Action Research Facilitates Education as a Continuum - Secondary School Curriculum Development based on Action Research

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Abstract: In this article, Action Research (AR) will be introduced as an inquiry-based pedagogy eliciting continuous education. Through clarifying its epistemological and practical values as well as having a close look at its inquiry cycle, this article seeks to reinforce the role that action research plays in an authentic educational environment. Subsequently, by analyzing the relationship between the AP Capstone course and the four steps of AR, the cultivation of middle school students in the secondary school environment is explored. Finally, a school-wide discipline curriculum is provided as a local example further showing the benefits of adopting the action research concept in school curriculum and skill development.

Keywords: Action Research; Inquiry-based Learning; Secondary School Curriculum; AP Capstone Program

1. Introduction

Relying on quotations from Cicero, Aristotle, Xenophon, and Francis Bacon, John Henry Newman, an Oxford Professor, and the spokesman of early Catholicism, made a reflective lecture on knowledge and education in "Knowledge Its Own End" (1852) to draw a sharp distinction between "useful knowledge" and "liberal knowledge". Newman acknowledged that people must be trained for careers and provided with ways to make their lives easier, which is the motive for learning practical knowledge. However, knowledge discovery should not end or merely arrive at a "scientific truth" or "material good" (Marrow, 1969, as cited in Hammond, 2013; Newman, 1852); rather, Newman believed "real education" exists solely for the sake of unfolding knowledge itself and fostering inquiry. While pursuing it, material goods, humans exercise their minds, reason, and reflection[1-2]. As knowledge is identified as a constantly changing, growing, and adapting feature (Baert, 2005, as cited in Hammond, 2013), action research is believed to be a contributive pedagogy to ignite meaningful inquiry and thereafter propels education/ knowledge discovery as a continuum[3-4].

2.Action Research: A Cycle of Problem-Solving

Action research is an iterative, reflective problem-solving process conducted by practitioners within educational settings. It is rooted in pragmatism, which emphasizes the practical application of ideas by acting on them to test them in real experiences. Pragmatism, as a philosophical tradition, supports the idea that knowledge is generated from real-world practices and problems, but conducting action research is not only for solving problems. This explains why action research has often been misunderstood and remains controversial. It blurs the lines between traditional research and practice. Unlike traditional research, seeking to generate new theoretical knowledge, action research aims to solve practical problems while generating new insights (Hammond, 2013). Simply put, there is no clear-cut completion of conducting action research and the research findings should not be stagnated[5-6].

The epistemological stance of education aligns with the principles of action research, which is designed to address authentic problems through a cycle of planning, acting, observing, and reflecting (Johnson, 1993; Buss, 2018; Mertle, 2021). During the starting stage of the four-step cycle, Buss (2018) stated the challenge of developing meaningful inquiry--to identify a specific problem of practice (PoP). Sound inquiry, from Levine's suggestion (2005, as cited in Buss, 2018) involves gathering initial data to understand the scope and nature of the problem, which requires the initiator to think from the perspective of an educational leader,

such as inquiries regarding low student engagement, achievement gaps, or ineffective teaching strategies. Step two is "Taking Action". Once the problem is identified, the next step is to plan and implement an intervention. This might involve developing new teaching strategies, adjusting classroom management techniques, or incorporating new technologies[7-8]. The key is to ensure that the intervention is contextually relevant and tailored to the specific needs of the students and the educational setting. Step three, "Data Collection and Analysis": during the implementation phase, data is collected to monitor the effects of the intervention, including both qualitative data (e.g. Student interviews, classroom observations) and quantitative data (e.g. test scores, attendance records). Analyzing this data helps educators assess the impact of their actions and determine whether the intervention is effective. Step four requires leaders to take "Reflection and Adaptation" to reflect on the outcomes and effectiveness of the intervention. It involves critically examining the data, considering the successes and challenges, and making necessary adjustments to improve the intervention (Mertier, 2017, as cited in Buss, 2018; Mills, 2014, as cited in Buss, 2018; Mertier, 2021). In an educational context, conducting the research cycle requires sophisticated skills, which should be rigorously fostered among all education practitioners (CPED, 2010, as cited in Buss, 2018)[9-10].

3.Education as a Continuum: School Teachers and Learners Benefit from Action Research

The four types of future schooling, depicted by the Organization for Economic Cooperation and Development (OECD) in 2023, explain the innovation in the educational field. In addition to defining core competency and cultivating future talents, OECD has predicted four types of future schooling: "schooling extended", "education outsourced", "schools as learning hubs", and "learn as you go" type. Among them, the looser the school's physical structure is, the more complex the requirements are for its teachers and learners. Emerging at the beginning of 20 century, action research reinforces teachers' development in three areas: personal, professional, and political (McNiff, 1999).

The inquiry-based action research offers individual teachers a chance to exercise their agency as an educator (Banegas, 2019); their professionalism will be reinforced once they are encouraged to solve authentic problems while playing multiple roles daily. Collaboration ensures collective interest in school development, through which individual teachers actively participate and propel the progress of the entire school. When the educational environment shifts from exclusiveness to inclusiveness, teachers are motivated and assisted in thinking from the leadership's perspective (Khatun &Salahuddin, 2013). Teachers' autonomy, aiming to solve problems at all levels in a school environment, results in greater motivation (Wiersma, 2000).

A similar positive effect of conducting action research also takes place among learners. Education aims to foster long-term autonomous learners, who can get closer to the truth of each domain. This ability, however, is not naturally acquired but will be formed through educational training or guidance. Once learners delve deep into interested fields, pose questions, negotiate with teachers, and reflect on their findings, they will replace passive knowledge acquisition with an active and in-depth knowledge-learning process. Learners will change their learning attitudes from demotivation to motivation as a result of exercising their agency (Lamb, 2017; Pinner, 2019; Taylor, 2013; as cited in Banegas 2019).

4.Action Research for Curriculum Improvement: A Case Analysis of AP Capstone Program

AP capstone program as an innovative diploma program from the College Board aims at equipping students with independent research, collaborative teamwork, and communication skills to fit into college requirements (AP Course Description, 2020). It empowers students by engaging them in two academic research courses: AP Seminar for one year, and AP Research for the second year. The whole program enlightens secondary school teachers on the implementation of action research by displaying the cycle of problem-solving and allowing flexibility in building up the discipline curriculum. The pedagogical framework "QUEST" of the AP Capstone program is rigorously in line with the cycle of problem-solving (See table 1). The following framework

is released by "AP Seminar Course and Exam Description" (2020) explaining the instructional foundation of the program (See figure 1).
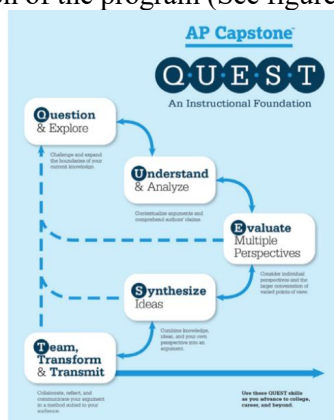

Figure 1. AP Capstone Instructional Framework

Question and Explore: Students are encouraged to challenge their current knowledge bank and pose questions; then be guided to identify "meaningful research questions".

Understand and Analyze: "Contextualize arguments and comprehend the author's claims." The target of the "U" step varies in "AP Seminar" and "AP Research". In the Seminar course, students are engaged in many intensive reading activities, through which they are taught to decode and comprehend academic research papers. In addition, the second-year "Research" course will develop students' understanding of different disciplines' paradigms. Later, they will select and adopt appropriate methodologies to complete their investigation (AP Research Course and Exam Description, 2020).

Evaluate Multiple Perspectives: With a strong emphasis on multiple perspectives and critical thinking, this stage trains students to critically reflect on their inquiry.

Synthesize Ideas: Students are encouraged to carefully analyze what they have known and found, and then to generate their own solutions or resolutions. In AP Seminar, the ideas will be displayed through a well-analyzed position paper; while in AP Research, after statistics analysis, students will write and present a research paper addressing his or her subject-inquiry.

Team, Transform, and Transmit: It calls for collaboration among peers and communication with target audience.

Table 1. Connection of AP Capstone program and the Action Research

AP Capstone	Link to Action Research
Question	With support, students will begin with
and Explore	problems worth exploring and identify a specific problem of practice (PoP) while conducting the action research.
Understand and Analyze	From comprehending academic research to taking action, students will undergo the transition step by step.
Evaluate Multiple Perspectives	In action research, the problem-solving process is not linear; instead, the incursive process will drive students to think from multiple lenses and perspectives.
Synthesize Ideas	It connects the final two stages of action research——"Data Collection and Analysis" and "Data Reflection and Adaptation", but the AP Capstone may stop at the final paper or solution, whereas the action research inclines to further investigation or realistic improvement.
Team, Transform, and Transmit	Collaboration and communication skills are required but hidden during the process of conducting action research. Even the whole research can be done by an individual, the authentic environment involves multiple stakeholders; thereby, those skills should not be overlooked.

Even as a program of the AP family, the assessment of AP Capstone must be accessible, measurable, and reliable; it leans more toward summative results with few formative inspirations. The score-oriented program more or less weakens the goal of achieving education continuity. However, it still maintains flexibility for teachers and learners. Implementing the program from a progressive and developmental perspective benefits the long-term educational goal-- cultivating learners' inquiry and autonomy. An example of cooperating AP Capstone program in building disciplines curriculum will be displayed to show how the AP Capstone program can be conducted to achieve the educational continuity of the action research.

Case Sharing: a social studies curriculum based on action research.

a)   **School**:   The   International Curriculum Center of High School, PGA group, China.

b)   **Curriculum Overview**: The three-year social studies curriculum has been designed with three tiers. Tier one is the foundational level with an array of social study courses, among which AP seminar is compulsory, and

students also need to take at least two courses. Tier two offers challenging courses and most of them are AP social study courses. At this stage, AP research will be offered to capable students, and they are encouraged to explore relevant social issues. Tier three is the "Leadership" program as the elite level. Students will participate in real social organizations to prove or calibrate research findings. It targets future leaders who will choose social studies as their college major or students passionate about this area. Overall, the discipline curriculum is built based on action research (AR) to achieve education continuity.

Table 2. High School Curriculum of Social Studies

Tier of Curriculum	Courses
Foundational Level	Chinese history, American History, World History, Government, Ethics and the rule of law, Chinese Culture, and Psychology, etc. (2-3 selective courses) AP Seminar (compulsory)
Challenging Level	AP Macroeconomics, AP Microeconomics, AP Psychology, AP United States History, AP United States Government and Politics, AP European History, Ethics and the rule of law (college level), AP Research, etc.
Leadership Program (Elite Level)	Tailored independent study project: participate in social/community organizations to conduct the project. College-level social study resources will be provided if needed.

c)   Course Connections to the Action Research
Foundational Level Courses (the learning environment is school-based, classroom-based, and frequent student access to online research)
✓   Subject Knowledge: students will systematically learn and comprehend basic subject knowledge.
✓   Language & Thinking: be supported to learn and apply English argument and research; critically think from multiple perspectives.
Studying & Planning stage (AR): diagnose and reflect on social problems, then research the relevant topic.
Challenging Level Courses (the learning environment is School-based, classroom-based, one-on-one research tutorial: students will be assigned one professional teacher to guide their research, social organizations shall be involved if necessary)
Subject Knowledge: strengthen understanding

of a specific area, avoid bias as much as possible, and be ready for college studies.
Language & Thinking: continuously adopt critical thinking skills to pose research questions. Be careful with research methodologies (students are encouraged to take Statistics).
Taking action & Data Collection stage (AR): students will be guided to conduct action research while taking the AP Research course. They will focus on exploring their interested areas/topics.
Leadership Program (Elite Level; the learning environment is school-based, academic meeting, social/community support, experts' advice)
Even after the AP research, students will have meetings with a social studies teacher, their academic advisor, and a college counselor to reflect on their research data. They will test the feasibility of their research findings by authentic investigation.

5. Potential Challenges & Conclusion
The action research indeed has a contributive impact on fostering educational continuity and learner autonomy. However, it involves many preconditions when implementing it in secondary school, including students' knowledge, language proficiency, teachers' professional competency, and resource and financial support from the school board. Even the mainstream international curricula: AP, IB, and A-Level have been aware of the epistemological and pedagogical purposes of action research and designed it into their system as AP Capstone program, A-Level Extended Project Qualification, and IB Extend Essay, school practitioners still need to reflect on an insist the core value of action research, i.e. to foster inquiry, to arouse further learning interest, and to get closer to the knowledge itself. What high school students have explored should not be their ending; rather, it should be the beginning of their independent academic investigation, even an entry to a future career path.

References
[1]AP Seminar. Course and Exam Description[M]. College Board, 2003.
[2]Baert, P. Philosophy of the Social Sciences: Towards Pragmatism[M]. Cambridge:

Polity Press, 2005.

[3]Banegas, D. L. Language Curriculum Transformation and Motivation Through Action Research[J]. The Curriculum Journal, 2019, 30(4): 422-440.

[4]Khatun, R. & Salahuddin, M. How School Teachers Can Benefit from Action Research: A Case Study[J]. Education, Health & Behavior Studies Student Publications, 2013, 1(1):4-20.

[5]McNiff, J. Action Research: Principles and Practice[M]. London: Routledge, 2002.

[6]Mertier, C.A. Action Research as Teacher Inquiry: A Viable Strategy for Resolving Problems of Practice[J]. Practical Assessment, Research, and Evaluation, 2021, 26(19):1-12.

[7]Mertler, C. A. Action research: Improving schools and empowering educators[M]. Thousand Oaks, CA: Sage, 2017.

[8]Mills, G. E. Action research: A guide for the teacher researcher[M]. Boston, MA: Pearson, 2014.

[9]Newman, J. H. From Knowledge to Its Own End. In M. Austin (3rd ed.). Reading the World, Ideas that Matter[M]. W. W. Norton Company, 1852.

[10]Rasmussen, H. T. Getting to maybe: Improving the education doctorate in an era of. uncertainty[J]. Impacting Education: Journal on Transforming Professional Practice, 2018, 3(2): 24-29.