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Title	"So what makes the Prime Minister's speech so reliable?" - Secondary social studies teachers' pragmatic approach to inquiry
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# **“So What Makes the Prime Minister’s Speech So Reliable?” - Secondary Social Studies Teachers’ Pragmatic Approach To Inquiry**

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## **Abstract**

An inquiry-based approach in the classroom equips students with discipline-based skills, thus facilitating knowledge construction (Kidman & Casinader, 2017). In view of the curricular focus in Singapore on developing students' critical and reflective thinking skills via inquiry (MOE, 2016a), this article illustrates teachers' enactment of inquiry processes in secondary Social Studies lessons, drawing on data from a baseline study. Analysis of teacher interviews and student focus group discussions yields insights into the possibilities and challenges of employing inquiry-based learning. The article spotlights teacher-student interactions in one particular lesson as students ascertain the reliability of the given sources. The analysis reveals teachers' pragmatic, fit-for-purpose approach to selecting key aspects of inquiry-based learning, which is largely driven by time constraints and concerns about syllabus coverage and students' assessment outcomes. These findings suggest the need for greater student agency in the inquiry process as well as more opportunities for students' critical and reflective thinking, and domain-specific understandings.

## **Introduction**

Over the past few years, inquiry has

emerged as a key pedagogical trend across a range of school disciplines. As Chomsky (2015) argues, the ability to inquire is a 21<sup>st</sup> century skill. Varied understandings of inquiry-based learning have emerged over time (Barrow, 2006) though learner-centredness, knowledge construction and problem-solving are generally regarded as key aspects of inquiry (e.g. Khalaf, 2018). As Kidman and Casinader (2017) note, an inquiry-based approach enables students' understanding and acquisition of discipline-based skills, which facilitate knowledge construction. Inquiry-based learning potentially helps students develop a 'method of intelligence' (Dewey, 1910) to address complex problems, and a disposition of reflection, which is central to inquiry (Dewey, 1933).

In the context of civics and citizenship education, an inquiry-based approach is said to foster civic consciousness among students by opening up space for reasoned deliberation of open policy questions regarding fundamental social values (McAvoy & Hess, 2013). With the school widely regarded as the primary training ground for citizenship education (Parker, 2003), the subject-domain of Social Studies is often associated with the role of equipping students with the necessary knowledge, skills and values for civic participation in democratic setups (Parker, 2011). In the Singapore context, the

secondary Social Studies curriculum envisages nurturing students as "informed, concerned and participative citizens" (MOE, 2016a, p. 3). The syllabus posits that students attain knowledge and understanding about real-world issues, and develop critical and reflective thinking skills through inquiry and authentic learning experiences. Well-facilitated discussions showcasing multiple perspectives are foregrounded to permit engagement with complex issues.

The locus of inquiry learning for Social Studies in the secondary school curriculum is the 'Issue Investigation' (Yang & Chua, 2021), and its introduction in 2016 may be seen a move to strengthen thinking skills development through inquiry-based learning (Yang, 2021). The syllabus posits a four-stage inquiry cycle for implementing 'Issue Investigation': sparking curiosity, gathering data, exercising reasoning, and reflective thinking (MOE, 2016a). From a pedagogical perspective, this article aims to unpack how aspects of the inquiry cycle become evident in teachers' classroom enactment; accordingly, the research question is: How do teachers enact inquiry in secondary Social Studies classrooms in Singapore? Yang (2021) observes the dearth of research in Social Studies from the perspective of pedagogy or teaching/learning experiences.

To address the research question, descriptive data is presented to comprehensively portray teachers' enactment of inquiry in the sampled lessons. Additionally, an illustrative vignette from one classroom is used to provide a glimpse of students 'exercising reasoning' as they engage in source-based analyses. To elucidate inquiry practices, pedagogical aspects of inquiry such as classroom talk and instructional tasks are examined. Classroom talk mediates knowledge and cognition (Mercer & Littleton, 2007;

Atwood et al., 2010), and its structure determines the space for student participation (Freebody, 2004). Tasks comprising learning activities form the backbone of classroom interactions and frame how students think and learn (Blumenfeld et al., 1987). The design and implementation of instructional tasks ascertain the quality of knowledge work students engage in (Hogan et al. 2013). Based on these theoretical premises, the article surfaces the knowledge work in the classroom in view of the talk and tasks pertaining to the four-stage inquiry cycle (MOE, 2016a). Excerpts from teacher interviews and student focus group discussions are analysed to yield insights into the possibilities and challenges of employing inquiry-based learning in secondary Social Studies classrooms.

The remainder of this article proceeds in three sections. The first section outlines the methods employed in this study. The second section provides a synoptic overview of trends observed in secondary Social Studies classrooms. To explore these trends in greater depth, the third section offers a vignette of one teacher's practice. Finally, implications for teaching and learning are discussed in view of the curricular focus on inquiry-based approaches.

### **The study**

This article draws on data from the Core Research Programme,<sup>1</sup> a large-scale research study. Data was collected (2016-17) from a nationally representative sample based on a stratified random sampling in line with the distribution of types of schools in Singapore. The sample included five Government and two Government-Aided<sup>2</sup> schools. With respect to the present article, data was obtained from classroom observations of 77 Social Studies lessons nested within eight curricular units at the

Secondary 3 level and taught by teachers in seven secondary schools. Each school nominated one Social Studies teacher with a minimum of 4 years of teaching experience. Researchers observed and video-recorded a complete unit of school curriculum work i.e. a series of thematic lessons for each participating teacher. Research methods also included audio-recorded post-lesson interviews and semi-structured teacher interviews as well as Focus Group Discussions (FGDs) with two groups of 4-5 students from every participating class. Content and thematic analyses were employed to surface key themes from the teacher interviews and student FGDs.

Lesson videos were coded (in Microsoft Excel) in five-minute intervals ('phases') based on a largely binary coding scheme (Kwek et al., 2017), which was developed and refined based on the Social Studies syllabus (MOE, 2016a), the *Guide to Teaching and Learning Upper Secondary Social Studies* (MOE, 2016b), and broader theoretical understandings. Insights from the data were also incorporated into the domain-specific coding scheme to better describe pedagogical practices in the sampled lessons. Coding analyses at the phasal level recorded whether an instructional event happened (or not) during a 5-minute phase. Coding indicators (not mutually exclusive) included pedagogical aspects such as student learning activities, classroom talk, inquiry processes, and knowledge focus (see Appendix A and Appendix B). Inter-rater reliability was monitored, and validity of the codes was reinforced through intensive discussions among the coders and engagement with domain experts. SPSS was used for compilation and statistical analyses of the coded data. The descriptive data presented subsequently is drawn from coding analyses of lesson videos.

## Inquiry in Singapore classrooms

Analysing the descriptive data from the sampled lessons using a range of coding indicators offers insights into the pedagogical aspects of the four-stage inquiry cycle (MOE, 2016a). As Table 1 shows, teachers stimulate students' curiosity by inviting students to brainstorm ideas, activating their prior knowledge, and introducing stimulating materials. In contrast, students' questions seldom provide the initial impetus for inquiring into issues.

**Table 1. Secondary 3 Social Studies inquiry: Sparking curiosity (2016/17)**

<b>Inquiry: Sparking Curiosity</b>	<b>% Occurrences in all Phases Secondary 3 (N=758)</b>
Ideation; Exchange of Ideas; Visualise Ideas	20.5%
Access Prior Knowledge	17.4%
Stimulus to Engage Interest	14.1%
Students Ask Questions	0.9%

Table 2 illustrates the patterns pertaining to data gathering. For the most part, students are presented with data. They spend more than half their lesson time generating data such as by making notes and accessing additional information based on the given sources. About one-third of the lesson phases show students making careful observations of the data to surface key ideas or themes. Far less time is spent on processing the information based on domain-specific criteria such as reliability and validity.

**Table 2. Secondary 3 Social Studies Inquiry: Gathering data (2016/17)**

<b>Inquiry: Gathering Data</b>	<b>% Occurrences in all Phases Secondary 3 (N=758)</b>
Data is Presented; Resources Provided	50.0%
Process information/data based on Criteria	17.2%
Make Careful Observations	34.4%
Data Generated by Teacher/Students from Sources	55.5%

Exercising reasoning denotes making sense of the data and extracting relevant information by deliberating on the evidence and arriving at informed understandings. Secondary 3 students spend more than one-fifth of the lesson phases engaging in data analyses, and 15% of the lesson time is spent on textual analyses (Table 3). Notably, critical analysis of the data, which entails questioning implicit or latent perspective/s is almost absent. Summarising ideas is relatively frequent at this stage of the inquiry cycle but students have very few opportunities to consider plural perspectives and evaluate alternative sources. In terms of communicating findings, there is modest evidence of students explaining and justifying their knowledge claims.

**Table 3. Secondary 3 Social Studies inquiry: Exercising Reasoning (2016/17)**

<b>Inquiry: Exercising Reasoning</b>	<b>% Occurrences in all Phases Secondary 3 (N=758)</b>
Data Analysis/Analyse Arguments	22.7%
Deep Analysis/Critical Analysis	3.7%
Text Analysis/Identify Techniques	15.4%
Perspective Taking/Consider Multiple Perspectives	4.5%
Evaluation/Evaluate Alternatives/Usefulness	3.4%
Justify Explanations or Claims	8.6%
Synthesize or Summarise Ideas	13.7%

Table 4 reveals that reflective thinking is the least emphasised aspect of the inquiry cycle in secondary Social Studies lessons. Students are seldom required to reflect on the inquiry process and findings, or on their own learning. Also, they hardly (re)consider their underlying assumptions or beliefs.

**Table 4. Secondary 3 Social Studies Inquiry: Reflective thinking (2016/17)**

<b>Inquiry: Reflective Thinking</b>	<b>% Occurrences in all Phases S3 (N=77)</b>
Meta-learning: Reflect on Learning Process	3.0%
Meta-Inquiry: Reflect on Findings, Inquiry	1.1%
Meta-self: Reflect on Own Beliefs/Assumptions	0.8%

The above findings are noteworthy given the curricular focus on students acquiring the disposition of reflective thinking and the importance of metacognition in student learning. Broadly speaking, inquiry is teacher-directed with teachers inclined to ask guiding questions and furnish sources. In contrast, students have negligible input in determining the inquiry focus or making decisions about data sources. Students have opportunities to analyse sources, but they seldom justify knowledge claims, consolidate their findings or engage in reflection (Kwek & Hussain, 2019). As discussed later, these findings suggest that overall, teachers adopt a pragmatic stance towards inquiry. Examenable aspects such as source-based analyses are far more emphasised than those that are perceived to be unrelated to summative assessments. In this context, the following vignette showcases one teacher's attempts to enhance her students' understanding of the domain-specific criterion of reliability, as students hone their skills for the mandatory 'Source-Based Case Study' component in the national examination.

### **A vignette from Ms Lee's classroom**

This section focuses on the classroom enactment of Ms Lee (pseudonym), a young graduate teacher with less than two years of teaching experience, teaching an 'Express'<sup>3</sup> class of 21 students at the Secondary 3 level in a 'neighbourhood' Government school (see Foo, 2021). A total of nine lessons themed 'Citizenship and Governance' were observed in the initial academic term (January-March 2017). The vignette below comprises excerpts from the third lesson, which is based on an inquiry question: *Is there too much restriction on freedom of speech in Singapore?* The lesson objective is to equip students with the skills of analysing sources and drawing evidence-based conclusions based on reliability.

At the outset, Ms Lee highlights the need to evaluate multiple perspectives in relation to an assertion statement. Students are required to use the given sources (in their worksheet) and explain the extent to which they agree with the assertion statement: *Strong control over free speech is beneficial for Singapore*. In groups, students examine the four text sources provided and attempt to rank the given sources from the *most reliable* to the *least reliable*. Each group indicates their responses, which Ms Lee documents on the whiteboard. Three of the five groups in the class deem that the most reliable source is Source A - an adaptation from a speech made by Prime Minister (PM) Lee Hsien Loong at an Inter-Religious Organisation anniversary dinner (May 2015). Subsequently, Ms Lee questions her students about the bases of their evaluation (Extract 1).

#### **Extract 1.**

1. T: Why is this (Source A) the most reliable?
2. S: There are a lot of examples and evidence.
3. T: Ok. But other sources also have evidence? They give example of Amos Yee, not bad right? They give example of White Paper policy, not bad right? So why the other sources cannot, why must this source?

The teacher offers a counter-argument about the reliability of Source A by pointing out the 'evidence' in other sources (Turn 3). Subsequently, she questions another student about her group's response of 'A' as the most reliable source. As evident from Extract 2, Ms Lee asks a supporting question: *So what makes the Prime Minister's speech so reliable?*

Extract 2.

1. T: Y. you chose 'A' right?  
Why you chose 'A'?
2. S1: Made by Prime Minister?
3. T: So what makes the Prime  
Minister's speech so reliable? So  
special that you think he's the  
most reliable?
4. S2: Because he's Lee Hsien Loong.

Clearly, students believe that Source A is the most reliable given that it a speech made by an authority figure (Turns 2 and 4). The issue of reliability is further problematised over the course of whole class interactions as the teacher probes deeper to elicit student responses. Ms Lee attempts to surface her students' reasoning by following up with clarifying questions, which permits them to explain their choice of 'A' as the most reliable source (Extract 3).

Extract 3.

1. T: So what about Lee Hsien  
Loong that makes him reliable?
2. S1: He's the son of Lee Kuan Yew  
(Students laugh)
3. S2: He's trusted by Singaporeans?
4. T: He's trusted by Singaporeans.  
Why do you think he would be  
trusted by Singaporeans?
5. S3: Government.
6. T: Oh because he's the  
government? So if it's the  
government you can trust what  
he says la?
7. S1: He's the Prime Minister!
8. T: He's the Prime Minister so  
definitely whatever he says is  
correct?
9. S4: He's the most reliable but his  
words may not be correct.
10. T: Oh wait, wait! There's a  
difference between correct and  
reliable - what's the difference?

11. S4: Reliable but not hundred percent  
correct.

12. T: So wait, wait - someone said  
something about Trump. Donald  
Trump - he is the  
most reliable President!  
(Students express disagreement)

Ms Lee's students attribute reliability of the PM's speech to his lineage as well as trust in the government. One student differentiates between reliability and accuracy (Turn 9), and the teacher reiterates the point (Turn 10) followed by the student's brief explanation (Turn 11). Subsequently, the focus shifts to the then-American president, Donald Trump. In spite of his position as an elected leader, students disagree with their teacher's assertion about Trump being reliable (Extract 4). The discussion continues and one student brings up the role of heredity.

Extract 4.

1. T: But you said based on title?  
Based on the title, you are the  
head of the country like what  
they say (Teacher points to a  
group of students) means you are  
the most reliable la!
2. S1: Teacher, the Americans elected  
Trump so =
3. T: = Ya so someone said there also  
because PM was also elected by  
Singaporeans just like Trump  
was elected by...So since most  
people elect him means he's the  
most reliable!
4. S: He has the genes.
5. T: Genes ah? You want to play  
genes ah? Ok! You are trying to  
say - how many of you - your  
parents didn't graduate from  
university? (Show of hands from  
students)
6. T: That means all of you ah y'all  
will never ever graduate from  
university? He said ah not I say

ah! Because you don't have the genes. Ah so the context ah.

Arguably, Ms Lee's questioning allows her students to consider the issue of reliability in greater depth; students have the space to understand that being the elected head of a country does not constitute a criterion for reliability (Turns 1 and 3). To counter her student's point about the role of genes (Turn 4), Ms Lee emphatically claims that students whose parents are non-graduates are not likely to graduate (Turn 6). The teacher then weaves the issue of reliability with a context familiar to her students. Specifically, she draws on students' participation in a co-curricular activity (CCA) in school to help them grasp the notions of bias and personal interest, which are pertinent to the issue of reliability (Extract 5).

Extract 5.

1. T: Ok which CCA are y'all from?
2. S1: Canoeing.
3. S2: Soccer.
4. T: Canoeing, soccer. Y'all know which CCA am I from? I am from floorball. And recently, did you'll hear the announcement or not? Floorball won 8-6 ok, don't play, play ok this school! It's strong you know, we won 8-6! Let me tell you ladies and gentlemen, floorball is the best CCA in North Star School! Ok it's the best! (Students laugh)
5. S1: Unreliable!
6. T: Why unreliable? Why are you sure I'm unreliable? Why?
7. S2: Because you are from floorball.
8. T: So?
9. S: You are biased...
10. T: Why am I biased?
11. S: You are from that CCA!
12. T: I am from that CCA. I want to promote my CCA and so I have a personal interest correct? Wouldn't he (PM) also have a personal interest? He's from the government. What do you think he would say about the laws that the government came up with?
13. S: Vote for me! (Teacher and students laugh)
14. T: Well, it's not during elections so it's not so accurate there but he's talking about his laws, you see ah (Teacher reads from Source A: *In such an environment, we cannot afford liberal positions. We will not hesitate to act firmly when necessary. We will make no apology.*) So he's talking about his laws to control speech. I am not going to make any apology. I will not hesitate to act firmly. Who came out with the law?
15. S: Government.
16. T: The government. Who is Prime Minister?
17. S: Government.
18. T: He's part of the government. Don't you think he may have a personal interest?

Based on Ms Lee's exaggerated claim about floorball being the 'best' CCA in the school (Turn 4), students are able to comprehend how bias and personal interest relate to the reliability of a given source (Turns 2, 4, 5 and 7). The teacher then consolidates her students' understanding by explicitly linking the CCA scenario with the issue in focus, which allows them to consider whether the PM's speech about government regulations is reliable (or not). Towards the end of the lesson, the focus shifts to Source B, which is an article posted by a university professor on his website. The teacher highlights the varying perspectives presented in the source - the professor acknowledges the benefits of the government's White Paper but also



concedes the misuse of freedom of speech. The teacher hastens to conclude the lesson “in view of time” and proceeds to demonstrate how to analyse Source A based on the *Message-Audience-Outcome* heuristic taught earlier.

### Discussion

As a whole, the vignette offers a microscopic glimpse of how teachers employ the recommended inquiry approach in Singapore’s examination-driven and time-starved classrooms (Loh, 2013). With reference to the domain-specific criterion of reliability, Ms Lee’s students investigate the issue of freedom of speech in Singapore by drawing in aspects of trust in authority figures, popular appeal, personal interest and bias. The teacher problematises the notion of reliability with a pertinent supporting question: *So what makes the Prime Minister’s speech so reliable?* The teacher’s focused line of inquiry surfaces insights, which permit her students to grasp the complexity of ascertaining whether a given source is reliable (or not). Students have room to state their viewpoints and are able to detect the flaws in particular lines of argument. The teacher also links the focal issue with the familiar CCA context, which helps her students grasp how personal interest possibly affects the reliability of a given source. Evidentially, Ms Lee tapped on the CCA example in order to “connect with them” as her academic department had decided on making issues more relatable for students via the *connect-extend-apply* strategy (post-lesson interview). Table 5 shows that in more than three-fifth of the lesson phases, teachers enable students’ conceptual understanding typically by weaving factual knowledge with examples and analogies (see Appendix B).

Table 5. *Secondary 3 Social Studies: Knowledge focus (2016/17)*

Knowledge Focus	% Occurrences in all Phases S3 (N=758)
Factual Knowledge	55.1%
Conceptual Knowledge	62.9%
Procedural Knowledge	47.5%
Epistemic Knowledge	9.6%
Metacognitive Knowledge	6.9%

While Ms Lee’s students have room to examine a range of criteria associated with reliability, the teacher shies away from explicitly linking reliability with broader understandings of how knowledge is constructed and validated in the discipline. Each discipline has a particular way of structuring content and methods of inquiry (Baildon & Damico, 2011). In this case, students lack the space to see how domain-specific criteria and standards (e.g. validity, reliability) facilitate knowledge construction in the discipline, enabling one to distinguish knowledge from mere information, opinion or belief. Effectively, the knowledge focus in Ms Lee’s classroom remains largely procedural, with the primary focus on equipping students with the skills of source-based analyses, which forms a key assessment component. Overall, procedural knowledge is evident in 47.5% of the lesson phases while only about one-tenth of the lesson phases show evidence of epistemic knowledge, which pertains to construction and validation of knowledge in the discipline (Table 5).

Over the course of the classroom

interaction, the teacher invites students to present and clarify their viewpoints. Even so, closed questions form the bulk of the teacher's questioning. The sampled lessons show that teachers' closed questions are far more frequent than open questions: 58% and 22% of the lesson phases respectively. Again, Ms Lee's students generally offer brief albeit well-considered responses, which is reflected in the overwhelming presence of students' short responses. Arguably, the frequency of the teacher's closed questions and students' short responses in Ms Lee's classroom resemble an Initiation-Response-Evaluation or IRE (Cazden, 1988) interactional pattern, with little room for students to initiate queries or explore fresh perspectives. Overall, whole class discussions are evident in only about one-tenth of the lesson phases whereas IRE sequences are observed in about two-third of the lesson phases. Notably, the FGDs reveal that secondary Social Studies students hope for more discussions and debates and generally less focus on content and examinations.

The vignette provides a snapshot of source-based analyses in one classroom but reflects broader trends of secondary teachers' enactment of inquiry in Singapore classrooms. Ms Lee's students barely surface any query as they exercise their reasoning in working through the sources. Similarly, the 'sparking curiosity' stage reflects a dearth of student questions in the observed lessons (Table 1). One student mentioned that he did not raise queries as his teacher "has a syllabus to cover ... If we are to do that, then they don't have enough time." Absent student initiations, classroom talk is largely steered by the teacher. Students generally lack opportunities to reflect on the inquiry process or findings as well as their own learning, as evident in the weak evidence of metacognitive knowledge (Table 5). The minimal presence of student questions and reflection tasks implies that

Ms Lee's students have few opportunities to make their thinking visible to other classroom participants as a form of public reasoning (Hattie, 2009). The teacher's classroom enactment belies her pedagogical beliefs: "... to get students to question each other's thinking and responses," which she admits "requires a lot of skills" (end-of-unit interview).

The foray into Ms Lee's classroom surfaces the possibilities and constraints of enacting inquiry in secondary Social Studies lessons. Teacher participants reported "running out of time" especially in terms of engaging students in discussions, which may be broadly attributed to heavy teacher workloads and results-oriented, top-down hierarchies in schools (Hairon & Dimmock, 2012). Ms Lee noted that owing to "manpower shortage" and "limited time," teachers in the school had not been able to provide students the opportunity of "going out and getting them to investigate an issue." Similarly, the teachers in Yang's (2020) study reported time constraints, which, combined with their exam-driven pragmatism and perceptions of the overwhelming scope and depth of inquiry, hindered the implementation of inquiry processes. They "watered down" (p. 21) 'Issue Investigation' by assigning the inquiry question to students, making the sources readily available, or tasking students to construct sources in a way similar to those used for the source-based case study in the examination papers. Teachers may understand the value of inquiry but inquiry-based approaches may conflict with content coverage and assessment preparation (Barton & Levstik, 2003).

The extent to which Ms Lee's classroom enactment aligns with the curricular focus on inquiry is debatable. Unsurprisingly, her lesson objective is "killing two birds with one stone" (post-lesson interview): teaching

her students the criterion of reliability, which ties in with the *Message-Audience-Outcome* heuristic students need to learn for their examination. The teacher's efforts to equip her students with critical thinking skills while ensuring assessment preparation seemingly reflect her realistic appraisal of implementing inquiry: "... inquiry in a very simplistic method of studying sources that is given to them." She raises a pertinent issue from a practitioner's perspective: "I think there needs to be more clarity on what inquiry is ... It's a really huge inquiry question" (end-of-unit interview). Yang (2021) notes that Social Studies teachers' varying interpretations of inquiry have resulted in different models of 'Issue Investigation' being presented to students. Broadly, findings from the Core Research Programme suggest that teachers take a pragmatic, fit-for-purpose approach to selecting key aspects of inquiry-based learning in terms of their classroom enactment, based on institutional requirements and/or classroom contexts (Kwek, 2021).

### Implications and Conclusion

Overall, this study surfaces some key strengths of the inquiry cycle as enacted in secondary Social Studies classrooms in Singapore. Teachers stimulate students' curiosity through ideation, activate their prior knowledge and use various stimuli. Students frequently engage in inquiry processes such as data analyses and textual analyses. Given the curricular focus on students' critical and reflective thinking, understanding of societal issues and appreciation of multiple perspectives (MOE, 2016a), several key areas for improvement emerge:

1. Students need to play a more significant role in ascertaining the inquiry focus, making decisions about the data sources, and having a

say in the design and outcomes of the inquiry process. Students require more opportunities to raise queries and issues of interest for discussion and deliberation. Teachers need to further "re-conceptualise their roles to encompass those of being a co-learner, a learning guide, and a facilitator" (Deng & Gopinathan, 2003, p. 60) to concretise the curricular aims of inquiry-based learning.

2. Students need more opportunities to justify epistemic claims as well as engage in critical analysis of the data and in perspective taking. Beyond an emphasis on procedural skills, inquiry entails a stronger focus on the *methods* by which knowledge is developed and validated in a discipline (Mansilla, 2005). Disciplinary practices such as argumentation, corroboration and justification facilitate the development of students' disciplinary understandings about the dynamic and provisional nature of knowledge.
3. Students' reflective thinking needs to be strengthened via stronger emphasis on tasks that permit reflection and sharing of reflection with peers, thus facilitating deep and meaningful learning (Garrison & Akyol, 2015). Students' metacognitive learning, which entails knowledge of cognition and regulation of cognition (Flavell, 1979) needs to be emphasised further. Additionally, students require more space to reflect on the inquiry process and findings, and importantly, to (re)consider their own beliefs and assumptions in the light of emerging understandings.

In summary, the findings presented here reflect a gulf between educational reforms and classroom realities, which continue to be largely teacher-centred with a focus on content coverage and examination success (Deng & Gopinathan, 2016). The findings foreground the potential role of students in inquiry-based learning as well as the need for more opportunities for students to engage in critical analysis and reflective thinking and to deepen their disciplinary understandings. Equipping students with discipline-based skills to facilitate knowledge construction (Kidman & Casinader, 2017) demands a conceptual shift from didactic, transmissive and results-oriented classroom practice to viewing all students as capable of learning through inquiry (Costes-Onishi et al., 2020). Drawing on the Core Research Programme findings, Kwek (2021) argues for a stronger focus on the epistemic stance of inquiry to better equip students with future-oriented competencies including "all of thinking, reflecting, judging, insight, feeling and imagination" (Jackson, 1998, p. 29, as cited in Johnston, 2002, p. 10). By providing a valuable empirical base of secondary Social Studies teachers' enactment of inquiry processes, this article paints a lucid picture of the opportunities and possible challenges of realising the curricular emphasis on inquiry-based learning in Singapore classrooms.

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do not necessarily represent the views of NIE.

### Notes

1. The 'Core Research Programme' is a large-scale research study in Singapore, which aims to provide policymakers and researchers well-informed, timely and evidence-based baseline descriptions and evaluations on the state of pedagogical practices in schools, and a systemic description and measurement of curriculum and reform initiatives. The research programme comprises Core 1 (2004-2007), Core 2 (200-2014), and Core 3 (in progress) including the OER 25/15 KBK project from which the present data is drawn.

2. Based on the regulating body of the school and the degree of financial assistance received, primary and secondary schools in Singapore are categorised as Government, Government-aided, or Independent schools. The curriculum, study materials, examinations, fee structure etc. in Government schools are fully regulated by the Government. Government-aided schools have some degree of autonomy but function according to Government regulations. Comparatively, Independent schools have greater autonomy.

3. Based on their performance in the Primary School Leaving Examination (PSLE), students are enrolled for 4-5 years of Secondary education in the Express, Normal (Academic) or Normal (Technical) stream. This system of streaming based on academic ability is being phased out by 2024. From 2020, full subject-based banding has been implemented, which allows secondary students to study different subjects according to their strengths and interests.

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## APPENDIX A

<b>Four-stage Inquiry Cycle (MOE, 2016a) (Kwek et al., 2017)</b>	
<b>Coding Indicator</b>	<b>Description</b>
<b>Sparkling Curiosity</b>	
Ideation; Exchange of Ideas; Visualise Ideas	Invite or brainstorm ideas, opinions; build on, connect and explore ideas; interactive exchange of ideas in a whole class/group setting
Access Prior Knowledge	Access students' prior relevant knowledge to help scaffold or model ideas/concepts
Stimulus to Engage Interest	Activities or materials that trigger or activate students' readiness or eagerness to learn
Students ask Questions	Invite students to surface queries; students initiate questions to their teacher or peers
<b>Gathering Data</b>	
Data is Presented; Resources Provided	Teacher provides students with the information or materials to work with
Process information/data based on Criteria	Students work through the data or information based on domain-specific criteria such as reliability, relevance, validity etc.
Make Careful Observations	Examine the data in detail to extract relevant or key ideas
Data Generated by Teacher/Students from Sources	Classroom participants access the sources of information and produce additional data
<b>Exercising Reasoning</b>	
Data Analysis/Analyse Arguments	Question or critically examine the data; analyse arguments; detect errors in logic or reasoning
Deep Analysis/Critical Analysis	Question what is not obvious or explicit in the data; examine or discuss omitted or hidden perspectives
Text Analysis/Identify Techniques	Identify techniques used by authors/illustrators to influence readers (e.g. imagery, stance-taking, persuasion) in view of purpose, audience and context
Perspective Taking/Consider Multiple Perspectives	Consider multiple perspectives even beyond lesson contexts; debate about plural often, contradictory viewpoints on issue/s
Evaluation/Evaluate Alternatives/Usefulness	Assess the utility, reliability or applicability of source/s; consider other viable sources of information
Justify Explanations or Claims	Support statements with evidence; surface the rationale for the derived understandings
Synthesise or Summarise Ideas	Consolidate key ideas; propose resolution; present findings



<b>Reflective Thinking</b>	
Meta-learning: Reflect on Learning Process	Reflect on one's learning process including activities, organisational structures etc; invite reflection about the process, purpose or value of learning
Meta-Inquiry: Reflect on Findings, Inquiry	Reflect on the different stages of the inquiry process as well as the inquiry output and outcomes
Meta-self: Reflect on Own Beliefs/Assumptions	Reflect on one's own pre-existing beliefs or assumptions; consider personal 'truths' in the light of emerging understandings

## APPENDIX B

Knowledge Focus (Kwek et al., 2017)	
Coding Indicator	Description
Factual Knowledge	Knowledge of facts, definitions, terms, details
Procedural Knowledge	Knowledge of procedures, algorithms, steps, skills; how to do something
Conceptual Knowledge	Knowledge of meaning of concepts/ideas, relationships between facts/concepts/ideas within a larger structure
Metacognitive Knowledge	Knowledge of cognition; knowing when or why to use strategies; learning to learn
Epistemic Knowledge	Knowledge of the nature of the discipline, disciplinary standards to establish knowledge