

# Action Research as Pre-Service Teacher Inquiry Physical Education

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**Abstract** The newest Canadian Elementary Health and Physical Education (2019) provincial curricula promotes inquiry as a pedagogical mode. AR complements this inquiry mode of instruction with its grounding in experience and practice which infuses educational roles. AR as practice-based inquiry helps new educators identify and reveal resolutions; however, first a need to want to improve needs to be identified, before next steps are taken. AR has the potential to open doors of perception, trigger new insights, and cultivate teacher development within teacher training and beyond while in-service. Admittedly, teachers change, no matter how incrementally, which permeates professional development, as witnessed in over 100 years of action research drawn upon herein. Extant AR literature is grounded in the educational development of participants as they teach. Development in AR is not actually a problem needing investigation; instead it remains a possibility that needs recursive attention to ensure it exists within the training of educators globally. Herein AR is illustrated via narrative accounts that reflect experiences while teacher training in an Ontario Faculty of Education programme.

**Keywords:** Action research; elementary curriculum; teacher training

## Investigación-Acción como indagación de la formación inicial de profesores y desarrollo profesional en la Salud Primaria y Educación Física de Ontario

**Resumen** Los planes de estudio provinciales de Salud Primaria y Educación Física más recientes de Canadá (2019) promueven la investigación como un modo pedagógico. La Investigación-Acción (IA) complementa este modo de instrucción de investigación con su base en la experiencia y la práctica que infunde roles educativos. La IA como investigación basada en la práctica ayuda a los nuevos educadores a identificar y revelar resoluciones; sin embargo, primero se debe identificar la necesidad de querer mejorar antes de continuar con los siguientes pasos. La IA tiene el potencial de abrir puertas a la percepción, desencadenar nuevos conocimientos y cultivar el desarrollo docente dentro de la formación docente y más allá mientras se está en servicio. Lo cierto es que el cambio de los maestros, sin importar cuán incremental sea, impregna el desarrollo profesional, como se atestigua en los más de 100 años de investigación-acción que se esbozan aquí. La literatura de IA existente se basa en el desarrollo educativo de los participantes mientras enseñan. El desarrollo en IA no es actualmente un problema que necesite investigación, sino que sigue siendo una posibilidad que necesita atención recursiva para garantizar que exista dentro de la formación de educadores a nivel global. Aquí la IA se ilustra a través de relatos narrativos que reflejan experiencias durante la formación de profesores en un programa de educación de una Facultad de Ontario.

**Palabras clave:** Investigación-acción; currículo de nivel primario; formación de profesores.

## Introduction

In our current year of 2021, Action Research (AR) infuses many disciplines and reaches a global audience (Rutten, 2021). For example, Action Research can be found in most school districts as a means of professional development (Ryan, 2020). AR is often enacted by educational practitioners as a practice embedded in daily work (Kennedy, 2016). AR is an authentic research tool rooted in educational landscapes that are both practical and progressive (Ryan, 2018). AR causes educational practitioners to look repeatedly at practices. AR uncovers elements of practice that may be problematic, while leading participants towards plausible responsive action while instigating reflection on past, present and future pedagogy (Rutten, 2021; Ryan, 2020). AR incorporates a 360-degree reflective pivoting, allowing educational practitioners to examine one's place within a particular setting to find out what works, what doesn't, and possibly what can be improved. AR is experienced, and in many ways is unending as the AR mode can become habitual within educational roles (Ryan, 2018). Habitual practices are imbued with teacher intuition which provides an inner compass for the teacher. AR provides perspective, scope and admittedly, informs educational policy, curricular guides and peers. AR can be a means to reinforce teacher intuition which is comforting to many new and experienced educators.

Within Education, the discipline of Health and Physical Education can benefit from AR efforts, whether in training or in-service once teacher training has been completed (Ryan, 2006). Teacher training in the province of Ontario (Canada) unfolds over two years and includes class instruction and in the field teaching practice. It is during this training that many questions surface, and it is this questioning that serves as both an instructional tool and a professional development mode. Questioning one's teacher role from within "leads to knowledge from and about educational practice" (McNiff et al., 1996, p. 8). Questioning supports and nurtures further inquiry, and is valuable as teachers develop their professional identity, self-knowledge and critical literacy understanding. Critical thinking in the role of educator most certainly includes "skills such as questioning, predicting, analysing, synthesising, examining opinions, identifying values and issues, detecting bias, and distinguishing between alternatives" (The Ontario Health and Physical Education, 2019, p.80). In addition, "students who are taught these skills become critical thinkers who can move beyond superficial conclusions to a deeper understanding of the issues they are examining" (p.80). This deeper learning has been a goal of Education in the province of Ontario and beyond for at least a decade.

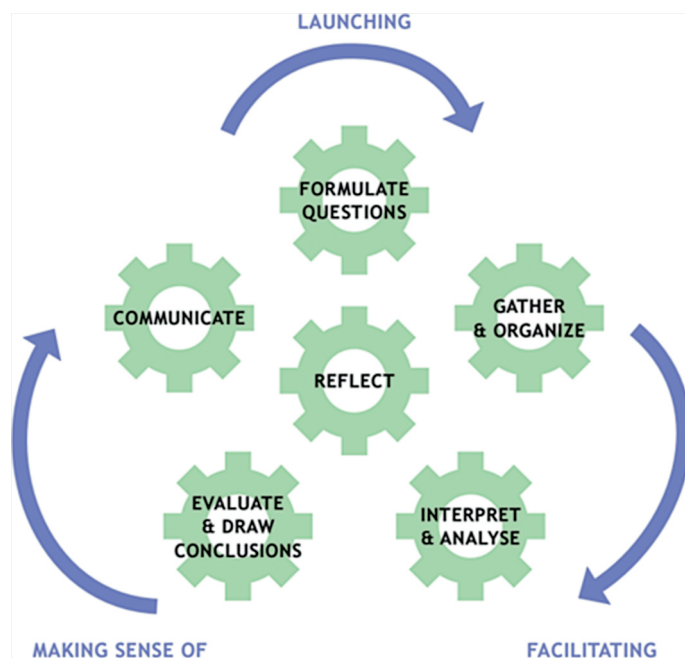
## Teaching as Inquiry: Questioning

The significance and importance of deep inquiry and questioning is historically noteworthy since it was Socrates who believed that a life without inquiry is not worth living (Fadiman, 1978). Building on this Socratic belief, the Ontario educator in training will learn in teacher training that "inquiry and research are at the heart of learning in all subject areas. In health and physical education, students are encouraged to develop their ability to ask questions and to explore a variety of possible answers to those questions" (Ontario Health & Physical Edu-

cation, 2019, p.82). The instructional dynamic of questioning via inquiry is a process and a means to develop, grow and change. “Teachers can support this process through their own use of effective questioning techniques and by planning instruction to support inquiry (particularly in the context of experiential learning)” (Ontario Health & Physical Education, 2019, p.82). The process is layered, lengthy and lasting, as teachers and students explore four areas of learning including: “Knowing Yourself – Who am I? Exploring Opportunities – What are my opportunities? Making Decisions and Setting Goals – Who do I want to become? and achieving goals and making transitions – What is my plan for achieving my goals?” (Ontario Ministry of Education, 2019, p.38). The questioning is recursive over time, and leads to deep learning which concerns the need to comprehend and pursue meaning. Students are able to link concepts to new ideas and to experience, all the while critically examining resultant knowledge for pattern and meaning (Biggs, 1999). These areas of questioning and association require an inquiry framework, as depicted below in figure one.

*Figure 1: Inquiry Framework for Health and Physical Education: Six Components of Inquiry-Based Learning*

Source: (OPHE, 2015, p. 8).



Questioning helps all “explore and learn together. Students should have opportunities to participate in a wide range of activities . . . to enable them to develop inquiry and research skills and provide opportunities for self- expression and personal choice” (Ontario Health & Physical Education, 2019, p.56). “Research skills are critical to students’ success in all subjects of the curriculum and in all areas of their lives” (Ontario Health & Physical Education, 2019, p.78). Inquiry and research are commonplace activities in all subject areas, and “in health and physical education, students are encouraged to develop their ability to ask ques-

tions and to explore a variety of possible answers to those questions” (Ontario Health & Physical Education, 2019, p.82).

In the classroom of 2021, there is a need to be encouraging while inquiring and educators “can support this process through their own use of effective questioning techniques and by planning instruction to support inquiry” (particularly in the context of experiential learning. (Ontario Health & Physical Education, 2019, p.82). The requirement to question and inquire complements tradition in education wherein educators reflect upon (Schon, 1983) authentic problems (Dewey, 1897) in their practices and away from practice in theory. This reflective action connects the cognitive, the affective and the physical behaviours in order to address problems as a means of play (Piaget, 1990). Combined, these elements and strategic and systematic planning lead one to become an Action Researcher within a classroom and/or school (Ryan, 2018; Vaughan et al., 2018).

## An Educator’s Toolbox: Action Research

The Action Research Network of the Americas Conference brought together many action researchers to “dialogue among scholars and activists from the global action research community and leaders of global circles of indigenous knowledge, and presentations of action research and participatory action research focused on education, health and wellness” (Rowell & Santos, 2016, p. 76). Of particular interest is the fact that this was a global event and AR was the centrepiece, viewed as a means to address these areas which included, “social reconstruction, and . . . sharing visions for a better future, and creating collaborations, and concrete plans for participatory forms of research and development projects across national borders and disciplinary boundaries” (Rowell & Santos, 2016, p. 77).

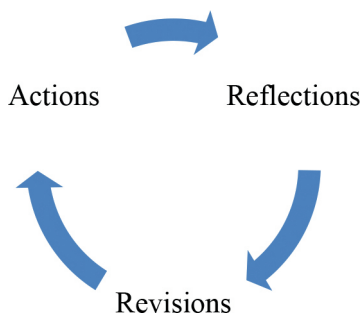
The recognition of AR as a global resource stems from the fact that “action research combines a substantive act with a research procedure; it is action disciplined by inquiry, a personal attempt at understanding while engaged in a process of improvement and reform”(Hopkins, 1993, p. 44). AR allows users to embrace “the capacity of people living and working in particular settings to participate actively in all aspects of the research process; and . . . The research conducted by participants is oriented to making improvements in the practices and their settings by the participants themselves (Kemmis, McTaggart, & Nixon, 2014, p.4). AR “is not a method or a procedure for research but a series of commitments to observe and problematise through practice a series of principles for conducting social enquiry” (McTaggart, 1996, p. 248).

Moreover, AR is a “systematic procedure completed by individuals in an educational setting to gather information about and subsequently improve the ways in which their particular educational setting operates, how they teach, and how well their students learn” (Creswell & Guetterman, 2019, p. 85). AR is a “deliberate way of creating new situations and of telling the story of who we are” (Connelly & Clandinin 1988, p. 153), as teachers in classrooms, schools and the community. AR can be embedded in day-to-day experiences and “conversation can play a significant role in the establishment and sustention of collaborative action research groups and can lead to the generation of new knowledge and understanding” (Feldman, 1999, p. 141). This reality challenges and opposes other research traditions and for

some the limited generalizability of AR causes some to dismiss its legitimacy (Ryan, 2018). AR is quite distinct, and it is this distinctness that makes it attractive for educators by focusing upon an issue, a tension and one's own practice to locate perhaps both an intervention and a resolution in a strategic manner (Herr & Anderson, 2015; Vaughan et al., 2018)

Admittedly, AR can be a lifelong and fragmentary activity rooted within personal enduring beliefs (values) that are more feeling than written and, in this sense, tacit. Value positions can be challenged in conversations giving rise to new orientations and understandings positions. Indeed, conversation “can lead to action, follow action or be part of action. Through the intermingling of conversation and action, praxis comes about with its growth of knowledge, understanding, and theory through action” (Feldman 1999, p. 133). AR reveals “clarity and understanding of events and activities and use[s] those extended understandings to construct effective solutions to the problem(s)” (Stringer, 2007, p.20). Ultimately, “it is a challenge to traditional social science by moving beyond reflective knowledge created by outside experts and sampling variables to an active moment-to-moment theorising, data collecting and inquiry occurring in the midst of emergent structure” (Torbert, 1991, p. 36).

Figure 2: Recursive Action Research Cycle – One Action Research Cycle/Phase/Step  
Source: (Ryan, 2005b, p. 33).



AR brings the task of teaching into the research realm, as educators observe, guide, and amend pedagogy to engage and support the learner (Pedersen & Pedersen, 2008). Each educator needs to move prudently since AR “is not a panacea for all ills and does not resolve specific problems but provides a means for people to more clearly understand their situations and to formulate effective solutions to problems they face” (Stringer, 2014, p. 8). AR is a “critical and self-critical process aimed at animating these transformations through individual and collective self-transformation: transformation of our practices, transformation of the way we understand our practices, and transformation of the conditions that enable and constrain our practice” (Kemmis, 2009, p.463). AR is “grounded in the ontological ‘I’ of the researcher, and uses a living logic; that is, researchers organize their thinking in terms of what they are experiencing at the moment” (McNiff & Whitehead, 2006, p. 42). Looking within the experience, or even back upon experiences, requires a level of reflexivity wherein the author processes and labels memories via words, terms and phrases that can best illustrate and encode experience in language that all can be decoded while reading (Ryan, 2005a). It was Dewey (1934) who reasoned that “all direct experience is qualitative, and qualities are what make life-experience itself directly precious. Yet reflection goes behind immediate qualities, for it is

interested in relations . . . (p. 293), associations, relationships and linkages within life experience (data).

AR makes possible improvement of practice while practicing and in doing so helps to increase the understanding of the practice (Kemmis & McTaggart, 1982). AR “can transform teachers, the classroom, and the school community” (Ward & Millar, 2019, p.42). However, some time ago Schön (1987) suggested pre-service students learning to teach is rushed since student teachers, “plunge into the doing, and try to educate themselves before they know what it is, they’re trying to learn. The teachers cannot tell them. The teachers can say things to them, but they cannot understand what’s meant at that point” (p.1). It takes time and experience in teaching practice to realise what needs to be changed and how, nonetheless these positive aspects of AR make it a powerful means for educators in particular, in the preservice programme, who document their own professional development often as part of teacher training tasks. The following reflective account provides insight into some of the minutia of teacher development; it is these small changes that when added together produce significant developmental change in teaching, teachers and education. There are four cycles of Acting, Reflecting and Revision within this brief excerpt numbered one to four.

## AR as a Reflective Exercise in Teacher Training

Within the province of Ontario (Canada) it is generally accepted that all teachers benefit from AR experience, and it is this recognition of AR that causes many Teacher Educators to include AR exercises in teacher training and in-service once teacher training has been completed. The current two-year teacher training in the province of Ontario (Canada) includes AR classroom tasks that are completed in teaching practicum located in Ontario schools. The teaching practice unfolds in Ontario classrooms and often stretches over five or six weeks. Teachers in training must act, reflect and revise their actions and thoughts via reflective AR based exercises. What follows is an exemplary excerpt from reflective accounts (practice tasks). The accounts have been mined from lengthy teacher training practice exercises anchored in an AR mode which often complete assigned practice tasks.

Indeed, the following narrative illuminates classroom management as a challenging aspect of teaching in 2021. While problems are able to be solved; it is the dilemmas which cannot be solved, and instead need coping strategies, that seem to garner much attention in pre-service teacher training (Ryan, 2020). The teacher in training is reflecting upon teaching actions to refine, revisit and revise their pedagogy in the moment and for the future.

## AR Reflective Journal: An Excerpt (Act, Reflect, Revise)

#1:

Act: During the middle of my math lesson, discussing the area of a rectangle, I asked a question about shortening the formula to a smaller, easier to write, form. I was writing on the

left-hand side of the board and turned around when I asked the question and a student stuck up her hand to answer. This girl frequently had her hand up and usually knew the answer, so I asked her for the answer which she gave without hesitation.

Reflect: It seems that I have a tendency to turn to my left when coming up from the board and so I would usually not make it to the other side of the room before I had chosen my student to answer the question. Even my associate said, in my un-graded evaluation, that.

“It is important that he continue to develop strategies to monitor the class for students who try to dominate his attention, so he can give his attention equitably among all students.”

Revise: I suppose that in hindsight I probably should have been waiting to see who all had their hands up, or even chose a student that doesn’t often answer. So, with this firmly in mind, I will try to keep a conscious list of which students have answered before and who needs to try now. Not being pushy about it, just encouraging others to have a voice in the classroom.

#2:

A: Often, when the students would come back from recess, or sometimes even between classes, the students would get very loud and boisterous in their talking with their neighbours. A small amount of time for talking at the beginning I felt was fine, but after a while if I needed them to be quiet, I would raise my voice and say, “Ladies and Gentlemen, could I please have some quiet?” To which they quieted down and sat in their seats.

R: I felt that this was a good strategy for me to get some quiet in my class. My voice is sufficiently loud enough that I can be heard over the din of their voices. And in reflection after a while, I no longer needed to raise my voice to ask for quiet, if I was standing up at the front many of the other students would tell their peers to be quiet. Which I felt was even better, because it may just work itself into a non-verbal queue.

R: I don’t think that my action should need to be revised; I got the desired response from the students so why would I change it. However, this being said, I may try other more non-verbal queue in the future but will more likely revert to this technique if it appears that the non-verbal cues are not working.

#3:

A: It was my first time teaching a history lesson, a subject about which, I know very little. So, my associate and I brainstormed, and decided that the best way to present the material was to do it through a movie. I readily agreed because I felt that the less, I talked the better the lesson was going to go, at least until I got a lot of the terminology down. Initially I thought it was going well, the students seemed to like watching the movie, and they very quickly responded to the questions that I asked of them. However, during one of the chunks of movie watching I happened to look over at Mike and saw that he was looking every which way but at the movie, which I found odd because he could answer the questions I posed, or at least have an answer that was somewhere in the vicinity of a right response. I really didn’t think that much of it and returned to checking my queues for when to stop the movie to discuss the next part.

R: I did feel that the class got a lot of history knowledge out of the movie, but it still nagged at me that someone wasn’t watching the movie, and when my associate told me that more than once the guys at the back of the class seemed distracted by everything else but the



movie, I felt that I should do something else. So, I made some suggestions to my associate and we decided that the best thing I could do would be to come up with a handout over the course of the night to maybe make them focus a little harder for the continuation of the movie on the following day.

R: The fill-in-the-blanks sheet worked well. It kept the students on task, and when I told them that they were going to have to pay attention because the wording for the question wasn't verbatim from the movie, it worked even better. It was also a good way to choose sections of the movie to stop at and ask further questions of the students.

#4:

A: My associate decided that her students were going to have a test in history at the end of the week, and she decided that I should do the review with them during the Thursday history class. So, I decided on a game for the students and set it up that night. When the review class started the game appeared to be going well, it was each man for his or herself and you had to answer enough questions to spell CONFEDERTION and then you would win a prize. Unfortunately, this didn't work very well, for very long.

R: After about 5 minutes I was accused of favouring one side of the classroom which may have been correct judging by action #1, and so I changed it mid-stream to not having to spell CONFEDERATION and instead it was one side against the other, for points. So, I would ask the question to one side give them a possibility of 3 tries at answering and then if they couldn't get it, the other side could have a chance to score the point. Unfortunately, this didn't last for more than 10 minutes before one side accused the other, and me, of getting more chances to answer than they got. So, I reflected and revised again. I called it the sudden death, and the groups would remain as they were, but they would only get one opportunity to respond, they could however discuss among themselves what the answer would be up to a max of 30 sec. This finally seemed to get me somewhere, so I stuck with it, and rode it to the end of the period.

R: In the future I will probably stick to games that are one group versus another, unless the rules for individual play are clearly laid out and have no loopholes. As I said this last attempt seemed to work so that will probably become my blueprint or starting point for any games I do in the future.

While this journal entry is quite easy to read, there is evidence of uncertainty, growth and internal debate as philosophical positions shift and stances change as pedagogy matures. This record can now be shared and made public to involve other stakeholders in the growth process of an educator. The record may instigate adjustments that ease the frustration and confusion in classrooms. There are other instances where practice accounts (inquiry) resemble a story without distinct phases. The account is personal, professional and an exemplary teacher training AR account which is both purposeful and expressive, as follows.

## AR Reflective (Narrative) Journal Excerpt

Another situation that arose during my placement had the opposite results. In this situation I tried everything to resolve the issue at hand, and it ended up escalating and blowing up in my



face. My AT teaches all three of the grade eight physical education classes, as well as two of the grade sevens. During my first week of observation in September there was no rotary, therefore I did not have the opportunity to meet or learn about any of the other students besides my AT's core class. We observed one physical education lesson for each of the classes upon our return in October; however, besides us not knowing the students, they did not know us either.

My one grade eight class went incredibly well, and there were no classroom management issues to speak of. They impressed me on a whole new level with their participation and consideration for others. However, the other grade eight class definitely questioned my abilities in becoming a successful teacher. I felt that with physical education, most people are excited to have a break from the mental stress of other classes. I believed that any issues would surround a slight level of overexcitement due to immaturity and excess energy. The other problem could be the girls not wanting to participate. I was definitely not prepared for the disruptive behaviour that occurred that morning.

It was the Tuesday morning. My third lesson ever. My first lesson with a different class. The students in this class had major attitude issues. They sat in their squads looking at me with this facial expression implying the question: "Who do you think you are?" I was taken back slightly by their unimpressed response with me. We began class with a relay warm up, which they enjoyed. However, I was already noticing one group of boys who even though talented in sports, exhibited a considerable lack of effort and a need for disrupting other students in the class.

That day I focused on the skill of the volley. We discussed the skill and then I had them working in pairs, and afterwards in small groups practicing the skill. These particular boys were in a group of three due to odd numbers in the class and this is where the experience began. To begin, one of the boys started joking around with one of the girls and ended up whipping her in the face with the volleyball. I sent him out into the hall immediately. He tried to re-enter at one point, and I told him to return out into the hall until I had talked to him. This particular boy is a pretty good individual. He is on the volleyball team and for the most part he does not intentionally cause issues, so he was pretty upset to be in trouble. I went out into the hall to talk to him. I asked him if he knew why he was in the hall. He explained to me why he thought he was in the hall. I took the disappointed angle with him and talked about how he is considered a role model in the class because we were doing volleyball and he is currently on the volleyball team. I mentioned how he is in his element right now and if anything should be a leader in the class assisting others. He felt badly and apologised, and I allowed him to re-enter the class. He was not an issue after that.

The other two boys, however, were a challenge. One boy had recently returned from a suspension and the other one acts out regularly in class. They are both on the volleyball team and enjoy sports so once again I was surprised at their lack of motivation towards physical education. They were behaving very immaturely. While the other students in the class were genuinely attempting to perform the skill properly and improve, these two boys were hitting the ball everywhere, kicking the ball, and disrupting other groups. There was no focus or desire in performing the task at hand. I tried reasoning with them. I used the same volleyball tactic I had taken with the previous boy and suggested a way to increase the difficulty of the activity in order to stimulate their interest.

It seemed like everything I did wouldn't work. They continued to act inappropriately and out of control, so finally I had had enough and sent one of the boys out into the hall who

deliberately acted out when I was watching. The problem with these boys is that nothing phases them. They do not argue when I send them out or attempt to reason with me regarding their actions. They don't care. They just walk into the hall without the smallest amount of remorse. I then talked to this boy about his actions.

The rest of the class continued in a similar way, and it didn't matter what I did or suggested, new people would replace the others in behaving inappropriately. I even talked to one of the boys prior to the next class regarding his actions and whether there would be any issues with him today and he said no and apologised. That class began as the last one ended.

During drill transitions, I refused to talk over the students and therefore an enormous amount of their time was wasted on waiting for everyone to focus. Overall, I felt like a failure with that class. I was definitely not expecting so many issues in one period. I needed to be better prepared and ready to respond in different ways. I talked to my AT and he suggested that in order to control more than one child at a time, I can just sit them on the different benches around the gym, isolated from each other. It was a simple concept; however, I was so flustered at the time that it had never occurred to me. It was a good experience as it definitely taught me that these scenarios can escalate at a rapid rate and that I need to be ready for all kinds of different situations. I also learned the true concept that a major part of teaching is not the actual content but classroom management.

Even though I learned a lot about being a teacher during that class, I was still angry as all my attention was focused on dealing with these students, when I could have been helping other students with the actual skill. Why should the rest of my class be neglected of proper attention while I deal with issues not even related to the lesson at hand? Another essential concept I learned was the importance in knowing your students. I am already getting to know the students in my AT's core class and have already been establishing which techniques are working for different students. It was difficult with the other classes as I had only met them once and had no idea which techniques would work, and which ones wouldn't. Also, the students in that class had no idea who I was either. I feel for this class especially a lot of the respect is built in getting to know the students as people and allowing them to get to know you as well and understand that you are a real person to and one that has the best intentions in mind.

I was happy that my AT never intervened. I feel that if he had stopped the class and talked with them, then that might have undermined my ability as a teacher. I respect him for having let it all happen and allow me to learn. My problems now reside in the "where do I go from here?" thought. Next time, yes, I can sit students on the bench and yes, they are wasting their own gym time and that is their problem. However, I want to get through to them. I want to succeed with them. I want them to be motivated. I know that with these boys, they will end up sitting on the bench every class due to their behaviour and if I split them into different groups, they will still find each other and the concept of forming specific groups is hard to do in physical education as time is limited as is. Also, some of them are in the same squads, so having them work in squads wouldn't necessarily be beneficial either.

It is harder to control in a gym environment, since students are not sitting at desks. They are moving around and interacting with each other. I want to be able to have everyone benefit from the class. I don't want my well-behaved students to suffer, and I don't want my teaching to become so militant that physical education is not fun anymore. I want those boys to want to participate and I need to develop different approaches in order to try and make that happen. I may attempt to use them as examples in front of the class so that they feel more important. I

may ask them directly what I can do to challenge them or make them more interested. I am determined to not have my management reside in them sitting on the bench every class because then that would also feel like failure. Failure to motivate.

Sometimes if the whole class is being disruptive, I may have to have them sit in their squads for the whole class and think about why they are not playing in gym right now. Perhaps I can find different ways to penalize, for example, doing inventory or running laps other than sitting students on the bench. Maybe when they are sitting on the bench, I will have the class play their favourite game and not allow them to participate. There are different options available, and some may work, and some may not. It is a trial-and-error attempt until a technique that works for the class surfaces.

All of these concepts would be more practical if they were my own class, and if I was going to be teaching them for the rest of the year. When I do have my own class, it will be easier to get to know my students and their interests. I feel that that is so important in becoming a successful teacher. It allows you to build rapport and respect, and it also allows you to understand the mindset of your students and perhaps the ‘why’ of their behaviour.

The record above communicates actions, emotions and in-the-moment thoughts that can now be revisited in this reflective account since they have been captured on paper. Over time these accounts can reveal trends, habits and instances where professional development is possible and necessary. AR remains a tool within the teacher’s toolbox to maintain the educational landscape.

## Discussion

A beginning teacher in training may have “feelings of isolation and loneliness . . . [due to] the shock of facing multiple demands . . . [and often fear] the challenge of teaching subject matter for which they are inadequately prepared” (Rosaen & Schram, 1997, p. 257). Faced with new and multiple challenges, a pre-service educator in training has little time to reflect, process and sort, in class teaching experience into useful feedback. This situates the teacher in training within a time deficit hence reflective efforts only superficially address an AR task in teaching practice. Conceivably this is a limitation of attempting to complete AR during teacher training. Nonetheless, it is generally accepted that AR is a way to sort out not only “one’s values, beliefs, motives, but also to give more attention to the analysis of the experiences of the classroom: ‘new perceptions’ may lead to ‘altered conceptions and reconstructions’ of aspects of the art of teaching” (Rudduck, 1991, p. 94). The teacher researcher is making a contribution to what is known about teacher training.

Once written down experiences can be made available to advisors, supervisors and other stakeholders. Those reading such accounts, including the author of the AR reflection, can begin to construct responses and suggestions that may offer differing interpretations and pathways (Ryan, 2020). Since the millennium, educators and education have felt a need to look back to see how we got to this point in time. This reflective habit is both informative and useful in all walks of life. Gabel (2001) claimed, we are in an,

era of teacher education during which reflective practice . . . and the value of reflexivity between experience and pedagogy are common research themes . . . Teaching journals are

assigned to facilitate deep and critical reflection on one's experiences in the field. At times, it seems that every possible identity is explored, every experience is examined, and every personal story is told. (p. 37)

The Ontario teacher in training, and really all educators, question their practice, their routines and their school community, as it is constantly changing, adapting and growing. AR supplies both a strategy and system to address emergent questions; the actions of the AR are empowering as they are often the centre point of the investigation. AR is the type of research, which is very accessible, adaptable and complementary to the role of an educator; and in addition, it is good research. Miles and Huberman (1994) agree, suggesting,

good qualitative research . . . requires careful record keeping as a way of connecting with important audiences. The first audience is self: The notebooks of the . . . help each keep track of what was done along the way, suggest ways of improving next steps, and give reassurance about the reproducibility of the results. (p. 280)

A question "serves as a mechanism and catalyst to engage actively and deeply in the learning process" (Blessinger & Carfora, 2015, p. 5). AR has been found to "serve not only as a means of improving teaching. . . but also, in developing practitioners' flexibility and problem-solving skills" (Parsons & Brown, 2002, p.6). Improvements "should be developed so that it reduces rather than increases such pressures" (Keegan, 2019, p.127), over time.

Figure 3: Teacher Improvement via AR

Source: (Ryan, 2006, p. 12)



Student-teachers may naturally reflect within the moment (Schon, 1983), or reflect following teaching, in each case reflection is "constructivist in nature because it allows the student to

take greater ownership of her/his learning by allowing them a means by which to construct their own knowledge rather than just having that knowledge merely spoon-fed to them by others” (Blessinger & Carfora, 2015, p. 5). AR is utilised “to improve the practice of education, with researchers studying their own problems or issues in a school or educational setting” (Creswell, 2012, p. 592). The data and the research are embedded in the teacher’s daily teaching practice and developed over time” (Keegan, 2019, p.128). “Education, as a ‘field of action’ of action research, can significantly affect the development of reflection” (Luttenberg et al., 2017, p. 94), as the action researcher can develop very personal insights that are documented and sometimes made public.

Admittedly, AR is “not expected to be generalisable. It is intended to focus on an identified area of improvement in an individual classroom or in a particular school” (Ward & Millar, 2019, p.43). AR can be shared, however, “teachers often find that some solutions identified by classroom researchers relate to their own circumstances; because of common foundations” (Ward & Millar, 2019, p.43). AR “can be a transformative tool for the environment and the curriculum, as well as for the child, the teacher, and the community” (Ward & Millar, 2019, p.43).

## Conclusion

AR is and has been for some time a positive force in education, yet sometimes there are barriers such as gaining entry, and getting ethics approval to examine your own work within a classroom which meets with resistance from protective stakeholders, who may fear what is written, reported and eventually made public. AR is very different from traditional sciences, as AR is firmly positioned in the social sciences, and understood easily by those who work within an educational role where personal experience is valued and instructive (Rutten, 2021). The almost intimate insight the reader gains by reading a journal entry made public via publication can be uplifting, bonding and motivating. This effort to develop a journal is a subjective task requiring risk-taking and confidence. Nonetheless, AR is iterative, and brings what may be tacit to the written page via planned actions, reflections and revisions (Zuber-Skerritt, 2018) through repeated cycles of AR over time (Ryan, 2020).

AR is a mode to make thinking visible, just as pedagogical documentation makes student thinking visible through photos, video, audio data, and written notes for the purpose of understanding thinking and planning. AR is a means to listen and decode pedagogy as tacit knowledge is made visible (Dahlberg 2012; Fyfe, 2012). By documenting within an AR enterprise, a window is opened to everyday insights “concerned with developing practical knowing in the pursuit of worthwhile human purposes” (Reason & Bradbury, 2008, p. 4). The journal entry is personal, subjective and meaningful, as it captures reflections in detail through the effort of the participant who works to advance their practice and understanding of their own pedagogy. Reflection on one’s everyday professional world seems an important “entry to a deeper understanding of educational innovation and change”. Through such reflection and revaluation, the teacher may gain a clearer sense of the way in which the past shapes and informs possibilities for action in the present” (Rudduck, 1991, p. 94).

A.R. fuses action while coupling “theory and practice, in participation with others, in the pursuit of practical solutions” (Reason & Bradbury, 2008, p. 4). A.R. is appealing, pliable, and inclusive as it seems to complement educational landscapes with it act, reflect and revise routine. Most importantly, an action researcher “addresses a specific, practical issue and seeks to obtain solutions to a problem” (Creswell, 2012, p. 577). A.R. is used “to improve the practice of education, with researchers studying their own problems or issues in a school or educational setting” (p. 592). The AR in this article demonstrates a need to reflect on self (reflexivity) in relation to others which is a fundamental developmental task within teacher training that impacts self-development in a professional manner. Making sense in a practice is a recursive cyclical exercise that is strategic and systematic within a particular context embedded in the education setting. The teachers in this article take actions, reflect upon these experiences, and plan next steps as a pedagogy which is something that helps pre-service teachers professionally develop. Professional development includes the revision of teaching plans, actions and decisions while training to be a Health and Physical Educator. The AR journal herein was a means to discover, decode, and process experiences to build self and professionally develop. This act of documentation (writing) is a means to sort, identify and bolster the evolving educator.

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