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Education evaluation in Singapore: current practices and recommendations for future Directions

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ABSTRACT

This article aims to review and comment on the articles in this Special Issue and suggest directions for Singaporean evaluators to consider in the future. Based on the review, we found education evaluators in Singapore are familiar with up-to-date evaluation theories and approaches and successfully apply them. We also found that a substantial proportion of these articles (six out of nine) focused on evaluation research. Only three of them related to conventional program evaluation. We suggest addressing this imbalance in the future. This article suggests several cutting-edge areas for Singaporean evaluators to consider in the future. Singapore has many innovative social and educational programs. Singaporean evaluators could advantage of these programs to address cutting-edge issues.

KEYWORDS

Education evaluation;
current practices; future
directions

Introduction

The current issue of the Asian Pacific Journal of Education brings readers a great collection of evaluation studies examining different angles of evaluation approaches in education. Program evaluation took a serious role in the United States around the 1960s (Shadish et al., 1991; Suchman, 1967) with infusion of public money into government funded social programs aimed at behavioural changes to preserve population health. Since then, the movement eventually expanded to other countries. However, differences in social, cultural, economic, and political environments likely influenced how the evaluation was conducted in different areas of the world, if at all. It is essential to understand how these countries have conducted program evaluations and use new insights to further advance the field of program evaluation. This paper focuses on Singapore's experiences with program evaluation by presenting an overview of the nine articles included in this Special Issues of the Asian Pacific Journal of Education (Part I), followed by recommendations for future directions (Part II).

Part I: overview of the articles in this special issue

This special issue includes nine articles. From an evaluation standpoint, these articles can be classified into two categories: *Conventional program evaluation studies* and *research on evaluation*. Conventional program evaluation studies are reports of a certain type of assessment to reflect on the merit of an intervention program in the areas of planning, implementation, and/or effectiveness (Chen, 2015). For example, process evaluation and outcome evaluation are examples of this type of evaluation. This category also includes efforts to develop innovative evaluation theories, models, or

approaches for assessing an intervention program. On the other hand, research on evaluation is an inquiry into or generates new knowledge related to the evaluation process, products, theories, methods, or practices (Coryn et al., 2017). As such, the articles in this category do not report the evaluation of an intervention program, but rather use programs to develop or test new evaluation strategies. For example, the authors Loh, Chong, and Lim-Ratnam in this Special Issue conducted a meta-analysis of educational evaluation articles in Asia, to understand the landscape of pedagogical methods and learning outcomes. The information is useful to understand past evaluation practices, their shortcomings, and to inform pedagogical areas for future assessment.

We used this distinction to classify the nine papers of the Special Issue and to provide reviews and comments for each article.

(A). Conventional program evaluation

There are three articles in this category. Our review and comments on these three articles are discussed as follows:

(1). A mixed method evaluation of an ecological systems approach for supporting young children from low-income backgrounds in Singapore (Xie et al.)

This study used mixed methods to assess the effectiveness of the Child Support Model (CSM) serving children and families from vulnerable, low-income backgrounds, with a range of financial, social, and learning support in the classroom. The quantitative component was a longitudinal study of a cohort of 58 children from low-income families. Children's language and cognitive outcomes and classroom engagement were measured three times (one pre-test and two follow-ups). In the qualitative component, participating children's parents and teachers were interviewed and discussed their perspectives and experiences in CSM. The data supported CMS and its effectiveness. CSM enhanced the well-being and learning outcomes of children from low-income families. Parents also expressed positive experiences participating in the CSM.

This study applied mixed methods to triangulate the evidence of program effects on children from low-income families. The use of qualitative methods provided additional evidence on parents' experiences with CMS. However, this study can be strengthened by having a larger sample (as acknowledged by the authors), as well as by upgrading the one-group design to an intervention/comparison-group design. In addition, we suggest the study could increase its usefulness and make more contributions by including the program's underlying theory of change or program theory in the evaluation process. Adding a theoretical framework to the study not only strengthens the design, but also allows for explaining the transformation mechanism(s) by which the intervention is producing the outcomes. Much of the criticism of published studies, revolves around underpinning theories and standardized outcome measures. It is always helpful to remember the ultimate outcomes expected from an intervention, beyond those expected at the individual level. In this case, for example, what were the benefits to the educational system and ultimately to society?

Ministry of Evaluation's evaluation practice (Lee & Liu)

This study introduced evaluation activities conducted by the Ministry of Education (MOE) in Singapore. MOE is responsible for developing educational policies and programs as well as for collaborating with schools and other organizations and agencies. The authors extended the theory of change to clarify major program components, to apply experimental and quasi-experimental methods to evaluate effectiveness of strengthening the schools' capacity to conduct evaluation, and to utilize the evaluation results.

Because of the evaluation expertise and resources MOE has, we suggest MOE takes a larger role in enhancing evaluation capacity and promoting program evaluation in Singapore in the future. We propose the following activities for MOE to consider:

- Provide evaluation training: MOE can periodically use webinars and/or in-person evaluation classes for government employees, school administrators and teachers, and for community workers.
- Offer funding and technical assistance to local agencies and schools to evaluate their programs and to publish evaluation results in local and international journals.
- Establish evaluation fellowships for recruiting and training evaluation specialists.
- Organize international conferences to promote evaluation learning and to widen international recognition of evaluation achievements.
- Facilitate collaboration between local and international evaluators to develop innovative evaluation theories and approaches and select appropriate programs to document/test them.

(3). Theory of Program and Theory of Evaluation (Chen, Morosanu & Chen)

This article discussed the importance of understanding the connection between problem-solving philosophies underlying intervention programs and the selection of evaluation theories and approaches for outcome evaluation. Intervention programs are explicitly or implicitly based on a problem-solving philosophy: reductionism, system-thinking, or pragmatic synthesis. Because the premises are different, a program based on a particular problem-solving philosophy requires the use of an appropriate evaluation methodology that aligns with the philosophy. For example, randomized controlled trials are useful to evaluate intervention programs based on reductionism, but these designs are counter-productive for evaluating intervention programs based on system thinking or pragmatic synthesis.

The article cautions against a one-size-fits-all approach proposed under the existing outcome evaluation theory and practice, and provides a contingency perspective of outcome evaluation as a better alternative. If intervention programs are designed under reductionism, it is appropriate to apply experimental methods. If programs are developed under system thinking or pragmatic synthesis, evaluators must use other types of evaluation theories and approaches. Because the great majority of researchers and evaluators have been trained under the tradition of reductionism, how to promote evaluation theories and approaches relevant to systems thinking and pragmatic synthesis in evaluation would be a challenging but important issue in the future.

(B). Research on Evaluation

Six articles of the Special Issue fall under the category of research on evaluation. These articles do not directly assess the quality or effectiveness of an intervention program. Rather, they deal with issues such as what are the current foci of education evaluations, how to better understand educational concepts, how to measure them, or how to apply them.

(1). Educational evaluation research in Asia: A Scoping Review (Loh, Chong & Lim-Ratnam)

The authors argue for the evolution of education evaluation in Asia and spotlight its unique facets and contextual challenges to guide potential research and evaluation areas in the future. A total of 62 articles from educational journals in Asia were selected for a meta-analysis. The authors found the major focus of these articles was in areas of learning, teaching, and outcomes. The authors identified gaps in areas of leadership and evaluation. For example, there is a lack of studies on the use of evaluation theories and models to frame and assess educational problems. The authors suggested more research on educational leadership and educational outcomes in the future.

The concept of research on evaluation is relatively new. However, there is still a lack of information on what it is, how to do it, how it relates to conventional program evaluation, and how it makes a contribution. This study helps clarify these issues.

(2). Education Practitioners' Epistemological Beliefs and Their Understanding of Evaluation: A Preliminary Study in Singapore (Chang)

The author raised an issue related to the relationship between teachers' beliefs and teacher training. More specifically, the author hypothesizes that students' epistemological beliefs shape their views on evaluation. The authors applied a quantitative method (survey) and a qualitative method (interview) to test this hypothesis. The data indicated participants' epistemological beliefs play an important role in learning how to design evaluation. The study provided evidence that program evaluation courses may not be sufficient to shape future evaluators if the courses only introduce evaluation knowledge without paying attention to how participants make sense of evaluation and interact with it.

This study is interesting and has the potential to influence future evaluation education. We encourage the author to demonstrate how to use the findings through clearly defined steps and to create an epistemological beliefs-based evaluation course for evaluators to adopt in practice. In addition, the author could evaluate this topic by comparing the effectiveness of the epistemological beliefs-based evaluation (intervention group) with a typical evaluation class (comparison group) on student learning. These efforts may get more evaluators' attention on the topic with the potential to enhance evaluation education in the future. As a general rule, evaluators must take not only a scientific, but also a neutral stance in their approach to assessment to ensure unbiased reporting of processes and outcomes of education.

(3). Assessing multiliteracies (Lim, Toh & Ong)

The authors raised the importance of both teaching and assessing multiliteracies because students depend on multiliteracy skills to navigate the complex multimodal communication in the digital age. This study used meta-analysis to identify major issues and themes. Based on 15 studies, the authors spotlighted the following major themes: 1). Researchers used metalanguage such as posters and comics to teach multiliteracies; 2). Researchers applied multimodal analytic frameworks to assess student artefacts; 3). Researchers relied on language and print literacy to assess multiliteracies. Based on the findings, the authors found a unified pedagogic metalanguage to assess student learning of multiliteracies is necessary, as well as to move beyond the focus on language and print literacy in assessment. Perhaps better long-term outcomes should be defined and linked to teaching via backward reasoning (Chen, 2015). Theoretical frameworks such as theories of learning might support this process.

Many issues addressed in this study are related to needs assessment. We encourage the authors to explore the potential connections between research on evaluation and needs assessment in future studies.

(4) Teaching from the heart (Loh, Kaur & Yeo)

Singapore gives out two national awards for outstanding teachers: The Inspiring Teacher of English Award (ITEA), and the President's Award for Teachers (PAT). This study focused on examining the teaching philosophies used by the award winners that led to their success. The study engaged with 4 ITEA and 2 PAT winners through interviews and curriculum review.

The data indicated the award-winning teachers have a passion for teaching and can effectively integrate subject matter with their pedagogical skills, to ensure the curriculum materials are relevant and meaningful to students, to build a strong rapport with their students, and to encourage student involvement and participation in making learning relevant and meaningful. This paper would make an even larger contributions if the authors would further elaborate on how and why this study could inform future teacher education and educational reform in Singapore in the future. These skills are definitely worth cultivating to improve the quality of educators' readiness to engage in meaningful teaching.

(5). Refine the Quality of Instructional Dimension in the Opportunity to Learn to Construct through the Productive Disciplinary Engagement Framework (Ong, Lee & Leowardy)

Opportunity to Learn (OTL) is an important concept for measuring the quality of teaching science. The authors proposed a new measurement to quantify the use of productive disciplinary engagement (PDE) framework. PDE can improve the quality of OTL measures to better understand the goals of science education. A case study design with middle school classes was used to assess the revised measures. The results suggested that revised measures are more reliable and valid in capturing the quality of science teaching. The authors extended an invitation to interested teachers and researchers to apply their proposed framework and measures in their courses.

The invitation raised challenging issues regarding dissemination of scientific findings that have been ignored. In this case, to make the dissemination feasible, the authors must provide additional guidance such as: What qualifications must the teachers have to make this happen? Do they need additional training? Would it create a burden on teachers and students? What kind of support is needed from school administration? These are important issues present not only in education but in social programs and healthcare as well. A lag of about 10 years was reported as common between scientific discovery and its application in practice (Albers et al., 2020).

(6). A Critical Evaluation of “Paradoxical” Leadership (Chua)

The author makes a case against paradoxical leadership by arguing embracing paradoxical leadership has not worked well in the educational system in Singapore. The idea is interesting and important. The author engages with literature reviews and philosophical arguments to support his assertion. In its current form, the paper serves as a valuable contribution by bringing this important issue to the attention of the scientific community, although it does not fully align with traditional evaluation or research methodologies. Further contributions in this area would be highly valuable if the author could collect empirical data to illustrate the challenges of paradoxical leadership in the educational system and provide well-founded suggestions for remedies or alternative approaches. A large body of literature exists on leadership with its own theories and outcomes. The bridge between leadership style and ultimate organizational outcomes and society benefits has yet to be demonstrated through scientific inquiry.

Part II: suggesting potential areas for advancing evaluation in Singapore

The above review confirms educational evaluators in Singapore and adjacent topics are familiar with up-to-date evaluation theories and approaches, and are successfully applying them in practice. Given these accomplishments, an interesting question to ask is: What could they do to further advance program evaluation in Singapore?

The recommendations we are making do not apply only to the review papers, but also to our observation of evaluation in Singapore in general. Our review indicates there are far more articles on research on evaluation than on conventional program evaluation in the Special Issue. If this reflects current evaluation practice in Singapore, we encourage evaluators in Singapore to conduct more conventional program evaluations in the future. Research on evaluation is useful to mark the progress made thus far. However, because conventional program evaluation is the pillar of scientific evaluation findings, evaluators should conduct more conventional program evaluations to build a strong evaluation foundation.

Furthermore, numerous innovative intervention programs in education, public health, welfare, housing, racial/ethnic relations, and other areas were designed and implemented in Singapore. The knowledge, experience, and lessons learned from planning, implementation,

and dissemination of these programs provide unique potential assets for evaluators in Singapore to use, to address cutting-edge issues of program evaluation to enhance their reputation in the future. We want to call the attention to several new developments.

Conducting proactive evaluation

The purpose of program evaluation is to satisfy the accountability and program improvement needs of intervention programs (Chen, 2015). Although both are important, the great majority of evaluation literature has focused on serving accountability rather than program improvement needs. Popular evaluation approaches such as process evaluation and outcome evaluation are better known and frequently conducted for accountability purposes. However, one consequence of such an unbalanced focus is the stakeholders' frustration that evaluation does not serve their need for improving programs. Stakeholders need real-time information for this purpose. Evaluation approaches serving program improvement needs are currently limited to formative evaluation. Currently, there is a movement asking evaluators to conduct proactive evaluation to address this imbalance.

Proactive evaluation is an approach that provides improvement-oriented information to stakeholders when they still have time and opportunity to use that information to improve their programs (Chen et al., 2021). Recently a few innovative proactive evaluation approaches have been proposed. For example, the multi-wave formation evaluation (Chen et al., 2020) addresses the limitation of the traditional one-time formative evaluation. A program stress test (Chen et al., 2021) was developed to examine an intervention's resilience and to identify areas that need improvement.

Lately, the attention has been expanded to program planning. Program plan evaluation (Chen et al., 2024) was proposed for assessment of strengths and weaknesses of a program plan before its implementation. Another interesting development is rapid cycle improvement (Schneeweiss et al., 2015) that uses early outcomes of a program to discover underperforming program components.

We encourage evaluators in Singapore to participate in the movement of proactive evaluation. They could make important contributions by: (a) Using educational programs to illustrate how proactive evaluation approaches can improve student outcomes and (b). Participating in developing additional innovative proactive approaches.

Addressing issues on the fidelity versus adaptation controversy

There have been heated debates among evaluators on how to evaluate the implementation of intervention programs (Johnson, 2017). On one hand, advocates of the fidelity approach argue the implementation of evaluation should stress the assessment of the fidelity of implementation of the intended components because fidelity increases program effectiveness. On another hand, advocates of the adaptation approach argue evaluators should pay attention to cultural and other types of adaptation because adaptation is essential for program success in the local context where programs are implemented. Currently, the debates or disagreements persist. A fresh view is needed to reconcile the differences.

Since Singapore is well-known for its implementation of policies or programs, it would be interesting to have more empirical information on implementation. Outsiders would be particularly interested in the following implementation questions: Is fidelity or adaptation the better approach in evaluating implementation and why? How is implementation evaluation conducted? How are the evaluation results utilized? Are there any strategies to reconcile the controversies? If so, how?

Advancing the holistic effectuality outcome evaluation

Traditionally, evaluators followed the Campbellian validity typology (Shadish et al., 2002) for outcome evaluation. The typology considers essential for evaluators to eliminate threats to internal

validity (confounded factors) to obtain the intervention's pure independent effects by using randomized controlled trials or other experimental methods. However, stakeholders view the pure independent effects created in controlled settings as artificial and not relevant to community practice. Stakeholders prefer outcome evaluation that takes realistic contextual factors into account. The holistic effectuality outcome evaluation approach was proposed for assessing contextualized effects (Chen, 2015).

Evaluators in Singapore could make important contributions to advancing the theory and approaches of outcome evaluation by illustrating how they conduct outcome evaluation. For example, how are MOE or other government agencies conducting outcome evaluation? What kinds of research methods do they use for the assessment? How do they address the issue of contextual factors? Do they assess an intervention's pure independent effects or holistic effects? How do they utilize outcome evaluation to make decisions? This information would be useful for advancing outcome evaluation in the future that is sensitive to local implementation conditions and to particular target populations.

Advancing external validity or generalizability

Evaluators and researchers agree external validity or generalizability is a crucial concept in program evaluation. Decision makers and stakeholders want to know whether the evaluation results in an organization or community are generalizable to other organizations or communities. However, external validity or generalizability is the area that is most underdeveloped in evaluation. One of the reasons is evaluation literature has neglected external validity issues. The majority of evaluation literature on outcome evaluation (e.g., Shadish et al., 2002) prioritizes internal validity (rigour) at the expense of external validity (generalizability). Recently, more and more evaluators argue evaluation must address external validity or generalizability issues (Findley et al., 2021). However, so far, the progress on external validity in program evaluation is still highly limited (Chen, 2010).

In Singapore, the great majority of educational and social programs have been implemented across schools or communities. Singapore seems to have profound experience and rich information on how to generalize evaluation findings from school to school or from community to community. This knowledge and experience of the dissemination and implementation of these programs would provide rich, fertile ground to develop evaluation theories and approaches for addressing external validity or generalizability. We encourage evaluators in Singapore to take on this challenge.

Enhancing inter-organizational collaborations

Intervention programs often require inter-organizational collaboration. A typical example in the West is the collaboration between planning/funding agencies (PFA) and community-based organizations (CBOs). For example, a PFA is responsible for planning an intervention program and for providing funds and other resources for grantees to implement an intervention program. CBOs or local agencies are responsible for implementing the intervention in communities. On the surface, this is a reasonable division of labour. However, because there is unequal power and resources between PFA and CBOs or local agencies., it is important to understand how the division of labour works in education and other fields.

A recent study (Chen et al., 2019) found communication barriers and distrust between a state health department and a local health district. As a consequence, the state outlined a plan and activities for health districts to implement, but health districts viewed the state plan as unrealistic, unfit to local situations. However, due to distrust between the two institutions, the gap was neither mentioned nor discussed. As a consequence, health districts substantially modified it to accommodate community needs in their implementation and there were no formal discussions on the discrepancy.

In Singapore, education programs require close collaborators between MOE and local schools. This provides abundant opportunities for studying inter-organizational collaboration on what works or does not work. For example, evaluators in the West are very interested in knowing: How does MOE communicate with local schools or agencies? What kind of relationships exist between MOE and schools? Does MOE seek schools' or local agencies' inputs in formulating and implementing educational policies? How does MOE address the issues of mistrust and communication barriers among organizations? How do these relationships affect the quality and effectiveness of educational programs?

Evaluating policies and programs for enhancing racial and religious harmony

Singapore is a nation inhabited by five million people from four ethnic groups: Chinese (majority), Malay, Indian, and Others. It is a multi-racial and multi-religious society. Since racial and religious harmony is essential for public safety and economic growth, the Singapore government has established policies and programs to enhance social harmony (Singh, 2016). Many other countries have problems with racial and religious conflicts or even wars. Decision makers, scholars, and citizens outside Singapore are very interested in having empirical information on Singapore's policies, programs, and implementation experiences on building trust and cooperation among different races and religious groups, as well as the effectiveness of these programs and policies. Evaluators in Singapore can fill the information gap by systematically evaluating the planning, implementation, and outcomes of these policies and programs as well as disseminating the findings including from educational settings.

Conclusion

We have provided the reviews and comments of the nine articles in this Special Issue. The review indicated that evaluators of education in Singapore applied updated evaluation theories and approaches to conduct conventional program evaluation and research on evaluation. While there is a notable strength in the research on evaluation, we recommend increasing the focus on conventional program evaluations to achieve a more balanced approach and further strengthen the foundation of evaluation knowledge. We also made several recommendations for future approaches to evaluation by using new cutting-edge developments in evaluation science for educational evaluators or evaluators in other fields to pursue in the future.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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