

## **Customised assessments to enhance 21<sup>st</sup> century skills in lower primary classrooms**

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### Abstract:

This paper reports on how holistic assessment is carried out in the lower primary classrooms in Rivervale Primary School. Using the school's curriculum framework (Riv BE), assessment for learning has been customized into the school programmes to address the challenges of assessing 21<sup>st</sup> Century competencies. In view of the changes in the educational landscape and the learning needs of pupils, we have refined our assessment for learning to be aligned with the learning outcomes that heighten pupils' 21<sup>st</sup> Century skills. School programmes such as Pick & Tell for English, Riv BE Trail for Mathematics and Learning Journey at the Mall/Neighborhood for Mother Tongue are examples of our innovative attempt to improve assessment. Pick & Tell is a modified version of Show & Tell which helps to build confidence in pupils' oracy. Riv BE Trail addresses pupils' attitude towards the learning of mathematics. The Learning Journey at the Mall/Neighborhood encourages pupils to see the relevance of Mother Tongue language and its practicality in their daily lives.

Keywords: Customised holistic assessments, lower primary, 21<sup>st</sup> Century competencies

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## Introduction

Since 2011, Rivervale Primary School has been using the school’s curriculum framework; Rivervale Brand of Education or Riv BE. This framework is based on David A Kolb’s Experiential Learning Theory as we believe that children learn best through concrete experience. The theory presents a cyclical model of learning, consisting of four stages: concrete experience, reflective observation, abstract conceptualization and active experimentation. The school adopts this learning theory into its school programmes to develop pupils who are reflective and self-directed learners. In view of the changing educational landscape and the learning needs of pupils, assessment for learning has been constantly refined to meet the Desired Outcomes of Education.

## Riv BE Framework

Rivervale Primary School teachers use Riv BE Framework in their daily lessons since it is introduced in 2011. In this framework, Kolb’s learning theory is adopted.

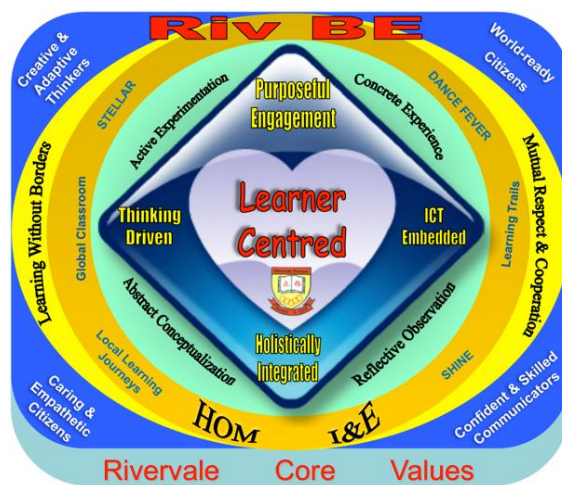


Figure 1: Riv BE Framework

Using Kolb’s four-stage learning cycle, pupils in Rivervale Primary School learn through concrete experience which engage them purposefully such as Maths Trail and Mother Tongue Learning Journey to the Mall. This is followed by the next stage which is reflective observation which requires pupils to consciously reflect on their learning experiences. The third stage of Kolb’s theory is abstract conceptualization where pupils need to make connections of their learning experiences to the real world. This makes their learning more authentic. Lastly, pupils go through active experimentation where they apply what they have learnt. The customized curriculum in Rivervale Primary School seeks to provide pupils with wide and varied experiences to build on their prior knowledge, gain new knowledge and skills; and be able to apply them in different situations and scenarios.

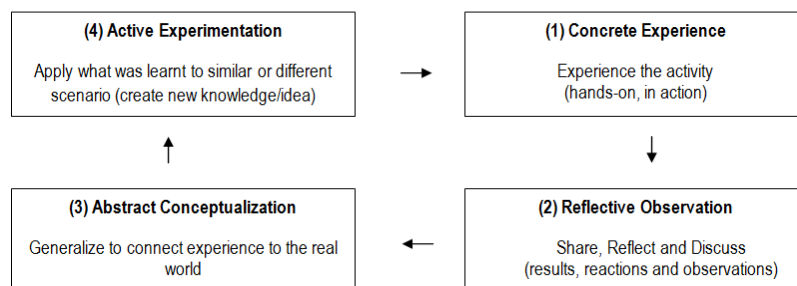


Figure 2: 4-Step Cycle in Riv BE

## Assessment for Learning

In Rivervale Primary School, our assessment for learning is aligned to 21<sup>st</sup> CC outcomes. Riv BE supports the assessment for learning which is based on a learner-centred 21st century education. The learning and assessment in classrooms are thinking-driven and holistically integrated through purposeful engagement.

The 21<sup>st</sup> Century Competencies are further unpacked into observable traits to establish a shared understanding on the Desired Outcomes of Education for our pupils. This provides clarity on how the customized curriculum supports the defined learning and assessment outcomes.

Modes of Assessment & Defined Learning Outcomes					
Subjects	Primary 1-2	Primary 3-4	Primary 5-6	Behavioural Outcomes - Values	Learning Outcomes – Riv BE
English	PERI HA Holistic Report Card Pick & Tell Penmanship Competition Early Literacy Assessment (P1) SA (P2)	Project Work Penmanship Competition Buddy Reading Assessments CA SAs	Buddy Reading Assessments CA SAs	Positive Attitude	Creative & Adaptive Thinker
Maths	PERI HA Holistic Report Card Performance Task Riv BE Trail ProblemSums.com Competition ENI Assessment (P1) SA (P2)	Riv BE Trail ProblemSums.com Competition Maths & Science Fair CA SAs	ProblemSums.com Competition Maths & Science Fair CA SAs	Hardworking  Caring	World-ready Citizens
Science	Science Trails	Young Scientist Card Practical Test School Science Website Maths & Science Fair CA SAs	Young Scientist Card (P5) Practical Test (P5) School Science Website Maths & Science Fair CA SAs	Loyalty  Teamwork	Confident & Skilled Communicator  Caring & Empathetic Citizens
Mother Tongue	PERI HA Holistic Report Card LJ to the Mall/Neighborhood - Photo Express (P1)	Reading Portfolio iWrite-Structured Essay-Writing Programme CA SAs	Sunshine Reading (P6 LA) Thumbs Up Reading CA SAs		



*The Rivervale – School of Excellence, Individuals of Character*

Figure 3: Assessments in Rivervale Primary School

## Pick & Tell

Although a picture is worth a thousand words, words do come in handy if the picture is unclear or distorted. After all, the most effective form of communication is still speech. The ability to put words together in a meaningful way to reflect thoughts, opinions, ideas and feelings is an effective communication skill that pupils can use for the rest of their lives.

Pick and Tell is an assessment of communication skills which is a vital 21<sup>st</sup> CC skill necessary for the globalised world that we live in. There are two learning outcomes for this assessment. One learning outcome is to equip pupils to plan and present information for a variety of purposes. Another learning outcome is to enable pupils to produce spontaneous and planned texts that are grammatically accurate, fluent, coherent and cohesive. These learning outcomes are aligned with the English Department’s objective of preparing pupils with the skills to communicate in internationally acceptable English. Thus, we design the assessment Pick and Tell for the lower primary pupils to scaffold them towards developing skills that will make them become confident and skilled communicators.

In Pick and Tell, each pupil is given ten minutes to prepare a speech based on a picture. The pupil will randomly pick a picture from a set of picture cards to talk about. There will be a different picture for each child in the class. The pictures are aligned with the STELLAR themes of ‘Hobbies, Food and Animals’. Pupils can talk about anything related to

the picture based on their experiences or knowledge. They have to mention at least three ideas with appropriate introduction and conclusion.

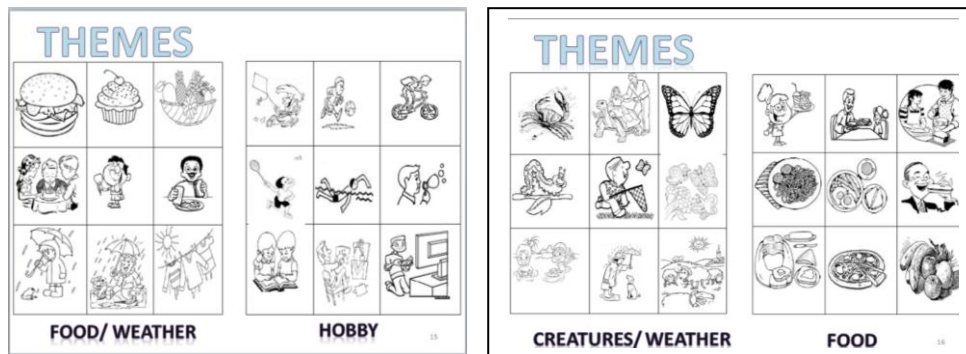


Figure 4: Sample Pictures of Pick & Tell

Pupils are assessed based on a set of rubrics.

Process Skill	Needs Guidance 1	Getting There 2	Very good 3	Excellent 4
<b>Content</b>	<ul style="list-style-type: none"> <li>Ideas are not relevant</li> <li>No attempt made to elaborate ideas</li> </ul>	<ul style="list-style-type: none"> <li>Not all ideas are relevant</li> <li>Little attempt made to elaborate ideas</li> </ul>	<ul style="list-style-type: none"> <li>Ideas are generally relevant</li> <li>Makes attempt to elaborate ideas</li> </ul>	<ul style="list-style-type: none"> <li>All ideas are relevant</li> <li>Ideas are well elaborated</li> </ul>
<b>Language Structure</b>	<ul style="list-style-type: none"> <li>Incomplete sentences</li> <li>Made 5 or more grammatical errors made</li> </ul>	<ul style="list-style-type: none"> <li>Uses simple sentences</li> <li>Made 4 grammatical errors made</li> </ul>	<ul style="list-style-type: none"> <li>Uses complex sentences</li> <li>Made up to 3 grammatical errors made</li> </ul>	
<b>Presentation</b>	<ul style="list-style-type: none"> <li>Lacks confidence</li> <li>Very little eye contact</li> <li>Not clear and inaudible</li> <li>Mispronounced many words</li> </ul>	<ul style="list-style-type: none"> <li>Some confidence shown</li> <li>Occasional eye contact</li> <li>Not always clear and inaudible</li> <li>Mispronounced a few words</li> </ul>	<ul style="list-style-type: none"> <li>Generally confident</li> <li>Maintains eye contact most of the time</li> <li>Generally clear and fairly audible</li> <li>Did not mispronounce any words</li> </ul>	

Figure 5: Sample Rubrics for Pick & Tell

### Riv BE Trail

Riv BE Trail is an experiential learning trail that relates Mathematics concepts to the environment. This trail is an example of our customized school programme for lower primary pupils that support the mission of Mathematics Department's of equipping every pupil with mathematical problem-solving ability through the acquisition and application of mathematics concepts and skills to meet the challenges of the 21<sup>st</sup> century. Thus, the objective of this trail is to weave Mathematics concepts into pupils' daily life to make the learning of Mathematics more meaningful and authentic.


Guided by the Riv BE framework, the trail is holistically integrated which sees the infusion of English, National Education and Health Education into the learning of Mathematics. Pupils go through the Concrete Experience stage in Kolb’s learning theory as they engage in hands-on activities at the neighbourhood mall while completing the task in groups to develop social skills towards team learning. Teachers check pupils’ understanding when they engage in problem-solving in activities such as shown below.

**2<sup>nd</sup> Floor**

2. Go to the Hair Inn.

Mrs Tan has long hair and she needs to cut and colour her hair.

Mrs Rajoo has short hair and she needs to cut and perm her hair.



Calculate the cost for the two ladies at Hair Inn.

Cost for Mrs Tan (Long hair/cut and colour)	\$
Cost for Mrs Rajoo (Short hair/cut and perm)	\$

Figure 6: Sample of Problem Solving Activity

Besides assessing pupils on how they apply prior knowledge in Mathematics concepts to solve Mathematical problems, the trail is also part of their formative assessment that focuses on Personal Quality. This is to develop pupils’ 21<sup>st</sup> century skills. The trail requires pupils to have mutual respect and cooperation among their group members when they are doing the activities. At the end of the experiential learning trail, pupils do self-reflection to assess on how they have used Personal Quality skills to get the task done. Teachers also use this trail as one of the formative assessments to provide feedback on pupils’ attitudes for learning Mathematics in their holistic report card.

	Pupil's Self-Assessment		Teacher's Observation	
	Yes	No	Yes	No
School Core Values and Habits of Minds -HOM				
<u>Positive Attitude</u> I adopt 'I Can' attitude.	😊	😞		
<u>Hard-working</u> I put in my best effort.	😊	😞		
<u>Teamwork</u> I work well with my team members.	😊	😞		
<u>Persisting</u> I keep trying and do not give up.	😊	😞		

Figure 7: Pupil's Self Reflection



Figure 8: Pupils in action at the Riv BE Trail

### **Learning Journey to the Mall/Neighborhood**

In recent years, the teaching and learning of Mother Tongue Languages (MTL) has gone through several refinements to nurture pupils to be active learners and proficient users of the language. There is a greater emphasis on helping pupils to have a passion for learning Mother Tongue Languages and become proficient in using them in a variety of real-life settings. In the Mother Tongue Language Review Committee (2010) Report, the language environment in the homes of Singaporeans is evolving as English is the most frequently used language in their homes. Thus, it is important for teachers to encourage interaction in MTL thereby strengthening pupils' communicative skills.

In alignment to the Mother Tongue Language Review Committee (2010) Report and Mother Tongue department's mission of pupils to be active learners and proficient users of their Mother Tongue Language in everyday life, we bring Primary 1 pupils to the neighbourhood mall and Primary 2 pupils around the neighbourhood for an authentic experiential learning. At the supermarket in the mall, pupils learn the words of common food

items in their MTL. Thereafter pupils will come together in group to create a model of their very own supermarket based on what they have seen and experienced. Pupils are given a guided script to talk about their supermarket model. In addition, they are required to respond to the questions posed by the peers. This is to enhance pupils' confidence in being an effective communicator of the MTL.



Figure 9: Pupils in action at the mall & presentation

To further enhance the pupils' communication skills, pupils are given a photograph taken during their learning journey with a set of questions to help them in the picture description (Photo Express). Teachers use rubrics to provide feedback to the pupils and parents in terms of their communication skills.

立伟小学  
一年级照片会说话练习

姓名: \_\_\_\_\_ ( )

班级: 1 / 1 \_\_\_\_\_ 日期: \_\_\_\_月 \_\_\_\_日



1. 这是什么地方?	这是_____。
2. 他们是谁?	他们是_____。
3. 他们在做什么?	他们在_____。
4. 为什么会到这个地方?	因为_____。
5. 你觉得他们喜欢到这里学习吗? 为什么?	我觉得他们_____。 因为_____。

立伟小学  
2013年一年级全面性评价  
照片会说话—反馈表

姓名: \_\_\_\_\_ ( ) 班级: \_\_\_\_ / \_\_\_\_

得分	☆☆☆☆	☆☆☆	☆☆	☆
	9-10分	6-8分	3-5分	1-2分
内容	描述很详细、很清楚,而且很有条理	描述相当详细、清楚,而且有条理	描述不详细、清楚	在引导下还是无法描述
表达	用语适当,说话非常自然流利	用语很少错误,偶尔会迟疑	用语有些错误,说话常常迟疑	用语有很多错误,多次长时间的停顿

评语:

得分: 
/
20
老师签名 \_\_\_\_\_
家长签名 \_\_\_\_\_

Figure 10: Sample of Photo Express Activity & Rubrics

Similar forms of assessment are conducted for Primary 2 pupils when they go on a learning journey around the neighbourhood. In alignment to the theme in their MTL textbook, pupils learn the names of objects seen during their walk around the neighbourhood in their MTL. They have to create their Dream Playground in groups and present to their classmates in class. This is in line with the active experimentation stage in Kolb's learning theory. Primary 2 pupils conduct a self-assessment of their own oral presentation. This aids them to be aware of their own learning and develop their confidence in speaking.



立伟小学  
2012年二年级全面性评价  
《我理想中的游戏场》——自我评价



我觉得自己	 我做到了!	 我可以做得更好!
说话时, 很清楚	<input type="checkbox"/>	<input type="checkbox"/>
说话时, 看着其他同学	<input type="checkbox"/>	<input type="checkbox"/>
在说话前做好准备	<input type="checkbox"/>	<input type="checkbox"/>
能流利地介绍游戏场设施	<input type="checkbox"/>	<input type="checkbox"/>
我还想对自己说: " _____ " _____ "		
姓名: _____ 班级: 2____ / 2. ____ 日期: _____		

Figure 11: Pupils in action at the presentation & self-assessment

### Conclusion

This paper is a report of the school's effort to implement assessment for learning in a more innovative way. The infusion of assessment for learning into the school programmes is an example of our innovative attempt to assess pupils' learning holistically. We believe that holistic assessment can enhance pupils' cognitive development as well as acquiring Social Emotional (SEL) competencies. Thus, as we raise awareness of SEL competencies in our formative assessments, pupils are equipped with 21<sup>st</sup> CC to face future challenges.

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