

# Use of Cartoons to Identify Students' Alternative Conceptions of History in a (Singapore) School

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## Abstract

*This article uncovers the alternative conceptions that students have of the study of Singapore during the Temasek period through students' cartoons, in the process deriving implications for future teaching through an analysis of the work performed by students. The discussions are drawn from a workshop session conducted by a History Master Teacher at the Academy of Singapore Teachers and cartoons from a selected batch of Secondary 1 students from a school that chose to participate in the learning of Singapore's pre-modern (Temasek) history through the cartooning approach. The investigation of alternative conception demonstrates that students' concepts of old Singapore can be affected—not surprisingly—to some extent by presentism in the categorical aspects of life identified on Temasek (architecture, religion, royalty, ordinary life). While it is pertinent to rectify students' inaccurate alternative conceptions, teachers' responses and class instruction should not devolve into an identification exercise of 'right' and 'wrong' interpretations. Surfacing alternative conceptions creates classroom opportunities to induct teachers*

*into certain aspects of the topic more deeply and to link the alternative conceptions of presentism to other concepts of history such as historical evidence, perspectives, as well as change and continuity, which allow students to better appreciate history along with contemporary issues of heritage.*

## Introduction

Historians and history educators debate the extent to which continuity and discontinuity apply to the classical and pre-modern periods of Southeast Asia and Singapore (Borschberg and Khoo 2018; Heng 2010; Sim 2015). Concepts such as monarchy or trade were not static in the context of Southeast Asian history – they have evolved across the long time period from the 13th to 19th centuries (Kwa 2006; Miksic 2013). Therefore, conveying the concepts from the past and their transitions to secondary school students, especially those studying history for the first time, represents an exciting but complex task. L. P Hartley, amongst others, have either quipped in or titled their works “the past is a foreign country” (Hartley, 1913: 9; Lowenthal, 1985). Knowing (or teaching) the past is almost tantamount to knowing a

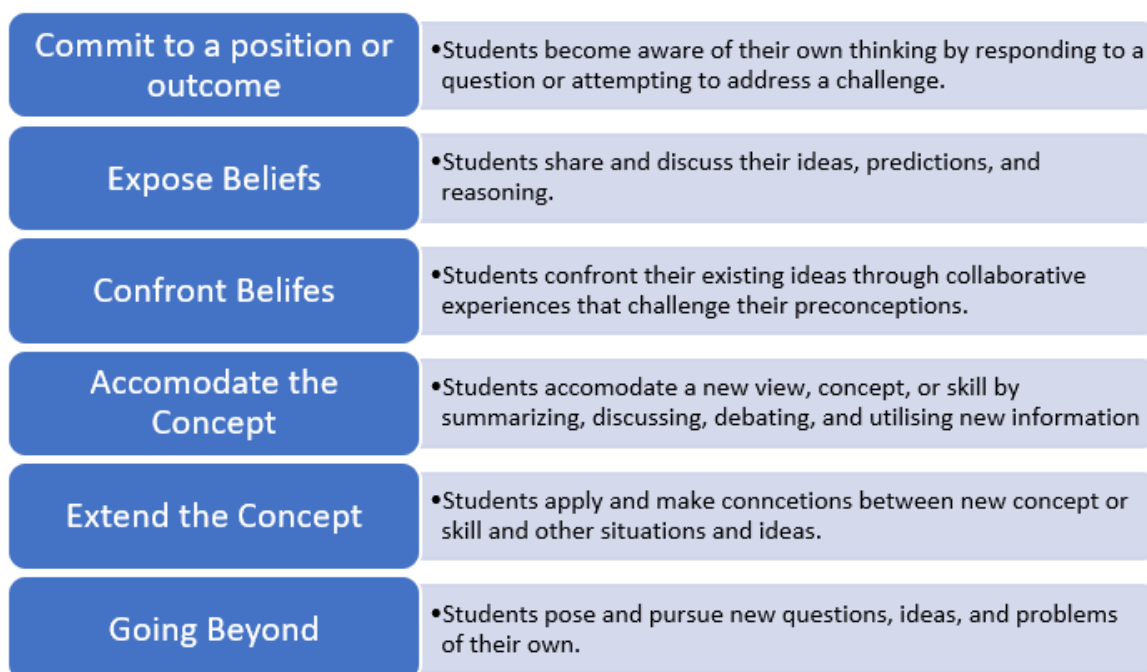
different cultural terrain. Bob Bain (2011) has highlighted this challenge in terms of the different cultural paradigms in understanding history, especially in teaching world history. As such, a teacher should expect his students in a historical classroom to have conceptions and alternative conceptions of what the past looks like.

The purpose of this paper is to explore the alternative conceptions that a student possesses with regards to ancient Temasek to Secondary 1 school students through interactive and creative instructional methods, such as cartooning. Therefore, this paper will first uncover some of the alternative conceptions that students have of the study of Singapore during the Temasek period; and second, discuss some of the implications for future teaching through an analysis of the data. To those ends, the subsequent section will first discuss the importance and utility of

identifying students' alternative conceptions in the classroom. The third section will outline a lesson design that uses cartooning in order to tease out such student conceptions. The fourth section then engages in a discussion of some of the implications that these alternative conceptions have for the historical classroom.

### **Alternative Conceptions, Conceptual Change, and its Role in the Classroom**

As this paper will be addressing students' alternative conceptions of history, modelling in alternative conception (or misconception) deserves a brief introduction. The idea of "alternate conception" is nestled within the wider Theory of Conceptual Change, which laid out a series of steps to help students acquire new concepts, as outlined in the diagram below:



This paper will focus on exposing student beliefs and alternative conceptions as the first step towards developing their historical understanding and imagination.

Since the 1970s, debates have ensued on whether student pre-instructional ideas should be called 'misconceptions', 'alternative conceptions' or other terms.

The term ‘Alternative conception’ was initially used by B. Bell (2005) to describe students being exposed to formal instruction but assimilating the teaching ideas incorrectly. However, researchers have raised concerns that the term ‘misconceptions’ has negative connotations regarding the worth of students’ ideas. Therefore, they suggest that ‘alternative conceptions’ might be more appropriate since it refers to all students’ ideas as being equally useful in the teaching and learning process (Zirbel, 2004). As such, the choice of terminology often depends on the purpose and focus of research being reported, the terms ‘alternative conceptions’ and ‘misconceptions’ are used interchangeably.

‘Alternative conception’ is defined by E.L. Zirbel (2004) as “any concept that is not in agreement with current understanding of human society and the past human world”. According to Zirbel, the reasons for alternative conceptions in students are:

- a) Innate knowledge, personal experience and bias of students (including being influenced by ‘emotional’ reasons);
- b) Simplistic (Aristotelian) or misunderstood and erroneous ideas based on wrong grounding or a bizarre/unusual model of understanding.

The reasons for an unsuccessful concept change are:

- a) The failure to recognize a problem with concepts;
- b) The unwillingness or partial unwillingness to resolve such problems, which can result in no change, wrong change or partial changes in conceptual

understanding, leading to flawed learning (Zirbel 2004, 1515-39).

Concepts may be understood as ‘pivots around which all arguments turn’ (Koselleck 2004). First-order concepts are complex because they possess many diverse meanings — their meaning, use and definition evolved over time and can be used in different ways by different interest groups (Carretero *et al.* 2013). Such concepts are important in history teaching because they influence one’s historical imagination. As such, history teaching needs to consider how students understand certain historical concepts and how these concepts operate in the themes of study of architecture, religion, royalty and ordinary life in Temasek, in order to avoid presentism as well as explore other historical concepts in operation.

In the context of classroom history, a student’s alternate conception of the past would manifest itself in various ahistorical depictions of the past. Among these ahistorical representations of the past, is ‘presentism’. In this paper, ‘presentism’ is used and defined as the ‘anachronistic introduction of present-day ideas and perspectives into depictions or interpretations of the past’ (Fischer 1970, 137).

Other second-order concepts such as historical significance and perspectives as well as change and continuity can also be discussed in relation to the concepts of presentism and historicity. The obvious and dramatic physical changes that occurred between the classical period and the present at various historical sites have effects on the actual or symbolic perceptions of such places. Students accorded different degrees of importance (significance) to the topic of study (Temasek Singapore) depending on their awareness of the topic as promoted in textbooks, by historians, or via a variety of

other mediums of transmission. The accordance of importance and perceptions (or misperceptions) in the students led to the formation of images or interpretations in their minds and was manifested in the student work presented in this research study.

In the context of humanities subjects, while there is no formal survey on alternative conceptions pertaining to the studying and learning of pre-modern Singapore history, there has been an increased focus on teaching this topic in line with a more in-depth coverage since 2014 (Ng 2014). Acquainting students with a more remote past has always been a challenge. The challenge ranges from introducing students to unfamiliar place names to familiarizing them with a different way of life and dressing. The uncovering, dissemination and popularization of the knowledge of Singapore during the Temasek period in the 1300s has been, as mentioned, attributed to the work of John Miksic and other historians such as C.G. Kwa. They have helped facilitate a greater awareness and rectification of the alternative conception among students and the larger public audience that Singapore before 1819 held little or no history. Teachers have taken a more exploratory and inquiring approach in the teaching of Temasek Singapore. One outcome of this development has been the publication of the teaching of archaeology and Temasek Singapore in an online education journal (Oh 2018).

#### **Methodology, use of cartooning, sampling and topic of study**

The lesson design below draws upon Master Teacher workshop sessions carried out in 2017 and classroom practices that teachers carried out in a Singaporean secondary school. A total of 77 students from Secondary 1, aged 12 to 13 years old,

participated in two separate classrooms. The two classroom teachers who were invited to participate in the study had between two to three years of teaching experience in a secondary school context and had attended workshop sessions conducted by a History Master Teacher from the Academy of Singapore Teachers on the use of cartoons in the lower secondary classroom.

A multistage process was used as a pedagogical approach to get teachers to use cartoons in the lower secondary classroom, where students learned about historical evidence and sources in order to construct historical interpretations about 14th-century Singapore. Students were exposed to historical sources from their textbook as well as artwork and content developed for World of Temasek (WOT), a non-fiction multiplayer online game world that recreated life in the 14th-century kingdom of Temasek and was jointly developed by the National Heritage Board, Media Development Authority of Singapore, Magma Studios, and prominent academics in the field such as John Miksic and Goh Geok Yian.

Beyond sources and classroom activities, students from the Secondary 1 class in this study also visited the National Museum to view relevant artefacts and the Keramat to explore its links to Temasek and experience the sanctity of the site as part of their 'Historical Inquiry Project'. Based on the students' study and visits, they were then tasked to draw cartoon interpretations of the period—first in groups of four or five and then individually. These cartoons were then analyzed in order to identify students' alternative conceptions. The following criteria were then used to determine whether historical understanding was present in student drawings:

- a) Relevance of content to the period

(e.g., portrayal of historical setting, character or material culture);

- b) Relevance and accuracy of historical evidence used in constructing the cartoon interpretation;
- c) And, historical imagination.

Written products have their fair share of limitations in eliciting student learning outcomes. For instance, students who are not proficient in the English language may find it challenging to express ideas or write an essay on a relatively unfamiliar topic. Those who possess better memory techniques and language skills are more likely to perform better in a written exercise. Moreover, schools in the 21st century aim to develop an effective and inclusive curriculum where students learn about a subject constructively by being allowed to explore different mediums of action and expression as well as modes of representation (Hall *et al.* 2012). Drawing and cartooning can potentially help engage students emotionally and help them discover and express their understanding about difficult topics in ways that were previously underestimated as a learning pedagogy (Immordino-Young 2016).

Cartoons have been employed by teachers to engage students in the classroom since the 1950s. Research has shown that from a cognitive load perspective, cartoons enhances retention and communicates ideas and content in a way that standard text cannot (Tamblyn 2003; Cheesman 2006). Cartoons are generally used in the classroom for four purposes: first, to teach empathy and imagination; second, to teach higher-order thinking skills (Sunal and Haas 2008; Wineburg 2001); third, to teach concepts (Keogh and Naylor 2000); and fourth, as additional resources and supplementary reading.

A drawback to the use of cartoons is that if the teaching process is insufficiently inducted or scaffolded, student art pieces could end up as toddler-type stick-man figures or aesthetic artworks graded more for their aesthetic value than evidence of historical thinking. Notwithstanding its limitations, the use of cartoons has the potential to get students to approach a topic visually, especially in the Singapore context. As a visual medium, cartoons can transform otherwise complex and opaque historical events and social issues into quick and easily comprehended depictions (Eisner, 1996).

### **Discussion of Observations and Data**

There were four themes identified as focal areas for students' cartooning exercises. They are: (1) architecture, (2) religion, (3) royalty, and (4) ordinary life in Temasek Singapore. There was tendency for students to refer to their contemporary experiences and knowledge to construct their interpretations of pre-modern Singapore. This degree of presentism is expected, and has previously been discussed by history educators (Fischer 1970). Pieces of work that demonstrate historical understanding show an earnest attempt by students to acquaint themselves with the materials under study. The WOT game and the school visits to Fort Canning, probably had an impact in promoting students' understanding of early Singapore beyond the textbook, although this might sometimes be taken out of historical context. Furthermore, students could be conceptually right about certain ideas but lack the awareness or means to express the information (narratively or through drawing) in the historical context being studied.

### **Architecture**

In terms of architecture and building

materials, 80 per cent of students (12 out of 15) who depicted dwelling places for the common people living in Temasek had the historically authentic notion that most buildings were made of wood and possibly built on stilts (pic. 64). They were likely influenced by how dwellings were similarly portrayed in the textbook. In contemporary Southeast Asia stilt houses are common, raised on piles over the surface of the soil or a body of water. Their origins are obscure, but they were built in this fashion primarily to protect against flooding and keep out vermin.

Some students depicted people living in triangular canvas tents pegged to the ground (pic. 68). Tents in general are more likely to be used by peoples of Northern and Central Asia rather than Southeast Asia. Carved stone pegs have been found at St Andrew's Cathedral archaeological digs, one of them even having a pointed tip and the carved image of a human head—but they were probably used as game tokens or for shamanistic practices rather than as pegs for tents (Miksic 2013). Contemporary scenes of wooden dwellings in parts of Southeast Asia can resonate aspects of historical architecture. Although this can give rise to alternative conceptions of historical presentism, a teacher can use the opportunity to draw links between the past and present to teach about continuity and change, an important concept and skill in the study of history.

### **Religion**

When asked to depict religions of pre-modern Singapore, all the students tried to depict the buildings associated with the faiths of different ethnic groups currently found in Singapore. These included Chinese temples (pic. 13) and mosques (pic. 23 and 26).

Furthermore, most cartoons feature

mosques with contemporary designs and symbols such as domes, minarets, towers, tiled floors and crescent symbols, which became prominent only later in Southeast Asia. The mosques of the classical-period Malay Archipelago were likely to have a multiple-level triangular roof rather than a dome roof (see pic. B). The frequent portrayal of Malay Muslims in songkoks, skull caps and hijabs are also indicators of a presentist lens because the growth of Islam in Southeast Asia is likely to have post-dated 14th-century Singapore, and Islam became a prominent religion in the region only after 1430 (Tan 2019).

About one-third of students (five out of 16) who depicted religion also tried to incorporate the Keramat (pics. 65 and 79) as an important aspect of religious practice in 14th-century Singapore. This was probably due to their school field trip experience, which might have led them to imagine a kind of ritual—flower and fruit offerings, water rituals, use of incense, and sale of trinkets—as an important aspect of Buddhist-Hindu-animist practices of the period. The Keramat holds special relevance for religious practices in pre-modern Singapore because it is situated at Fort Canning, where Sultan Iskandar Shah is supposed to have been buried. It was a site that early settlers of Singapore at the time of Raffles' arrival still revered in 1819. They believed in the sacredness of Fort Canning Hill (Bukit Larangan) because Malays believed that the 'last of the five kings who ruled Singapore in the golden age (was buried there)' (Miksic 2013, 219, 222-39). In modern times, the practice of Keramat worship is also sometimes linked to supernatural miracles performed by Muslim saints, although it is doubtful whether any shrine or saint's resting place was ever located on the hill (see pic. A). Hence, special attention might have to be taken to explain to students the linkages and incongruities of associating the 'sacredness'

of the hill in relation to kings of the different historical periods and the contemporary perception. Embedded here is another chance to dispel certain alternative conceptions of historical presentism as well as to affirm continuities.

While Hinduism and Buddhism had important religious influences on pre-modern Singapore, Only two of the 16 drawings attempt to look at Buddhism from this aspect. This is seen from student drawings of bald monks wearing orange robes labelled as kasaya (pic. 26). The monks are also portrayed as engaging in different kinds of activities, such as collecting alms or food in bowls or meditating and living in Chinese-type monasteries (pics. 13 and 26). Nonetheless, students depicting Buddhist influences in pre-modern Singapore is an interesting development because Buddhism is not prominently portrayed in the school textbook. In the wider context of the region up to the 12th century, Buddhism had been spreading under the aegis of Srivijaya (650–1377 CE); this is evident (not without debate) from the Kedah Buddha on display in the (Singapore) Asian Civilisations Museum, although it might not be obvious to the casual visitor.

However, when it comes to various Chinese religions, the existing archaeological information does not allow us to assess whether there was a Chinese temple in Temasek (or even early Singapore on the eve of Raffles' arrival). The construction of a temple was preconditioned upon a critical mass of population in a community. Although there might be a mix of opinions on the matter, it is worth noting that a (Chinese) place of worship could vary from a spirit tablet under a tree to a full-size temple (Qiu 1990). Beyond drawing full-fledged buildings, students could be acquainted with a variety of structures that places of worship could

manifest. The infusion of external (religious) influence in Southeast Asia during the classical period marked a significant phase in Southeast Asian history, with impacts on latter-day heritages. Making distinctions between developments in religions in the earlier and later periods allows one to again better understand the concept of change and continuity at work, giving rise to a more astute appreciation of modern-day Southeast Asian heritage.

### Royalty

A total of 21 students tried to portray royalty in pre-modern Singapore. When royalty is portrayed as personages, one-third of students (four out of 12 drawings) show rulers as bearded Western-type men with royal crowns and thrones (pic. 49). Others show them as Greek gods or kings with short-cropped hair, long beards, and a chiton or cloak around their bodies (pic. 41). Their royal entourage ranges from armed guards with piked helmets (pic. 20) to armed crusader-type knights in armour who use swords and shields to protect their royal patrons (pic. 41). Other conceptual errors include the view that rulers had treasures comprising gold chests full of rubies, diamonds and gold (pic. 41).

Other depictions involve the portrayal of Temasek rulers as Sultan Hussain (one of the princes supported by Raffles and the British when they landed in 1819) or other Malay rulers from the 19th century. They are dressed in the traditional Malay royal outfit (pic. 22) and portrayed as Malay kings carrying a royal kris or accompanied by an escort carrying an umbrella wherever they travel. They wear the baju Melayu: a long-sleeved shirt, raised stiff collar (cekak musang collar), as well as trousers (seluar) and skirt-type songket around the waist (kain sarung).

Yet other anachronisms depict the rulers

of Temasek living in concrete and mortar palaces, designed with English Palladian (pics. 17 and 22) or Corinthian (pic. 34) architecture, complete with water fountains and lush gardens. Such images vaguely resemble the Istana Kampong Glam or current Malay Heritage Centre at Kampong Glam, a palace built between 1836 and 1843 by Sultan Hussein's son Tengku Mohammed Ali, who was later recognized as Sultan Ali Iskandar Shah. The Istana Kampong Glam was designated as the royal seat of Singapore's Malay rulers in the 19th century. Students' alternative conceptions could derive from their visits to the Malay Heritage Centre, which has such architectural design and is a popular place for primary and secondary school learning journeys (pic. C).

The alternative misconceptions on Temasek royalty suggest that there is a need to dispel and then make association of the alternative conception with the later period in context. Doubts about the lineage from Sang Utama (Temasek) to Parameswara (Melaka) to Hussein (Johor) can be raised at several points, first from Utama to Parameswara because their authentication draws from the *Malay Annals*, written from a legendary perspective. The genealogy of the successor kings after the fall of Melaka was also subject to doubt and division after different branches of the diverse royal family began to vie for the throne after Mahmud Shah II, giving rise to the different hikayats. Despite the contested lineages, contemporary scholars such as L.Y. Andaya and Muhammad Hashim have tried to argue for Srivijaya-Melaka as a broad subcultural zone that was distinct from Java (Andaya 2008; Hashim 1992). In this context, different sources (for instance, the *Malay Annals*) convey different (debatable) perspectives of a genealogy that is varied (contesting successors) and at the same time continuous (drawing upon a similar cultural and heritage zone).

One-third (four out of 12 students) who drew Temasek's rulers were able to portray their characters with the right period clothes and jewellery: gold headgear, earrings, armlets, necklaces and rings. The characters have colourful cloths draped across their shoulders and multicoloured sarongs wrapped around their waists. Such drawings link the legendary kings of Temasek with the Srivijayan Indian influence. Here, Wang Dayuan's accounts also provide important evidence of how the people in Temasek or Banzu dressed during the period as well as what kind of cloth might have been transacted in trade. Students might have derived their conceptions from the WOT game, which portrays Temasek rulers wearing such outfits, or from the school textbook, which features the gold jewellery found atop Fort Canning (CPDD 2014, 36). Half of the student depictions of royal palaces (eight out of 16 cartoons) are also accurate in depicting royal palaces of pre-modern Singapore as having an architectural style with wooden pillars, stilts and tiered roofs. It is possible that such conceptions may also have been derived from the WOT game, which uses a replica of Sultan Mansur Shah's 15th-century palace, the Melaka Sultanate Palace, as a model for its construction (pic. D).

Some of the courtly duties and practices of the ancient Temasek court are also depicted in student cartoons. Such royal activities include the receiving of diplomats from different kingdoms and cultures (pics. 3 and 61). A Chinese princess is portrayed in picture 61, which might refer to dynastic marriages as a form of improving diplomatic ties. The cartoons depict such visits as involving playing host and having courtly ceremonies or exchanges of gifts between the Temasek ruler and various ambassadors and emissaries. Picture 3 depicts acts of respect and rituals performed by visitors to the court, such as prostrating



themselves before the rulers and offering rare artefacts such as small statuettes and ceramics. Courtly practices such as kneeling or prostrating before the monarch were common forms of respect in pre-Islamic days and likely adopted by the Temasek court. Small preclassical kingdoms in Southeast Asia such as Chi-tu as well as the modern Chakri Buddhist Thai kingdom continue to practise such courtly customs. Such depictions of the exchange of gifts may have been derived from the textbook, period dramas in the media, or images in WOT, which involve an inside look at diplomatic exchanges in the court of the Temasek rulers (Wheatley 1973).

### **Ordinary life in Temasek: occupations, trade, technology**

Students' depictions of trade and occupation were analysed to understand their alternative conceptions of ordinary inhabitants in Temasek Singapore. Of the 39 cartoons from the category of trade and occupations, some occupations were identified (see table 1.3). In general, students were able to appreciate a variety of goods being traded in Temasek.

The main kinds of wares being traded ranged from consumer goods (cloth, batik, porcelain, hornbill casques and jewellery) to consumables (mainly fish and fruit) and at times horses. This was during the prosperous period (14th century) of Temasek in Singapore, when trade in a variety of commodities from within and outside Southeast Asia—spices, rhinoceros horns, ceramics and silk—underlined the importance of Temasek as a major entrepot settlement. Pictures 58, 67, 68 and 80 depict the variety of goods traded by Singapore as a midway point between East and West, as well as the possible nature and arrangement of the Temasek marketplace. Among the cartoons that depict trade, ceramic goods are unmistakably obvious in most cartoons

that are drawn on a miniature scale or in detail. Students also show an awareness of how trade was carried out. Eight of the 26 cartoons (30.8 per cent) reveal an awareness that Chinese coins were used as a medium of exchange. Others seem to depict barter as a mode of exchange, with buyers and sellers bargaining over the prices of goods (pics. 58 and 67).

Students, however, found it difficult to depict exactly what marketplaces of Temasek might have looked like. Their depictions ranged from merchants making deals at modern-looking quays (pic. 58) to riverside or beachfront marketplaces (pics. 68 and 80) and even tent cities. The kinds of stalls at Temasek marketplaces also range from makeshift tables to wooden or thatched pavilions (pics. 67 and 68). This confusion might be because of the different interpretations of what constitutes a village or city in non-Western and pre-modern contexts. Even today, the idea of heterogenetic cities is not thoroughly understood and researched, although most settlements in island Southeast Asia appear to have been heterogenetic settlements that produced few monuments (Miksic, 2010; White, 1990). In the case of Singapore, it is only through two decades of systematic archaeology that historians are able to ascertain that it had a population with an 'indeterminate proportion of immigrant Chinese merchants (probably South Asians too) who used Chinese currency to carry out both maritime trade and manufacturing activities there'. The traders were likely to have been involved in full-time merchant activity and transacted with both craft specialists based in Singapore and local food suppliers who provided for subsistence needs (Miksic, 2010: 106-20). Here, teachers should be cautiously cognizant of the limits of Miksic's portrayal because R. Ptak's review of the former's work has questioned whether the settlement of Temasek possessed an exclusively urban

or rural area (Ptak, 2014: 213-16).

The storage of goods during transportation also garners some discussion. Students had a tendency to depict goods as being carried in wooden crates and boxes. However, the Belitung shipwreck suggests that large Dusun-type storage jars rather than wooden crates were used to store the ceramics traded. Smaller bowls were stacked helically, with up to 140 bowls per jar (Flecker 2011).

This presents an opportunity to probe into the varied places of procurement and types of ceramics that were traded through Temasek. The end of the Yuan (1271–1368 CE) and rise of the Ming Dynasty (1368–1644 CE) was characterized by a disruption to the ceramics trade known as the ‘Ming gap’, which was subsequently filled by alternative supply points from the mainland Southeast Asian trading entities. From there, one is naturally led to think further about factors that contributed to the rise and prosperity of Temasek or, from the reverse angle, factors that prevented ‘the settlement of Singapura from becoming an “adjunct” of some nearby area [such as the Riau islands]’ (Ptak 2014, 213-16; Xin 2015, 344-55).

Students’ alternative conceptions of economic activities in Temasek featured hunting, fishing, mining and even rubber tapping. This is characterized by the conflation of historical content and form seen in picture 38, where a student even has a Native American figure in his depiction of hunting in Temasek. Figuratively, the intention to depict the Native American as symbolic of the exotic and heterogeneous nature of Temasek is not conceptually wrong. If one were to make a more literal interpretation, clearly the Native American does not belong in this part of the world and time period. The depictions of a miner using a pickaxe (pic. 71) and rubber tappers

(pic. 50) further reveals confusion in students about the periodization. Tin mining and rubber tapping developed and flourished only in the 19th and 20th centuries respectively (Hagan and Wells 2005, 143-50; Shimada 2015, 197-212).

Other student depictions feature economic activities of native hunter-gatherers (pic. 40), possibly Orang Lauts, harnessing resources from their surrounding environment (fishing and harvesting produce from forest). The bird-hunting activities in pre-modern Temasek more likely took the form of bird traps and blowpipes rather than the bows and arrows depicted in picture 40 (National Geographic 2014). Other historical anachronisms depict alternative conceptions of how people fought pirates armed with modern weapons. Clearly, ordinary life in classical Southeast Asia offered a perspective of day-to-day living and activities that could differ from the modern world in many ways.

### **Implications of Alternative Conceptions on History Instruction and Conclusion**

The history workshop developed for teachers was aimed at utilizing a particular teaching approach (cartooning) and education theory (theory of conceptual change) to help students explore topics related to pre-modern Singapore (Temasek). The findings suggest that students have varying alternative conceptions related to the perception of Temasek Singapore in the subtopics of architecture, religion, royalty as well as aspects of ordinary life (such as occupations, trade and technology).

The identification of alternative conceptions hints that discussion pedagogies centred on historical reasoning and content as interdependent processes are important for conceptual change to take place with the goal of rectifying ahistorical

ideas about the past. From the perspective of lesson design, history educators could use lapses and issues in students' depictions as a starting point for history instruction. In this way, teachers can blend rich, accurate, and engaging historical content with age-appropriate pedagogy to address specific learning gaps, and in so doing develop assessment approaches to enable students to develop a more robust understanding of the roles that historical evidence and corroboration play in historical interpretation.

History education research on cognitive apprenticeship pedagogies, including teacher modelling followed by verbal scaffolding and writing strategies to help students use the strategies independently, are also likely to be effective (De la Paz and Felton 2010). The process of discussion around such second-order historical concepts as evidence, perspectives, and change and continuity can also ameliorate the effects of presentism by explicitly modelling such historical thinking, by pointing out certain misconceptions without its devolving into an exercise of correct and incorrect depictions. Such approaches hold the potential for a more engaging pedagogy, which can help students integrate and challenge what they know about their world with historical ways of looking at the world, especially on issues related to heritage and historical interpretation.

From the perspective of history as a discipline, content knowledge alone is insufficient to help students acquire the historical tools and concepts to 'do history', particularly to develop coherent, meaningful and usable interpretations of the past. The range of students' alternative conceptions highlighted for the topic on Temasek Singapore points to the need for developing curricula and pedagogical approaches that both acknowledge the

schematic frameworks that students bring to the classroom at the topical level and can be further used to expand and develop frameworks as valuable advance organizers that can be revisited, updated and extended as students progress as history learners. This will also require attention to be devoted to developing experienced and specialist teachers, niche collaborations with specialists on the relevant subject-matters as well as dedicated focus on the processes of learning and interaction between the teacher-facilitators and students. The outcome is that pedagogies that address how students construct usable, coherent and evidence-based learning heuristics in the history classroom can also help students address enduring issues not just in Singapore history but also world history and new ways of dealing with issues in the contemporary world.

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