

Use of Visible Thinking routines to generate relevant points for expository writing

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Abstract

The English language syllabus (Curriculum Planning and Development Division [CPDD], 2008) outlines the teaching of writing as having three stages – the generation and selection of ideas, development and organisation of ideas, and review, revision and editing. This study focuses on the first stage – the generation and selection of ideas – as this is a crucial stage which determines the extent to which the next two stages can be effectively executed. We investigate the effectiveness of Visible Thinking routines in enabling our Secondary 3 Express students generate and select relevant ideas for expository writing.

Introduction

The syllabus (CPDD, 2008) recommends that students are taught how to generate ideas appropriate to any text type using strategies such as brainstorming, asking questions pertaining to the topic and context, and using visual techniques such as concept maps. This is aligned with one of the desired learning outcomes of the syllabus, for students to “develop, organise and express ideas coherently and cohesively in writing and representing for a variety of purposes, audiences, contexts and cultures” (CPDD, 2008, p. 58).

This study is an extension of a cluster schools’ project in 2016, where a team of teachers from five secondary schools¹ identified the pre-writing stage as a common learning gap for our students. It was observed that students largely ignore this critical step due to factors of time and convenience. As a result, students struggle to present and elaborate on ideas in their essays that are significant and to meet the demands of the question. In addition, as students pay cursory attention to the planning stage, their subsequent essays may not consider the links between the ideas presented, and how those ideas may be perceived from other points of view.

The process of generating and selecting ideas becomes more challenging for the students as they encounter more complex text types. For example, the process of generating and selecting ideas for the personal recount text type is accessible to the students as they can retell parts of their own life experiences. In contrast, the exposition text type requires the students to be more aware of current affairs and topical issues like healthcare and the environment, even as they relate these to their

¹ English department key personnel from East View, Ngee Ann, Pasir Ris, St Hilda’s and Tampines Secondary Schools collaborated in 2016 as part of the E6 EL (Secondary) Cluster Support Group initiative.

personal experiences. At the upper secondary level, expository writing is a critical skill for the students to acquire.

Literature Review

Englert, Raphael, Anderson, Anthony, and Stevens (1991) state that to develop expository writing abilities, students need instruction in the process of writing, and in the structures that underlie well-formed texts. Based on research on writing and the routines used by good writers, researchers like Salmon (2016) have suggested routines that could be taught to students to improve writing. More importantly, these routines should inform teachers of what their students are thinking. Salmon (2016) points out that “[w]hen teachers know how children think, they can have better conversations and scaffold their thinking to a higher level” (p. 15).

Thinking routines are intended to “support and structure students’ thinking. The steps of the routine act as natural scaffolds that can lead students’ thinking to higher and more sophisticated levels” (Ritchhart, Morrison, & Church, 2011, p. 47). As teachers employ the routines, they are able to gain insight into the thinking done by the students, and engage students in conversations that extend and add depth to their ideas. Collins, Brown, and Holum (1991) and Dajani (2016) write about how Visible Thinking routines can help teachers to externalise students’ thoughts through oral or written forms like pair discussion and mind maps. This is helpful at the pre-writing stage in demystifying what these thoughts are and how they come about. Teachers can then seek to clarify these thoughts and help students in concretising student output into points for writing.

Visible Thinking (VT) has been chosen as a facilitation tool that aids the process for this study, firstly, for the teacher to engage and train students, and secondly, for students to internalise and hone the way they think “to the extent that students can develop a greater awareness of thinking processes, [and] they become more independent learners capable of directing and managing their own cognitive actions” (Ritchhart et al., 2011, p. 22). This study proposes that students can also independently rely on these routines to brainstorm and “select relevantly from the ideas generated” (CPDD, 2008).

The choice of expository writing is based on the kind of writing tasks set at the Secondary 3 level. Expository writing, specifically the discursive and argumentative text types, is an extension to the personal expository writing done during the lower secondary years.

At lower secondary, students are first introduced to personal expository writing, where they look at a subject matter or elaborate on a point from a personal angle. At Secondary 3, students are asked to broaden their perspectives, and engage in topics or issues by explaining or providing reasons. This is

Step	Action
Generate	by listing ideas and initial thoughts that come to mind when you think about this topic or issue.
Sort	your ideas according to how central or tangential they are. Place central ideas near the centre and more tangential ideas toward the outside of the page.
Connect	your ideas by drawing connecting lines between the ideas that have something in common. Explain and write on the line in a short sentence how the ideas are connected.
Elaborate	on any of the ideas or thoughts you have written so far by adding new ideas that expand, extend, or add to your initial ideas.

Figure 1: The GSCE routine outlined by Ritchhart et al., 2011

something that does not come naturally for students, and they need guidance in generating and selecting ideas during the pre-writing stage. The key VT routine employed to aid the guidance is 'Generate, Sort, Connect, Elaborate' (GSCE), originally a tool used to map understanding in the form of a concept map.

According to Ritchhart et al. (2011), concept maps like GSCE “help us to activate our knowledge of a topic and then connect those ideas in a meaningful way [... and] can help to solidify one’s thinking and understanding as well as to reveal that thinking to others” (p. 125). This is one way in which GSCE is suitable for this study. With students mapping their ideas, they are able to demonstrate the connections between ideas and how these develop. However, the study also adapts the routine to suit the process of planning for an essay, and more importantly, as a way of promoting thinking. This is reinforced by Ritchhart et al. (2011): “Teachers at this stage [...] sometimes find that they modify and adapt the routines slightly to better fit their needs and objectives” (p. 266).

Methodology

This study observed 80 Secondary 3 Express students who had been banded into high performing, and mixed performing (consisting of mid- and low performing students) groups, taught in three groups by three different teachers. The high performing students were grouped separately as they had performed better than the other students in the study. The rest were banded in two mixed groups as there was little differentiation between the mid- and low performing students. The mid- and low performing students had strengths and weaknesses in different areas.

The grouping for the study is as follows.

Student profile	Number of students	Number of groups
High performing learners	28	1
Mixed performing learners	49	2 (Mid = 29; Low = 20)

A total of 77 questionnaires were administered at the beginning and end of the study. These consisted of the same items, and provided data on student perceptions of their understanding of the discursive expository sub-genre.

The study spanned three cycles and a theme was covered in each cycle. Students went through the following process.

- In order to activate their schema, students were provided a compiled resource of stimuli like video links and past years’ oral communication pictures, reading articles and a set question.
- The stimuli and articles served to enrich students’ content knowledge on the given themes, and the main activity revolved around the set question.
- The students were brought through the GSCE routine with the set question.

With each cycle, the process was refined. The flowchart below demonstrates how the steps were streamlined, after considering teacher and student feedback. The main development for this study was the adaptation of the GSCE routine. After Cycle 1, it was decided that the routine could be articulated better. Hence, the term uGSCE was devised, with each step explained and exemplified. The insertion ‘u’ is meant to stand for ‘unpack’, that is, for the students to demonstrate their understanding of any given question. Unpacking a question involves the students knowing the nature of the text type and identifying and understanding keywords.

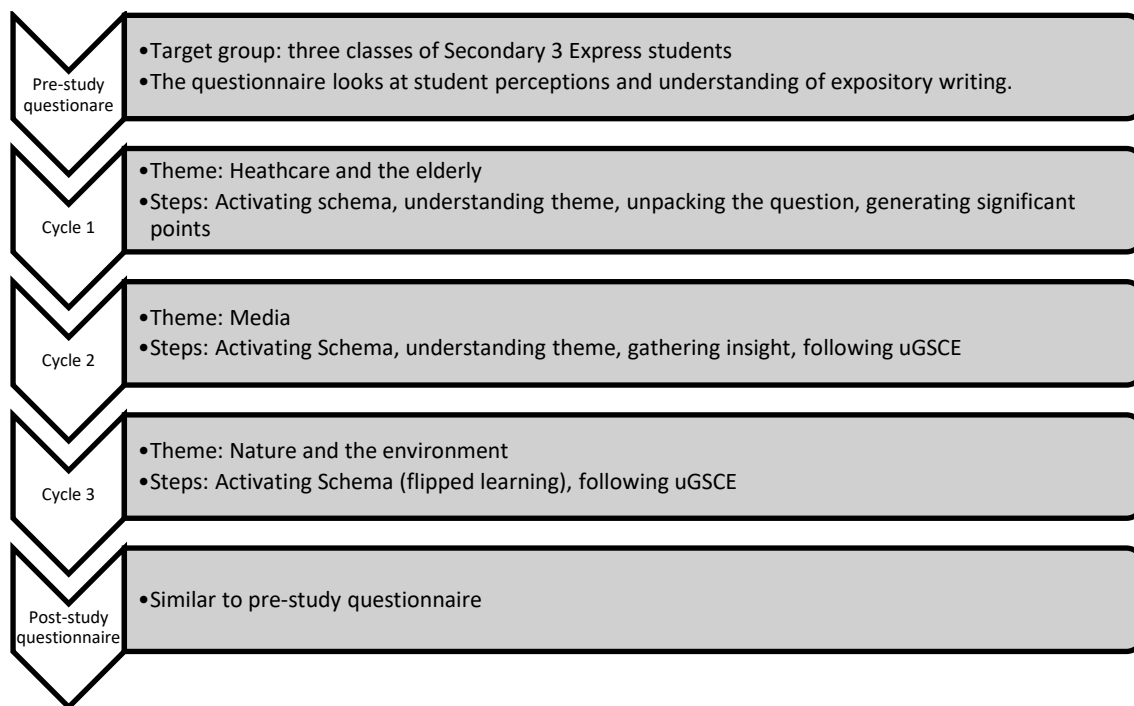


Figure 2: Flowchart of the pre-study questionnaire, lesson cycles and post-study questionnaire

The GSCE routine outlined by Ritchhart et al. (2011) is essentially a concept mapping tool. The team adapted it into a process that would help with the generation and selection of ideas. After refinements with each cycle, the routine now takes this form.

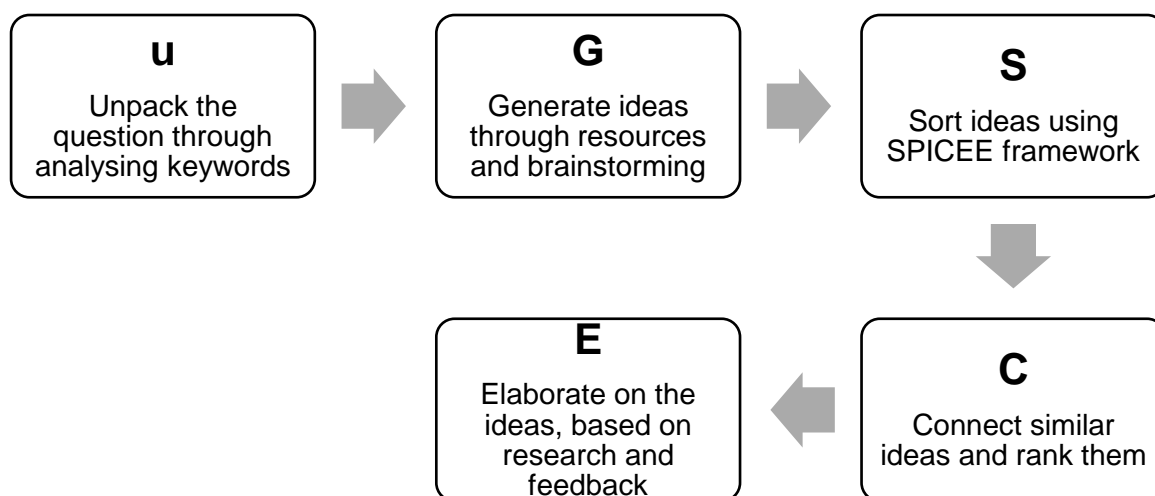


Figure 3: The revised uGSCE routine

For the second cycle, the team decided to adapt and integrate ways to help students with the process:

- When generating ideas, students were encouraged to think of ideas which did not only pertain to their immediate context of self, friends and family, but also that of their community and the world at large, and
- A sorting framework (SPICEE) was used to guide students who were not able to think of their own way to categorise their ideas. SPICEE is an acronym for the various aspects that students could consider: Social, Physical, Intellectual, Cultural, Emotional, Economic.

The uGSCE routine was made accessible to students using guiding cards (see the Appendix). The set of five cards brings students through the steps, by suggesting actions students can take or questions

they can answer. It is important to note that the cards are neither didactic nor exhaustive; they are to be used as a guide to help students think through the pre-writing stage.

Data collection

A Pre-Study Questionnaire was administered to all students who participated in this study. It was carried out to gather the students' perceptions and understanding of expository writing prior to the implementation of the three cycles of the planned instruction. The Post-Study Questionnaire, which was similar to the Pre-Study Questionnaire, was administered at the end of the study in Term 4 Week 8. It was designed to gather the students' perceptions and understanding of expository writing after three cycles of implementation.

Out of the 10 questions in the questionnaire, we chose five questions that were critical to our analysis of the impact of the treatment. These questions gathered information on the students' grasp of the routine in terms of how far they felt it enabled them to generate a list of ideas freely, as well as select and extend ideas. In addition, mind maps produced by five student representatives from the three experiment groups over the course of the three cycles were analysed based on the steps of the uGSCE approach.

Student and teacher interviews were also conducted at the end of the three cycles to gain a deeper understanding of learner and teacher perceptions of the uGSCE routine. The analysis of the student reflections helped to establish if they were able to employ the routine effectively as a thinking framework. The analysis of the teachers' interview responses helped to explain the effectiveness of the adapted routine as a facilitation tool. It also helped to cover gaps in the total picture not explained by other data, gaps such as how teachers were able to provide feedback to students as part of the process and whether students were able to internalize the uGSCE routine for long-term use as a thinking framework.

Results

The five questions from the questionnaire that were analysed, and the graphs of the collated data, are given below.

Q1: Do you enjoy writing expository essays?

Q2: Can you generate a list of ideas quickly and freely?

Q3: Do you discuss your ideas with your friends?

Q4: Do you organise or categorise your ideas after generating a list of ideas?

Q5: Do you rank your ideas after generating a list of ideas?

From the data, we gathered that, though the high performing group registered improvements for all five items, the results were positive for the mixed performing learner groups for three items. Out of the 49 students in the mixed performing group, 17 more students (a 35% increase) said in the post-writing survey they discussed their ideas with their friends (Q3), indicating that they adhered to the process, and could potentially benefit from the collaboration. In addition, the group registered a 25% increase (12 students) in the number who organised or categorised, and ranked their ideas (Q5).

It was observed from the mind maps generated by the students that they sorted their ideas, with some connecting similar or linked ideas using drawn lines. In one of the examples, the student determined that her ideas were related in terms of causality, which helped her to explain the main ideas and, subsequently, streamline the flow of her writing. In another sample, the student was able to denote and explain the links between grouped ideas, providing evidence of the student's thinking in examining ideas that were closely related. There was another sample of how a student generated,

organised, and subsequently ranked ideas according to the various aspects of SPICEE. With a structure guiding the students, they gained clarity on what was meant by developing their ideas.

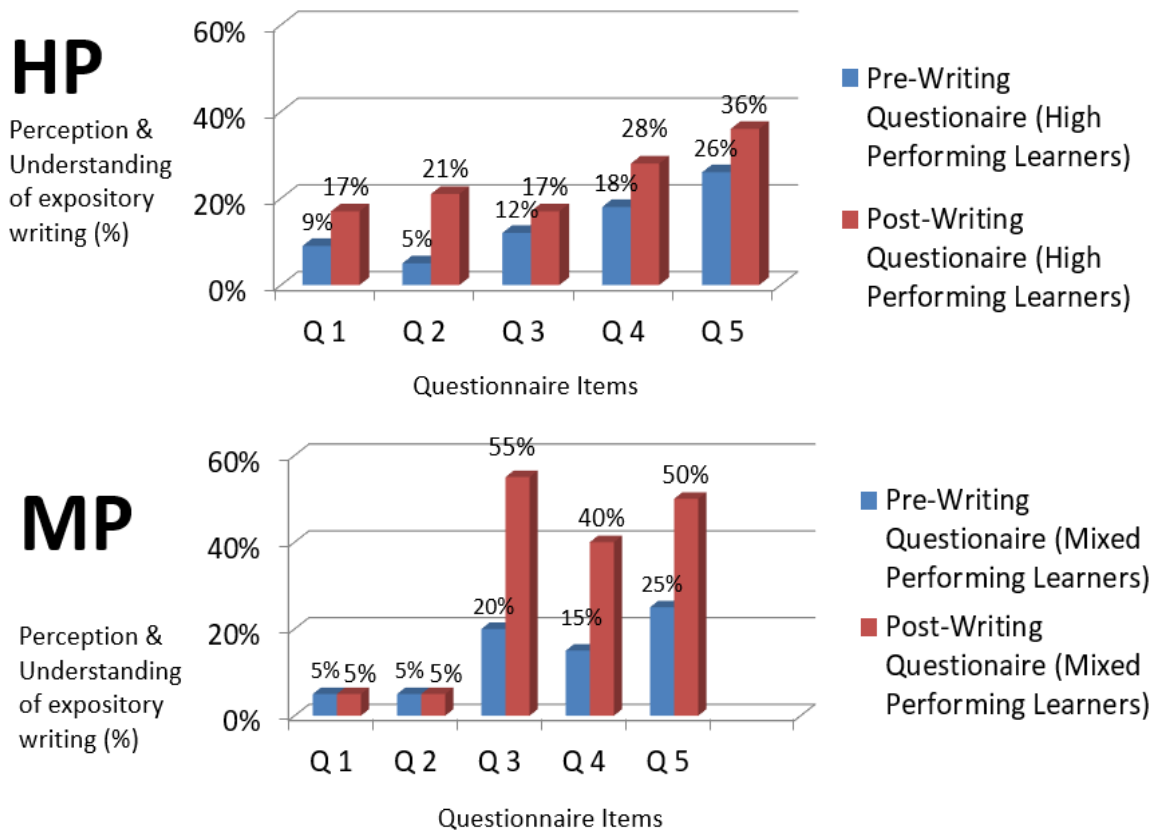


Figure 4: Table comparing data collected from both questionnaires

In interviews with the students, they reported that they were able to connect similar ideas and this helped them expand the main ideas and decrease the occurrence of repetition or duplication of ideas. From the pool of similar ideas, a main idea was distilled and other ideas served to augment the former. Students stated that the routines helped them.

With uGSCE, I am able to think more in depth about the question and come out with more ideas relating to the topic.

VT strategy is indeed very helpful as it guides me to generate more ideas when I am writing my essays. I kept asking myself the 'Why' questions. Thus, enabling me to elaborate and expand more on my points.

With uGSCE, I am now able to have a more clearer thought in a sense that the way I plan my essays is more organised.

These positive responses were reflected in the quantitative results, where students reported positive results in the post-study questionnaire in the area of organising or categorising their ideas (a 10% improvement for high performing learners, and a 25% improvement for mixed performing learners).

The researchers recognise that SPICEE is not the only way to categorise ideas, and any way of categorising ideas has to be meaningful to the learners and task. As students become more familiar with the process of categorising ideas, they may develop their own ways or even organically form ones which best fit the ideas they generate.

Teachers who taught the three groups reported improvements in the way the students approached the writing task.

The strategy is useful in unpacking the question and generating a list of ideas. Some students consciously ranked their points and drew substantial connections between points.

By the end of the cycle, I would say that students were able to think more broadly when generating ideas and consider some of the relationships between each of these concepts. However, adapting these ideas to suit the needs of different questions still proved to be challenging for many students [...] As a whole, the strategy was most useful in helping students to unpack essay questions and generate ideas for their responses. It has helped students become a little more flexible and aware about their thinking process.

What struck me from this whole process was that it challenged the assumption that we knew who we taught. The written artefacts generated by the students revealed their thinking process, and those proved valuable opportunities for clarification and extension. The routine was rigorous, and trying for many students and even teachers, but it concretised the step of planning before writing. Before, students were flippant when it came to planning but having seen the value of how it could enhance their subsequent writing, it reduced the resistance.

Discussion

From the data, it is evident that the use of the uGSCE routine results in the following outcomes:

(i) Generation and development of ideas

Most students found that they were able to produce an initial list of ideas associated with the topic quickly and freely. Furthermore, the use of the routine facilitated the elaboration of points in a way that was relevant and met the demands of the question.

(ii) Monitoring of learning

The entire uGSCE routine provided opportunities for the students to keep track of their own learning as documentation was key in Visible Thinking. The mapping of ideas and their development was a useful way of tracking learning, in that the students were able to trace their flow of ideas and were aware of the way and extent to which each idea was developed. For the teachers, this gave insight into student learning, equipping the teachers with the necessary material and understanding of the students' thinking which could be used for subsequent lessons (to clarify or extend).

(iii) Organisation of ideas

The learners were able to use the routine to organise their thinking and ideas for an expository question, rank their ideas and develop their maps as a structure for discussion.

(iv) Evaluation of ideas

In addition, the routine enabled the learners to examine their ideas and improve the quality of their ideas. In giving and receiving different feedback from their peers and teachers, the students were prompted to seek, receive and give feedback for the pre-planning stage of writing. This developed into a discourse where ideas were developed, challenged and affirmed.

Conclusion

From the questionnaires, it was revealed that in terms of enjoyment in writing discursive essays, the mixed performing learners did not register any change in perception with the use of the uGSCE routine. However, the high performing learners registered an 8% increase. The study did not set out to

measure enjoyment as part of our research question, but an affective quality in learning could be an important determinant in students using the routine in the long run.

Another area that was mentioned in the data (but not something that the study set out to measure) was metacognitive awareness. As noted earlier, Visible Thinking routines are not just activities, but a vehicle to promote thinking. With the constant employment of the routine, it is hoped that the students' thinking is sharpened. Such a metacognitive approach would also allow students to consider the 'big picture' – the relationships between various ideas that take into account multiple perspectives relevant to the question.

There are a number of suggestions that were raised at the end of the study, which could improve the efficacy of the routine.

- There could be refinements to the guidance provided on the uGSCCE cards, in particular under "Sort". The SPICEE categorisation does have its limitations and there are possibly other aspects that ideas could be categorised under.
- The use of ICT as an enabling tool could be further explored. During the course of the study, there was an attempt for one of the groups to harness ICT in the use of a Google form to guide students through the routine. There was positive feedback from the students.
- The use of the routine could be extended to other kinds of expository writing, namely personal and argumentative expository writing.

It would be meaningful if the routine could reach a stage where students are able to co-construct their learning. Some possibilities would be for them to take turns to provide reading or viewing materials for their classmates to be better informed about a theme which they have decided on, come up with categories which they can use to sort their ideas, or develop a set of rubrics to discern the 'better' ideas which the students can go on to develop. This process promotes student centricity and ownership, which will engage and reduce the resistance from students.

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Appendix: Guiding cards for the uGCE routine (adapted from the GCE routine outlined by Ritchhart et al., 2011)

Unpack

1 Question types - Are you providing:

Reasons? – Explain why young people in Singapore are reluctant to speak in public.

Interpretations? – What is your idea of beauty?

Solutions? – What can be done to encourage more people to visit nature parks?

Evaluations? – What are the advantages and disadvantages of technology?

2 Identifying Keywords
Which word/phrase is critical to the topic?

3 Context of the question
What is its **theme**?

.....

Who are the **people involved**?

.....

Is it specific to **Singapore**?

Is it referring to a specific period of **time**? (e.g. past, present or future)

Examples *Reasons* *Thesaurus*

Create / Develop / Gather / Collect / Expand / Interpret — **G**ENERATE — *Effects + Causes*

Search Google or newspaper and magazine articles

Have you searched for relevant resources?

Have you created a word list relevant to the theme?

Have you created a quick list of the ideas?

Organise your ideas into to **categories**.

SORT

Example:
Social
Physical
Intellectual
Character
Emotional
Economic

Link ideas that share a **connection** in the respective categories that you have chosen.

CONNECT

Effect 4

Reason 2

3

4 Long Term

1

Solution

2

1

3

Have you **ranked** your points according to their **importance** and **scope for discussion**?

ELABORATE

Have you beefed up your points?