoption for pupils learning enhancement is an effective way to build internal capacity of schools. Supportive environment which encourages new ideas of the practitioners and testing innovative practices will feast even the reluctant colleagues to join in collaboration in action research with robustness. The most common and effective means of dissemination of educational action research within an institution are carried out and across institution through the following activities.

Arousing the interest and face to face contact with network of practitioners on the process and technique applied for the enquiry is a highlighted feature for an effective dissemination (McLaughlin and Black-Hawkins,

2007). Teachers rethinking on the nature with enquiry eye have to be informed to organic, dynamic networks of interested colleagues for whom it tends to be more favoured. Posch (1994) model of dissemination insists on publicising of action research findings first to the beneficiaries of the field of enquiry rather than to the world of knowledge. Shared interest, transparency in the process for replication by other faculty members are pre requisite for this model. Teacher enquiry with a tuned perspective on knower and the status of knowledge simultaneously is offered as a contribution of this model.

Other Modes of Sharing

According to Baumfield, Hall, and Wall (2013), various methods for sharing practitioner enquiry are:

Visual displays

The inquiry conducted by a teacher could be displayed as attractive posters. The headings should be interesting and attention winning. The key findings have to be highlighted to arouse the interest of the colleagues to replicate or instill new inquiries. Placement of the poster should be discussed so that its significance for the internal quality development of the institution is reflected.

Research promulgation lunch party

The senior administrators and management, as an act of encouragement, could organize a research promulgation lunch party to support and encourage such inquiries among

other staff teachers at least once a month. This may provide a forum for the teachers to share their innovative ideas and swap resources and discuss previously conducted research findings. This may be an encouraging forum to propagate the action research which induces improvement in teaching practice, students learning and quality of the institution on whole.

An agenda in staff meetings

The action research conducted by a staff member could be projected as an item on the agenda of staff meeting. The transparency and narration of the process in a staff meeting will promote cooperation and collaboration among faculty members. This exposure will guide the novice teachers to follow the line and continue researching in solving forthcoming classroom problems.

School souvenir or handbook

Every school or any educational institution maintains a souvenir or school handbook as a record of their school progress and school accomplishments every year. Along with school infrastructure, progress and display of students' achievement, practioners enquiry should also be allotted a section in the handbook. The teachers who are an integral part of the educational system should be given encouragement through publishing their efforts for working on the improvement of the school culture. This could also motivate the other teachers to work on the practice area. The entire process of research with clear indicators would reach the parents to reveal the care and concern of the

teachers towards their wards' learning. Thus the publication of action research in school handbook not only reaches within the institution but also to other institutions and community.

Senior teachers' observation and peer coaching

The young researchers could pair up with a senior staff to have suggestions and training regarding the tryout of the new strategy with a class/ group. The feedback and recommendation of such experienced faculty member can help in refinement of the study. The collaborative efforts could upsurge the inquiry spirit among the freshers and also enhance the performance of the students.

Small grants for projects

The administrators could also declare small grants for such action research projects to encourage self-reflective process. The funding project could also be extended across institution to build up and spread of enquiry research and its results. The outcome of previous enquiries could also be showcased to support the follow up or advanced strategies to solve a persisting problem with a combined and collaborative effort of teachers across institutions.

Conferences

Educators can organize and participate in conferences where they could create a platform for the projection of their research. This powerful strategy could give additional insights into systematic solving of academic problems. The conference proceeding could reach the learned society

to work and test the applicability of the new strategy for common problems.

Authentic stories of learning and leadership need to be told through the voice of those who actually lived the stories (Krovetz & Arriaza, 2006). Widening the academic circles can enable the emergence of different perspectives. Network of schools, institutions and learners, parents, local community could extend the valuable support to develop social relationship and sharing of new experiences. The importance of creation of such network for positive social, economic and educational relationship is highlighted in various countries. In such a community, exchange of ideas, knowledge and resources with colleagues foster knowledge process. School networks deliberately foster such connectivity as an opportunity to interact and collaborate with people with common interest and gain valued opportunity to learn from each other.

John Dewey while advocating the value for teachers' research also emphasizes the teachers' approach to the uncertainty and disappointment in it with the spirit of 'critical optimism' (Shields, 2003). Working in an environment that ropes experiment could be a road for success for teachers and for the institution were they work. Action research which calls professional development for teacher does make a real difference in the lives of the pupils in schools. A teacher's journey could fail if he/ she doesn't record her action in any one of the schools to bring this real change in pupils.

Apart from publications the teachers can also contribute through production of simple and practical tools or instruments like learning material, teaching aids or tangible artefacts. Reproducing and replication of such useful practical ideas and materials help in conservation of money and energy. This could also be a mean for disseminating the hard work of the teachers, which prevents them from getting buried in their own institution. Thus the sharing of process outcomes transparently with the teaching community ensures the rigour of the research. The colleagues also get familiarized with the knowledge over the research tool developed in order to make the best use of it and adapt and innovate.

The replication of a successful action research could also reveal the replicability of such research and genralisability of it for the same problem in different contexts. Thus applicability of it in a new context either helps in validating it with newly posed questions on it. An institution should build an encouraging and supporting structure for research activities of teacher for the upliftment of their own institution. Top-down and bottom-up support systems encourage organic growth and scope for development of new ideas where encouragement, recognition and resources are provided without reluctance.

Works Consulted

Abdel-Fattah, A. M. (2015). Grounded theory and action research as pillars for interpretive information systems research: A comparative study. *Egyptian Informatics Journal, 16*(3), 309-327. http:/ / dx.doi.org/ 10.1016/ j.eij.2015.07. 002

Agryris, C., & Scon, D. (1991). Participatory action research and action science compared: a commentary. In W.F. Whyte (Ed.), *Participatory action research*, Newbury Park, CA: SAGE.

Altrichter, H., & Gstettner, P. (1993). Action research: A closed chapter in the history of German school science. *Educational Action Research*, 1, 325-360.

American Educational Research Association (2000). Ethical standards of the American educational research association. http:/ / www.aera.net/ uploadedFiles/ About_AERA/ Ethical_Standards/ EthicalStandards.pdf

Anderson, P. V. (1998). Simple gifts: Ethical issues in the conduct of person-based composition research. *College Composition and Communication, 49*(1), 63-89.

Anderson, R., & Helms, J. V. (2001). The ideal of standards and the reality of schools: Needed research. *Journal of Research in Science Teaching*, 38, 3-16.

Anderson, T., & Kanuka, H. (2003). *E-research: Methods, strategies, and issues*. Boston: Pearson Education.

Angadi, G. R. (2019). Teachers' professional development through action research. *International Journal of Research in Social Sciences, 9*(5), 899-918.

Antonellis, P. J. (2014). Revisiting action research. *Journal of Social Science, 1*(1), 12-20. http:/ / scholarworks. merrimack.edu/ mgt_facpub/ 1

Arung, F. (2014). *The conceptual framework of classroom action research.* https:/ / usnpendbing.wordpress.com/ 2015/ 03/ 24/ th e-conceptual-framework-of-classroom-action-research/

Auriacombe, (2015). Closing the gap between theory and practice with action research. *African Journal of Public Affairs, 8*(5), 1-15. https:/ / pdfs.semanticscholar.org/ 674e/ d769caddd2865d4d9b9e634f02c61c981c94.pdf

Aylara, P. (2014). Action research [PowerPoint slides]. SlideShare.https:/ / www.slideshare.net/ aylaraprejith / action-research-38530286?from_ action=save

Banathy, B. H. (1996). *Designing social systems in a changing world.* New York: Plenum.

Banegas, D. L., & Castro, L. S. V. (2015). A look at ethical issues in action research in education. *Argentinian Journal of Applied Linguistics, 3*(1), 58-67.

Bassey, M. (1998). Action Research for Improving Educational Practice. In R. Halsall (Ed.), *Teacher Research and School Improvement: Opening Doors from the Inside*, 93-94. Buckingham: Open University Press.

Baum, F., MaxDougall, C., & Smith, D. (2006). Participatory action research. *Journal of Epidemiol Community Health, 60,* 854–857. doi: 10.1136/ jech.2004.028662

Baumfield, V., Hall, E., & Wall, K. (2013). *Action research in education learning through Practitioners enquiry* (2nd ed.). London: Sage Publications.

Baumfield, V., Hall, E., & Wall, K. (2013). *Action research in education* (2nd ed.). London: Sage Publications.

Berg, B. L. (2001). *Qualitative research methods for the social sciences* (4th ed.). Boston: Allyn and Bacon.

Bibi, S. (2011). Teaching: Experience or qualification? *Action Research*, November 2011. https:/ / static1.squarespace.com/ static/ 54cb2e66e4 b0 4 9ee7 8a97b14/ t / 54d223dee4b0084a3eb 96bab/ 14230 57886922/ Teaching-Experience-or Qualification.pdf

Bogdan, R., & Biklen, S. K. (1982). *Qualitative research for education: An introduction to theory and methods* (3rd ed.) Boston: Allyn and Bacon.

Bognar B., & Zovko M. (2009). Pupils as action researchers: Improving something important in our lives. *Educational Journal of Living Theories, 1*(1), 1-49. http:/ / ejolts.net/ files/ journal/ 1/ 1/ Bognar_Zovko1 (1). pdf

Boog, B. W. M. (2003). The emancipatory character of action research, its history and the present state of the art. *Journal of Community & Applied Social Psychology, 13,* 426–438. https:/ / doi.org/ 10.1002/ casp.748

Borg, S. (2015). Facilitating teacher research: Course design, implementation, and evaluation. *International Perspectives on English Language Teaching*. London: Palgrave Macmillan. https:/ / doi.org/ 10.1057/ 9781137376220_8

Borgia, E. T., & Schuler, D. (1996). Action research in early childhood education, *ERIC DIGEST*, https:/ / www.ericdigests.org/ 1997-2/ action.htm

Burns, A. (1999). *Collaborative action research for English language teachers*. New York: Cambridge University Press.

Burns, A. (2005). Action research: An evolving paradigm? *Language Teaching, 38*, 57–74. doi:10.1017/ S02614448 05002661

Burns, A. (2010). *Doing action research in English language teaching*. Abingdon: Routledge.

Burton, D., & Bartlett, S. (2005). *Practitioners research for teachers*. London: Sage Publications.

Cacos, C. (2016). *Dave Ebbutts action research model*. https:/ / www.scribd.com/ doc/ 302524373/ Dave-Ebbutt- s- Action-Research-Model

Cain, T., & Harris, R. (2013). Teachers' action research in a culture of performativity. *Educational Action Research, 21*(3), 343-358.

Calhoun, *F. E. (1994). How to use action research in the self-renewing school*. ASCD.

Campbell, A., & Groundwater-Smith, S. (2007). *Dealing with issues and dilemmas in action research*. London: Routledge.

Capobianco, M. B., & Feldman, A. (2010). Repositioning teacher action research in science teacher education. *Journal of Science Teacher Education, 21*, 909–915. https:/ / doi.org/ 10.1007/ s10972-010-9219-7

Carr, W., & Kemmis, S. (1986). *Becoming critical: Education, knowledge and action research*. London: Falmer.

Chapter 1 (nd). *Introduction to action research*.
https:/ / www.sagepub.com/ sites/ default/ files/ upm-binaries/ 38973_1.pdf

Chien-Chin Chen, (22, August 2018). *Facilitation of Teachers' Professional Development through principals' instructional supervision and teachers' knowledge-management behaviors.* Contemporary pedagogies in teacher education and development. https:/ / doi.org/ 10.5772/ intechopen.77978

Choo, Y. B. (2018, March 2). *TSL3133 Topic 7 Action research planning & proposal* [Video]. YouTube. https:/ / www. slideshare.net/ YeeBeeChoo/ tsl3133-topic-7-action-research-planning-proposal

Cochran-Smith, M., & Lytle, S. L. (2007). Everything's ethics: practitioner inquiry and university culture. In Campbell, A., & Groundwater-Smith, S (Eds.), *An ethical approach to practitioner research: Dealing with issues and dilemmas in actionresearch* (pp. 24–41). Abingdon/ New York: Routledge.

Coghlan, D & Brannick, T (2014). *Doing action research in your own organization.* (4th ed.) Los Angeles: SAGE Publications. https:/ / us.sagepub.com/ sites/ default/ files/ upm-assets/ 62944_book_item_62944.pdf

Corey, S. M. (1949). Action research, fundamental research and educational practices. *Teachers College Record, 50, 509-514.*

Corey, S. M. (1953). *Action research to improve school practices.* New York: Teachers College Press.

Cortes, P. A. R. (2013). Exploring action research on a professional development course in Chile [Unpublished doctoral dissertation]. University of Leeds.

Coulter, D. (2002). What counts as action in educational action research?. *Educational Action Research, 10,* 189-206. http:/ / dx.doi.org/ 10.1080/ 09650790200200181

Creswell, J. W. (2005). *Educational research, planning, conducting and evaluating quantitative and qualitative research*. New Jersey: Prentice Hall.

Cunningham, D. (2011). *Improving teaching with collaborative action research: An ASCD action tool*. Virginia, USA: ASCD.

Curry, A. (2005 August 14-18). *Action research in action: Involving students and professionals* [Conference session]. World Library and Information Congress: 71st IFLA General Conference and Council Libraries - A voyage of discovery, Oslo, Norway. http:/ / www.ifla.org/ IV/ ifla71/ Programme.html

David, C. (2002). What counts as action in educational action research?, *Educational Action Research, 10*(2), 189-206, doi: 10.1080/ 09650790200200181

Day, C. (1999). Teacher research and school improvement: Opening doors from the inside. *Cambridge Journal of Education, 29(1), 150-152.* https:/ / search.proquest.com/ openview/ bb435a79c5cc9296de4877562b7a96b8/ 1?pq-origsite=gscholar&cbl=49174

Dewal , O. S. (2003). *Action Research: Handbook for primary teachers*. New Delhi: NCERT.

Dharnakar, M. (2019, February 13). *Action research part 3*. [Video]. YouTube. https:/ / www.youtube.com/ watch?v=EtOu9rLb8d0

Dharnkar, M. (Feb 13, 2019). Action research: Part 2 by Madhavi Dharankar. *Youtube*. https:/ / www.youtube.com/ watch?v=nt4n7nbxQbM

Dick, B. (2000). *A beginner's guide to action research*. http:/ / www.uq.net.au/ action_research/ arp/ guide.html

Dick, B. (2002). *Action research: Action and research*. http:/ / www.scu.edu.au/ schools/ gcm/ ar/ arp/ aandr. ht ml, 2002.

Dick, B. (2007). What can grounded theorists and action researchers learn from each other? In A. Bryant, & K. Charmaz (Eds.), *The Sage Handbook of Grounded Theory,* 398-416. London: Sage Publications.

Dick, B. (nd). *What can grounded theorists and action researchers learn from one another?* New York: Dover Publications.

Edwards, Jenny. (2018). Conducting action research on the effects of cognitive coaching SM and adaptive schools. https:/ / www.thinkingcollaborative.com/ wp-content/ uploads/ 2018/ 01/ Action-Research-Manual-2018-Jenny-Edwards.pdf

Efron, S. E., & Ravid, R. (2013). *Action research in education: A practical guide*. New York: The Guiford Press.

Eilks, I. (2018). Action research in science education: A twenty-year personal perspective. *Action Research and Innovation in Science Education, 1*(1), 3-14. https:/ / pdfs.semanticscholar.org/ a694/ 828c3faa5a9 d7d4bc9c8b832470b87eba76.pdf?_ga=2.37721125.40381 6799.1583867805- 46997280.1575401730

Eilks, I., & Markic, S. (2011). Effects of a long-term participatory action research project on science teachers' professional development. *Eurasia Journal of Mathematics, Science & Technology Education, 7*(3), 149-160. https:/ / doi.org/ 10.12973/ ejmste/ 75196

Elliott, J. (1991). *Action research for educational change*. Bristol: Open University Press.

Evans, M., Lomax, P., & Morgan, H. (2000). Closing the circle: Action research partnerships towards better learning and teaching in schools. *Cambridge Journal of Education, 30*(3), https:/ / www.tandfonline.com/ doi/ abs/ 10.1080/ 713657160

Ferrance, E. (2000). *Action research.* LAB at Brown University. https:/ / www.brown.edu/ academics/ educationallian ce/ sites/ brown.edu.academics.education-alliance/ files/ publications/ act_research.pdf

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2011). *How to design and evaluate research in education* (8th ed.). Boston: McGraw – Hill.

Gay, L. R., & Airasian, P. (2003). *Education research* (2nd ed.). New Jersey: Prentice Hall.

Gay, L. R., Mills, G.E., & Airasian, P. (2006). *Educational Research: Competencies for analysis and applications* (10 ed.). USA: Pearson Education Inc. http:/ / englishlangkan.com/ produk/ E%20Book%20 Educational%20Research%20L%20R%20Gay%20Pears on%202012.pdf

Gelling, L., & Giddings, C. M. (2011). Ethical review of action research: The challenges for researchers and research ethics committees. *Research Ethics, 7*(3), 100–106. https:/ / journals.sagepub.com/ doi/ pdf/ 10.1177/ 174701611100700305

Grimshaw, J. M., Eccles, M. P., Lavis, J N., Hill, S. J., & Squires, J. E. (2012). Knowledge translation of research findings. *Implementation Science, 7*, 50. https:/ / doi.org/ 10.1186/ 1748-5908-7-50

Grossman, P. (2005). Research on pedagogical approaches in teacher education. In Cochran-Smith, M., & Zeichner

(Eds.), *Studying teacher education: The report of the AERA panel on research and teacher education* (pp.425-476). Mahwah, NJLawrence Erlbaun.

Grundy, S. (1982). Three modes of action research. *Curriculum Perspectives, 2*(3), 23-34.

Habermas, J (1987). *Knowledge and human interest*. Cambridge, UK: Polity Press.

Hall, K. M. (2005). *Action research: A guide for associate lecturers.* Milton Keyes, Philadelphia: The Open University Press.

Halsall (Ed.). (1998). *Teacher research and school improvement: opening doors from the inside.* Buckingham: Open University Press.

Hammond, L. D., Hyler, E. M., & Gardner, M. (May, 2017). Effective teacher professional development. *Learning policy institute research brief*.
https:/ / learningpolicyinstitute.org/ sites/ default/ files / product-files/ EffectiveTeacherProfessional_Development_BRIEF.pdf

Hendricks, C. (2009). *Improving schools though action research: A comprehensive guide for educators*. Pearson: Villianova.edu.

Hendricks, C. (2009). Using action research to improve educational practices: Where we are and where we are going. *Journal of Curriculum and Instruction, 3*(1), 1-6, doi: 10.3766/ joci.2009.v3.n1p1-6.

Hendricks, C. (2017). *Improving schools through action research: A reflective practice approach* (4th ed.) New York: Pearson.

Hien, T. T. T. (2009). Why is action research suitable for education? *VNU Journal of Science, Foreign Languages,*

25, 97-106. https:/ / repository.vnu.edu.vn/ bitstream/ VNU_123/ 57640/ 1/ 25.2.4.pdf

Hine, G. S. C. (2013). The importance of action research in teacher education programs [Special issue]. *Educational Research, 23*(2), 151-163. http:/ / www.iier.org.au/ iier23/ hine.html

Holter, A. C., & Frabutt, J. M. (2012). Mission driven and data informed leadership. *Catholic Education: A Journal of Inquiry and Practice, 15*(2), 253-269. http:/ / ejournals.bc.edu/ ojs/ index.php/ catholic/ article/ view/ 1935/ 1753

Hopkins, D. (2002). *A teacher's guide to classroom research.* Buckingham: Open University Press.

https:/ / aru.mandela.ac.za/ Aims-of-Action-Research

https:/ / methods.sagepub.com/ images/ virtual/ actionresearch/ 10.4135_ 978148339 6484-fig6.jpg

Iliev, D. (2010). Pupils as action researchers - benefits and limitations. *Procedia Social and Behavioral Sciences*, 2, 4208–4211. https:/ / reader.elsevier.com/ reader/ sd/ pii/ S1877042810007068

Ivankova, N. V. (2015). *Mixed methods application in action research: From methods to community action.* Los Angeles, USA: Sage.

Jane, Zeni. (1998). A guide to ethical issues and action research. *Educational Action Research, 6*(1), 9-19. doi: 10.1080/ 09650799800200053

Johnson, A. P. (2012). *A short guide to action research* (4th ed.). Boston: Pearson.

Johnston, M. (2005). The lamp and the mirror: Action research and self-studies in the social studies. In K. Barton (Ed.), *Research methods in social studies education:*

Contemporary issues and perspectives (pp. 57-83). Greenwich: Information Age Publishing.

Kemmis S., & McTaggert R. (1988). *The action research reader* (3rd ed.). Australia: Deakin University Press.

Kemmis, S. & Wilkinson, M. (1998). Participatory action research and the study of practice. In B. Atweh, S. Kemmis & P. Weeks (Eds.), *Action research in practice.* London: Routledge.

Kinsler, K. (2010). The utility of educational action research for emancipatory change. *Action Research*, *8*(2), 171–189. https:/ / doi.org/ 10.1177/ 1476750309351357

Koshy, V. (2009). *Action research for improving educational practice.* London: Sage Publications.

Krovetz, M. L., & Arriaza, G. (2006). *Collaborative teacher leadership: How teachers can foster equitable schools*. Thousand Oaks, CA: Corwin Press.

Kurt L. (1946). Action research & minority problems. *Journal of Social Issues*, 2, 34-46.

Laudonia, I., & Eilks, I. (2018). Teacher-centred action research in a remote participatory environment – a reflection on a case of chemistry curriculum innovation in a Swiss vocational school. In J. Foletta (Ed.), *Participatory Action Research: Principles, approaches and applications* (pp. 215- 231). Hauppauge: Nova. (Reprinted In J. Calder & I. Eilks (Eds.), Action research in science education, *Action Research and Innovation in Science Education, 1*[1], 3-14, www.arisejournal.com)

LeGeros, L. (2016). *Why do action research?* https:/ / tiie.w3.uvm.edu/ blog/ why-do-action-research/ #.Xm4EzXIzbIV

Lesha, J. (2014). Action research in education. *European Scientific Journal, 10*(13), 379-386. http:/ / eujournal.org/ index.php/ esj/ article/ viewFile / 3363/ 3127

Lim, P. T. H. (2007). Action research for teachers: A balanced model. *Proceedings of the redesigning pedagogy: Culture, knowledge and understanding conference,* Singapore. https:/ / www.academia.edu/ 20274598/ Action_ Research_For_TeachersA_ Balanced_Model

Lincoln, Y.S., & Guba, E.G. (1985). *Naturalistic inquiry*. Beverley hills, CA: SAGE.

Little, J.W. (1981). *School success and staff development: The role of staff development in urban desegregated schools*. Boulder, CO: Center for Action Research, Inc.

Luxmi, M. V. (2017).Importance of action research for B.Ed. pupil teacher. *International Education & Research Journal, 3*(5), 449-450.

Maheshwari, V. K. (2012). *Action research in education.* http:/ / www.vkmaheshwari.com/ WP/ ?p=402

Mantiza, M. B. (2013). *Teacher as action researcher.* https:/ / www.slideshare.net/ BESPF1/ teacher-as-action-researcher

Margerison, J C. (1973). Experiential education and action research some organizational dilemmas of action research in education. *Instructional Science, 2,* 53-62.

Marrow, A. J. (1969). *The practical theorist the life and work of Kurt Lewin.* New York: Basic Books.

Marton, F., Cheung, W. M., & Chan, S. W. Y. (2019). The object of learning in action research and learning study. *Educational Action Research, 27*(4), 481-495, doi: 10.1080/ 09650792.2018.1489873

McDonough, J. & McDonough, S. (1997*). Research methods for English language teachers*. Delhi: Arnold.

McLaughlin & Black-Hawkins. (2007). School-university partnerships for educational research: Distinctions, dilemmas, and challenges. *Currriculum Journal, 18*(3), 327-341.

McNiff, J., & Whitehead, J. (2002). *Action research: Principles and practice* (2nd ed.). New York: Routledge Falmer.

McNiff, J., & Whitehead, J. (2005). *Action research for teachers*. Oxford: David Fulton.

McNiff, J., & Whitehead, J. (2010). *You and your action research project* (3rd ed.). London: Routledge.

Mertler, A. C. (2009*). Action research: Teacher as researchers in the classroom* (2nd ed.). California: Sage Publications.

Miles, M., & Huberman, M. (1984). *Qualitative data analysis: A sourcebook of new methods* (2nd ed.). Beverly Hills, CA: SAGE.

Mills, E. G. (2014). *Action research: A guide for the teacher researcher* (5th ed.). NJ: Pearson Publishers.

Nasrollahi, M.A. (2015). A closer look at stringer's action research model in improving students' learning. *International Journal of Current Research, 7*(7), 18663-18668.
https:/ / www.journalcra.com/ sites/ default/ files/ issue-pdf/ 7466_0.pdf

Nelson, D. (2013). Action research: An appropriate research paradigm for practitioners. *Language in India, 12*(10), 183-196. http:/ / www.languageinindia.com/ oct2013/ deepikaactionresearch.pdf

Nguyen, L. H. T. (2015). *Action research in education - An overview*.

http:/ / nnkt.ueh.edu.vn/ wp-content/ uploads/ 2015/ 12/ 01-2015.pdf

Nicodemus, B., & Swabey, L. (2015). Action research. In C. V. Angelelli & B. J. Baer (Eds.), *Researching translation and interpreting*. New York: Routledge.

Noffke, S., & Somekh, B. (2010). *The sage handbook of educational action research.* London: Sage Publication.

Nolen, A. L., & Putten, J. V. (2007). Action research in education: Addressing gaps in ethical principles and practices. *Educational Researcher, 36*(7), 401-407.

Nuan, D. (1992). *Research methods in language learning*. Australia: Cambridge University Press.

Nunan, D. (2001). *Research methods in language learning* (9th ed.). United States: Cambridge University Press.

Nunes, M. B., & McPherson, M. (2003). Action research in continuing professional distance education. *Journal of Computer Assisted Learning,* 19, 429-437.

O'Brien, R. (2001). Um exame da abordagem metodológica da pesquisa ação [An Overview of the Methodological Approach of Action Research]. In Roberto Richardson (Ed.), *Teoria e Prática da Pesquisa Ação [Theory and Practice of Action Research].* João Pessoa, Brazil: Universidade Federal da Paraíba.
http:/ / www.web.ca/ ~robrien/ papers/ arfinal.html

Palaskar, J. N. (2018). Research ethics. *Journal of Dental and Allied Sci*ences, 7, 1-2. http:/ / www.jdas.in/ temp/ JDent AlliedSci711-6659382_182953.pdf

Parker, M. (2006). *Action research in education.*
http:/ / www.edu.plymouth.ac.uk/ resined/ actionrese arch/ arhome.html

Parson, J., Hewson, K., Adrian, L., & Day, N. (2013). Engaging in action research: A practical guide to teacher-conducted research for educators & school leaders. *Cambridge Journal of Education*, *30*(3), 405–420.

Parsons, R. D., & Brown, K. S. (2002). *Teacher as reflective practitioner and action researcher.* Stamford: Wadsworth / Thomson.

Pathak, R. P. (2008). *Methodology of educational research.* Delhi: Atlantic Publishers.

Peirce, J. S. (1940). 'Abduction and induction' in J. Buchler (ed.), *The Philosophy of Pierce: Selected Writings*. London: Routledge & Kegan Paul (republished as *Philosophical writings of Peirce*. New York: Dover, 1955)

Peltokorpi, E. L., Maatta, K., & Usiautti, S. (2012). How to ensure ethicality of action research in the classroom. *World Journal of Education, 2*(3), 32-42. doi:10.5430/ wje.v2n3p32,
https:/ / files.eric.ed.gov/ fulltext/ EJ1158982.pdf

Piggot-Irvine, E. (2002, September 12-14). *Rhetoric and practice in action research.* [Paper presentation]. Annual conference of the British Educational Research Association, University of Exeter.
http:/ / www.leeds.ac.uk/ educol/ documents/ 0000247 1.htm

Pine, G. J. (1981). Collaborative action research in school counselling: The integration of research and practice. *The Personnel and Guidance Journal, 59*(8).
https:/ / doi.org/ 10.1002/ j.2164-4918.1981.tb00603.x

Pine, G. J. (1981). *Collaborative action research: The integration of research and service.* Paper presented at the annual meeting of the American Association of Colleges for Teacher Education, Detroit, MI.

Posc, P. (1994). Networking in environmental education, In B. Pettigrew (Ed.), *Evaluation and innovation in environmental education*. Paris: OECD.

Postholm, M. B., & Skrøvset, S. (2013) The researcher reflecting on her own role during action research, *Educational Action Research, 21*(4), 506-518, http:/ / dx.doi.org/ 10.1080/ 09650792.2013.833798, DOI: 10.1080/ 09650792.2013.833798

Putman, S. M., & Rock, T. (2018). *Action research: Using strategic inquiry to improve teaching and learning*. California: Sage Publications.

Raja, B. W. D. (2002). *Action research in the English classroom.* [Paper presented] English Language Teachers Association of India's first regional Conference. Coimbatore: ELTAI.

Raja, B. W. D. (2008). A decade of action research studies (1996-2006). In Jahita Begam (Ed.), *Innovations in modern educational research* (pp. 43-50). Agra: H.P. Bhargava Publishers.

Raja, B. W. D. et al. (2003). *Action research* (in Tamil). Chennai: DTERT.

Raja, B. W. D., & Lourdes, R. G. (Eds.) (2002). *Action researches on school setting – Monograph.* Tuticorin: IGNOU, Tuticorin Center (2557).

Raja, B. W. D., & Rajathi, P. G. G. (2005). Action research – An extension to professional development of teachers. *Meston Journal of Research in Education, 4*(2), 12-16.

Raja, B. W. D., & Sivamani, G. S. S. (2002). Action research – A way for proving professional commitment. Proceedings of professional commitment of teachers

and teachers educators (pp.98-101). Palayamkottai: St Xavier's College of Education.

Raja, B. W. D., (2009). A *sine quo non* for action researches in higher education. *University News* 47(7), 18-22.

Raja, B. W. D., Boopalarayan, G.A., & Rajalakshmi (Eds.) (2008). *Action research: Monograph.* Manjur, Ramanathapuram: DIET.

Rajathi, P. G. G. & Mangayarkarasi, S. (2005). *Solving the problem of poor attendance of Standard IV children through counseling*. An action research report submitted to DTERT, Chennai.

Ramirez, X. R. (2004). An analysis of the research processes involved in an action research project: A case study. *Káñina, Rev. Artes y Letras, Univ. Costa Rica*, 28(2), 221-234.

Rao, R. R. & Rao, D. B. (2006). *Methods of teacher training.* New Delhi: Discovery Publishing House.

Rapoport, R. (1970). Three dilemmas of action research. *Human Relations, 23(*6), 499-513.

Reason, & Bradbury. (2001). *Handbook of action research.* London: Sage Publications.

Riding, Phil, Fowell, Sue and Levy, Phil (1995) "An action research approach to curriculum development". *Information Research*, *1*(1).
http:/ / InformationR.net/ ir/ 1-1/ paper2.htmlMapotse, T.M. (2015). Process in congruence to emancipate teachers: Technology education and action research. 3 rd International Conference on Innovation Challenges in Multidisciplinary Research and Practice (ICMRP-2015), *Full Paper Proceeding ICMRP-2015, 3*, 138-148.

Riel, M. (2010). Understanding action research, centre for collaborative action research. Pepperdine University. http:/ / cadres.pepperdine.edu/ ccar/ define.html

Riel, M. (2010-2019). Understanding Collaborative Action Research. Center For Collaborative Action Research, Pepperdine University CA, USA (Last revision Mar 2019). Accessed Online on (date) from http:/ / cadres.pepperdine.edu/ ccar/ define.html

Romme, A. G .L. (2004). Action research, emancipation and design thinking. *Journal of Community and Applied Social Psychology, 14,* 495–499. doi: 10.1002/ casp.794

Rowell, L., Bruce, C., Shosh, J.M., Riel, M . (Eds). (2017). *The palgrave international handbook of action research.* US: Palgrave Macmillan.

Rust, F., & Clark, C. (2007). *How to do action research in your classroom.* New York: Teachers Network Leadership Institute.

Sagor, R. (2000). *Guiding school improvement with action research*. Alexandria: Association for Supervision and Curriculum Development.
http:/ / www.ascd.org/ publications/ books/ 100047/ ch apters/ What-Is-Action-Research% C2% A2.aspx

Sagor, W. (2005). *The action research guidebook.* London: Corwin Press.

Sankara, S., Dick, B., & Passfield, R. (Eds.), (2001). *Effective change management through action research and action learning: Concepts, perspectives, processes and applications*. Australia: Southern Cross University Press.

Schneider, B. (2012). Participatory action research, mental health service user research, and the hearing (our)

voices projects. *International Journal of Qualitative Methods, 11*(2), 152-165.

Schwandt, T. A. (1997). *Quality inquiry: A dictionary of terms.* New Delhi: Sage Publications.

Sheids, P. M. (2003). The community of inquiry: Classica pragmatism and public administration. *Administration and Society, 35*(5), 510-538.

Sidik, S. M. (2005). How to write a research proposal. *The Family Physician, 13*(3), 30-32.

Simmons, S. (1985). From paradigm to method in interpretive action research. *Journal of Advanced Nursing, 21*, 837-844.

Singh, Y. K. (2006). *Fundamental of research methodology and statistics.* New Delhi: New Age International.

Smith, M. K. (1996; 2001, 2007) *Action research: The encyclopedia of pedagogy and informal education.* https:/ / infed.org/ mobi/ action-research/

Sommer, R. (2009). Dissemination in action research. *Action Research, 7*(2). https:/ / doi.org/ 10.1177/ 1476750308097028

Stringer, E. (2004). *Action research in education*. New Jersey: Merrill Prentice Hall.

Susman, G. I. (1983). Action research: A sociotechnical systems perspective. In (Ed.) G. Morgan, *Beyond method: Strategies for social research.* London: Sage Publications, 95-113.

Sutter, W.N. (2006). *Introduction to educational research: A critical thinking approach.* Thousand Oaks, CA: Sage.

Thanh, N. L. H. (2015). *Action research in education – An overview*.

http:/ / nnkt.ueh.edu.vn/ wp-content/ uploads/ 2015/ 12/ 01-2015.pdf

Tindowen, D. J., & Guzman, Joy., & Macanang, Domer. (2019). Teachers' conception and difficulties in doing Action Research. *Universal Journal of Educational Research. 7.* 1787-1794. doi:10.13189/ ujer.2019.070817

Tomal, D. R. (2005). *Action research for educators*. Lanham: Rowman and Littlefield.

Tripp, D. (2005). Action research: A methodological introduction. *Educação e Pesquisa, 31.* https:/ / www.researchgate.net/ publication/ 237316452_Action_research_a_methodological_introduction/ citation/ download

Upadhya, B., & Singh, Y. K. (2007). *Advanced educational psychology*. New Delhi: APH Publishing Corporation.

VanBaren, J. (2019). *What are the types of action research design?* https:/ / bizfluent.com/ list-7608678-types-action-research-design.html

Walker, M. (1993). Developing the theory and practice of action research: A South African case. *Educational Action Research, 1*(1), 95-109. doi: 10.1080/ 0965079930010106

White, J. D. (1999). *Taking language seriously: The narrative foundations of public administration research.* Washington: Georgetown University Press.

Willis, J. W., & Edward, C. (2014). *Action research: Models, methods, and examples*. USA: Information Age Publishing.

Winter, R. (1989). *Learning from experience: Principle and practice in action research.* London: Palmer Press.

Yasmeen, G. (2008). Action research: An approach for the teachers in higher education. *The Turkish Online Journal of Educational Technology – TOJET,* 7(4), 46-53. http:/ / www.tojet.net/ articles/ v7i4/ 745.pdf.

Zeichner, K. (2001). Education action research. In P. Reason, & H. Bradbury (Eds.), *Handbook of action research: Participative inquiry and practice* (pp.273–283). London: Sage Publications.

Zeni, J. (1998). A guide to ethical issues and action research. *Educational Action Research, 6*(1), 9-19. doi: 10.1080/ 09 650799800200053

Zuber-Skerritt, O. (1982) *Action research in higher education*. London: Kogan. Zuber-Skerrit, O. (Ed) (1996). *New directions in action research.* London: Falmers Press.

Zuber-Skerritt, O. (Ed.). (2005). *New directions in action research.* London: Falmers Press.

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