Applied Learning Programme (ALP): A Possible Enactment of Achieving Authentic Learning in Singapore Schools

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ABSTRACT: As a response to global challenges and the need to equip its citizens with 21st century competencies, the Ministry of Education (Singapore) (MOE) announced two key programmes to enable the acquisition of these key attributes. One of them, Applied Learning Programme (ALP), serves to enable authentic learning achievement by introducing 'real world' skills to the students in Singapore schools. Having been informed by theories that surround the notion of authentic assessment and authentic learning, this paper attempts to apply these theories to the discussion on ALP, using the concept known as Work-integrated Learning (WIL) as a possible ALP reference point. Implications of its enactment, including the intractability of assessing values and desirable attributes and its impact on the traditional role of the teacher are also discussed in this paper. While the author agrees that ALP holds promise in achieving authentic achievements as a long term and sustainable form of learning that can positively influence student learning, equip students with 21st century competencies and ensure positive future outcomes, there is a need for greater scholarship discourse in the area of authentic assessment and authentic achievement and their roles in the enactment of ALP.

Keywords: auththentic learning, authentic assessment, Applied Learning Programme, Work-integrated Learning, ALP, WIL

Background

Since independence, a large part of Singapore's narrative rests on Singapore economic vulnerability to its geopolitical destiny and lack of natural resources. Hence, investment in its people is of paramount importance and education is seen as the key driver in which a quality workforce can be produced and sustained. Key education speeches have consistently centred on preparing Singaporeans for the global workforce in the face of rising neoliberalism.

In the Ministry of Education (MOE) Workplan Seminar (2013), Education Minister Mr. Heng Swee Keat posed a global challenge. Singaporeans entering the future workforce are expected to possess attributes that go beyond technical competences and stellar grades. In quoting Mr.

Leo Yip, Chairman of the Economic Development Board, he pointed to a future that requires one to be adaptable to an uncertain world:

> "To deal with the demands of a VUCA (volatility, uncertainty, complexity, ambiguity) environment, good grades in school are not enough. In fact they might not even be relevant". Attributes such as adaptability, confidence and creativity are desirable and critical to Singapore's long term survival.

Introduction

This paper attempts to offer a possible enactment of the Applied Learning Programme (ALP) curriculum, a new curriculum instruments introduced by Mr. Heng in his speech, in Singapore schools when it is rolled out in 2014.

While the realities of the challenges ahead for Singapore is clear and unquestioned, the road ahead in implementing and enacting a framework of authentic achievement and authentic assessment that prepares our children for the future does not seem to be sufficiently articulated, in as far as current literature, public policy papers or information related to this initiative is concerned. Other than information released on mainstream social media platforms that describes ALP initiatives taken by some secondary schools, details on its implementation have been sketchy on a scholarship level.

As a concept adopted in this paper, ALP will need to be unpacked further. Having been informed by theories that surround the notion of authentic assessment and authentic learning, I will attempt to apply these theories to the discussion on ALP.

In addition ALP will be discussed by using the concept known as Work-integrated Learning (WIL) as a possible reference point when discussing ALP's possible enactment.

Applied Learning Programme (ALP)

This section focuses on achieving a better understanding of ALP.

As a response to global challenges, the MOE announced two key programmes to enable the realisation of these enactments. One of them, Applied Learning Programme (ALP), serves to enable authentic learning achievement by introducing 'real world' skills to the students in Singapore schools:

> "The Applied Learning Programme will serve to connect academic knowledge and skills with the real world. The emphasis is on the application of thinking skills, connecting knowledge across subject disciplines, stretching the imagination and applying these in authentic settings in society and industries."

By implication, this latest initiative by MOE privileges the use of authentic settings in enabling deep learning among the students, vis-à-vis traditional classroom learning environments. According to the latest release by MOE regarding ALP, it is set to be rolled out on a massive level, reaching all secondary schools by 2017:

> "The Ministry of Education (MOE) will support all secondary schools to each develop an Applied Learning programme and a Learning for Life programme by 2017 to complement their core academic and student development programme."

There is a need to unpack the notion of ALP in order to better understand it as a worthwhile instrument that aims to allow students to see "the value and relevance of academic learning to real world situations." (Heng 2013).

In Mr. Heng's speech at the Work Plan Seminar, he painted a few characteristics of how ALP will look like when enacted. In an attempt to allow for sufficient discussion on this issue, an analysis of ALP will be taken from parts of the speech delivered by the Education Minister and interpreted as reasonable proposals for scholarship analyses. It must be mentioned here that care is taken to ensure that quotes taken from the speech retains its intended meaning within the realm of authentic achievement learning and achievement:

Bridging academic knowledge to authentic work settings
ALP "enables him (the student) to bring together what he has learnt in science, mathematics, humanities or the other languages to real-life applications." Beyond its practical value, this characteristic also contains an element of fostering values of lifelong learning: "His academic learning will come alive in an area that he is excited about, and stimulate his interest to learn more."

Involvement of professionals from the workplace to bring about 'real world issues'
Together with another programme known as *Learning Life Programme* (which this paper will not be discussing), ALP aims to create authentic workplace settings and through it, brings with it values that have lifelong utility:

- "He will, through reflections on these experiences, further develop his identity and values, his sense of empathy and care, and to discover his strengths and interests."
- "…and to enable students to acquire values and social-emotional skills that serve them for life."

These characteristics are couched within the Singapore's education system of a "student-centric and values education" (Heng 2013), a key focus for the direction of Singapore's education. Specifically, the education system aims to imbue in students the ability to sustain their learning well beyond their school years:

> "Put simply, in the ten years of basic education, we aim for every student to acquire a broad and deep foundation for his lifelong journey." (Heng 2013)

The analogy of a "breadth, depth and length" of learning was presented.

Using dimensions as an analogy for learning, "length" is represented by lifelong learning, where each student is expected to be instilled with the value of sustainable learning, and education presented as a "marathon" instead of as a "sprint". The idea of "length" also connotes the acquisition of values that help the student to be prepared for the vicissitudes of life:

> "While we want our students to succeed in their chosen field, life is not just about careers. It is also to unleash our human spirit, to find purpose in life, to explore

the truth, beauty and goodness around us, and to contribute towards adding to that, all our life." (Heng 2013)

Theoretical approaches to ALP

The notion of *authenticity* figures largely in the education initiative of ALP. What will be useful to conceptualise ALP is to frame it as a discussion on authenticity. According Cumming and Maxwell (1999), the term 'authentic' was a reference to 'authentic achievement', as stated by Newmann and Archbald (1988). While MOE emphasises the importance of the acquisition of lifelong skills beyond school as a more important upshot than that of the kind of knowledge acquired in schools, Newmann and Archbald placed lesser emphasis on definitions of success in schools as "trivial, meaningless and contrived" (Newmann and Archbald 1992).

Rather, the authors argue that what makes for quality and useful assessments in schools are outcomes that "represent appropriate, meaningful, significant, and worthwhile forms of human accomplishment." (Newmann and Archbald 1992). Therefore, the key idea that synthesises these ideas is termed as 'authenticity'. Arising from this, it is reasonable to view ALP as an instrument that is designed to attain a goal beyond the shelf life of schooling. Newmann and Archbald (1988) has argued that such achievements of authentic learning outcomes should be the key focus of assessment in schools, moving in the direction where the forms of authentic assessment should inform the way an instructional curriculum is designed.

The range of examples presented by MOE that characterises how ALP can be enacted seems to fit into the four major of interpretations of authentic achievement and authentic assessment as proposed by Cumming and Maxwell (1999):

- Performance and performance
- Situated learning and situated assessment
- Complexity of expertise and problem-based assessment
- Competence and competence-based assessment

For example, government organisations such as the Singapore Science Centre and the Information Development Agency (IDA) partnering schools in setting up "tech labs" and "tinker labs" in an attempt to produce gadgets or building enterprise hubs for aspiring entrepreneurs can be seen as an example of a mix of *complexity of expertise/problem-based assessment* and *competence/competence-based assessment* as forms of authentic assessment and authentic achievement.

It will be useful if schools, in their attempt to design ALP-based curriculum, has clarity in the specific forms of authentic assessment and authentic achievement that they wish to attain. This can possibly bring about a more focused effort and useful channeling of resources in curriculum implementation.

Another perspective that can be adopted for ALP is how it attempts to bridge the gap between what is being learnt in school and the professional world, or workplace. In quoting Boud (1990), Gulikers *et al.* (2004) wrote "that a major problem for education is the fact that there are gaps between teaching and professional practice and between assessment tasks and what occurs in the world of work." A worthwhile system that informs the student of his progress in

learning, otherwise known as formative assessment, has to perform a 'double duty', which means it has to both

> "meet the specific and immediate goals of a course as well as establishing a basis for students to undertake their own assessment activities in the future. To draw attention to the importance of this, the idea that assessment always has to do double duty is introduced." (Boud 2000)

The ALP, as a curriculum instrument that exists to prepare students for the professional workplace, emphasises the

> "application of thinking skills, connecting knowledge across subject disciplines, stretching the imagination and applying these in authentic settings in society and industries." (MOE 2013).

A possible enactment is through the creation of learning environments in schools that resemble the workplace.

For example, Teck Whye Secondary School started a curriculum module known as 'Design Thinking', which has students visiting elderly students and interviewing them to find out their needs and co-create solutions with them to solve daily living issues. Real-life situations, in the form of the lives of the elderly citizens, provide the context in which the students apply extramural skills they have learnt from school, such as needs analysis and interviewing skills.

Such forms of learning in ALP have both construct validity and consequential validity (Gielen et al. 2003). To take the earlier example on Teck Whye Secondary School, construct validity will look at the skills being assessed – interview skills and needs analysis – to see if the assessment measures what it is supposed to measure, while the success of the exercise, or its outcomes (be it intended or unintended) as effects of the skills tested, will represent the consequential validity of the ALP-based curriculum's assessment and achievement system.

Seen as an exercise in authenticity, an ALP that is similar to this example is expected to have a learning environment that is authentic with reference to a criterion, or its particular resemblance to the real world, known as criterion situation (Gulikers 2004).

However, while it is desirable to consider the immense value of creating an authentic setting in order to create affordances for the students to acquire lifelong or extramural skills, one needs to be informed about the importance of considering the educational level of the student and ensuring that it matches what is being demanded in the particular ALP, in terms of the requisite skills inherent in the programme. For a meaningful design, the ALP curriculum needs to be cognizant of match between the complexity of the tasks in the learning environment, or criterion situation, and its reference to the true complexity in the professional workplace (Gulikers 2004), failing which there will be a cognitive overload and a resultant negative learning outcome experienced by the student. (Sweller *et al.* 1998). Therefore, the ALP can adopt Gulikers' (2004) idea of abstracting from a real professional setting into the criterion situation.

A sharper focus on ALP can be achieved by considering a set of attributes or values that can be universally accepted across ALP's multiple enactments. Tan (2008) identified three attributes that aims to promote authentic learning:

1. *Students' assessment ability*

   Authenticity in ALP can be achieved if students are given the opportunity to self-assess their learning without the need to depend on their teachers. For example, students working on creating prototype devices at the Singapore Science Centre can be given numerous opportunities to assess their learning progress by referring to a set the expected outcomes at different developmental milestones of their production. They should also be to assess the need to collaborate with other teams or acquire additional resources to bolster their chances of success. The ability to exercise reliable judgment on the complexity of tasks and its requisite level of attention to it is also considered as a form of authentic assessment ability.

2. *Developing capacity for independent lifelong learning*

   According to Tan (2008), "assessment is authentic when it prepares students to learn without depending on their teachers." The ability to build coherent cognitive structures of thinking independently during the learning therefore defines the attainment of authentic forms of assessment.

3. *Integrating learning*

   Tan (2008) considers learning as authentic when "it requires students to learn in a holistic and integrated way." Rather than to reduce knowledge to "compartmentalised silos", authentic learning occurs when the student is able to synthesise and integrate knowledge by drawing them from a wide spectrum of subjects beyond artificial boundaries created by existing curriculum. If the vision for ALP is any indication, it offers much potential for providing multiple affordances to students in synthesising and integrating knowledge in a holistic manner that fits into the context within which the learning is taking place.

Work-integrated Learning (WIL)

Work-integrated Learning, or WIL, is a curriculum instrument used primarily in the higher education (HE) context to equip undergraduate students with desirable attributes that ready them for the immediate world beyond their tertiary education, which is the work place.

Despite the difference in educational contexts within which ALP and WIL are sited, a scholarship exploration of WIL seems to suggest that its broad aims shares common grounds with the basic principles and aims of ALP, which, in my interpretation, essentially aims to equip and prepare students in the current stage to be employable and relevant for the future, through the development of skills that are essential to life beyond school. A WIL therefore offers a possible applied context in which ALP can be enacted in our schools.

There are several definitions that describe how a WIL is enacted.

Reeders (2000, p. 205) defines it as "student learning for credit designed to occur either in the workplace or within a-campus setting that emulates key aspects of the workplace. "

WIL is utilised as a means

> "for enhancing professional and developing work-readiness in new graduates. It is widely considered as a point of difference in developing graduate employability by enhancing skill outcomes, such as team-work, communication, self-

management and problem-solving, employment prospects and student understanding of the world-of-work." (JACKSON)

The notion of WIL suggests the inclusion of authentic practices resembling the workplace into a learning environment. Griffith University, since 2006, has been developing WIL as a core component of their strategic plan. In its public document, WIL is defined as:

> "…the term used to denote a range of educational activities that integrate theoretical learning with its application in the workplace, community, studio or practice setting, and provide an authentic experience of work or professional practices that typically occur in these settings.
>
> (Griffith Work-integrated Learning (GWIL) Working Party, 20 November 2009)

If WIL can be adopted as a possible applied context to the ALP, the former's typical assessment strategies can actually find a place within the assessment framework of ALP settings. The list below highlights the range of possible assessment strategies that can be employed when assessing authentic achievements during ALP:

WIL Assessment Strategies – Items used as formal assessment tasks:
- Research project /report/assignment
- Reflective journal/log book/resources
- Conference/seminar/case/poster presentation
- Attendance and participation
- Supervisor assessment
- Case studies
- Exam
- Action plan
- E Portfolio
- Exit interview
- Group assessment
- Discussion board interaction
- Academic facilitator meetings

There is considerable literature that substantiates the nature of WIL. It is worthwhile pursuing further exploration into WIL when designing ALP.

Implications of ALP

This section discusses possible issues arising from the implementation of ALP.

The intractability of assessing values and attributes

It is reasonable to argue that ALP aims to create current learning contexts for future states of achievement − both in terms of the immediate future (current realities − where skills like collaborative working, creativity and critical thinking skills are needed for daily negotiations within the school context) and the future beyond school (professional realities).

The challenge, therefore, lies in authentically assessing the authentic achievements of a student within a WIL context. Inherently, a professional workplace is considered authentic for learning because its problems are generally complex in nature and amorphous in its structure. According to Yorke (2011), problems in the workplace frequently:

- arise unpredictably (nature and time)
- are multidisciplinary in nature;
- are messy…, in that they are relatively less bounded than academic assignments;
- have to be dealt with on the basis of incomplete information;
- require the engagement of others.

Therefore, given the situated nature of work-engaged learning, assessments of authentic learning and achievement have to be seen in the light of how the students respond to various unforeseen or unprecedented events. It demands of the student to move beyond the need "to connect academic knowledge and skills with the real world." It requires creativity, judgment and emotional intelligence to make decisions and solve problems in the face of ambiguous situations or situations with incomplete information.

Yet, such attributes defy fixed and binary forms of definitions. It "takes on different shapes in different contexts and is likely to keep on developing." (Knight 2007). By implication, it poses deep challenges when designing an authentic assessment task – how can such ill-defined achievements be assessed, and will the form of assessment practices implicate the learning and practices within a WIL context?

These questions suggest the notion of the 'washback effect', which is a term used prominently in the teaching of language but can reasonably be applied to a general context of assessment and learning. By definition in the teaching of linguistics, 'washback' "refers to the extent to which the introduction and use of a test influences language teachers and learners to do things they would not otherwise do that promote or inhibit language learning."(Messick 1996). Taken to its fullest benefit, positive washback effects can take place when authentic assessment and learning are designed in ALP with high construct validity and consequential validity. However, negative washback can occur when surface or shallow assessment and learning measures are adopted by schools when ALP is reduced to simplistic and compartmentalised forms of knowledge.

Developing these competences into lifelong attributes poses problems during the education process, due possibly to the following reasons:

1. Current approaches to assessment in Singapore tend to be 'measurement' or psychometric in nature. Such forms of assessment are clearly at odds with 'fuzzy' or complex competences (Knight and Yorke, 2003).

2. Current practices in assessment tend to overemphasise current learning for progression and certification purposes and fall short of focusing assessment efforts on long term learning (Crisp, 2012).

3. As authenticity is not an objective construct (Honebein, Duffy, & Fishman, 1993; Petraglia, 1998), learners can differ in their perception of the authenticity of the same assessment (Gulikers *et al*, 2007). Student's perception of assessment tasks and their

features can possibly have more influence on learning than the "objective" nature of the authentic assessments (Entwistle, 1991; Van Rossum & Schenk, 1984)

Implications on teacher workload

If ALP is to be implemented on a massive scale, considerations have to be paid towards its implications on the workloads of teachers. As announced by MOE, all schools are expected to roll out ALP by 2016. While resources have been promised by MOE to all schools to aid them in implementing ALP, what has not been addressed adequately is the larger question of how the workload of teachers in schools will be managed in light of the expected massive scale in which ALP is poised to be implemented in schools. The following factors have to be considered when rolling out ALP:

1. *Expertise required of ALP are beyond pedagogical and curricular expertise*
   The responsibilities of teachers involved will extend beyond their pedagogical and curricular expertise. As they will be dealing with subject matters that are beyond educational issues, such as accountancy, law, engineering or retail, the acquisition of these professional knowledge to the level that is sufficient to enable effective facilitation and mentorship of the students in respective ALP will have to be considered. This can cause considerable stress and cognitive overload of the teachers handling these ALP-based programmes.

2. *Administrative and management burden on teachers*
   The administrative and management load of the teachers can be extensive and onerous, assuming that there will be little offloading of traditional teaching workload. Beyond just delivering content-related knowledge, teachers in ALP may have to be involved in activities such as designing a course, recruiting industry partners, tutoring and facilitation, negotiating and managing agreement with external parties.

Due regard will have to be paid towards the issue of teachers' workload when ALP is implemented to all schools.

Meaningfulness of tasks to students

Messick (1994) and Stein *et al.* (2004) argue that "students' perception of meaningfulness of the assessment is at the heart of authenticity." It is insufficient to provide a criterion situation of sufficient complexity to challenge the student in an ALP situation.

Sambell *et al.* (1997) showed that "it is crucial that students perceive a task as relevant." Unless they see the skills that they are acquiring are of a transferable value or that they are linked to situations in a real world, students will not see any relevance in the task they are performing. In the strictest sense of the word, ALP would have failed in its highest aspiration for achieving authentic learning and achievement if there is an oversight in paying due attention to task relevance.

Conclusion

Achieving authentic achievements as a long term and sustainable form of learning can positively influence student learning and better prepare them for their future careers, and ALP as a curriculum instrument is believed to be able to help Singapore students achieve skill-sets that are regarded as 21st century competencies. However, the lack of scholarship details on

the nature of ALP suggests a need for a greater unpacking of the key idea of authenticity that is implied in ALP.

Theoretical underpinnings related to authenticity, authentic assessment and authentic learning have been offered as possible conceptions of ALP, and a curriculum instrument known as WIL has been proposed as a possible applied or enacted context for ALP. Possible implications and issues arising from the implementation of ALP were also discussed.

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