Investigating the Ability of Bhutanese Teachers to Understand and Carry Out Action Research in Teaching

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Abstract

Research demonstrates that teacher action research can help teachers, school and system bring positive change, ultimately impacting the students' learning. Teacher action research (TAR) has been implemented in Bhutan to improve the professionalism of Bhutanese teachers, but there have not been any studies conducted to investigate the state of TAR in Bhutan. This descriptive study with qualitative support investigated Bhutanese teachers' ability to understand and carry out action research in teaching. A semi-structured online survey questionnaire was used to collect data and to gain a better understanding and insights about the Bhutanese teacher action research program. These data were interpreted by means of descriptive statistics to draw conclusions, which was corroborated with qualitative open-response data. Participants expressed that TAR was essential in improving their practice, but they lack comprehensive abilities. This downside was described as due to lack of knowledge, time, and resources pertaining to TAR. In addition, teachers in this study expected to receive in-depth professional development workshops, attend educational conferences and seminars from within the country and outside. Recommendations for support for TAR in Bhutan is provided.

I would like to dedicate my work to Januka Dungana (wife), Yogita Timsina (daughter), and Dipen Timsina (son) for unwavering support and enduring love

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Chapter 1

Introduction

Background and Rationale

Bhutan is a mountainous country nestled in the Himalayas between India and China. It is nearly the size of Maryland in the United States and a population is less than a million. Bhutan has been in the global limelight because of the concept called *Gross National Happiness* (GNH). That means, prosperity of its people or socio-economic development in Bhutan is measured in terms of GNH as opposed to Gross Domestic Product (GDP). This human development principle is based on material and spiritual development, where both should occur side by side to complement and reinforce each other (Ura, Sabina & Tshoki, 2012). GNH measures Bhutan in a holistic way. In July 2008 the Government of Bhutan became a constitutional democratic monarchy with the King as the Head of State and the Prime Minister being the head of government. Prior to 2008, it was a full-fledged monarchy.

The early education system of Bhutan mainly consisted of monastic education where Buddhism was taught and learned. Towards the mid- 20th century, the Royal Government of Bhutan prioritized formal (western) education as an engine of growth in the nation building process (Denman & Namgyel, 2008). Beginning in the 21st century, Bhutan envisioned having an efficient, high-performing and successful education system that would "prepare students to thrive in a competitive and fast-growing world with knowledge, intellectual competence, and character" (BEP 2014-2024, 2014, p.19).

Improving education in Bhutan is a national concern, which was explicit in His Majesty the King's address to the graduating teachers at the 3rd Convocation of the Royal University of Bhutan in Paro, February 17, 2009:

> Our education system built and nurtured with your hard work and dedication has served us well. But we must understand that the times have changed here in Bhutan and all around us in the world. We cannot face new challenges with the same tools… thus, every person and institution must evolve to meet the aspirations of our people and the changing needs of our nation.

This anecdotal quote shows that importance given towards strengthening the foundation of education is accorded even from the highest authority.

From my own experience, the education system of Bhutan has improved a lot. I witnessed many changes in the education system during my 13 years as a teacher in the system. There is continuous progress in curriculum and instructional strategies. When I graduated from teacher training college, I had acquired basic skills in teaching strategy, child psychology and classroom management, but did not know that action research existed in the teaching profession. Today, pre-service teachers are trained more comprehensively before transitioning into the workforce. Textbooks have become Bhutanese-based, and professional development workshops and trainings are frequently organized. However, data indicates that the system fails to provide the necessary knowledge and skills to meet the new challenges to the students. Studies conducted on education by the Royal Education Council (REC) (2009) indicated that student learning outcomes did not meet the goals. Some of the finding of REC were:

1. Gaps were prevalent in the students' learning outcomes, classroom practices, school processes, and education support systems.
2. A majority of students were unable to understand core concepts and could not apply their knowledge to real-life situations.
3. Students performed best on questions that tested recall and rote memorization. (REC.2009, p. 29)

Also, teaching is not a choice profession. The Bhutan Education Ministry struggles to attract top performing graduates and retain qualified and experienced teachers (Sherab, 2013). The Teachers' Job Satisfaction Study (REC, 2013) revealed that teachers were dissatisfied with their job because of lack of continuous professional development and support. Ninety-five percent of teachers responded that professional development was one of most important factors that contributes to teacher quality (Namgay & Yuden, 2013).

Based on these findings, the Bhutan Education Blueprint 2014-2024 (BEP 2014-2024) was created to address the numerous challenges in education and to guide the development and transformation of education in Bhutan. BEP 2014-2024 is a strategic framework in education to guide the educational reforms in Bhutan. Continuous professional development for teachers was one of the initiatives and priorities highlighted in BEP 2014-2024 to raise the standards of student learning. Numerous strategies and initiatives for teacher professional developments were proposed in the Bhutan Education Blueprint 2014-2024. The following proposed strategies and initiatives continue today:

- Master Lead Teacher (MLT), Cluster Lead Teacher (CLT) and School Lead Teacher (SLT) are selected to lead the peer led culture. This is used to create a culture of professional excellence in all schools where teachers mentor and inspire one another and share best practices of teaching and learning in all schools (p.83).
- Every teacher is to receive a minimum of 80 hours of in-service professional development (PD) programs annually. Forty of these hours will be provided by MLT, CLT and SLT, and 40 hours will be provided by the Ministry directly (BEP 2014-2024, p. 40).

MLTs, CLTs and SLTs are selected by the Ministry as focal teachers in the region, cluster (a region identified by the government to function as one unit), and school, respectively.

This post (MLT, CLT & SLT) required them to do their defined roles and responsibilities in addition to their proposed teaching load. Their role is to support and enhance the professionalism of teachers within their jurisdiction. For example, the focal teacher is required to look after staff development such as professional development workshops and trainings. After the focal teachers receive a Training of Trainers training, they in-turn provide same workshops to teachers in the respective clusters.

Research Problem

Considering that a research culture is an important element of any educational institution, the Bhutanese Ministry of Education wants to ensure that every teacher conducts educational research (BEP 2014-2024). In-line with creating in-service professional development programs and peer led culture towards professional excellence, the Bhutanese Ministry of Education wants to, "ensure every teacher produces at least one 'action research' in a year related to teaching and learning" (BEB 2014-2014, 2014, p.80). To achieve this, teacher action research workshops were conducted by the Education Ministry experts between 2015-2018 to train the CLTs and SLTs. The CLTs and SLTs, in turn, provided same trainings to teachers in respective clusters and schools. However, Bhutanese teachers expressed dissatisfaction for this cascading model of providing professional development programs. They feel that the program content is diluted as a result of condensing a week-long National Based In-service Program to an hour-long Professional Development workshop at the school level (REC, 2013). There seemed to be a problem between the edicts and the practitioners.

From my own experience, I can definitely see how completing one action research project in a year may be a difficult for Bhutanese teachers with limited knowledge about conducting research. Like me, many teachers might not have learned research skills during a

training period, or attended research workshops or training, let alone those specifically involving action research. Even some of those teachers who attended action research workshops during in-service period likely learned from their peers rather than directly from experts. Teachers generally do not have access to online resources or guidebooks to learn independently, and there are no professional learning communities or platforms to clarify the queries. Based on these constraints, what seemed to be challenging was the ability of Bhutanese teachers to carry out action research confidently in the field.

Purpose and Research Question

In this study, I sought to discover the perceptions of Bhutanese teachers regarding their ability to conduct teacher action research in schools because I wanted to find out their confidence level to conduct teacher action research in schools. Confidence comes from feelings and belief of our ability, skills and experience. This study will also assess the impact of teacher action research workshop provided by the Bhutanese Ministry of Education as a professional development program for teachers. I sought to find out what Bhutanese teachers in the field knew about TAR, the problems they faced while conducting TAR, and what kinds of professional help do they expected to receive from the schools, districts, or the government.

Information about teacher action research is abundant globally. However, gaps still remain to Bhutanese teachers and policy makers in terms of connecting professional development, teacher practices, and student outcomes. Due to the complexity of teacher change and growth, more studies are needed to more accurately capture the confidence and challenges of teachers from the field. Therefore, one of the purposes of this study was to discover the impacts of current teacher action research professional development on Bhutanese teachers' practices based on their level of confidence. The second purpose of the study was to offer general

recommendations for the professional development program particularly to improve the teacher's practice.

The study specifically aimed to answer the following questions:

1. What are the perceptions of Bhutanese Teachers about what they know and how confident are they in conducting Teacher Action Research?
2. What are Bhutanese Teachers' expectations of professional support to enhance their Teacher Action Research skills?
3. What are some practical problems and benefits identified by Bhutanese Teachers in conducting Teacher Action Research?

The following chapters discuss in more detail the relevant literature (Chapter 2), the research methods (Chapter 3), the results (Chapter 4), and discussion and recommendations (Chapter 5).

Chapter 2

Literature Review

Teacher action research (TAR) is a professional development program implemented to reform education in Bhutan. As a member of the Bhutanese teaching fraternity, I feel it is important to understand the concepts and methodological contexts of this program before it is incorporated within a bigger system such as education in Bhutan. The goals of this literature review are to delineate the potential paradigm, theory, and tenets of TAR, and to see if they can be understood by Bhutanese educators. My literature review will adhere to the following structure:

1. Present a global overview of history, paradigm, theories, and perspectives of action research in education.
2. Narrow to suitable definitions of action research and teacher action research
3. Discuss some models of action research and its salient features.
4. Discuss the history of action research in Bhutanese context including my own experiences.
5. Describe the methodology approach for the study.

Research is an important tool in for probing problems and finding solutions or truths. Whether, a physician or an educator, every practitioner should try to incorporate research to enhance their daily learning process because no hypothesis or theory can be called scientific or accepted if it lacks the support of empirical evidence (Johnson & Christensen, 2017). TAR is a type of research carried out by teachers to enhance their professional knowledge and students' learning (Bensimon, Polkinghorne, Bauman & Vallejo, 2004, Wang, Kretschmer & Hartman, 2010; Johnson, & Christensen, 2017). TAR has its own history of modification and transformation and it is still emerging in the field of education (Abes, 2016).

History, Paradigms and Theoretical Perspective of Action Research

History of Action Research

Kurt Lewin (1890-1947) is often regarded as a founder of action research (Johnson & Christensen, 2017). In the 1930s, Lewin started action-oriented research to empower the oppressed by democratic participation as reflected in his article, *Action research and minority problems* (Andronic, 2010). Lewin, at that time considered that, there was no relationship between social theory and social action. While scientists developed the theory, practitioners separately engaged in actions without knowing the scientific theory. In Lewin's conception, research with the action based on scientific theory was required to have a consistent result or informed solutions for social change (Andronic, 2010). This idea of combining *research* with *action* gave birth to action research. Since then, this concept of action research has undergone transformation and modification reaching beyond borders for various disciplines and institutions (Somekh & Zeichner, 2009). The following paragraphs describe a timeline of critical events towards conceptualizing action research.

Corey (1953) adopted many of Lewin's ideas into educational settings in USA in the late 20th century, distinguishing action research from traditional research and incorporating it into the school curriculum. Corey identified the role of teacher as a central driver of education reform and introduced cooperative action research to teachers in schools (Somekh & Zeichner, 2009).

With a focus on pedagogy, which he thought was a determining factor for students' achievement, Stenhouse (1985) suggested that teachers involve action research in their pedagogy through a joint teacher-student interaction. The knowledge generated by teachers as a facilitator through such interactions was helpful in informing education policy and practices (Somekh & Zeichner, 2009).

Carr and Kemmis (1986) worked further to develop more structured theory and methodology in the conduct of action research by locating TAR within the critical theory. They laid an argument that educational research, like action research, can produce an informed understanding about the practice of teaching only when the teacher becomes a researcher. Their main focus was still emancipatory, holding the Lewin idea of resisting the marginalized subjects, and generating informed knowledge through critical self-reflection (Carr and Kemmis 1986).

Elliott's (1992) contribution in improving education was developing the moral aspect of teachers through action research, which he relates to knowledge and understanding conveyed by an educational theory can be applied by teachers in learning to teach effectively. Such effective and informed teaching believed to improve the moral aspect of teachers (Somekh & Zeichner, 2009). In addition, he also developed a multi-level action research which focused on professional growth of a teacher while achieving student's performance. In the multi-level process of professional growth, Elliott suggested teachers in schools could partner with university experts to make a multi-tier process to enhance practice of teaching. Due to the nature of such collaboration, he also suggested it as participatory action research (Thomas, 2017).

McNiff and Whitehead (2011) developed a complete guide to action research to help the educators undertake an action enquiry and produce a quality report for publication and further dissemination. Their key point was to make practitioner-researcher a knowledge or a theory generator about learning and practice for oneself and for others (McNiff & Whitehead, 2011).

Another complete guide for the teacher researcher was developed by Mills (2018). He felt that teachers, through action research, have the potential to become agents for educational change. His idea was to make teachers understand the nexus between theory and practice. He argued that to make such nexus teachers and administrators need commitment to conduct action

research, and those commitment in itself can be an ongoing professional development to them (Mills, 2018).

The contributions of all these authors were profoundly influential in presenting action research as a legitimate research methodology in education (Nassrollahi, Krish, & Noor, 2012, Mills, 2018) and TAR stands out to be an educational reform agency adopted by different individuals, institution or countries. Despite having existed for more than six decades, action research can still be considered a globally emerging paradigm (Abes, 2016). It is emerging because action research is becoming more theorized, drawing on wide range of contemporary thought and knowledge often based on the professional, the personal and the political areas, and tradition of action research flourished and diversified across political boundaries (Noffke, 1997). All these differing conceptions of action research were informed by different paradigms, theories and research.

Paradigms

The nature of educational theory, and how that theory is applied in practice, depends on the paradigms in which it is situated. According to Arhar, Holly and Kasten (2001), a paradigm is a world view, or a frame of reference attributed to a group of people who hold similar beliefs. They characterized two distinct periods as *modern* and *postmodern*, which can be described by different beliefs: positivism and interpretivism, respectively.

Although there are many ways to characterize the two paradigms, Arhar, Holly and Kasten (2001) provides a general and clear description of each. The "modern paradigm was known by progress, universality and regularity" (Arhar, Holly & Kasten, 2001 p. 25). During that paradigm, the model of teaching relied on rote learning and the curriculum was organized such that simpler concepts progressed to more complex concepts (Arhar, Holly & Kasten, 2001). And at that time, all students were made to progress at the same time and in the same way.

Researchers who adhered to modern curriculum used various methods of experimentation and observation to generate knowledge considering "all behaviors and events are orderly and can have predictable results" (Mills, 2018 p.4) and the goal of inquiry was to explain, predict, and discover. This traditional belief where natural phenomenon can be explained in methodical way using empirical science across all discipline is known as *positivism.*

For positivists, knowledge about the social world can be obtained objectively, as in technical perspectives. People using technical perspective considered knowledge as a *thing,* separate from the researcher. There are cause and effect relationships throughout. They use statistical analysis and assume that a phenomenon can be studied, experimented, manipulated and analyzed. The results can be generalized and applied to other situations. This kind of traditional research approach, also called technical research, basic research, or spectator research, is situated in the positivist paradigm where the knower's own value position is not considered in the process (Arhar, Holly & Kasten, 2001).

Although Dewey (1859-1952), an education philosopher, in modern paradigm believed in regularity but argued that students should be viewed as active participants rather than passive participants. This active participation set-up a transition between modern and postmodern paradigm. Conversely, Jean Piaget (1936) showed that "each individual has a unique biological endowment and circumstances which interact to make experience unique and not regular" (Arhar, Holly & Kasten, 2001, p.26). Since technical research could not address individual differences, particularity and irregularity among the learners (Arhar, Holly & Kasten, 2001), this gave rise to new belief or *postmodernity* paradigm. This alternative belief, also termed as *interpretivism***,** looked for naturalistic methods of generating theory by using non-traditional yet scientific methods of interpreting or constructing the knowledge. Applied to education, this paradigm enables researchers to build rich local understandings of the real-world experiences of

teachers and students and of the cultures of classrooms, schools and the communities they serve. A rich local understanding involves a broader focus on pedagogies, curriculum policies and schooling system in which teachers are immersed. Such an interpretive orientation is essential for teachers wishing to adopt more student-centered pedagogies such as constructivist approaches to teaching and learning. Thomas (2017) described interpretivism as what people think and how they form ideas using themselves or by immersing in a situation. He argued that "knowledge is everywhere and is socially constructed" (p.109). It is evident that while modern education or positivism believed in progress, postmodern or interpretivism education believed in difference. Some of the theories in education that supported interpretivism beliefs are constructivism and critical theory.

Thomas, (2017) also argued that there are no expectations in the social world where the researcher should remain objective in his or her study. Instead he argued that all the work researchers do should be based on their own interests and they should become involved as the participants in their own study. Such involvement or immersion in the context is what he called *researchers position.* Traditionally, education scholars came from outside the schools. They conducted research in schools on teaching and learning, curriculum, administration, organizational and professional development, but these scholars were not answering the questions posed by teachers about their everyday work (Mills, 2018). This objective-oriented paradigm did not support TAR very well because TAR is rooted in a belief of transforming oneself through self-reflection.

Theories that support Action Research

Within the paradigms, there are theories which are systematically organized explanations of a phenomenon to bring new meanings or coherence to the understanding of an occurrence (Abes, 2016). Constructivism theory is often associated with Piaget's theory of cognitive development, which describes that "we function and make meaning from experiences. Life is a continuous process of *assimilation* and *accommodation*" (Arhar, Holly & Kasten, 2001, p. 27), which creates new learnings. Constructivism simply states that learning is an active, contextualized process of constructing knowledge rather than acquiring it (Pine, 2009). Teacher-researchers constructing their own theories of better practice is fundamentally based on constructive theory. Constructivist approach as opposed to behaviorist approach is student-centered, progressive learning and knowledge is built from experiences.

Critical theory in education represented a new path toward increased emancipation and democratization directed towards social change (McNiff &Whitehead, 2011). Researchers using the critical approach look into ways of deconstructing a social situation and reconstructing it for a specific purpose. Action research in general involves people looking through the lens of critical theory seeking opportunities for emphasizing participation, emancipation, democratization, and advocation (McNiff & Whitehead, 2011; Stark, 2014). Furthermore, action research is also grounded in the ontology of the researchers. This makes action research distinctive from other types of research. The ontology (the theory of being or I in the context) is the philosophical orientation of looking at things or events that exist in the social world involving the researchers' position (Thomas, 2017 p. 123). Particularly for TAR, the meaning of critical theory and ontology was what Mills (2018) described as, accomplishing improvement of oneself or own practice by examining our own constraints and empowering those marginalized subjects in the process. Thomas considered knowledge, practice, and development as three foundations in TAR

to inform the gap between theory and practice, thus, it is also form of professional development (Sagor,1992).

Buddhist Philosophical Perspective

Since Bhutan is a Buddhist country, I also investigated the Buddhist philosophical approach to action research. Some researchers supported similarities between key Buddhist values and basic principles of action research. For example, Chuaprapisilip (1997) agreed that Buddhist notions of insight and mindfulness can help clarify and explain the reflection process, which is the core matter in the action research cycle. Buddhism believes in meditation. Through meditation, individuals are expected to achieve emancipation at a personal level, and such individual transformation can be applied skillfully to groups by means of team consciousness. Such transcendental collaboration consciousness can support participative, collaborative and emancipatory tenets of action research tactically. Furthermore, Hattam (2004) offers a comparison of critical theory with socially engaged Buddhism, which he argued are both concerned with awakening and liberating society.

The paradigm shift, developing educational theories, and researches all are aimed at changing educational practices. All practices, formal or informal, have theories that guide them (Kemmis, McTaggart, & Nixon, 2014). Stark (2014) considered that pragmatism as a mode of inquiry is the philosophical orientation of all action research. He stated, “through pragmatism as a mode of inquiry, those involved in the research process are looking to fit new pieces into their current understanding about a given phenomenon” (p. 89). Thus, action research treats theorists as practitioners and practitioners as theorists and aims to bridge the gap between theories and practice (Kemmis, McTaggart, & Nixon, 2014). In an age of *methodological pluralism* (Wang & et al. p.107), TAR has even been regarded as *multi-paradigmatic* (Wang & et al. p.107) and

permits the presence of various perspectives. However, paradigm, theories, and philosophy do not succinctly define action research. Characteristics and purpose are imperative to fully understand the concept of action research.

Definition, Purpose and Characteristics of Teacher Action Research

Definition of Action Research

Action research has become a contested term; it means different things to different people (Maxwell, 2009). For example: Kemmis (2009) defined action research as a "practice-changing practice" (p.25); Stark (2014) defined it as "an instrument of change to bring about transformation in people's lives wrought by people themselves" (p. 88); Noffke (2009) accepted that it is a practice involving reflection and action directed at transforming teaching practices; and Maxwell (2003) described action research as purposive and directly linked to *action* to create improvement. Regardless, in all of the definitions *action* is in association with *research*. Several other terms for teacher action research have been used by experts over the years. These terms include practitioner research, teacher-as-researcher, practical inquiry, and interactive research (Bilgili, 2005). All these terms imply a systematic inquiry that enable researchers to find effective solutions through cycles of planning, acting, observing, and reflecting (Hine & Lavery, 2014; Kemmis, McTaggart, & Nixon, 2014).

Each term used for action research is based on different needs, practical, epistemological and political (Kemmis, McTaggart, & Nixon, 2014). Practical needs are based on problems the researcher or practitioners face within their daily lives, and epistemological needs are based on the discrepancy of dominant research with those problems (Kemmis, McTaggart, & Nixon, 2014). Teachers in the classrooms use action research based on practical and epistemological

needs and not necessarily for political needs (Roberts, Bove & Zee, 2007). Because TAR aims to enhance the lives of students and teachers (Sagor, 2004), it assumes that teachers, individually or in teams, work towards their investigation to improve themselves as professionals and benefit students through systematic reflection on their practice (Roberts, Bove & Zee, 2007).

In educational settings, Feldman (1996) separated action research conducted by teachers into two types: (a) teachers reflecting on their teaching and student learning; and (b) problem-solving process in which teachers focus on a problem and ask question about it potentially to solve the problem. The first highlights the practical approaches such as classroom action research to improve one's practice. The second type emphasizes critical approaches such as emancipatory teacher action research. However, both types are directly linked to 'action' to create improvement, discover something new through reflection, rather than and to evaluate (Kemmis, McTaggart, & Nixon, 2014).

Based on my understanding of the perception of Bhutanese experts conducting TAR workshops, their definition of teacher action research is similar to how Mills (2018) defines action research in her sixth edition book: *Action Research: A Guide for Teacher Researcher*:

> Action research is any systematic inquiry conducted by teacher-researchers, principals, school counselors, or other stakeholders in the teaching/learning environment to gather information about how their particular schools operate, how they teach, and how well their students learn. This information is gathered with the goals of gaining insight, developing reflective practice, effecting positive changes in the school environment (and on educational practices in general), and improving student outcomes and the lives of those involved (p.10).

Purpose of Teacher Action Research

Before understanding the purpose of TAR, it is important to understand why teachers need research. A magazine published by National Institute of Education, Singapore (2014), titled *Teacher as Researcher* highlights three key reasons why teachers need research.

First, every classroom is different and dynamic, which makes the classroom complex. In this complexity, a teacher has to operate. This provides a compelling reason for teachers to look more closely into their own teaching practice. One way for teachers to find effective teaching practices is to conduct research in their own classroom.

Next, broader outcomes demand better pedagogies. In 21st century schooling, students' expected outcomes are determined by individual differences and diversity. Instead of reusing the same teaching strategies that worked in the past, teachers may need to develop innovative ways of teaching informed through classroom research.

Finally, the nature of the work teachers does every day is challenging and everchanging, therefore, teachers need professional development to remain adaptable. TAR is considered a professional development program as it enhances the teaching practice and positively impacts student's learning (Roberts, Bove & Zee, 2007).

It is evident that TAR becomes authentic and meaningful only if the teacher-researcher conducts in his or her own classroom space to become a better teacher. Hine and Lavery (2014) agreed that research is not effective if it is perceived by teachers as an edict that is passed down from university experts to practitioners. Rather, it is much more effective when it is fashioned with personal relevance by the practitioners themselves. TAR allows teachers to take account of their relevance about their classroom or instructional issue when they design a study, perform the study, analyze data and results, and reflect. All educators who conduct action research want to

improve their own practice, to positively impact students (Mills, 2018), and to contribute to theoretical knowledge base (Wang, Kretschmer, Hartman, 2010).

Characteristics of Teacher Action Research

The literature defines six unique characteristics of TAR. First, it is conducted by teachers. Sagor (1992) regarded teacher action research as teacher-initiated and teacher-directed towards improving practice. Teachers who conduct action research take control of what they focus, use suitable methodology, and make decisions towards their improved practice.

Second, TAR is a cyclical scientific inquiry. The action research process is not straight-forward leading directly to a fixed goal. As the researcher progresses through the cycle, focus and methods may shift or change (Cunningham, 2008). According to Mc Taggart (1996), "action research is not a *method* or *procedure* for research but a series of commitments to observe and problematize through practice a series of principles for conducting social enquiry" (p.248). He asserted that the spiral image of action research may be useful for learning action research, but it should not be considered as a prototype for practice.

TAR is about gaining insight through critical self-reflection. The action research cycle alternates between critical reflection and action. The researcher observes, documents, and then reflects upon phenomena in his or her own setting or values. If the reflection reveals inconsistency or mismatch with his or her own values, then the researcher needs to initiate the change in the cycle. Through these repeated cycles of action and reflection, the researcher looks for evidence of ongoing transformation of the observed phenomena (McTaggart, 1996; Cunningham, 2008; Pine, 2009).

Unlike empirical research, TAR has more freedoms from manipulation and controls of variables from the naturalistic settings. TAR tends to be qualitative, emancipatory, participative, and collaborative. Although emancipatory research is aimed more to benefit the marginalized

subjects, in TAR, this means that it is free from restrains from other controlling factors. Sagor (1992) believed action research can be conducted by individuals, but most agree that it is collaborative especially when the study is a critical research which involves many stakeholders. For example, the Kemmis and McTaggart (1988) model of action research regarded action research as a team work or collaborative work directed at critical change and not individual work. Critical friend or peer observation or professional buddying is core to collaboration to provide critical feedback and outsider views to limit the biases.

According to Bensimon, Polkinghorne, Bauman, and Vallejo (2004), TAR occurs within a school or classroom. In this way it is action-oriented research used to bring positive changes to a local context (classroom or school). While empirical research findings try to reach an unspecified audience to bring changes, TAR is shaped by the local condition to bring changes to specified local individuals.

Finally, action research is a strategy in pedagogy. Pine (2009) described that TAR takes place in the context of discovery and invention as opposed to verification. Finding new ways of teaching or different approaches to assessment has the potential to transform change towards betterment. Discovery such new ways of teaching increases the awareness about the pedagogy of teachers to make a difference in a very specific way (Stark, 2014).

Action Research Process

The theories, definitions and characteristics still do not necessarily provide structured guidelines for practitioners to use in the process of action research. Models of action research are required for practitioners to understand the process clearly. There are many models already exist and more are still emerging. Although many models of action research are based on Lewin's original idea of democratic process, these models underwent changes over time at least in the

educational realms (Rossouw, 2009). I summarized the action research process from Stringer's (1996) model to Mills (2018) model to highlight the transformation and emerging trends.

Action research seemed to evolve from cycle of reflective practice: observe, act, and reflect in a recursive cyclical manner. Stringer's reflective cycle (1996) in action research spiral was to look at the issue pertaining to improvement in order of look, think, and act. Nassrollahi, Krish, & Noor (2012) interpreted *look* was to observe the issue or problem, *think* was to reflect, and *act* was to take action-steps to improve the situation.

Kemmis, McTaggart, and Nixon (2014) described action research process in four stages in a cycle: planning, acting, observing, and reflecting. In the planning stage, the teacher researcher identifies the area of practice to improve. Upon identifying the area, an investigation is carried out by the researcher on the topic to develop the action research question and action plan. During the investigation process, teachers need to find out the situation of the focus, his or her competence level to take the account of research and should look out for literature on this topic.

In the acting stage, the teacher researcher implements the action plan and simultaneously reflects on the process and modifies the plans based on needs and findings. In the observing stage, the teacher researcher observes the effects of action, the constraints on action, and other issues which arise. The teacher researcher also monitors, collates, analyzes data, and shares findings with co-researchers or colleagues for interpretation.

Finally, in the reflecting stage, teacher researcher evaluates the research process and the effectiveness of the interventions. Depending on the conclusion about what has been achieved and what needs to be done, the researcher identifies possible ways of moving forward into the next cycle.

Mills (2018) suggested a four-stage dialectic action research spiral and described as “a dynamic and responsive model that can be adapted to different contexts and purposes" (Mills, 2018, p.26). Four stages as suggested are: (a) identifying the sense of purpose based on a problem (focus); (b) collecting data using different data collection techniques; (c) analyzing and interpreting data to synthesize and analyze the information gathered for interpretation: and (d) developing an action plan for interventions to improve the situation. Some form of action may invariably spiral the researcher back into the process repeatedly at any stage upon reflection. It is a dialectic in nature, meaning teacher-student interaction.

Clearly, all these action research models share common elements about how to proceed with inquiries. Stark (2014) expressed that inquiry in a research process should be clarified progressively by examining the consequences of actions and “adjusting” (p.89) in a continual cycle of inquiry. Adjusting, in this context, means as reflecting and reiterating the process for clarity or emphasis. For example, Mills (2018) described that action research process is not linear or cyclic as it is mentioned. The researcher can repeatedly cycle between two or more stages depending on the research emphasis. Thus, there are no fixed goals, rather a continuum of improvement on the teachers’ practice. In all models, action research is cyclical, systematic, reflective, and collaborative (Elliot, 1978; Carr & Kemmis, 1988; Noffke, 2009; Wang, Kretschmer, & Hartman, 2010; Kemmis, McTaggart, & Nixon, 2014; Mills, 2018). All models emphasize that the nature of action research is not to find out what teachers do in the class to solve a problem or issue, rather it is finding out new ways to improve their practice and how teachers change their instruction to positively impact students (Mills, 2018) and contribute to theoretical knowledge (Wang, Kretschmer, Hartman, 2010).

Benefits of conducting teacher action research

TAR offers many benefits. I summarized the benefits from various literature pertaining to the teachers, systems, and body of knowledge in Table 1.

Table 1. *Benefits of Conducting Teacher Action Research*

For Teachers	For the System	For the Body of Knowledge
Effective professional development with regard to pedagogy (Ado, 2013; Painter, 2017; Mills, 2018).	Through collaboration, proper communication and peer support, staff development will take place in a system (Ado, 2013; Mills, 2018).	Generates new theories for teaching and learning (Johnson, 2012; Painter, 2017).
Provides intrinsic and extrinsic motivation to practitioners (Hensen, 1996; Noffke, 2007).	Using TAR helps to enhance school-wide planning efforts (Ado, 2013).	Through literature, TAR informs best practices, the nexus between theory and practice, decisions, impacts, and further recommendations (Painter, 2017).
Enhances communication and collaboration skills among students, staff, school administrators and educators (Mills, 2018).	Leads to informed and precise educational reforms (Somekh & Zeichner, 2009)	Provides opportunity for different research designs and methods (Somekh & Zeichner, 2009)
Develops reflective practitioners and transforms attitude, thinking and perception (Cain & Harris, 2013; Mills, 2018).	Creates conducive classrooms through increase dialogues and dynamism of teachers (McBee, 2004)	Provide concrete evidences for reforms and programs as it combines research knowledge and local knowledges (Brydon-Miller, Greenwood, & Maguire, 2003).
Empowers teachers for their work and dynamism (Zeichner & Noffke, 2001).		
Stimulate teachers to learn, unlearn, and relearn (Ado, 2013).		

Status of Action Research in Bhutanese Context

Since 1998 there have been a number of interventions taken by the Bhutanese government to upgrade the professionalism of teachers in Bhutan. Early efforts were made to introduce action research to teachers of Bhutan between 1998-2003 by the Bhutanese Multigrade Attachment Project (BMAP) aided by University of New England, Australia (Maxwell, 2003). Some action researches were taken during this BMAP project by the teachers as a course work but faded its vigor soon. In 2006, the Institutes of Teacher Training College adopted action research as one of the modules in the pre-service teacher training institute, which was ignored prior to 2006. Some action research studies in Bhutan have been published in the past, but they addressed more from technical perspectives rather than from a critical or practical perspective (e.g. Dukpa, 2003; Maxwell, 2003; Namgyel, 2005). However, TAR didn't gain popularity during that time.

Again in 2010, Bhutanese government placed a strong emphasis on education by the name of *Transformative Education for Gross National Happiness*, aimed at transforming the of education system to 21st century needs (Sherab, 2014). Various in-country workshops and trainings about TAR were organized but again it didn't bring significant changes in educational reform. Studies conducted by Bedford and Copper (2013) found that teachers needed more access to external support for reassurance and guidance during the action research cycles.

In 2014, The Royal Government of Bhutan, within its holistic approach of Gross National Happiness, developed *Bhutan Education Blueprint 2014-2014* (2014) as a most recent educational reform framework. Some of its rationales are:

1. Continue to give high importance to education as an engine of growth in the nation building process.
2. Urgent need for review and reform actions in the education system.

3. Fill the gaps that are prevalent in the students' learning outcomes, classroom practices, and school processes.
4. Strategize a comprehensive transformation of education system to ensure that Bhutanese students achieve the best wisdom and global competence (p.10-11).

All of the rationale outlined above required Bhutanese government, again, to kickstart some effective programs as a means to bring educational reforms. This time, government considered teacher as agency for change (Kemmis, McTaggart, & Nixon, 2014), and sought to improve the teachers' practice by providing TAR as a professional development program quite intensely. The government felt that implementing teacher action research can lead to identifying, implementing, and evaluating changes in teaching and school practices, rather than waiting for external support or resources (Copper & Bedford, 2017).

As an immediate follow-up strategy, Bhutan launched the *Sherig Endowment Fund,* which provided financial assistance to promote action research in the schools. This was meant to address challenges related to quality teaching and learning, and school management. Concurrently, Royal Education Council (REC) started providing trainings and workshops in conduct of action research to general and focal teachers. Focal teachers are senior teachers who attend professional development workshops and trainings from experts and who, in turn provide the same professional guidance in the same way to fellow-teachers in respective clusters and schools.

REC still provides action research workshops across the country in a series of sequence towards achieving capacity building of focal teachers in action research and creating a research environment (REC, 2017). The Government's vision was to have a pool of Bhutanese experts within the country who can guide peers, thus achieving sustainability, a core theme of GNH. However, many teachers claimed that the original idea or training knowledge gets diluted in the

cascading workflow between experts, focal teachers and teachers in the field (BEB 2014-2024, 2014). Also, Pine (2009) asserted that TAR is challenging as it is doing research and bringing change. Enacting change requires time, planning, communication, and effective implementation skills, which seems to lack in Bhutan.

Based on few of the success stories, the Bhutanese Ministry of Education now mandates every teacher take action-research (BEB 2014-2024, 2014). However, largely teachers in the field expressed their dilemmas and predicaments around conduct of action research in schools, which prompted me to explore the level of confidence of Bhutanese teachers to conduct action research in schools based on their abilities.

The literature review strongly demonstrates the need to create a Bhutanese community of action research practitioners who are informed about different perspectives and emerging trends. However, to fully understand the implementation of action research to Bhutanese teachers, it is imperative to know the response from the field. For this, I designed a study to explore the confidence and knowledge of Bhutanese teachers regarding teacher action research. Past research used different methods than I did in this study. For example: Hine and Lavery (2014) studied *Action research: Informing professional practice* by using the case study method; and Bilgili (2005) studied *the teachers' process of change through action research* by using qualitative methods. I used a quantitative study with support from qualitative data to generate descriptive results. This research design was a 'descriptive study with qualitative support'. The methods and methodologies are discussed broadly in the next chapter.

Chapter 3

Methodology

This chapter presents the methodologies and methods employed in this study. In it, I discuss the participants, study procedures, data construction, analysis techniques, and credibility of the study. The goal of this study was to answer the following research questions about Bhutanese teachers and TAR.

1. What are the perceptions of Bhutanese Teachers about what they know and how confident are they in conducting Teacher Action Research?
2. What are Bhutanese Teachers' expectations of professional support to enhance their Teacher Action Research skills?
3. What are some practical problems and benefits identified by Bhutanese Teachers in conducting Teacher Action Research?

Research Design

This inquiry demanded descriptions about the situation of Bhutanese teachers pertaining to TAR. To get authentic narratives without manipulating the variables, descriptive research was used in this study. Descriptive research is "aimed at casting light on current issues or problems through a process of data collection that enables to describe the situation more completely" (Fox & Bayat, 2007, p. 45). In other words, descriptive research describes a set of observations through graphic statistics about what is happening in a particular context. Fox and Bayat also argued that descriptive research is more conclusive in nature and is not used to discover inferences or determine cause and effect relationships. A descriptive research approach was appropriate because it provided an opportunity for me to employ quantitative, qualitative, and survey methodologies. Fink (2015) described that when desired information is collected directly from people in the field, a survey tool is most effective. Since I lived away from Bhutan during

this study, this seemed to be the best method for my data collection. Therefore, my research design was a cross-sectional *descriptive quantitative study with qualitative support* and a survey tool was used to collect the data.

According to Creswell and Creswell (2018) a qualitative and a quantitative research methodology can be easily distinguished based on the type of data collection. If the data collection is based on numbers or closed-ended questions, it uses quantitative research technique. If the data collection are words or open-ended questions, it uses a qualitative research technique.

I used a survey tool to obtain both quantitative and qualitative data concurrently. I used descriptive quantitative research methods to quantify the problem statement by collecting numerical data, which was transformed into usable statistics. Mills (2018) asserted that many quantitative researchers have little interaction with the participants and such studies are not considered meaningful without direct observation. Therefore, qualitative data was collected concurrently to support the quantitative data. Again, Mills noted that concurrent use of quantitative and qualitative methods in a study enables a better understanding about the phenomenon under investigation. In other words, a quantitative method was used to assess the research questions in the study while qualitative methods were used in parallel to acquire a descriptive response to a closed-ended survey question. By doing this, I gleaned an insight into the contexts and perceptions at each backdrop by triangulating the data, and therefore generated more meaningful results and greater reliability.

According to Thomas (2017), triangulation is the combination of two or more methods in studying the same phenomenon. There are different types of triangulation: methodological, data, investigator, and others. Methodological triangulation is logically mixing different methods in a study. Investigator triangulation is collaboration between two or more investigators to synergize the result. Data triangulation is logically mixing data collection methods. In this study, I

supported the descriptive quantitative statistics with qualitative descriptions for the following reasons: (a) involving more research methods places more confidence in the result (Johnson & Christensen, 2017); (b) it was also necessary for the purpose of increasing credibility and validity (Creswell, 2009); and (c) to corroborate the result of descriptive quantitative with qualitative data (Creswell, 2009).

Considering the limited financial resources and time frame for my study, an online electronic survey was deemed the best method of data collection. Fink (2015) noted that advantages of online electronic (using computer or mobile) surveys include low cost, fast transmission speed, and more honest responses. He also argued that survey research is best suited if different items in the survey instrument are aimed for a different purpose, which relates to the type of questions I had in the survey.

Population and Participants

The population in my study was comprised of all the primary level to higher secondary level school teachers in Bhutan. I chose to conduct my study with this population because I am also a member. Owing to the large number of individuals in a population, a sample comprising 30 teachers was used in the study. The online survey questionnaire was sent to 30 Bhutanese teachers, out of which 23 responded. Three respondents did not complete the entire survey and thus, were excluded from the report. Based on the information gathered from these participants, I closed my survey because of the repeating pattern in their responses.

Of the respondents (n=20), 16 were male and 4 were female, which gives a ratio of 4:1, respectively. However, this ratio does not represent the male and female teacher ratio of Bhutan. The total numbers of male and female teachers in Bhutan as of June 2017 were 5081 and 3563, respectively (*Annual Education Statistics, 2017*), giving the overall ratio of 2:15. All the participants were currently teaching in various school and different levels and places. Of the

respondents, 10% were from Primary school, 25% from Middle Secondary school and rest (65%) were from higher Secondary schools. Administrators were not included in the study. Seventy percent of the participants had a bachelor's degree and 30% held a master's degree. All were certified teachers holding either a Bachelor's Degree in Education or Post Graduate Diploma in Education.

Participants' number of years spent in the teaching profession are shown in Table 2. None of them had spent more than 15 years teaching, which is not common to Bhutanese teacher status in the country. There are many teachers who had spent more than 15 years in teaching. Out of 20 respondents, only three conducted teacher action research in past three years, and the maximum numbers of research projects conducted by an individual was three.

Table 2. *Respondents' Numbers of Years in Teaching Profession*

Years	Respondents
1-5	2
6-10	10
11-15	8
>15	0

Although there are many sampling methods, I chose to use a non-probability sampling method. Through this method, members in the sample are selected from the population in a non-random manner (Thomas, 2017). One such non-probability sampling method that I employed was convenience sampling because I had previously obtained email addresses of participants (convenience). The sample participants were contacted via their email addresses.

Ethics

When humans are used as the subjects in research, an Institutional Review Board (IRB) approval is required. After successful completion of online training on *Research Ethics and Compliance Training* under *Collaborative Institutional Training Initiative,* I sought the approval of the University of Wyoming IRB. When participants are invited to participate in research, it should be their choice based on their understanding of the study, and risks and benefits posed to them (Johnson & Christensen, 2017). This ethical process was managed through a process of informed consent as the first item in the questionnaire using the *Qualtrics* software. The consent page contained the accurate information about the purpose, methods, protection, risks, and benefits to them as participants and research as a whole. The consent item also provided a voluntary decision about whether to participate or not. The questionnaire was sent soon after the approval from the IRB.

Data Collection Tools

I used a semi-structured online electronic survey questionnaire to collect data. Semi-structured questionnaires include a mixture of both structured and unstructured parts within the same questionnaire (Johnson & Christensen, 2017). Structured questionnaires consist of items with completely pre-categorized response options such as yes or no, multiple-choice, Likert scale, or other rating scale formats. It is a firm type of questionnaire as respondents cannot add more detail to their responses. An unstructured questionnaire consists of items or questions with totally open-ended questions, which gives more freedom for the respondents to give in-depth and broader responses (Creswell and Creswell, 2018). My use of this type of questionnaire helped me obtain mutually inclusive responses.

Based on these tool types, I prepared a 23-item semi-structured online survey questionnaire (Annex B) using the online *Qualtrics* software. The survey questionnaire covered

broad areas related to: Bhutanese teachers' understanding about the concept of action research; their individual confidence level to carry out each stage of the action research cycle followed in Bhutan; their practical issues; and the opinions about the kind of professional support they expect from the government to improve their instructional practice. The data matrix in Table 3 provides a summary of how each item addressed the research questions. It was prepared and piloted using seven Bhutanese teachers (those seven teachers were also included in the actual survey).

Table 3. *Data Matrix*

Research Questions	Constructs measured	Item Number in the Questionnaire
Background and demographic information		Question 1 to 8
1. What are the perceptions of Bhutanese Teachers about what they know and how confident are they in conducting Teacher Action Research?	This question measured the conceptual understanding of action research in teaching and their level of confidence in carrying out each phase of the four-stage action research cycle as suggested by Kemmis, McTaggart and Nixon (2013, p.19) (a model commonly followed by Bhutanese experts to conduct action research workshops)	Question 9-20
2. What are Bhutanese Teachers' expectations of professional support to enhance their Teacher Action Research skills?	This question seeks to find out the type of professional guidance required by the Bhutanese teachers in the field to become better teacher-researchers.	Question 21
3. What are some practical problems and benefits identified by Bhutanese Teachers in conducting Teacher Action Research?	This question was used to identify some of the challenges faced by Bhutanese teachers in the last three years and how conduct of TAR in schools empowered them individually in their practice.	Question 22 & 23

A pilot survey is a strategy used to test a questionnaire using a smaller sample compared to the planned sample size (Creswell and Creswell, 2018). Conducting a pilot survey prior to the

actual large-scale survey presents many benefits for the researcher (James, 2017). For instance, my pilot study, which was conducted to a convenience sample, served to check:

1. The appropriateness of questions to the target population.
2. Whether the instructions were clear or not.
3. Readiness of respondents to the questionnaire.
4. This pilot survey provided a basis for the revision and finalisation of the survey questionnaire.

For a research finding to be convincing, appropriate, consistent and credible, there are two concepts that are important: *validity* and *reliability*. While validity refers to accuracy or correctness of the findings, reliability refers to consistency with which the research will produce the same results if repeated (Creswell, 2009). The pilot survey in my study suffices to provide validity because it offered better information about whether the type of survey was effective in fulfilling the purpose of the study or not. Fink (2015) reasoned that reliability as such in survey research is not definite when multiple items do not measure the same phenomenon, but in my study, an attempt was made to address reliability by considering *credibility*. Creditability is concerned with increasing the width and depth of understanding in the study phenomenon (Hussein, 2015) by means of qualitative support. So, to increase the creditability most of the quantitative items in my questionnaire were supported with the qualitative items.

Data analysis

All the quantitative and qualitative data gathered through the survey questionnaire were compiled to tease out frequencies, themes, and patterns. Quantitative data was analysed using both Qualtrics software and Microsoft Excel to find descriptive statistics such as the mean, standard deviation, number of responses, and percentages. Qualitative data were recorded and used either as direct quotes to support quantitative result or generated themes through key-

words-in-the-context (KWIC). KWIC is a word-based technique that are typically a fast and efficient ways to look for themes in the sentences. I deconstructed an abstract and incomprehensible sentence into conspicuous themes in the context to derive simpler themes. I did not fully transcribe the qualitative data as it was beyond my plan in the study.

Methodological Limitation

Thomas (2017) affirmed that "there is no *one* way of understanding things, and no *one* way of doing inquiry" (p. 190). Therefore, I chose cross-sectional descriptive research using survey tool as my study design. This descriptive quantitative research design in itself has its limitation like poor generalizability and validity. Results of descriptive research largely depends on its survey tool and I might have overlooked the construct of survey tool in all dimension due to the inefficiency in using the *Qualtrics* software or inadequate knowledge in the field. Even the responses obtained cannot be trusted fully because of its electronic nature. Since the study was cross-sectional, it may not have provided sufficient perspectives in the research area. The sample size was not representative and there was selection bias due to convenience sampling. I could have improved on the sample's representativeness by stratifying the sample, but due to distance and time constraints, stratification was not achievable.

Chapter 4

Main Findings

Findings in this chapter comprised of data gathered from the 20 respondents who successfully completed the survey. The results are focused to answer the three research questions. Most of the findings are represented as graphics, direct quotes, percentages, counts, means, and standard deviations to elicit evidence to support the findings.

Both closed-ended and open-ended survey items were used to collect the data more comprehensively about the conceptual understanding, confidence level, professional guidance, challenges and empowerment.

Introductory Conceptual Understanding

To find the conceptual understanding of TAR, two questions were asked in the survey questionnaire. First, the respondents were asked to describe in their own words, "what is TAR?". The results showed that all (n=20) teachers knew the very basic concept or introductory level of teacher action research. For example, "Research undertaken by teachers to improve their own teaching styles and methods. It basically makes teachers reflective practitioner".

Nevertheless, eight (n=20) of the respondents described TAR as finding a solution to a problem. For example, one person stated that, "It is a study to find out the problems related to teaching profession". Another noted that, "teacher action research is a tool or method for classroom teachers to assess and find solutions to various problems related to school also to reconsider teaching strategies". A third stated, "teacher action research means collecting drawback in learning and teaching".

While all identify TAR as research, one respondent described, "it is neither a research nor a report, but some scientific inquiry related to your daily teaching", which showed how teachers struggle to identify and differentiate the research and inquiry.

The second question, which was related to the first question about the conceptual understanding, required the respondents to select multiple pre-determined responses to indicate "what should teacher-researcher do?". This survey item provided me with an opportunity to learn more about their understanding of the TAR concept. Figure 1 shows how many respondents understood the role of teacher-researcher in the schools or classrooms.

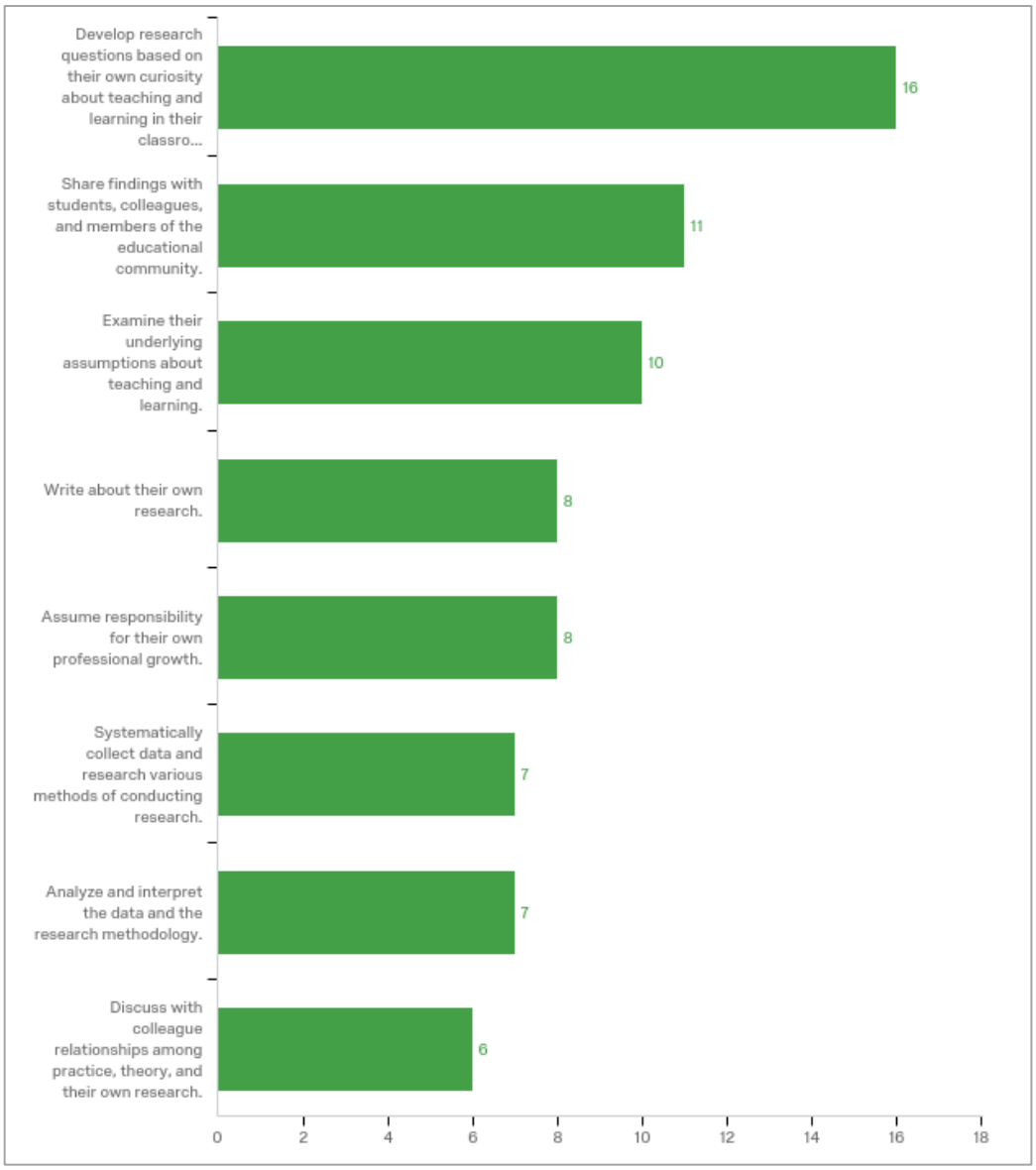

Figure 1. Decreasing order of counts representing what a teacher-researcher should do.

This varying length in the horizontal graph showed inadequate understanding of what a teacher researcher should do, which otherwise should have been all equal.

Confidence

Confidence level was measured in two-tiers process, overall and specific to the four-stage action research cycle, through survey item 11 to 20. In the first tier, the closed-ended survey item (question 11) was designed to find out the overall confidence of teachers to carry out TAR. The findings indicated an above-average confidence as shown by a mean of 3.05 on a Likert scale of one to five and standard deviation as low as 1.06 as shown in Table 4. This view was demonstrated by one of the respondents as "50:50" (average) in his description about his overall confidence level. Again, the survey item (question 12) was asked what effected their overall confidence level to carry out TAR in schools, which required the respondents to select the pre-determined responses. The majority of the respondents claimed two main reasons: (a) they did not study action research during their training period; (b) the workshop or training they received was not adequate to understand the concept of TAR. The data showed that 29% of respondents did not study action research during their training period in teacher training colleges; 23% of respondents showed that they received workshops or trainings, but they were still unable to understand the concept; 13% asserted that they require continuous professional support from experts; and 10% were in favor of having guidebooks and other learning materials.

In the second tier, survey items 13 to 20, comprised of simultaneous open-ended and closed-ended response, were asked to understand and capture the confidence level in addressing all four stages of action research cycle by the Bhutanese teachers. Even to this, the Bhutanese teachers exhibit an above-average level of confidence in addressing all four-stages of the action research cycle as shown in Table 4. The mean in all stages showed between three and four on the Likert scale of one to five points and the standard deviation was close to one.

Table 4. *Confidence Level in Addressing all Four Stages of the Action research Cycle*

Stages	Mean	Standard deviation
Planning Stage	3.79	1.15
Acting Stage	3.37	0.80
Observing Stage	3.53	0.94
Reflecting Stage	3.29	1.02
Overall Confidence	3.06	1.06

Professional Guidance

Figure 2 represented the expectations expressed by Bhutanese teachers in terms of professional support from the broader organization like school, district or government through pre-determined responses in the survey. While 51% of the respondents wanted the government, districts, and schools to provide them with more education conferences, seminars, and professional development programs, only 11% wanted guidebooks and other online resources.

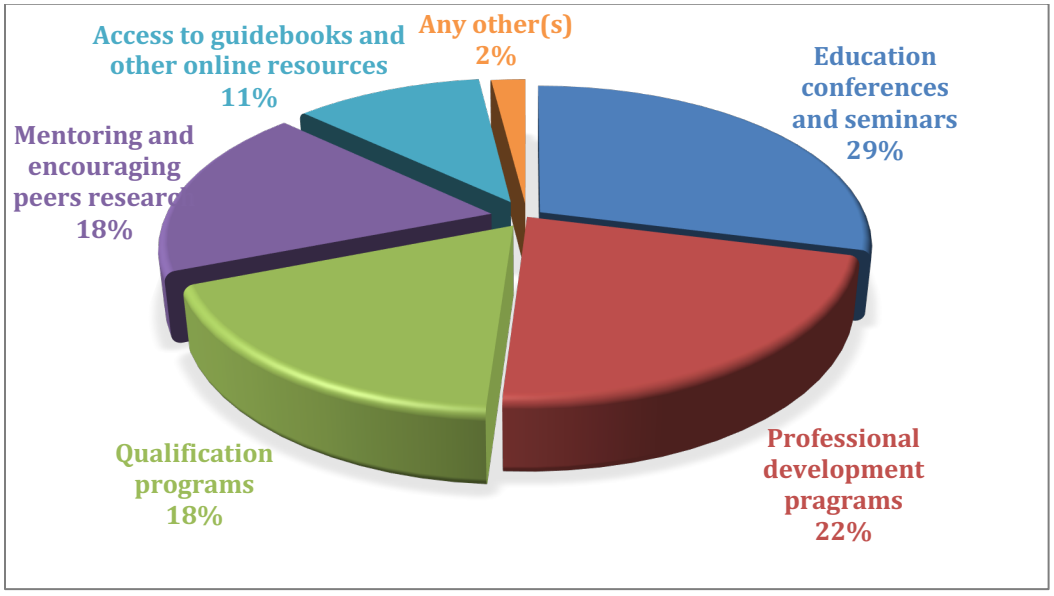

Figure 2. Expectations expressed by Bhutanese teachers in terms of professional support from the broader organization

Another factor mentioned was adopting a one-subject-one-teacher policy as a working-policy. A one-subject-one-teacher policy is newly adopted strategy by the Bhutanese government to reduce the workload of Bhutanese teachers.

Challenging Factors

Three of the respondents (n=20) who conducted teacher action research from 2015 to 2018 expressed some practical issues. Major challenges mentioned were: lack of time, inadequate knowledge of oneself in the field of action research, and unavailability of resources such as guide books, related articles, and research experts. For example, one respondent described "lack of time, inadequate knowledge and resources hindered me to carry out the action research."

Empowerment

A majority of the respondents had not conducted TAR recently, yet most of them described how they were empowered. Maybe they knew the expected outcomes of TAR. The teachers were empowered in the following three ways:

1. It has helped them to improve the teaching learning process considerably by prompting them to reflect which teaching strategies they use require revisiting or improvement;
2. They were able to find a problem and seek solutions related to school, curriculum, and practices; and
3. They were able to look at the learners from different lens. For example, "doing research made me progressive teacher or adapting teacher for any generation learners".

None of them mentioned feeling empowered as decision-makers with regard to research focus, process and outcome, which is emphasized in the literature (Zeichner & Noffke, 2001; Painter, 2017; Mills, 2018).

Chapter 5

Discussion

In this chapter I discuss and synthesize the findings of the three research questions and why they are important, relate those findings to other similar studies, provide recommendations, state conclusions, and identify limitations.

Conceptual Understanding of Action Research in Teaching

Both open-ended (survey item 9) and closed-ended (survey item 10) were asked to understand the concept of action research in teaching. Some of the characteristics that commonly define teacher action research from the literature review include:

1. It is conducted by the teacher.
2. It is researching a pedagogical strategy.
3. It is an iterative cyclical scientific inquiry.
4. It provides insight through critical self-reflection.
5. It tends to be qualitative, emancipatory, participative, and collaborative.
6. It is action-oriented research intended to bring positive changes to local context (classroom or school).

Some of the characteristics listed above were reflected in the descriptive responses of Bhutanese teachers to the research question, “What is TAR?”. Respondents noted the importance of teachers engaging in research to improve the overall education system, revise curriculum, and improve instructional practices.

> Reflection on teaching methodologies and strategies to improve the process further; and teacher doing a research in school to improve education system. It can be to improve instruction or revising curriculum.

These definitions demonstrated an introductory level of understanding about the purpose and benefit of TAR as many of the respondents described TAR as finding a solution to a problem. Within the responses gathered, seven out of 20 noted that TAR is important to identifying problems within the teaching profession. Similarly, five were able to identify TAR as a critical tool or method to assess and find solutions related to the school and individual teaching strategies. However, none of the responses mentioned that teacher action research is cyclical, participative and collaborative, connects theory and practice, and or is action-oriented in nature.

Another survey item (question 10), which required the respondents to select the pre-determined responses, "What should a teacher researcher do?", demonstrated the teachers' lack of conceptual understanding of TAR. For example, 16 out of 20 respondents claimed that the roles of teacher-researcher should develop a question based on their own curiosity about teaching and learning in their classrooms, and none thought that TAR was to connect theory and practice. Overall, the responses indicated a lack of comprehensive conceptual understanding of TAR and could not identify the roles of teacher-researcher.

A study by Kitchen and Steven (2008) showed that action research helped teachers develop professionally through reflection, inquiry into practice, and connecting theory and practice. They found that teachers' conceptual understanding of teaching and learning was changed. They saw explicit growth of teachers and student. The result of this study suggest that Bhutanese teachers should get involved in TAR sooner to gain comprehensive conceptual understanding and simultaneously identify the roles of teacher-researcher.

Confidence

Confidence according to Merriam-Webster dictionary is, "a quality or state of being certain". For example, an expert may certainly find more confidence in doing something than the

novice doing that same thing might. Bhutanese teachers' abilities to conduct TAR in schools was measured through the perceptions of their confidence. Both, overall confidence to conduct TAR and specific confidence to follow the four-stage action research cycle reported above-average (this mean was between three and four out of five points on the Likert scale). This indicates they have some but not total confidence. The confidence level of an individual to conduct TAR in schools is the result of preparedness, conceptual understanding, and motivation (Polly, McGee, Wang, Martin, Lambert, & Pugalee, 2015). According to Polly et al. (2015), teachers' preparedness, confidence and practices are influenced by teacher beliefs, content knowledge, and teacher education.

In a study conducted by Vaino, Holbrook and Rannikmae (2013) about the role of collaborative action research in bringing constitutive changes in teacher's belief, the authors insist that if sustained change in teachers' beliefs and practices are desired, then long-term and in-depth programs are needed. In-depth programs are high-quality professional development programs. Teacher beliefs alone are not sufficient to bring about a conceptual shift among practitioners, rather content knowledge of the practitioners is equally important to understand the concept (Bensimon, Polkinghorne, Bauman, & Vallejo, 2004). While some efforts of the Bhutanese government might have succeeded, the result and feedback of this study showed limited success. For example, the survey data showed that respondents with a master's degree found it easier to conduct action research than those without. However, some studies have shown that the effect of teachers' certification has shown better achievement in students than the effect of content degrees like bachelor's or master's degrees (e.g., Darling-Hammond & Youngs, 2002). To sum it up, both teacher certification and qualification are a necessary part of teacher confidence.

Professional Guidance

Findings indicate that most Bhutanese teachers look forward to professional development programs such as education conferences and seminars, professional development workshops, and even qualification upgrades. Unlike in the past, the Bhutanese government seems to continue to support teachers with in-country workshops. For example; in the 2014-15 school year, only 1809 teachers participated in professional development workshops whereas in the 2016-17 school year, 11,349 teachers received professional development programs (Annual Education Statistics, 2017). This increase in numbers of teachers who participated in professional development programs was because 2016 was declared as "Teacher Development Year". Numerous in-country professional development programs were hosted to mark that year. While national recognition and initiatives from the government level continues, teachers in the field always look more for immediate support from districts and schools. Professional development (PD) serves to support, guide, and facilitate the changes in teacher practices that are needed to meet current national education goals (Supovitz & Turner, 2000).

While some autonomous or central schools (local organizations) started identifying the teachers' professional needs and hiring qualified experts to train the teachers, many teachers desired such support to continue. Teacher research is an on-going progress. As a research practitioner, teachers look for shaping their practice, defining their goals, making connection to theoretical frameworks to support their work (Brydon-Miller, Greenwood, & Maguire, 2003). According to Supovitz & Turner (2000), "high-quality professional development will produce superior teaching in classrooms, which will, in turn, translate into higher levels of students achievement" (p.965). Bhutanese teachers claimed that current PD programs did not facilitate much change in their practices. Some of their grievances were that those PDs were brief and one-time (REC, 2013). According to Gast, Schildkamp, & van der Veen (2017), teachers need two or

more years of professional development on a teaching strategy in order to effectively implement the strategy. Since changes in teacher practices take time, continuous support is crucial to accurately capture their improvement.

Barriers

Many of the respondents expressed the barriers they faced to conducting TAR in schools in the last three years. “Use of software to tabulate data was difficult”; “no training and resources”; and “peer experts are not resourceful” were three of the barriers identified by the study’s teachers. This indicates that there were barriers and difficulties that clearly affected their confidence. On the other hand, one respondent mentioned, “we have good numbers of teachers in schools with good research skills who help me to conduct action research and I also search resources from internet”. This revealed that there are teachers who are motivated to learn on their own and to seek help from peers. This statement also magnified the mixture of differing confidence levels among Bhutanese teachers. However, these differing confidences denotes that there are opportunities for collaborative action research by colligating the strengths among peer educators in Bhutan.

Some other conspicuous barriers from the findings included: no external motivation, lack of incentives, peer incompetency, lack of technical skills, and funding. However, none of the respondents mentioned inadequate support from their administrators. This may indicate that school principals in Bhutan are cooperative and supportive of TAR. Studies have shown that when schools focused on action research with strong support from administrators, and allocated time and resources, it can have significant success (Bilgili, 2005; Kitchen & Steven, 2008).

Finding enough time seemed to be the greatest challenge for Bhutanese teachers to conduct TAR in schools. For example, one respondent mentioned that, “teachers are confident

and competent in doing action research but due to time constraint many teachers fail in doing research". This statement matches my experience, because Bhutanese education follows an explicit curriculum that compels teachers to follow a syllabus and to prepare students for tests within a stipulated time frame. Such practice limits practitioners' ability to conduct extra-curricular activities. Besides, teachers engage in many other non-curricular roles outside of instructional hours, such as games, vocational, and club coordinators. These add to the time issue as well.

Empowerment

Though most of the respondents did not conduct the TAR in recent years, nearly all of them described a lasting effect of empowerment. This was directly noted in their survey responses.

> I didn't conduct TAR but thought that it will empowers teachers to conduct simple research in schools; it might have improved our quality of teaching and learning; helped me find problems in school in the field of teaching and learning process, and able to find solutions.

These descriptions imply that TAR is effective in bringing change in their practice and empowers teachers to become self-directed. It allows teachers to make their own decisions and to engage in classroom research. Such feelings of empowerment can take teachers to the next level of understanding in their practice (Kemmis, McTaggart, & Nixon, 2014).

Recommendations

Collaborative Action Research

After reviewing the action research in literature, I considered what Bhutanese teachers are using the collaborative four-stage action research as suggested by Kemmis and McTaggart (1988) to be valid and applicable in the Bhutanese context. This model is based on the principle of collaboration, which is most relevant considering the initial stage of TAR in Bhutan. Most often collaborative action research based upon teacher-university partnership (Kemmis, McTaggart, & Nixon, 2014), but in Bhutanese context it is group of teachers working to solve a common problem. Such localized partnership demonstrated by Bhutanese teachers can lead groups to collaborate and establish self-critical communities of practice for personal, institutional, and societal change (Vaino, Holbrook & Rannikmae, 2013). One of the strongest benefits of a professional learning community would be synergizing the strength and overlapping weakness of individuals in the group (Hord, 2009). Sagor (1992) agreed that when collaborative action research is institutionalized in schools, it can transform school culture thereby bringing about educational change. Not surprisingly, most financial aid sanctioned in 2017 by the Bhutanese Education Ministry was for collaborative TAR proposals (MoE, 2017). This echoes the encouragement of collaborative TAR in schools. I implore for teachers to conduct TAR to fully understand its tenets, exhibit preparedness and way-forward confidence.

Enhance Teacher-need Approaches

The majority of respondents in my study did not carry out teacher action research in the past three years. This finding is concerning. While there are top-down approaches from the government to enhance professionalism of teachers through various policy and mandates, there must be a bottom-up approach to facilitate teachers in the field. The role of focal teachers needs

to be strengthened through workshops and trainings. Typically, the teachers have the least amount of power when it comes to selecting professional development. It is the district or government that selects the programs that are implemented within schools, and they are usually selected based on price rather than need. The professional programs should be need-based, address topics raised by the teachers in the field, and should transition towards high-quality long-term professional development in order to impact teachers' practices. Although, national programs such as "Teacher Development Year" and 40 hours of every year professional development from the government were welcomed by the teachers, teachers desire more local support to attend educational seminars and conferences. Organizations should continuously seek out domestic and international opportunities to encourage teacher growth.

Provide Time

The main concern respondents raised was not receiving enough time to implement TAR. To this concern, the Ministry could explore opportunities to provide time for teachers. A time management workshop or training session may be helpful for many teachers. Respondents remarked that reducing the teaching workload could provide them enough time for research in the classroom. One teacher one-subject policy and restricting teachers' involvement in other non-curricular activities in school are some of the suggestions recommended by the teachers in the field to increase their time for research.

Provide Required Resources

Respondents agreed that they also do not have enough resources such as online articles, guidebooks, and experts. Therefore, providing Bhutanese context-based guidebooks and ready access to online articles could help to solve this challenge. Additional interventions such as

extrinsic motivation, pecuniary rewards, financial support, and research-experienced focal teachers are some other suggestions made by the respondents to bring them closer to becoming successful teacher-researchers.

Establish Organized Professional Learning Community

Hord (2009) defined professional learning communities (PLC) as groups of teachers working in collaboration in a conscious effort to "learn deeply with colleagues about an identified topic, to develop shared meaning, and identify shared purposes related to the topic" (p.41). Piloting a professional learning community in an organizational way within a district may provide opportunities to the interested practitioners by sharing resources and convening meetings. Fostering collaboration among teachers and providing structured guidance for PLC might motivate teachers who are already crunched in a school schedule.

Limitations

Due to the short time frame of the study period, interviews of teachers and other stakeholders from the ministry could not be collected, which otherwise would have added more value and insight. Some of the close-ended responses may not have encompassed all the related parameters for responders to provide inclusive responses. In addition, wider variance in confidence level might have affected my interpretation.

Future research

Future research plans for Bhutanese educators include a same cross-sectional or longitudinal study about the impact of action research professional development to the teachers

using multiple data collection techniques and involving all stakeholders. This study looked teachers in general, but research could be extended to only those teachers who engaged in the process of action research to determine how action research experience brought effective change into their own practices. Further research could also be conducted to ascertain the effects of action research workshop training.

Conclusion

The outcome of this study leads to two general conclusions: (a) TAR is an effective professional process that improves teaching practice of teachers; and (b) Bhutanese teachers lack the confidence to conduct TAR in schools due to inadequate knowledge or time.

Since the literature review revealed that TAR is a strong and powerful tool that improves both teachers' and students' learning, it is critical to put more resources into this effort. TAR provides research opportunities within and outside the classroom, and it empowers teachers. In addition, TAR findings can inform policymakers to strategized professional programs towards desired educational reforms. Considering the global practice and 21st century students, the implementation of TAR to Bhutanese teachers was timely and appropriate. The top-down and bottom-up approaches seemed legitimate, but only if the roles were redefined and strengthened by considering the professional needs of the teachers.

Findings from the data analysis suggest that Bhutanese teachers still lack a robust understanding of the TAR concept, process, and applicability. These inadequacies hindered their full-confidence in implementing TAR. Moreover, they expected in-depth and long-term professional development programs from the government along with frequent opportunities to attend education seminars and conferences. Therefore, the Ministry's edict, "ensure every

teacher produces at least one action research in a year related to teaching and learning" (BEB 2014-24, 2014) may be too ambitious, considering the current situation in the field.

I hope that this paper will inspire fresh insights, awareness, critical thinking and noble approaches to TAR by policy makers, school administrators and teachers of Bhutan. Furthermore, I hope TAR will become increasingly integrated into everyday practice at schools. TAR has inspired me both professionally and personally, but I have yet to fully experience the empowerment, change and impact that will come from full immersion into the program. I am prepared for it.

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Appendix A

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September 6, 2018

Prem Prasad Timsina
Graduate Student
Science and Mathematics Teaching Center
University of Wyoming

Ana Houseal
Associate Professor
Science and Mathematics Teaching Center
University of Wyoming

Protocol #20180906PT02092

Re: IRB Proposal *"Investigating the Ability of Bhutanese Teachers to Understand and Carry Out Action Research in Teaching"*

Dear Prem and Ana:

The proposal referenced above qualifies for exempt review and is approved as one that would not involve more than minimal risk to participants. Our exempt review and approval will be reported to the IRB at their next convened meeting on September 20, 2018.

Any significant change(s) in the research/project protocol(s) from what was approved should be submitted to the IRB (Protocol Update Form) for review and approval prior to initiating any change. Further information and the forms referenced above may be accessed at the "Human Subjects" link on the Office of Research and Economic Development website: http://www.uwyo.edu/research/human-subjects/index.html.

You may proceed with the project/research and we wish you luck in the endeavor. Please feel free to call me if you have any questions.

Sincerely,

Nichole Person

Nichole Person
Staff Assistant, Research Office
On behalf of the Chairman,
Institutional Review Board

Appendix B

Survey Questionnaire

Part I: Background Information

Your name:
Gender:
Qualification:
Numbers of years in teaching:
School you teach: PS/LSS/HSS
Did you undertake Action/teacher research within last three years?
Yes/No……...
If Yes, how many? (Alone or Collaboration) ……

Action research has varied meaning. In educational field, research taken by teachers to improve their practice and connect theory and practice is often cited as teacher action research. In recent years teacher action research in our country has become popular, but are our teachers confident?

Part II: What do Teachers Know about TAR?

What do you think is teacher action research? Write in your own words.
(write briefly) …….
What do teacher researcher do?
Tick the ones that are applicable according to you
Develop research questions based on their own curiosity about teaching and learning in their classrooms.
Systematically collect data and research various methods of conducting research.
Analyze and interpret the data and the research methodology.
Write about their own research.
Share findings with students, colleagues, and members of the educational community.
Discuss with colleague relationships among practice, theory, and their own research.
Examine their underlying assumptions about teaching and learning.
Assume responsibility for their own professional growth.
(http://www.nea.org/tools/17289.htm)

Part III: What part(s) of TAR cycle (commonly followed in Bhutan) do Bhutanese teachers identify easy or challenging?

Please read all directions carefully before completing each section of the survey. Please rate the difficulty you experienced with the following components of action research using the following scale: 1 indicates easy 2 indicates a low level of challenge 3 indicates a moderate level of challenge 4 indicates a high level of challenge 5 indicates an extreme level of challenge

How confident you are to conduct action/teacher research in schools?
Easy 1 2 3 4 5 Most Challenging

Please tick one or more reasons to explain your choice

Didn't study action research in colleges (including training college)
Studied action research in colleges (including training college)
Attended action research workshop
Attended action research workshop but it was very brief to understand
No guidebooks or resource book available to continue learning
No professionals or experts to contact for clarification
My social science research skill is enough to carry out action/teacher research
Any other(s)……..

In a typical action research workshop conducted by experts from the ministry often has four parts in a cycle. Planning, acting, observing, and reflecting. There are more details to each of these stages. What part(s) of the action research cycle do you (teacher) identify as easy or challenging? Why?

What is your level of confidence to address the planning stage?

(In Planning stage, the teacher researcher identifies the area of practice that he or she wants to improve. Upon identifying the area, he or she carry outs an investigation (situational analysis, competence and literature review) to develop the AR question and makes action plan)

Easy 1 2 3 4 5 Most Challenging

Explain your choice briefly

……..

What is your level of confidence to address the acting stage?

(In acting stage, the teacher researcher implements the action plan and simultaneously reflects on the process and modifies the plans)

Easy 1 2 3 4 5 Most Challenging

Explain your choice briefly

……..

What is your level of confidence to address the observing stage?

(In Observing stage, the teacher researcher observes the effects of action, the constraints on action, and other issues which arise. The teacher researcher also monitors, collates, analyses data, and shares findings with co-researchers or colleagues for interpretation.)

Easy 1 2 3 4 5 Most Challenging

Explain your choice briefly

……..

What is your level of confidence to address the reflecting stage?

(Reflection in AR takes place in all stages. Teacher researcher evaluates the research process and the effectiveness of the interventions. Depending on the conclusion about what has been achieved and what needs to be done, the researcher identifies possible ways of moving forward into the next cycle.)

Easy 1 2 3 4 5 Most Challenging

Explain your choice briefly

……..

Part IV: What Kind of Professional Guidance do the Teachers Expect from the Government/District/ Schools?

What kind of professional help do you think you require to fulfill ministry's plan "make every teacher to carry out one action research in a year".

Qualification programs
Education conferences and seminars
Professional development network
Mentoring and encouraging peer research
Guides and other online resources
Any other:……
(adapted from: https://www.oecd.org/berlin/43541636.pdf)

Part V: Conduct of TAR in schools

If you had undertaken teacher action research within last three years,
what issue(s) arose for you while engaging in teacher action research?
(write briefly) …….

In what ways has the teacher action research experience empowered you and/ or your teaching?
(write briefly) …….

Thank you for your valuable response and time to complete my survey.

The author is a high school teacher in science from Bhutan. He taught chemistry for 13 years. He also taught environmental science for ninth grades. He will continue to teach high school students after completion of his master's degree