Negotiating the complexity of curriculum integration: metalanguages as levers that shape the innovation process

Letchmi Devi Ponnusamy*
NIE 2-02-13, National Institute of Education, 1 Nanyang Walk, 637616, Singapore
Email: letchmi.p@nie.edu.sg
*Corresponding author

Liang See Tan
NIE5-B3-20, National Institute of Education, 1 Nanyang Walk, 637616, Singapore
Email: liangsee.tan@nie.edu.sg

Suriyani Rahamat
SIM International Academy, 461 Clementi Road, 599491, Singapore
Email: suriyanir@sim.edu.sg

Nur Amira Mohammad Ibrahim
NIE2-02-11, National Institute of Education, 1 Nanyang Walk, 637616, Singapore
Email: amira.ibrahim@nie.edu.sg

Abstract: This paper describes an instrumental case study that examined interactions amongst school teachers and curriculum leaders in the midst of developing integrated curriculum. Using the dual framework of curriculum as a socio-cultural entity and of curriculum as praxis, the study found that the school-wide curriculum vision that anchored the curriculum integration process catalyzed teachers’ negotiations and collaborations. This intensified attention to learners’ thinking and creative production during lessons. Teachers began to question their personal connections to other disciplines which prompted them to re-consider their routine instructional practices. Analysis of teacher exchanges and interviews pointed to metalanguages, an assemblage of abstract ideas and symbols that supported and sustained the process of curriculum integration. We argue that understanding the ways that metalanguages tie together subject matter considerations, teachers’ perspective of teaching the subject and their desire to meet learners’ needs inspires greater meaning and commitment for all stakeholders during curriculum integration.

Keywords: curriculum integration; curriculum innovation; teacher conversations; metalanguage; curriculum vision.
1 Introduction

Disciplinary compartmentalisation, a feature of most school systems today, is argued to stunt learning by limiting inquiry, meaning-making, and motivation (Cummings, 1994; Gess-Newsome, 1999; Venville et al., 2002). Perkins (1992, p.22) found that learners today exhibit ‘inert knowledge’, as they are not given the chance to transform what they learn during lessons. The arguments for greater curriculum integration are made compelling with the advent of the internet, as economic activity is now focused on applied knowledge, problem finding and solving skills and creative output (Sala-i-Martin et al., 2016). Hence Finland, despite its highly-ranked education system (Organisation for Economic Cooperation and Development, 2016), has altered the regular school curriculum for older students to accommodate learning beyond subject boundaries (Garner, 2015). Similarly, integrated curriculum units are increasingly used in middle schools as they are seen to be more responsive to the developmental needs of young people (Beane and Brodhagen, 2001; Dowden, 2010). This paper outlines the experiences of one school in designing integrated curricula and explicates the processes, discussions and negotiations that arose amongst teachers and curriculum leaders. We look at key approaches and debates in curriculum integration, the significant role of teacher deliberations and how metalanguages support the dialectical discussions to connect the personal and professional meaning making processes during curriculum integration.

1.1 Curriculum integration: approaches, issues and benefits

Drawing from Dewey’s (1910, 1938) philosophy of progressive education, Beane (1995) asserted that implementing curriculum integration entails a re-thinking of the role of knowledge and how it is used in the process of learning. Three important elements are defined as key to curriculum integration:

- knowledge of the disciplines
- the connections that exist amongst the different disciplines
- a continuous and meaningful amalgamation of knowledge and its connections with the learners’ own schema so that there is personal and social relevance (Beane, 2013).

Therefore, proponents argue that by connecting concepts and real world issues both socially and politically, integrated curricula will alleviate the limitations of subject-based learning.

Dowden (2007) identified a two-way distinction to how schools approach curriculum integration: a student- and subject-centred approach. The former involves students collaboratively working with the teacher to construct the classroom curriculum. Advocates of this approach assert that it enhances “personal and social integration through the organisation of curriculum around significant problems and issues” (Beane, 1997, p.19) and that knowledge is integrated within a students’ life-world and contextually situated within the community, national, and global conversations (Goldberg, 2016). Conversely, subject-centred integration places greater emphasis on the integrity of disciplines (Gehrke, 1998). This approach is more amenable to schools as the different subjects are honoured.¹

However, integrating curriculum is beleaguered by several complex issues. Firstly, school subject matter is built around major disciplines that organise knowledge differently for the purposes of instruction. Each discipline has its own epistemological deliberation that allows for sophisticated ways for thinking about and investigating issues in the real world, and these may sometimes not be readily integrated (Boix-Mansilla et al., 2000). Secondly, the act of combining two different subjects often results in less rigour and trivialisation for any one of the two curricula (Czerniak and Johnson, 2007). In fact, when teachers embrace the idea of curriculum integration, they tend to adopt rather superficial approaches (Arrowsmith, 2013; Russell-Bowie, 2009).

Even as these issues exist, researchers have found that integrating curriculum
Negotiating the complexity of curriculum integration provides a host of different psychological/developmental, sociocultural, motivational and pedagogical benefits (Krug and Cohen-Evron, 2000; Vars, 2001). Integration brings about greater change in the learner (Bergman and Fiering, 1997; Goldsmith-Conley and Bales, 1994) and draws on the human capacity to connect disparate ideas together (Etim, 2005). In particular, an arts-integrated curriculum is thought to create the conditions for complex, real-world learning (Elfland, 2004; Goldberg, 2016), and even though the research evidence is weak, policy makers are paying more attention to this (Marshall, 2005). Curriculum integration is therefore increasingly being explored as a means of providing deeper and meaningful learning experiences to help learners synthesise knowledge from different disciplines and apply them to real-world problems (Ellis, 2005; Vars, 2001).

1.2 Curriculum integration: its place in the Singapore school system

In the Singapore context, The “Thinking Schools, Learning Nation” (TSLN) (Goh, 1997) and the “Teach Less, Learn More” (TLLM) (Lee, 2004) policy initiatives played a critical role in encouraging curriculum integration. TSLN encouraged creative and critical thinking infusion across all subjects to ensure relevance to future economic needs (Gopinathan, 2001). The TLLM however, motivated educators to focus on developing active, life-long learners, through the re-organisation of content around themes, and advocating for integration across different school departments (Deng et al., 2013). While these initiatives to curriculum integration taking root in Singapore, the greatest change have arguably been motivated by national frameworks. The Social Studies curriculum is one example of national-level subject integration, where elements of history, political science, economics and human geography are integrated with citizenship education (Singapore Examinations and Assessment Board, 2015). Researchers observe that this curriculum integration effort has altered the way that schools, teachers and students approach the traditional school disciplines of history and geography (Lam et al., 2013; Sim and Print, 2005).

Within schools, the form and function of curriculum integration have been quite varied, so that in some schools, this has been taken on by specific groups of teachers from self-selected departments, and at other times, the push for integration has been from the school leaders (Tan and Ponnusamy, 2013). Other studies point to superficial levels of integration owing to issues like a lack of discussion between teachers (Lim and Khine, 2006) and different understanding about implementation amongst teachers (Lam et al., 2013). Despite these issues, understanding how curriculum integration takes place in Singapore’s educational context provides new insights that help to reduce the reliance on a prescriptive curriculum (Ministry of Education, 2002a, 2008) and high-stakes testing (Heng, 2013; Hogan and Gopinathan, 2008). Such knowledge can lead the way to the broader learning goals that Singapore hopes for its education system (Goh, 1997; Shanmugaratnam, 2004).

1.3 Curriculum integration and the work of teachers as curriculum developers

One of the fundamental entities that are crucial to the process of curriculum integration is the teachers’ perspectives on being innovators of the curriculum (Venville et al., 2002; Wallace and Priestley, 2011). During curriculum integration, the teachers are the curriculum developers, and need to work simultaneously with the four commonplaces of the curriculum: the learner, milieu, the subject and teacher (Schwab, 1973). However,
the current practice of teachers specialising in one teaching subject may prevent teachers’ from delving into other related disciplines. Furthermore, a deep approach to curriculum integration appears to be challenging for teachers due to a lack of a common collaborative culture to enhance teachers’ capacity (Leung, 2006) and practical guidance and direction (Dowden, 2014). In fact, Lam et al. (2013) found that even with a collaborative culture, teachers’ varying conceptions of curriculum integration hindered the curriculum integration process and made the implementation haphazard and ineffective. Additionally, the extant discourses about formal curricula, pedagogy and assessment influences the micro-level interactions that take place between teachers and learners in the classroom (Bernstein, 1990). Such discourse can threaten the rather localised process of curriculum integration.

However, Priestley (2011) found that the social interaction of teachers, the school leaders, and disciplinary experts in Scottish schools were key to successfully adopting integrated curricula. Grundy (1987) alluded to this via the perspective of the curriculum as praxis, where the dialectic stemming from teachers, faculty members and learners was seen as an essential part of coherent learning. In this respect, paying attention to teacher conversations and their meaning-making process can be a measure of the depth and lucidity of the integrated curricula.

1.4 Meaning making during curriculum integration: teacher communication, conversations, and agency

Teachers involved in changing their practices need to be part of discourse communities, as they allow teachers to debate and exchange their views about the practices (Putnam and Borko, 2000). During such discourses, teachers are constantly adopting a critical lens to evaluate their tacit understandings of knowledge that they have about the learning conditions (Wallace et al., 2007). However, it is also clear that the teacher’s willingness to change is reliant on external conditions such as the wider community in which they work, the levels of teacher agency and opportunities for collaboration (Cochran-Smith and Lytle, 1999; Ingvarson et al., 2005). Hence, curriculum change is hinged on how teachers make sense of the change and the conversations that take place around them (Biesta et al., 2017; Van Eekelen et al., 2006; Wlodkowski, 2011).

Taken collectively, the teachers’ internal and external dialogue about the curriculum change arguably act as an internal compass for action. Such dialectics play a crucial role in the overall achievement of agentic action during the curriculum development process (Drew et al., 2016). However, whilst teachers may convince themselves of the need for change, implementing the curriculum can also prove to be challenging. In the context of curriculum integration, the dialogue amongst the teachers from different disciplines can either help or hinder the overall process. The internal and external language of the team members play an essential part in the development and implementation of the curriculum. Hence, understanding how the abstract ideas and concepts, or metalanguages develop during curriculum integration is essential to ensuring its success and efficacy.

1.5 Metalanguages: the products of meaning making

In general, metalanguages are defined as the vocabulary or symbols used to examine or analyse language and the term was originally used by linguist Roman Jakobson and other Russian Formalists to characterise a language that makes assertions about other
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languages. Metalanguages, while referring to representations present in the language that is the object of study, is oriented towards communication in the social domain (van Leeuwen, 2004). Drawing from these ideas, we argue that metalanguages are levers that engender meaning making during curriculum integration as they serve the social function of connecting individuals, purposes and practices. These metalanguages can stem from a larger vision, and represent the symbolic and paralinguistic aspects of the change initiative. Yet each participant’s background knowledge and experience can create new meaning, so that metalanguages can become personalised and supplement the vision that schools adopt.

Enunciating visions is not new to schools, as school visions are often used as an important identifying element for learners and staff members. However, school visions tend to be accepted superficially, and tend not to shape daily teaching and learning activities. By looking at metalanguages that develop around a vision and how they assist the teachers in the creative task of curriculum, the process of interpretation and meaning making becomes apparent. Seen in this light, metalanguages are instrumental in developing the vision expressed by the organisation that lubricates and encultures individuals and practices. Metalanguages act as abstract tools that prompt and sustain gradual re-interpretation and re-envisioning of change initiatives and take time to develop. In this respect, metalanguages are creative engines that allow the participants to subjugate the larger vision and make them own. Detractors may argue that such metalanguages are fluid and organic, as they involve the interpretations of its members in a temporal and spatial sense. However, articulating the metalanguages can shed more light on the multiple interactions and the restructuring of disciplinary knowledge, values and beliefs in building new ways of teaching and learning.

2 Methodology

2.1 The case and its context

This instrumental case study was based at, Singa School, a pre-tertiary, specialised independent school that caters to students aged between 13 and 18. The school was set up as a part of an educational reform process, where the Ministry’s Secondary and Junior College Education Review (Ministry of Education, 2002b) put out a mandate to provide arts-anchored learning experiences to promote creative thinking and learning (Ministry of Information and the Arts, 2000) as a defining feature of its curriculum. Singa School was expected to embrace a wider range of learning outcomes that went beyond the common yardstick of high-stakes examination. This attempt at developing integrated curricula to address learners’ aesthetic sensibilities and creative ability is reflective of Beane’s (2013) ideal for a democratic core.

Admission to the schools’ six-year program is based on auditions and portfolios to identify learners’ early interest and passion in the arts. Singa students spend more than 10 hours a week training in one of four arts specialisation, with the rest of the school day being spent in learning academic subjects. The curriculum in the first four years is developed by the schoolteachers in order to prepare students for the two-year International Baccalaureate Diploma Programme (IBDP). The teaching staff is recruited with various academic and arts specialisations, with some being performing practitioners in their field. The academic teachers, many of whom come from mainstream schools, are
offered in-house and external professional development opportunities in the IBDP curricula.

Six months’ before Singa School began operating, its leaders and staff members collaboratively identified the common vision of ‘the connected curriculum’ that would anchor all lesson activities. Hence, learning would be guided by deeper, interdisciplinary thinking and creative production that transcended the arts. Staff members consistently referred to creating a learning experience that is holistic and transformational, in order to achieve the vision of the connected curriculum. In this respect, curriculum as praxis (Grundy, 1987) was a perspective that was embraced, where there was committed action on the part of teachers to create learning experiences that are aligned to the expressed interest, of developing creative thinkers anchored on ensuring the learner’s greater good in the pursuit of the creative spirit.

To sustain interdisciplinary opportunities for thinking and creative production, Singa School leaders and teachers developed and implemented four types of integrated curricula, namely interdisciplinary learning (IL), all arts integration (AAI), learning across borders (LAB), and communication for analysis and research (CAR). It was envisaged that these four curricula would provide essential platforms for interdisciplinary learning to supplement typical subject-based learning. Table 1 shows details of the four types of integrated curricula.

### Table 1 Types of integrated curriculum at Singa School

<table>
<thead>
<tr>
<th>Curricula</th>
<th>Subjects/ domain</th>
<th>Focus of integration/ integration approach</th>
<th>Teacher involvement</th>
<th>Classes involved</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interdisciplinary Learning Unit</td>
<td>Academic and arts</td>
<td>Multi-disciplinary approach that focuses on thinking in the discipline/subject-centred approach</td>
<td>Teachers groups created by interest</td>
<td>Specific classes</td>
<td>Varies from a few weeks to a term.</td>
</tr>
<tr>
<td>All Arts Integration</td>
<td>Visual art, music, dance and theatre</td>
<td>Focus creating integrated art through experimentation and problem solving around one art-form/subject-centred approach</td>
<td>Art teachers assigned to certain classes</td>
<td>Whole level</td>
<td>One term</td>
</tr>
<tr>
<td>Learning Across Borders</td>
<td>Cognitive and affective domains</td>
<td>Focus on aspiration, broader learning outcomes such as the inculcation of desired learner qualities such as sense of directedness and persistence/student-centred approach</td>
<td>Teachers teaching the level</td>
<td>Whole level involving of the first, second school year and third-year students</td>
<td>First week of the first, second school year and third-year students</td>
</tr>
<tr>
<td>Communication Language, for Analysis and Research</td>
<td>English language</td>
<td>Focus on persuasion and critical thinking skills through analysing real life issues/subject-centred approach</td>
<td>English language teachers</td>
<td>First to fourth-year students</td>
<td>First four years</td>
</tr>
</tbody>
</table>

The subjects that were integrated into AAI, LAB and CAR were markedly different and they were planned with different outcomes. The academic and arts based subjects
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were integrated into the interdisciplinary units (ILU). ILUs explored topical connections between any groups of subjects in the school, and was undertaken by teams of interested teachers who saw a common vision. Learners were expected to develop products that required them to access and connect ideas from different disciplines. The modes of assessments and the lengths of ILUs were determined entirely by the team of teachers (see Tan and Ponnusamy (2013) for detailed descriptions of such units). Table 1 also highlights the overall integration approach for each type of integrated curricula, based on Dowden’s (2007) two-way distinction.

AAI intended to achieve integration amongst the four different art forms of visual art, dance, music and theatre, whereas LAB adopted general themes to give learners opportunities to re-interpret what it means to learn in an arts-anchored learning environment. Hence, during LAB activities, students explored concepts like ‘Dreams’ or ‘The Arts District’ which required them to explore physical sites or installations near the school, and then re-represent them in ways that make meaning to them. Finally, CAR was developed as an integrated language curriculum to connect Singa learners with the essential skills of communication and took the place of the typical English Language curriculum offered to learners. This was meant to provide learners with the necessary skills and knowledge to express what they had learned, as is needed in the IBDP. Clearly, the range and reach of these curricula meant that most teachers in Singa School were engaged in the curriculum innovation process.

2.2 The research study

Using the conceptual framing of the curriculum as socially and culturally constructed instrumental case study, the researchers set out to study the phenomenon of the metalanguages that arose as teachers implemented integrated curricula. Given the unique mandate of the school and the fact that many of the school’s leadership team, its teachers and students hail from the typical school system, the study explored the socio-cultural leverages that assisted in developing and implementing integrated curricula. The general research question guiding the study was therefore set out as “What shapes and sustains leaders and teachers’ involvement and agentic action in curriculum integration?” Curriculum in this respect is a fluid entity, that is guided by social and cultural aspects of meaning-making, with the overall goal of ensuring significance to the learners’ real-world (Cornbleth, 1990).

A case is instrumental when its purpose “goes beyond the case” (Stake, 2005, p.8). Since this case looks at how learning in a school is reconstructed to integrate different subjects, it seeks to present a realistic account of curriculum integration. This is significant, as few schools in the local context have undertaken a school-wide, programmatic approach to curriculum integration, particularly one that involved the arts and academic subjects. The school’s leaders and board members were keen to build on the creative dispositions of its learners, so that students were expected to build capacity in their chosen art forms, actively learn academic subjects and make connections with other art forms. Particularly, the study sought to understand the negotiations and interactions between teacher teams and school leaders as well as the agentic socio-cultural factors that encouraged staff and students to continue on this endeavour of integrating subjects.
Multiple types of data were gathered over a period of six years to attain a deeper understanding of the phenomenon of curriculum integration (Yin, 2009). The data included transcripts from in-depth interviews with school leaders and staff members who volunteered to participate; field notes taken during curriculum development meetings; lesson observations and documents such as schemes of work and government reports. Throughout this process the researchers built rapport with staff members to seek richer and in-depth portraits of the curriculum innovation process, although to ensure neutrality, the respondents’ views and actions were not judged and participant confidentiality was observed (Patton, 2002). Details of the different participants that this paper draws from and their involvement with the different integrated curricula are presented in Table 2.

Table 2  
Participant background information

<table>
<thead>
<tr>
<th>Participants</th>
<th>Role in the school</th>
<th>Disciplinary background</th>
<th>Years of teaching Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sophie</td>
<td>School leader</td>
<td>Arts</td>
<td>More than 30 years</td>
</tr>
<tr>
<td>Tulip</td>
<td>Curriculum leader</td>
<td>Academic</td>
<td>More than 20 years</td>
</tr>
<tr>
<td>Michael</td>
<td>School leader</td>
<td>Academic</td>
<td>More than 20 years</td>
</tr>
<tr>
<td>Jonathan</td>
<td>Teacher; LAB unit designer and implementer</td>
<td>Arts; trained abroad, involved in the local arts scene</td>
<td>More than 10 years in both local and overseas schools</td>
</tr>
<tr>
<td>Daphne</td>
<td>Teacher; LAB unit designer and implementer</td>
<td>Arts; trained abroad, involved in the local arts scene</td>
<td>More than 10 years in both local and overseas schools</td>
</tr>
<tr>
<td>Joanna</td>
<td>Teacher; Year 3 LAB unit designer and implementer</td>
<td>Academic; teacher education in local systems</td>
<td>More than 15 years in local schools</td>
</tr>
<tr>
<td>Lois</td>
<td>Teacher and AAI Coordinator and unit implementer</td>
<td>Arts, who was trained overseas; experience gained from different cultural settings overseas</td>
<td>More than three years in both local and overseas schools</td>
</tr>
<tr>
<td>Wendy</td>
<td>Teacher; Y3 AAI unit designer and implementer</td>
<td>Arts, trained both locally and abroad; experience in the creative industry</td>
<td>More than five years in overseas schools</td>
</tr>
</tbody>
</table>

The in-depth analysis began with the open coding of field notes and semi-structured interviews using NVivo software to unearth key concepts and ideas (Strauss and Corbin, 1998). Utilising constant comparative analysis (Glaser, 1965), the codes were categorised into concepts related to the curriculum integration process such as teachers’ disciplinary knowledge and openness to experimentation. Three themes were generated after investigating the patterns in the resultant categories that provided answers to the main research question of “What shapes and sustains leaders and teachers’ involvement and agentic action in curriculum integration?” Member checking to ensure the authenticity and veracity of the findings was done via sharing the themes with curriculum leaders and teachers. The themes together with associated categories and codes are shown in Table 3.
Table 3  Themes and their associated codes and categories

<table>
<thead>
<tr>
<th>Theme</th>
<th>Categories</th>
<th>Codes</th>
</tr>
</thead>
</table>
| **Theme 1**: The language and vision (metalanguage) constantly connects academic and arts learning to how they each contribute to the art shapes and in this way they sustain the curriculum integration process | Shaping and getting more buy-in to the integration process | • Planning (e.g., open-endedness; adaptivity)  
• Cooperation on curriculum making  
• Involvement of all subject teachers  
• Exploring different models  
• Belief about student’s potential to be creative  
• Teacher adaptivity  
• Checking feasibility |
| **Theme 2**: Making personal meaning of the curriculum integration process and its implementation is powered by metalanguages | Making personal meaning of the curriculum integration (individual teachers)  
Addressing issues in the implemented integrated curricula | • Teacher involvement (individual)  
• Teacher’s epistemological beliefs about learning and about knowledge  
• Learning as connected and connectable  
• Dispositions of an adaptive learner (e.g., efficient and highly skilled; imaginative, risk takers)  
• Teacher identity – taking personal pride realising deeper learning  
• **Curriculum**: Tension in implementation  
• Teacher attitude  
• **Teacher**: The role in making/adapting/modifyng curriculum  
• **Teacher**: Belief about knowledge (content knowledge, experiences/exposure to subject specific areas) |
| **Theme 3**: Metalanguages are the ballasts that provide opportunities for conversations, reflection and negotiation about the process of curriculum integration | Achieving integration by communication and negotiation during planning sessions  
Anchoring the change process | • Teacher involvement  
• Teacher planning  
• Adaptive curriculum  
• Tension in implementation  
• Tension in planning  
• Collaborative workspace-synergistic mechanism  
• Communicating, vision  
• Experimental and discovery |
3 Findings

In this section, the development and implementation of two diametrically contrasting cases of curriculum integration, namely LAB (academic and arts subjects) and AAI (different arts subjects) are presented to elucidate the metalanguages that were evident. LAB and AAI were selected primarily because they used different integration approaches (Dowden, 2007): LAB was student-centred whereas AAI was subject-centred. The markedly different approaches used provide an important contrast in the elucidation of the metalanguages that arose during curriculum integration.

3.1 Curriculum integration shaped by metalanguages: common ideas in LAB

The findings revealed that teachers, from both academic and arts departments, were actively connecting their subjects during the development and implementation of LAB units. The discourses amongst teachers’ favoured active bonding of ideas in the subjects to achieve the connectivity set out in the curriculum vision. During the interviews, school leaders and staff members showed how the learning experience in LAB was centred on getting learners to appreciate latent links between the different subjects in the curriculum, and to explore possible connections. Such exploration and reconnections nurtured students’ seeing meaning across different disciplines and increased opportunities for creative thought. This visible, consistent push to connect the learning set the scene for deeper connectivity both in teacher-teams and at the personal-level. To ensure that the integrated units being developed reinforced the key message of connecting different subject areas, curriculum documents and student products had an emphasis on developing learning experiences around larger ‘enduring understandings’ that the staff had created together. Examination of curriculum documents for LAB (see Table 4) gives evidence of this. Across the four years of the LAB program, subject integration was achieved by articulating different messages as shown. However, the general foci were on broader learning outcomes such as the inculcation of desired learner qualities of self-directedness and persistence and aspiring to connect these into their life worlds.

Table 4 Key messages in the curriculum document that direct learning experiences across four years of the LAB integrated curriculum

<table>
<thead>
<tr>
<th>Year 1 and 2</th>
<th>Year 3</th>
<th>Year 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Introduce the culture of learning in Singa</td>
<td>• Introduce multiple perspectives/concepts through the arts</td>
<td>• Introduce various ways of exploring and research</td>
</tr>
<tr>
<td>• Understanding the use of space</td>
<td>• Introduce multiple perspectives/concepts through the arts</td>
<td>• Create an awareness of research in various disciplines (through the extended essay in IB curriculum)</td>
</tr>
<tr>
<td>• Understanding attitudes to learning</td>
<td>• Understanding knowledge through ideas</td>
<td></td>
</tr>
<tr>
<td>• Balance between Academic and the arts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Openness, embracing diversity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Positive learning for self-improvement and lifelong learning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Understanding knowledge through ideas</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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The statements in Table 4 make clear that the school’s intent was to require every learner to ask one crucial question i.e., “How is this experience or knowledge connected to me?” However, rather than repeat this message over the four years, the units were framed in a step-wise manner, so that the aims grew in terms of sophistication. Such exploration and reconnections were seen to help students see meaning across different disciplines and increase opportunities for creative expression.

During the planning stage, an open approach was adopted, where teachers got the chance to think about and share their thoughts about how their own subject matter was related to a real-world task, such as when viewing a museum exhibit. The unfettered dialogue and discussions, which ranged from the superficial to self-directed questioning, provided insights into their exploration of ideas. These team planning sessions provided the teachers with the space to see how the activities extended into their own domains, and activated their creative thinking abilities and created metalanguages at both the teacher and team levels.

The collaborative workspace and the synergistic interaction amongst the teachers allowed teams to assess the quality of learning and thinking that was achievable in the unit. Such group and individual exploration are demonstrated in this excerpt from the field notes taken during their planning for the Year 3 LAB curriculum, entitled ‘The Museum’. This week-long unit expected learners to interrogate how viewing an exhibition of Egyptian mummies at a nearby museum could mean many different things to them. It was envisioned that the learner would need to use multiple lenses to experience the exhibition. Conducted at the start of the year, ‘The Museum’ was the collective effort of language, history, science and art teachers. During their planning meeting, Jonathan, Joanna and Daphne offered up different insights about what the exhibition meant in terms of learning experiences, as reflected in this excerpt from the field notes taken then:

“Teachers are discussing how to use an examination of the Egyptian Civilization exhibit at the local museum to examine the Four Ways of knowing (i.e., the Theory of Knowledge ideas of Perception/Language/Emotion/Reason). [An]other teacher discusses the plan of investigating the theme of Immortality, by looking into the Egyptian Mummy and the art teachers are using this idea to understand how they will use the process of making the Mummy as a metaphor to look into the artistic creation…. The conversation takes a humorous turn as some teachers recall that certain artists used “the theme of conserving… pickles…. They will make pickles of small onions…. laughing…all talk together…” then the teachers want to compare it with the Chinese culture… to distinguish … to see the same them in various cultures and how language will provide a lens to look at the cultural theme…”

A closer examination of this excerpt sheds some light on the team and individual teacher deliberation process. It became evident that during the discussion between language, history, science and art teachers, there was an exploration of how they each might connect with the topic of visiting an exhibit. The History teachers explored the notion of immortality whilst the art teacher was concerned with how ancient societies saw the importance of art. The Science teacher saw parallels with the way pickling is used in preservation. The language teachers were concerned with how language can be an important tool for preserving cultural traditions. Clearly, teachers seemed to draw from their different disciplines to explore the exhibit that had been selected for this particular learning activity.
During the creation of this unit, the teachers were concerned about the need to provide conceptual coherence in reconstructing the learners’ experience and utilised the abstract idea of “Four Ways of Knowing”, which they borrowed from the IB¹ theory of knowledge (TOK) syllabus. This theme was selected for several reasons. Firstly, Year 3 students would be introduced to ideas from TOK that will be taught in the next year. Secondly, the team recognised that this theme was broad enough to cut across different disciplinary boundaries as it required learners to use perception, language, emotion and reason as a means to organise their experiences. This theme required learners to articulate their personal understanding of the exhibit, and then explore their perceptions using the different disciplinary lenses. In this way, the learner was motivated to look at the experience of viewing the exhibit using multiple disciplines and therefore arrive at multiple perspectives. This process of articulating different perceptions and perspectives would have allowed learners to achieve a deeper and more complex understanding of the ideas in the exhibit.

The “Four Ways of Knowing” theme provided a framework to connect the different disciplines during the learners’ inquiry of the museum exhibit. This required teachers to also think deeply about what the museum exhibit meant to them in terms of their disciplines. Analysis of the teacher interviews gave rise to the code “belief about student’s potential to be creative” as shown in Table 3. As teachers created this LAB unit, they were guided by a set of abstract ideas aligned to the collective goal of developing the learners’ sense of self and creative potential, which signaled a common language, or metalanguage. This metalanguage allowed for conceptual alignment around the core vision of a ‘connected curriculum’ and the effect on the learner was visible. After recording their thoughts, perceptions, emotions and reasons, the Year 3 learners were asked to communicate their responses with each other. Many of the learners reflected that the process of articulating their experiences using different ways of knowing was a liberating process, enabling them to explore other experiences. One student commented, “Many of our fellow students made so much sense even though they had different views and it made me think about the LAB experience in a bigger picture”. These responses showed the metalanguage associated with developing creative thought resonated deeply with the learners and allowed them to explore real world experiences.

The kinds of teaching strategies that the teams adopted in LAB reflected pedagogies that promoted exploration and self-reflection such as student–journaling and questioning. Teachers who had previously taught in other local schools felt gratified to see more curriculum time being devoted to such exploratory activities, highlighting that such activities were severely lacking in the examination-driven curriculum in typical schools. Joanna, who teaches an academic subject, related that she became more aware of how she began to see her students differently. She saw them as explorative because they changed from “being reluctant to speak up and not so vocal” to “raising a lot of thoughts after visiting the museums”. Tulip, the school’s curriculum leader, expressed that teachers have “a lot of flexibility in terms of how to experiment with their teaching methods and all that. There’s a lot of dialogue that takes place within the faculty”. Such dialogue creates metalanguages that spur an active co-construction of knowledge around the ideas in this LAB unit.
3.2 Curriculum integration anchored by metalanguages: making personal connections in AAI

During the development and implementation of integrated curricula, it became evident that teachers went through a personal meaning making process. Hence besides the realisation that learning different areas of study should allow learners to connect ideas from different subjects, the learning activities had to also provide opportunities for making meaning. One such place where the personal meaning making process was supported by curriculum integration was in the integrated arts curricula of AAI. Developed by individual teachers, each AAI unit is intended to stimulate risk taking and innovation. Learners work in heterogeneous teams, with others who specialise in different art forms. Thus, there are two key elements in their task: finding meaning and accessing different art forms. To the extent that the teams are from different art-form specialisations, AAI offers a unique situation of increasing interaction amongst students specialising in other art forms. Hence, to complete the AAI task, each learner is given the opportunity and social context to make sense of the role of the other art forms and therefore capitalise on them in order to grow their own craft.

Lois, the AAI coordinator, identified AAI as a “very novel approach to arts education” and commented that she had not experienced arts integration as a student and that this was not a feature of other programs for young artists. Lois clarified that using heterogeneous grouping and a participation grade, rather than marks, offered a thought-provoking, non-threatening space for learners to explore other art forms. During the lessons, Lois pointed out that learners were “struggling with the process of connecting the different ideas from their peers in the team” as they were in unfamiliar spaces, which required them to reconcile their personal conceptions of their art form. This constant call to experiment, problem find and problem solve — and create an idea, concept or performance — meant requiring learners to communicate with other artists and take risks to reinterpret the art form.

Michael, the assistant school leader, who had worked in different local schools, perceives Singa’s curriculum as offering spaces for dealing with both ambivalence and experimentation. He reflects that “while there is always this concern about uncertainty, ambivalence and ambiguity, there is also this celebration of adventure….there’s this space for us to explore and experiment.” Clearly, the metalanguages of heightening the creative process supplement the larger curriculum vision of a ‘connected curriculum’. Interviews with the teachers who created and implemented the AAI were rich with expressions of personal meaning, critical framing and transformation of practices.

The personal lens that Wendy used to create an AAI unit called ‘Lights ON’ is a good example of the personal being involved in the design of curriculum. A visual art teacher, Wendy had worked in the creative industry as an industrial designer before she came to teach at Singa School. She taught this unit over two years, to Years 3 and 4 learners, to explore ideas in the visual arts. Wendy was keen to use the activities in the unit to build an understanding and appreciation for the importance of light in expressing artistic ideas across all other art forms. Her reasons for using this approach were personal because her rationale for the exploration began with her own experiences as a university student. She explained she “started to play with (the) quality of light…and then I started to realise that there were all these different facets of it. Like how you cannot capture light unless you have a surface to diffuse it”. It becomes clear that Wendy’s personal experiences with how the arts a role in her learning and growth as an artist guided the
curriculum development process for this AAI unit. Furthermore, Wendy reveals that while her personal experience was in the visual arts, the abstract purpose of connecting different disciplines was the reason why she organised this learning experience as an AAI activity.

“In my case under visual arts, immediately light as a quality jumped into my mind because this cuts across whether you are dance, theatre or music. And then they are exposed to a variety of lights so that they are also aware of what is available…. and then they are exposed to a variety of lights so that they are also aware of what is available.”

Clearly, the larger metalanguage of personalised meaning-making and of interpreting learning as a connected activity played an important role in Wendy’s reasons for creating and implementing a unit on light.

Nevertheless, using light was not the raison d’etre for the development of the AAI activities. AAI unit development was also undergirded by ideas about artistic dispositions and ontologies that require learners to make connections across different disciplines. For example, Wendy explained that, too often, what happens during classroom activities is just superficial hands-on explorations, or an overemphasis on one modality of understanding the world. As explicated in the following quote, she maintains that there is a tendency to use only writing and communication as a means to understand the real world in schools, even in the lower years’ curriculum at Singa. Rather, she argues that another way to interpret the idea of “the connected curriculum” is to offer up complex and deeper explorations of artistic expression and greater advocacy for play as a means of creative exploration and meaning making.

“You do all these hands-on (activities) in primary school but when you go into secondary school or (even) in this case when you go into your lower years in Singa, there is this missing component, where everything is about writing and communicating, which is important. But then …you tend to neglect this artistic expression. And when you allow them to play, so this is where they start to play with light. They are discovering things you cannot discover in a book. Everyone is going to interpret it differently.”

A comparison of the types of thinking utilised by students in AAI with that in academic subjects like science showed that the higher levels of application, evaluation and synthesis in the revised Bloom’s Taxonomy (Anderson and Krathwohl, 2001) were more often used. Such findings provide an indication that creative dispositions such as curiosity, discovery and exploration were an important part of the implementation of ‘Lights ON’. On the whole, Sophie, the school leader, describes the teaching “is about deeper learning with everybody bringing (ideas) to the buffet table”.

4 Discussion

The findings point to unique metalanguages that undergird the design and implementation of the two integrated curricula of LAB and AAI. There were abstract and personal re-interpretations of the curriculum vision that involved concepts like ‘discovering things you cannot discover in a book’, ‘allow them to play’, ‘struggle’, and ‘multiple perspectives’. Grouped together, these terms describe elements of creative thinking and therefore lend support to the argument that metalanguages support the development of integrated curricula. The AAI unit, ‘Light’s ON’ was more specific to
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arts integration while ‘The Museum’ in LAB involved the disciplinary integration of academic and arts subject. These contrasting units demonstrate the multiple ways of interpreting and re-representing the curriculum vision of disciplinary connections for the learners. At the same time, the findings show the teachers and leaders re-thinking their own personal experiences and influences in their quest to nurture their learners’ cognitive engagement and creative thinking ability.

The unusual practice of creating and implementing a curriculum vision at Singa School however, was a radical idea that arguably helped to sustain the process of integration. At the same time, the complex interaction of the social and personal meaning-making practices and the growth of unique discourses bring particular weight to the role of metalanguages. It was metalanguages that allowed the curriculum vision of knowledge as being connected and ‘connect-able’ to be re-interpreted in classroom learning. Hence, the use of a curriculum vision and the associated metalanguages address the third space of the curriculum development process. Barton and Tan (2009, p.52) see the third space as being one where different discourses “coalesce to destabilise and expand the boundaries of official school discourse”. In fact, the dialectics in the third space are supported by metalanguages at Singa, where meaningful, abstract concepts and synonyms for connecting different disciplines in the integrated curricula, allowed for the reinterpretation of the discourse articulated in official reports (Ministry of Information and the Arts, 2000) and recommendations (Ministry of Education, 2002a).

Additionally, adopting a praxis approach (Grundy, 1987) meant that curriculum integration was developed and sustained by questions about the significance to the overall needs of the learners and its meaning to teachers. Hence, while integrating the curriculum needs to happen via dialectical discussions, this needs to be grounded in the common interest such as the need to develop creative thinkers. Hence, when anchored in the collective belief of well-being and the emancipation of the learner’s spirit, curriculum integration moves closer to the core democratic ideal of education (Beane, 2013). This is especially important in the context of current school cultures where the curriculum is often conservative with narrowly defined pragmatic goals such as career readiness. Articulating the metalanguages that arise during curriculum development can be a positive motivation for determining deeper meaning for teaching subjects (Wlodkowski, 2011) and address the loss of disciplinary rigour in curriculum integration efforts (Czerniak and Johnson, 2007). Ultimately, becoming aware of the way that teachers make meaning of curriculum is a powerful starting point for change (Katz et al., 2005).

However, despite the rich reinterpretations of the curriculum vision and the development of metalanguages, there were limitations. The need for a degree of sophistication and clarity of learning outcomes is a recurrent issue in the LAB and AAI units that were studied, a problem raised by other researchers studying other curriculum integration efforts (Arrowsmith, 2013; Mansilla, 2005; Repko, 2008). The pedagogy used in LAB and AAI was generally exploratory and the tasks focused on divergent thinking to engender creativity. This was qualitatively different from our observations of academic subject lessons in Singa, where traditional instructional practices were more apparent. While this was significant change, AAI lessons lacked deeper teacher-led exploration such as perspective-taking, conceptualising and problem centring, as observed by others (Czerniak and Johnson, 2007; Nikitina, 2006). Other issues were also encountered such as the differing capacities of teacher-teams (Marks and Louis, 1999; Short and Greer, 2002) and a lack of conceptual depth in integrating curricula (Arrowsmith, 2013; Badley and Henry, 2009).
5 Conclusion

This study provided a snapshot of the processes that promote and sustain curriculum integration. Specifically, the findings suggest that metalanguages that are developed around a core curriculum vision provide significant scaffolding for teachers to develop a deeper understanding of the curriculum integration process. It presented how the teachers, through team discussions and personal reflections, developed a nuanced interpretation of the curriculum vision to create learning experiences that connected the different disciplines. It is noted that generalisation of these findings to other contexts should be done cautiously, given the methodological limitations of this single site case study. However, given the non-hierarchical, interconnected nature of curriculum development (Perillo and Mulcahy, 2009), metalanguages can support and unite the “ecology of learning environments” that arise during curriculum innovation (Heath, 2000, p.128). Hence, in the current context of adherence to subject-driven curricula and high-stakes testing, investigating metalanguages can do much to reveal teachers’ meaning making and sustain participation in curriculum integration.

References


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Notes

1Schools use numerous other frameworks for subject-centred integration (see multi-, inter- and trans-disciplinarity (Drake and Burns, 2004); Fogarty’s (1991) 10 different approaches; education for global competency (Boix-Mansilla, 2008–2009)).

2There are still questions about the extent of the transferability of cognitive skills gained in arts learning to other disciplines (Burton et al., 2000; Hetland and Winner, 2004; Smithrim and Upitis, 2005).

3Singa students opt to study one of four art forms when they join the schools and ultimately specialise in this one art form by the time they graduate. Students are typically grouped according to their specialised art forms, and stay as a class for most of the school day.

4Theory of knowledge (TOK), a compulsory inquiry in the IB diploma program, is seen as a thoughtful and purposeful inquiry into different ways of knowing, and into different kinds of knowledge. Unlike a typical school subject, the teaching is composed almost entirely of questions, the principle one being ‘How do we know?’.

5All learners from Years 1 to 3 take part in one scheduled 10-week AAI unit in a school year, and the form of the unit increases gradually in difficulty, starting with simple explorations of melody for the Year 1 cohort and ending with a capstone performance that incorporate all four art-forms in Year 3.