Improving Conversation Skills with the BOAR Oral Thinking Frame

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In daily conversations and at oral interviews and tests, speakers are required to provide extemporaneous, yet developed, replies to questions. This requires highly developed thinking skills and strategies to activate long-term and working memory. However, thinking is rarely taught alongside speaking. Therefore, the BOAR Thinking Frame was introduced, with four thinking skills: Balance, Opposites, Alternatives and Reason. These four skills act as thought organisers to structure thinking processes. These thinking tactics are explicitly taught to students to aid their thinking and to proceed in a certain direction. The structuring of thoughts reduces straying and increases communication ability. It was implemented as a research project from 2016 to 2017. Apart from higher scores achieved in Spoken Interaction, nearly 60% of students agreed that BOAR was useful for generating ideas and analysing an issue more deeply. It is now implemented as a teaching strategy.

日常会話や面接や口頭試験ではでは、話し手は質問に対して即座に、かつ即座かつ洗練された返答をするすることが求められる。これには、長期記憶と作業記憶を活用する高度に発達した思考スキルと思考戦略が必要である。しかし、考えることは話すことと一緒に教えられることはほとんどない。したがって、本稿の「BOAR思考枠組み」が開発された。それは、バランス、対比、代替、理由という4つの思考スキルからなり、思考プロセスを組み立てるための思考オーガナイザーとして機能するものである。これらの思考戦術が学習者たちに明確に教えられると、それにより彼らは思考し、特定の方向に進むことができるようになる。思考を組み立てることで、目的のない思いつきが減り、コミュニケーション能力が高まる。これは、2016 年から 2017 年にかけて研究プロジェクトとして実施された。Spoken　Interactionにおいて高いスコアを達成した他、学習者のほぼ　60%が、BOAR は 、アイデアを生み出し、問題をより深く分析するのに役立つと回答した。現在は教授法として実施されている。

Thinking and speaking are independent lines of development that cross at certain points where “thinking becomes verbal and speech intellectual” (Vygotsky, 1962). We can think without speaking and speak without thinking, but to build meaningful human interactions, the integration of the two processes is necessary as thought is only completed through word (Van der Veer & Zavershneva, 2018). Thus, it is reasonable to postulate that to realise deep and meaningful conversations, maturity in both aspects of speaking and thinking counts. Yet, in the classrooms of today, speaking as a productive skill is largely taught apart from and ahead of thinking skills. This paper presents the use of the BOAR Oral Thinking Frame, with the aim to enhance the thinking skills of secondary school students in Singapore (grades 7 to 10) to develop their speaking skill, especially in conversational use.

Literature Review

Although Singaporean teenagers have done well in global assessments in skills such as problem-solving, Singaporeans seem to “fare poorly in spoken English and lack confidence in articulating their views” (Khew, 2014). In the main author’s teaching experience, students often claim that they are unable to think of what to say when posed questions in oral examinations. In most cases, students would answer questions superficially, be unable to either grasp concepts on a broader level or analyse issues in depth. Many would offer limited suggestions, with little or no counterarguments, fresh ideas and alternative choices and views.

Based on the premise that critical thinking and self-expression are essential for quality conversations, language learners should be taught to craft credible and appropriate responses. It is paramount to build requisite skills to enable students to “convey and

express their thoughts and opinions with accuracy, fluency, appropriateness and succinctness" (MOE, 2010, p46). The main author hopes to develop a strategy to help students achieve the above aim.

Research on Integrating Thinking and Conversation Skills

The movement of teaching thinking has gained ground as an important goal of education, as espoused by Costa (1991). Dilekli & Tezci (2016) posited that teaching thinking is possible, and it is seen to be of great value to the student as a life skill (Sanavi & Tarighat, 2014). Obaidullah (2016) went a step further to argue for thinking and understanding to be taught as language skills. He listed six skills in mastering a language: listening, reading, understanding, thinking, speaking, and writing. In thinking, Obaidullah highlighted the use of critical and creative thinking while in understanding, he referred to the employment of skills and strategies to apply learners' "contextual knowledge to infer or anticipate things" (Obaidullah, 2016). The teaching of these six skills in tandem would enhance proper language learning. Chen (2016) implemented a theoretical framework for integrating high-order thinking into L2 speaking of first-year university English language classes in Taiwan. He found strong evidence that thinking tasks exert "statistically significant positive effects on L2 speaking proficiency and higher-order thinking performance" with long-lasting effects. In another study, he found that integrating thinking into L2 learning helped students to process information and respond faster. They took less time to think and to express their ideas. Students themselves felt that they were more fluent and could speak more (Chen, 2017).

Costa (1991) outlined four thinking skills, namely, creative thinking, decision making, critical thinking and problem solving. Among these skills, critical thinking is most closely studied in its impact on students' learning. Among the thinking skills outlined by Costa (1991), critical thinking is most closely studied in its impact on students' learning. It is defined as "the intellectually disciplined process of actively and skilfully conceptualising, applying, analysing, synthesizing and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action" (Malmir & Shoorcheh, 2012).

Recent studies in linking the impact of teaching critical thinking to speaking skills have been encouraging (Malmir & Shoorcheh, 2012, Yang, Chuang, Li & Tseng, 2012, Sanavi & Tarighat, 2014, Yang, Gamble, Hung & Lin, 2014, Casamassima & Insua, 2015, Afshar & Rahimi, 2015). Students who have received training in critical thinking perform better orally, as they can identify directions, focal-areas, and sort relevant information and evidence. Such organisation leads to coherent articulation of their thoughts (Malmir & Shoorcheh, 2012) and a deeper grasp of vocabulary and higher speaking motivation (Sanavi & Tarighat, 2014). Yaghoubi (2017) proved "positive and low/moderate correlations between the psychological constructs of critical thinking and the willingness to communicate" among foreign language learners, auguring an improvement in language learning. Thus, teaching critical thinking explicitly, as purported by scholars such as Arfae (2020) and Ramezani, Larsari, & Kiasi (2016), is key to raising speaking ability (Sanavi & Tarighat, 2014). Therefore, this study will focus on imparting critical thinking skills using thinking frames.

Using Thinking Frames to Scaffold Thinking in Speaking

Thinking frames, as defined by Perkins (1986), are "representations that are intended to guide the process of thought, supporting, organising, and catalysing that process". They are tactics students can employ to aid their thinking and include information to show how and when to proceed in a certain direction (Perkins, 1986). The organisation of thoughts helps to reduce "purposeless wandering" (Casamassima & Insua, 2015) and improves effective communication. Different thinking routines can be used to target students' language-based needs in accuracy and message-based needs in interaction, fluency and meaning. The latter will be the target focus of the main author.

Development of B.O.A.R Thinking Frame

Researchers have posited that having metacognitive knowledge about learning impacts one's learning behaviour and the process of planning, monitoring and evaluating (Tay et al., 2020). Thus, the main author believes that as students think consciously and explicitly about how to organise their thoughts in relation to each question, they would be able to raise their conversation skills in the Spoken Interaction segment at the O Level Oral Examination and in their daily lives. To this end, the main author conceptualised the set of four thinking skills: Balance, Opposites, Alternatives and Reason (B.O.A.R) as a thinking frame in July 2016. They act as thought organisers to structure thinking processes, to link experiences and to generate ideas. B.O.A.R serves as a model that shows students how to think well and offer well-developed answers to engage in and sustain conversation.

Using Bloom's taxonomy of skills (Gogus, 2012) as a framework, the relevant thinking skill is paired to a question with B.O.A.R designed to answer it. A detailed representation of the design of B.O.A.R is shown in Appendix A. It shows question samplers, their

corresponding Bloom's taxonomy of skills, an explanation of the thinking frame, examples of how it is used and its rationale.

Research Description

Research Purpose and Rationale

Although there have been recent studies that link the teaching of critical thinking to oral communication skills in countries such as Iran, Argentina and Taiwan, there has been little or no known research on the impact of teaching thinking on oral skills in Singaporean schools. Thus, this research study is aimed at examining if explicit teaching of thinking is able to develop secondary school students' conversation skills.

To this end, the main author conceptualised a thinking frame entitled B.O.A.R. Consisting of four thinking skills, B.O.A.R was designed to help students organise and structure their thinking, prime them for idea generation and help them to link their experiences to the oral topics to develop comprehensive responses for the Cambridge O Level oral examination, and in their real-world interactions.

Objective of study

The objective of this study is to investigate if implementing the thinking frame B.O.A.R will develop students' conversation skills for the examination. This study was guided by the following question: Does the implementation of B.O.A.R develop one's conversation skills?

In this study, the main author and two other teacher-participants first taught the frames directly and practised using them with the students until they became fluent and spontaneous (See Appendix B for an extract of the notes on B.O.A.R given to students). After the 'automatization' of the frames, the teachers slowly removed these supports until the frames became fully internalised. It was hoped that students would be able to transfer the application of these frames in their daily discourse. As students activate the transfer of these thinking frames to solve real-life issues and bring depth to conversations, they would reap the ultimate purpose of education.

Methodology

The sample comprised 76 Secondary Four (Year 10) students in a Singaporean public school. These students were taught in four groups. The groups were formed based on teacher deployment plans and student differentiation. Group 1 consisted of 18 students of high ability, Group 2 had 20 students of middle ability and Group 3, 18 students of lower ability

Research Design

Research Overview

With the conceptualisation of the B.O.A.R Oral thinking Frame in May 2016, the research study formally began in February 2017. It was implemented over a course of 10 weeks in Terms 1 and 2 from February to April 2017, 6 weeks in Term 1 and 4 weeks in Term 2. At the start of the study in February, the main author and two English Language teacher-participants conducted B.O.A.R through group teaching in two lessons totalling 160 minutes, giving examples of oral questions and eliciting answers from students using the frames. Thereafter, individual practices with students were carried out with approximately 20 to 30 minutes of interaction time with each student. During individual practices, teachers used any one out of the four thinking frames to delve into in-depth discussions with students. At the end of the study, students sat for an oral examination identical to one they had sat for in September 2016 as part of their semester assessment.

The research design is a mixed-method study consisting of both quantitative and qualitative approaches. Equal priority in quantitative and qualitative methods and integration of the results at the analysis stage (Creswell, 2003) was used.

Quantitative Approach: Test Records Pre-and-post the Implementation of B.O.A.R

In the quantitative approach, the school test records before and after the implementation of B.O.A.R were collected and compared. The means were calculated, and the data was presented using a Microsoft Excel spreadsheet. This data was then plotted in a graphical format.

The school test scores before the implementation of B.O.A.R were represented by the students' performance scores in their Secondary Three (Year 9) end-of-year oral examination. Only the scores in the Spoken Interaction component were considered for this study, as B.O.A.R is designed to improve conversation skills.

The test scores after the implementation of B.O.A.R were represented by the students' Secondary Four (Year 10) mid-year oral examination Spoken Interaction scores. The students' test scores before and after teaching B.O.A.R were analysed to determine if the implementation of the thinking frame had developed their conversation skills.

Qualitative Approach: Student Individual Reflection, Small-group Interview and Teacher-Participant Interview

In the qualitative approach, participants were asked to write reflections after the school test in April 2017. A small-group interview was then conducted with selected participants based on their performance in Spoken Interaction in the test. The reflection and interview served to provide the researcher with a deeper analysis of the results in the quantitative approach. A group interview with the teacher-participants was also conducted to gather further information about the implementation of B.O.A.R.

Research Schedule

The research was scheduled from February to April 2017, during which the instruction of B.O.A.R was carried out. The data from the school test after the B.O.A.R implementation, individual reflection and small-group interview were collected.

Instruments

The instruments adopted in the study included:

1. B.O.A.R Thinking Frame
2. Group Instruction and Individual Practice of B.O.A.R (Appendix B)
3. Individual Student Reflection
4. Small-group Interview for students
5. Teacher-participant Interview

Data Collection and Analysis

All students were asked to write a short reflection to ascertain their perceptions of using B.O.A.R. Responses were grouped into major categories and themes for a further analysis. A small-group interview of 20 students was conducted based on their performance in the Spoken Interaction part of the test after the implementation of B.O.A.R. The group comprised nine students who had made the most improvement, four who maintained the same scores and seven whose performance dipped.

The aim of the small-group interview was to find out if the students' improvement, or lack thereof, was linked to B.O.A.R. A group interview was also conducted with the two teacher-participants to gather data on their perceptions of the usefulness and effectiveness of B.O.A.R through their experience in teaching it. Major themes reflecting students' perceptions of using B.O.A.R and its effectiveness are presented below.

Findings

Improvement in Grades Before and After the Implementation of B.O.A.R

In 2017, a total of 76 students sat for the spoken interaction test before and after the implementation of B.O.A.R. There was an increase in mean score from 12.7 marks to 13.2 marks (out of a maximum of 20). Thus, an overall improvement in the results in the Spoken Interaction segment after the implementation of B.O.A.R is evident.

Quantitatively, there was an improvement in conversation skills as reflected in students' scores. A qualitative study was then done to assess students' perceptions and experiences in using B.O.A.R.

Student Perceptions of Using B.O.A.R

74 students took part in the individual reflection survey. All, except one student, reported the use of at least one thinking skill. Perceptions of the students are reported below with figures. They include the skills they used most, what they viewed to be the most and least useful skills and how useful BOAR is in developing their conversational skills.

Of the four skills, the one most used by students was Balance, followed by Reason (Figure 1).

Figure 1
*Use of B.*O.A.R in the oral examination

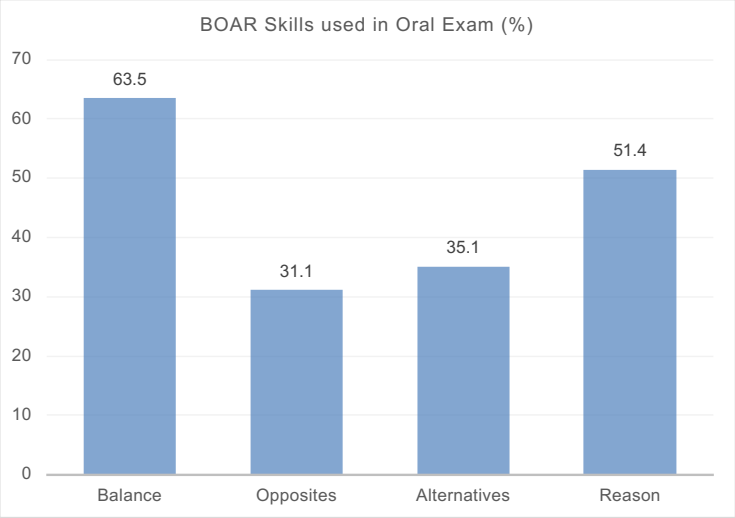
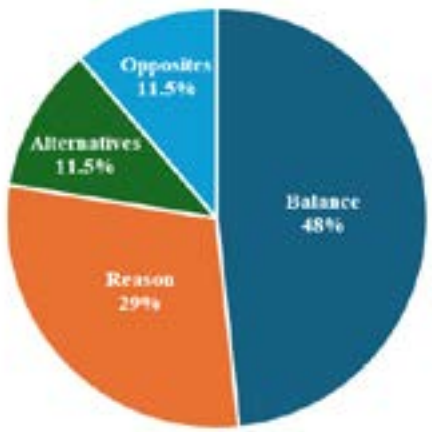


Figure 2
Most Useful and Least Useful Thinking Skills



From that survey, 48% of students felt that Balance was the most useful thinking skill, followed by Reason (29%). Some reasons offered for their choices were that Balance helped them to weigh both sides of a matter and could be applied to many questions they encountered. In addition, Balance also allowed the students to "inject new ideas" into a conversation. Teachers believed that Balance was the most frequently used skill because the priming question was extant in every practice paper. Many questions in the practice papers started with "How far do you agree…" and "Do you agree…". Thus, students could immediately associate the question with the Balance thinking skill. The priming for idea generation seemed to work well.

As for Reason, students felt they could relate to it easily as they were "used to giving reasons", citing it as the most applicable skill. This observation for Reason is easy to understand considering that Reason functions at the basic level of *Knowledge on Bloom's Taxonomy,* where students are generally able to retrieve their experiences to answer for their choices or behaviour.

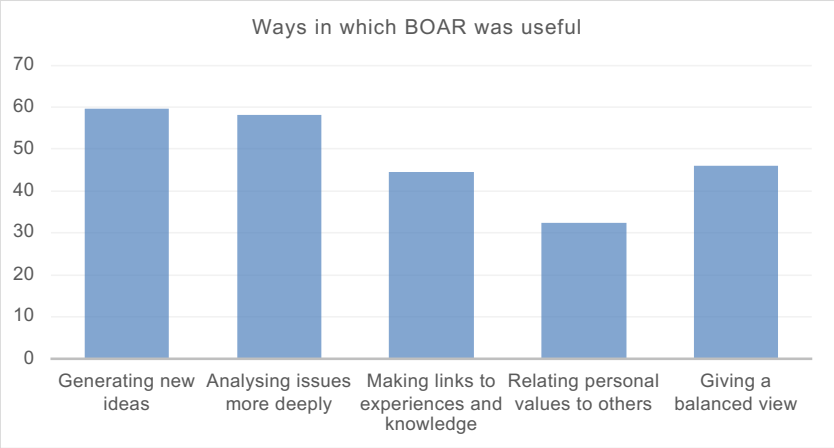
The student participants felt that Opposites and Alternatives were the least useful skills. Reasons cited by students included not knowing how to use both these skills. They were unable to come up with good alternatives, and Alternatives was hard to understand and confusing. The teacher-participants' comments corroborated students' sentiments. When matched against Bloom's Taxonomy, Alternatives is at a high level of *Synthesis*. Students are expected to combine ideas to create a new product. This may explain the reason for the difficulty, and it is also an indication of the students' level at the time.

For Opposites, responses included not knowing how to apply it. This could be due to the fact that some questions did not directly ask for opposites, such as advantages and disadvantages or causes and effects, etc. Students also found it hard to apply the skill to other questions. This was confirmed by teachers' feedback that questions were not explicit in asking for Opposites and thus priming did not work for the students, and they could not extrapolate the skill to other questions. Another reason could be that Opposites taps on the skill of *Analysis,* which is also a critical thinking skill requiring practice.

Students gave their input on how B.O.A.R was useful to them (Figure 3). The top reasons were that B.O.A.R was useful for generating ideas (59.5%), followed by 58.1% agreement that it helped them to analyse and think about issues more deeply.

Figure 3

*How B.*O.A.R was Useful in Developing Conversational Skills



The feedback from students supported the original intent of B.O.A.R as an instrument to help generate ideas for conversation. But, as indicated by Figure 2, although students could share reasons readily enough, they did not find it easy using Reason to enunciate their personal values and beliefs and as such, their perceptions of B.O.A.R as an instrument eliciting that was the lowest out of the five aspects of usefulness.

Discussion

From the quantitative and qualitative analyses, students generally found B.O.A.R useful in enhancing their conversation skills, although they had differing levels of understanding for each skill. Although students indicated that B.O.A.R was generally easy to understand, there was still some confusion. Some students found Opposites and Balance similar and were confused between the two. This may point to some gaps in the metacognitive understanding and application of the skill. Although Opposites and Balance both require students to present two sides of an argument, Balance points to when and for whom a certain situation may not apply, using the skill of *Evaluation*. Opposites, however, employs antithetical thinking such as "problem versus solution" and concerns itself with the skill of *Analysis* (Appendix A). *Analysis* requires the breaking down of parts of an idea to consider their relations with one another and to the larger picture. With Opposites, students are geared towards contrasting different parts of an idea, rather than comparing similar parts. In *Evaluation* (Balance), students also must consider contradictions in an idea and come to a decision about it. In doing that, they may see that they have done the analysis of the smaller parts of an idea and confuse it with evaluating the larger picture.

In addition, as reported earlier in the paper, oral questions have evolved over the years. It may be difficult for students to apply Opposites flexibly and interchangeably if the questions do not contain the specific terms as introduced in the Opposites skill, such as pros and cons, incentives and disincentives, etc (Appendix A). Thus, more time and practice may be needed to help students think about, relate to, and apply Opposites to questions that may not immediately present themselves as Opposite questions.

Another point of interest was that some students cited nervousness as one of the reasons for not using B.O.A.R as much as they had wanted to. A significant percentage of students (44.6%) indicated that they blanked out during the examination. In the group interview, students explained that, although it was relatively easy to learn and understand B.O.A.R, it was harder to use them due to anxiety. However, as the discussion went on, some students said they might have used B.O.A.R subconsciously. This may indicate the internalisation of the thinking frame as they start to use the skills without realising it. Through their practices, students might have stored the messages in their long-term memory and retrieved them subconsciously during the test, giving them a sense of familiarity.

It could also mean that students were still not as cognizant of their meta-thinking as the main author had hoped they would be. As reflected by students in the interview, about half of them wanted more individual practice and classroom discussions where teachers would cue the students on the skills and where they could hear one another's views. Students felt that the exchange of ideas and the input from teachers would help to enrich their own answers and clarify the skills.

To further the use of the B.O.A.R. Thinking Frame, in 2018, the English Language teachers in the school have started teaching the B.O.A.R framework across the levels, starting with the most relatable skill of Reason at Secondary One (Year 7), giving students ample time and practice to understand and internalise the skill of articulating their personal values and beliefs, before progressing to the next skill in the following year.

As of 2023, a revised national English Language syllabus has been rolled out, with some modifications in the way conversation skills are tested. Despite these changes, the authors find that B.O.A.R is still applicable. Even though the style of questioning

has changed slightly, students can still make use of the thinking frame to answer the questions.

In addition to that, the B.O.A.R. Thinking Frame can also be extended to writing, as many essay topics at the upper secondary level (Years 9 and 10) are expository and discursive in nature and require well-developed arguments. In crafting a response, B.O.A.R. can also be used to develop strong points and arguments to support students' views. Going forward, a deeper examination of B.O.A.R.'s extended use could be to determine how it would help L2 learners, especially individuals who struggle to generate ideas and develop content in the aspect of writing.

Conclusion

The study showed quantitative improvements in students' conversation skills in the oral examination. However, due to the lack of a control group, the effectiveness of BOAR cannot be fully ascertained. Despite the limitation, the study had succeeded in determining the receptiveness of the students towards B.O.A.R and their perception of its usefulness in developing their conversation skills, which was the objective of the study.

Students perceived B.O.A.R to be useful in generating ideas and linking to experiences and knowledge. In addition, they spoke about B.O.A.R helping them "organise ideas in a professional way", "think more (deeply) than usual", and giving them "more to talk about". This was supported by teachers who felt that B.O.A.R helped students organise ideas and analyse issues at a deeper level. As one of the teacher-participants put it, the frame gave students "a language to structure their thoughts."

Perhaps the most unexpected, but positive, finding through the interview was that students reflected that they were positive about using B.O.A.R in their daily lives and found it useful for other subjects, such as the Humanities. It is gratifying as one of the aims of B.O.A.R was to contribute towards the ultimate purpose of education, where students live their learning.

Bio Data:

Lim Cheryl Ming Yuh is the Head of Department for English Language and Literature at Outram Secondary School, Singapore and the developer of BOAR. She holds a Master of Teaching (English) awarded by the National Institute of Education. A content creator, Cheryl has 12 educational videos on YouTube that focus on BOAR, Thinking Steps, Mirror Reading and Purpose-Audience-Context, with a viewership exceeding 14,000. She believes in teaching thinking in speaking and improving self-assessment practices to promote self-directed learning. Cheryl_lim_ming_yuh@moe.edu.sg

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Appendix A

Overview of B.O.A.R thinking frame used with Oral Exam Questions

No.	1128/04 Oral Exam Question Samplers	Bloom's taxonomy of skills required	B.O.A.R thinking frame	Explanation of B.O.A.R	Examples of using B.O.A.R	Rationale of B.O.A.R
1.	Would you enjoy a certain activity? Why or why not? *or* Would you choose a certain career/ sport/ course? Why or why not? *Or* What is your opinion about a social occurrence or general observation?	*Knowledge* – recalling, identifying and describing differing situations and contexts	"**Reason**"	• Students make links to experiences, values and preferences to provide reasons for their choices, with accompanying examples. • The key word for students to remember this frame is "Because". • The big idea is "Personal Value". • Students are taught to keep pushing for the next "because"; I do *because* I think, *because* I believe. They should finally explain their personal value/belief which motivates their thoughts that turn to fruition in their actions. • It is important to note that students are prompted to verbalise their reasons and arrive at their own base values and not anybody else'.	• Example: To a question such as "Do you enjoy sports?", students may answer: • Yes, they play sports because they love the adrenaline rush of achieving at competitions ***(action)*** • which is because they take pride in overcoming challenges and reaching their goals ***(thought)*** • That is because they believe in the spirit of excellence and endurance ***(personal value).*** Students may opt to say: • No, I do not enjoy sports and proceed to provide the reasons for their action, thought and personal value before moving to "I would rather" or "Instead of this"	• Students tend to provide superficial answers to why they choose a certain course of action without delving deep into their belief systems • Explaining their personal value lends depth to the conversation by showing the examiner the steering compass of the candidate and is a good springboard to discuss new ideas such as an alternative activity they would enjoy (see example under "Alternatives")
		Synthesis – forming/ creating an innovative and unique "product" or a combination of ideas or thoughts	"**Alternatives**"	• Students must proffer another option on top of the item or activity given in the question. This alternative option is usually linked to their personal value. • Key phrases to prompt thinking are: "I would also consider", "On top of this", "Besides this", • Big idea is "What else?" • The rationale of this thinking frame is to help students see that in life, there is hardly a one-size-fits-all choice as humans and issues are multi-faceted and they can open their minds to explore alternatives. • Students are also encouraged to speak their mind if they do not enjoy the said activity and go on to describe what they really would enjoy. • Their key words are: "I would rather", "Instead of this" • They should offer more than one alternative activity in this case.	• Example: To the question "Do you enjoy sports?", after "Reason", students may proceed to give 'Alternatives' based on their personal value (spirit of excellence and endurance): • On top of sports, they also enjoy chess as it is mentally stimulating, • It takes hours to plot a seamless game and years of practice to perfect the game • training and realising the spirit of excellence and endurance • Students may opt to say: • No, I do not enjoy sports and proceed to provide the reasons for their action, thought and personal value before moving to 'I would rather' or 'Instead of this, I would'	• Most students would not go further to suggest an alternative activity besides sports • Thus, the use of "Alternatives" ensures the birth of a new idea • Where students opt to start with "Instead of this", they should use their personal value to explain two activities they would enjoy and that would be a new idea too.

2.	What are some causes / effects / problems / solutions / advantages / disadvantages / methods / incentives / disincentives of a certain situation?	*Analysis* – identifying motives, surfacing underlying ideas and intentions, breaking down an issue to exemplify its relation to the large picture	"**Opposites**" *(main)* and "Reason"	• Students automatically think the antonym of a given noun, the flip side of the coin: • Problem ⇔ Solution • Cause ⇔ Effect • Pros ⇔ Cons • Measures ⇔ Challenges • Incentives ⇔ Disincentives • In "Opposites", students answer what is asked and then offer the opposite • The frame that requires more explicit teaching and practice is Measures ⇔ Challenges. When students are asked "What are some ways to raise money for charity?" (1128/04, 2013), they first suggest at least 2 methods and then think of the obstacles that confront 1 of the methods • The rationale of "Opposites" is to help students see the interconnectedness of ideas and the mutual influence of forces; complementary or conflicting.	• Example: 'What are some incentives to help people recycle more?' • Students may answer: • Monetary incentives, games and quizzes • They go on to discuss the opposite, which is disincentives of recycling in this case: the lack of recycling bins, the lack of collective effort (the inaction of others that undo the work of recyclers) • Students are encouraged to think of the reason for these disincentives e.g., The NIMBY syndrome (utilising the sub-frame 'Reason'), • They then toggle back to incentives to tackle the new set of problems they have identified (utilising "Opposites" again): increasing awareness, providing education to correct attitudes etc.	• When told to discuss problems, most students would offer 2 to 3 problems without going into solutions. • When asked about solutions to an issue, even lesser would think of the problems related to these solutions • Being able to offer the opposite situation helps to create new ideas for the interaction • Students are able to offer double new ideas when they toggle back and forth the 'Opposites' frame (see example) • Incentives ➔ disincentives ➔ new incentives
3.	To what extent do you agree with a statement?	*Evaluation* – making value decision on issues of concern or duty, solving contradictions and controversies, developing perspectives, opinions, judgments and making decisions	"**Balance**" *(main)* and 'Reason'	• Students are trained to give a balanced answer by explaining both Yes and No • The big question to bear in mind is: "In what situation is it not wholly true/ not the sole factor?" • The two more common factors students should consider are "when" and "who" • Students are encouraged to go with their leanings and explain the position they are more inclined to. • Then they have to push to think of situations when their position may not apply • Keywords are "to a large / small extent", "on the other hand", "however"	• Example: "Dancing is the best way of getting and staying fit. How far do you agree with this statement?" (1190/04, 2015) • Students can take the position of yes; it is the best way and give reasons such as people who love music or possess good coordination skills would enjoy dancing which greatly motivates them in making it a regular routine which aids in getting and staying fit. • However, people who are not music lovers or prefer exercise that target a certain part of the body or competitive games etc would find other forms of exercise more effective.	• In a hurry to express their views, most students do not stop to think of when a statement may not be true. They explain their position with examples and contentedly close the case. • However, they neglect the fact that the question wants to know 'how much' they agree with a statement implies that there is room for 'the other side of the story'

Appendix B

Extract of Worksheet given to students during the Instruction Stage

B.O.A.R Thinking Skills Notes Page

BALANCE

1. Question: *e.g., How far do you think it is the responsibility of every citizen to keep themselves as fit as they can? (1128/2013)*

Yes:

- *It is each citizen's job because each one is primarily responsible for their own health (Reason).*
  - *We should keep ourselves fit so that we can go about our daily duties such as school, work and play.*
  - *Everyone should keep fit by exercising regularly (Insert personal examples).*
  - *and watching their diet by exercising self-control (Insert personal examples).*
- *Therefore, I believe it is mostly the citizen's responsibility to keep themselves fit as it is basic self-responsibility (Personal Value).*

It is important to guide students to distinguish between balance and opposite. In this case, the 'No' stand is not that the citizen should not take responsibility for their own fitness, it is to explore *who else* can also be responsible for them.

No:

- *However, it takes a village to raise a child. Besides the citizen, other parties such as parents and the school can contribute to an individual's fitness (New Idea).*
  - *Parents play an important role in a young person's fitness.*
    - *Parents can cook nutritious meals at home and monitor the food intake of their children.*
    - *They should also be good role models and avoid fast foods or overeating so that their children can pick up healthy eating habits.*
  - *The school helps students to stay fit by*
    - *conducting PE lessons, CCAs especially sports and uniformed groups and*
    - *various sports meets such as the Cross Country and Swimming Carnival. (Insert personal examples).*
- *Therefore, although it is primarily the responsibility of the citizen to keep themselves fit, others around them can contribute to their fitness.*

OPPOSITES

5. Question: *e.g., What measures do you think can be taken to discourage people from jaywalking? (1128/2014)*

Ways:

- *There are several measures to discourage people from jaywalking:*
  - *more frequent policing*
  - *heavier punishments (insert details)*
  - *for students, assembly talks and videos about the consequences of jaywalking (insert personal examples)*

Here we guide students to do a 'double opposite':
Measures → Challenge = Opposite 1
Challenge → Solution = Opposite 2

Challenges: (Identify one challenge to any one of the measures propose)

- *However, not everyone will take the assembly talk seriously. Most students don't think accidents would happen to themselves and therefore they often switch off during such assembly talks from the Principal or the police department. (New Idea 1)*

(Proceed to Identify one solution to the challenge propose)

- *What schools can do is to invite someone who has really been injured from jaywalking to present the talk or to interact with the students to share his story with them. Coming face-to-face with a person in real-life will convince the students better.*
- *The school can also implement a system to correct the behaviour of the jaywalking student. Those caught jaywalking should be made road marshals with the school prefects to guide road-users and direct traffic before and after school hours (insert details). (New Idea 2)*

ALTERNATIVES

9. Question: *e.g., Do you enjoy doing charity work? (1128/2013)*

Big idea: What else?

- *Yes, I enjoy doing charity work because I love helping people. I think people are very important and their welfare should be taken care of (Reason - Personal Value).*
- *I have participated in a few community service projects such as ... (Insert personal examples)*
- *On top of charity work, there are other ways to help the society. (New Idea)*
  - *For example, my friends and I play soccer with a group of boys in my neighbourhood every weekend. They are from less privileged households and their parents are often not at home. As we all love soccer, we have fun playing together and after that, we often sit down to have drinks at the coffee shop. Recently, my friends and I have started teaching them some schoolwork and we feel happy that we can help them. Even though we can't help them financially, at least we can improve their knowledge. (Link from Personal Value).*

Students only need to provide one alternative to the suggested activity along the same theme, in this case, helping others. It is usually easy to make links from their personal value to suggest other activities that result from their belief.

REASON

13. Question: *e.g., Can you imagine being as active as the people in the picture when you are old? Why, or why not? (1128/2015)*

Actions → Thought patterns → Personal Value:

- *Yes, I can imagine myself to be as active as the people in the picture because I love sports (Reason). I am in the Rock-Climbing Club and I have practices three times a week... (insert personal examples) [Actions]*
- *I enjoy training because I believe that daily exercise routine will make me stronger and better in my techniques. That will help me clock better timings in my competitions to beat my opponents [Thought patterns]*
- *Because I believe discipline and hard work is the key to success. [Personal Value]*
- *So therefore, when I am old, I would still want to be fit and healthy so I can enjoy a long life and get to do all that I like. I believe that after school, I will keep up a regular exercise routine by going to the gym and when I have children, I will bring them on runs with me and also teach them rock climbing so that we can all have fun exercising and playing sports. I would want them to be disciplined in keeping fit so that they can be strong and healthy. (Link from Personal Value)*
- *In fact, I believe that on top of exercising like the people in the picture, I would lead others to stay fit so I may open a Keep-fit club where I teach the older people to keep up an exercise regime. We may also go on fishing and hiking trips to keep an active lifestyle. (New Idea -Alternative - Link from Personal Value)*

Here, we guide students to trace their reasons to a personal value:

Actions → Thought patterns → Personal Value

Then they create a new idea by suggesting other activities that result from their personal value:

Personal Value → Alternative