

## Speaking and writing with a flipped reading programme

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### Abstract

This paper reports on the effects of a flipped English Language reading programme on student learning. Students generally lack content and vocabulary for spoken interactions and writing. An existing reading programme was 'flipped' to provide content and vocabulary support for speaking and writing activities. Speaking and writing skills were then taught in class using the reading materials (news articles) as content. However, it had previously been a challenge to get the students to read and complete the pre-lesson worksheets before coming to class. Thus, tablets were introduced as a means of over-coming some of the challenges in engaging the students in preparing for the flipped classroom and during the flipped lessons.

### Introduction

#### *Background*

Prior to 2015, every Monday, the Lower Secondary students in the school read the local newspaper, *The Straits Times*, as part of the Reading Programme. There was a lack of a follow-up to the Reading Programme and of integration of the Reading Programme into supporting the teaching of language skills due to time constraints. Thus, the team decided to flip the Reading Programme and have the students complete the worksheets as homework to free up curriculum time for teachers to do higher forms of cognitive work during class time. These higher forms of cognitive activities were designed to support the different language skills e.g. Speaking, Reading, Writing, Listening, Grammar and Vocabulary.

### Literature Review

#### *The Flipped Classroom*

Brame (n.d.) explained that, in a flipped classroom, students gain their first exposure to new material outside of class and then use class time to do the harder work of assimilating that knowledge. In terms of Bloom's revised taxonomy (Anderson, Krathwohl, & Bloom, 2001), this means that students are doing the lower levels of cognitive work (gaining knowledge and comprehension) outside of class and focusing on the higher forms of cognitive work (application, analysis, synthesis or evaluation) in class where they have the support of their peers and teacher. The flipped classroom started in secondary education in the classrooms of two high school chem-

istry teachers, Jonathan Bergmann and Aaron Sams (Bergmann & Sams, 2012).

### *Models of a Flipped Classroom*

Walvoord, and Anderson, (1998) promoted the use of the flipped classroom approach in their book *Effective Grading*. They proposed a model in which students gain *first-exposure learning* prior to class and focus on the *processing* part of learning (synthesizing, analysing, problem-solving, etc.) in class. To ensure that students do the preparation necessary for productive class time, Walvoord and Anderson (1998) proposed an assignment-based model in which students produce work (writing, problems, etc.) prior to class. The students receive productive feedback through the processing activities that occur during class, reducing the need for the instructor to provide extensive written feedback on the students' work.

Lage, Platt, and Treglia (2000) described a similar approach as 'the inverted classroom', and reported its application in an introductory economics course in 2000. Lage et al. initiated their experiment in response to the observation that the traditional lecture format was incompatible with some learning styles. To make their course more compatible with their students' varied learning styles, they designed an inverted classroom in which they provided students with a variety of tools to gain first exposure to material outside of class: textbook readings, lecture videos, PowerPoint presentations with voice-over, and printable PowerPoint slides. To help ensure student preparation for class, students were expected to complete worksheets that were periodically but randomly collected and graded. Class time was then spent on activities that encouraged students to process and apply economic principles, ranging from mini-lectures in response to students' questions to economic experiments to small group discussions of application problems.

Crouch and Mazur (2001) described a modified form of the flipped classroom that they term peer instruction. The peer instruction (PI) model requires that students gain first exposure prior to class, and uses assignments (in this case, quizzes) to help ensure that students come to class prepared. Class time is structured around alternating mini-lectures and conceptual questions. All students must answer the conceptual question, often via 'clickers', or handheld personal response systems, that allow students to answer anonymously and that allow the instructor to see (and display) the class data immediately. If a large section of the class (usually between 30 and 65%) answers incorrectly, then students reconsider the question in small groups while instructors circulate to promote productive discussions. After discussion, students answer the conceptual question again. The instructor provides feedback, explains the correct answer and follows up with related questions if appropriate. The cycle is then repeated with another topic, with each cycle typically taking 13-15 minutes.

### *Benefits of a Flipped Classroom*

Bergmann, Overmeyer, and Willie (2011) found that the flipped classroom helped to develop life-long learners. This is one of the 21<sup>st</sup> century competencies. It also increased students' engagement in the materials and increased interactions between students and the teachers. Bransford, Brown, and Cocking (2000) found that, by providing an opportunity for students to use their new factual knowledge while they had access to immediate feedback from peers and the teacher, the flipped classroom helped students learn to correct misconceptions and organize their new knowledge such that it was more accessible for future use. The flipped classroom was a metacognitive approach to instruction that could help students learn to take control of their own learning by defining goals and monitoring their progress in achieving them.

### *Intervention Model of the Flipped Classroom*

Brame (n.d.) listed four key elements of a flipped classroom. Teachers need to provide an oppor-

tunity for students to gain first exposure prior to class and to provide an incentive for students to prepare for class. Next, teachers need to provide a mechanism to assess student understanding and provide in-class activities that focus on higher level cognitive activities.

In the intervention model, students were assigned multimodal tasks as homework in the flipped classroom. Teachers prepared accompanying worksheets which served to guide students through the multimodal tasks as well as to check that students had prepared for class. There was an in-class activity where students applied their learning from the multimodal tasks. This in-class activity targeted one of the language skills. It was believed that with students completing their worksheets as homework, curriculum time would be freed up for teachers to do higher forms of cognitive work during class time. These higher forms of cognitive activities would support the different language skills e.g. Speaking, Reading, Writing, Listening, Grammar and Vocabulary.

## Methodology

### Research Objectives

One of the objectives of this study was to examine whether, with the use of tablets, there would be a rise in student engagement level in self-directed learning (SDL) when preparing for the flipped classroom and during the flipped lesson. The second objective was to see if students were able to apply the content and vocabulary that they had learnt from the news articles they had read in their speaking and writing activities.

### Sampling

This study investigated a population of students studying in one mainstream secondary school. The sampling frame was a typical secondary school in central Singapore. The sample size was 64 Secondary 2 students (32 boys and 32 girls) from two classes from the high performing stream (Express Stream), taught by two different teachers. The Primary School Leaving Examination (PSLE) T-score for the students was between 188 and 240. The population was chosen based on it being a convenient sampling as intact classes were being used. (Please see Table 1)

Table 1  
Profile of the classes

Class	Males	Females	PSLE T-score	% of completed worksheets	No home computer	Unmotivated Students
Class 1	19	15	181-228	67.6% (23/34)	4	7
Class 2	13	17	192-244	83.3% (25/30)	2	3

Class 1 is the weaker class with a lower PSLE T-score. It is a challenge for most teachers teaching Class 1 to engage seven of the students who are unmotivated, very distracted and not interested in school. Eight students from Class 1 and six students from Class 2 are on the Financial Assistance Scheme. This could explain why more students in Class 1 do not have a home computer and the higher percentage of students not completing worksheets as homework. With the tablets, students without home computers could stay behind after school, borrow the tablets and complete their pre-lesson worksheets for the flipped classroom.

### Intervention Programme

A series of seven flipped lessons were conducted over a period of three consecutive terms. The duration of each lesson was sixty minutes. The schedule is laid out in Table 2.

Table 2  
Flipped Lesson Schedule

Month	Theme	Language Skill(s)	Focus Activity
Jan	Food	Organisational Structure of a Mixed Genre (Exposition + Personal Recount)	Process Writing Describe some of your experiences in food courts and hawker centres. How important are these places in your life as a teenager in Singapore?
Feb	Elderly	Organisational Structure of an exposition using Levels of Response Level 1 – Self Level 2 – Family Level 3 – Community + Government.  Technical Vocabulary	Spoken Interaction – Content-based Question What can Singapore do to prepare for an ageing population?
Mar	Altruism	Use of an anecdote as an introductory technique  Use of anecdotes to support arguments	‘People are selfish by nature.’ Do you agree?
Apr	News	Organisational Structure and linguistic features of a News Report	Alternative Assessment – writing and publishing a news report
Jul	Water Conservation	Organisational Structure of an exposition using Levels of Response  Technical Vocabulary	Spoken Interaction – Opinion-based Question Water conservation is the responsibility of the government. Do you agree?
Jul	Internet Addiction	Organisational Structure of an Impromptu Speech using the two-point format	Spoken Interaction – Opinion-based Question How do you feel about sending Internet-addicted youths to harsh military camps?
Aug	Young and Rude	Use of personal stories to support personal opinions	Spoken Interaction – Opinion-based Question 1. Are today’s young Singaporeans gracious? 2. Do you think it is important for the young to be gracious?

## Instrumentation

To meet the first objective of examining whether, with the use of the tablets, there would be a rise in student engagement level in self-directed learning (SDL) when preparing for the flipped classroom and during the flipped lesson, the following were used:

- Teacher observations (by the English Language Department teachers) during two cycles of Lesson Study (14 July 2015 with Class 1 and 28 July 2015 with Class 2)
- A perception survey administered to 61 students in both classes
- Interview with seven selected students

Profile of the selected students

Student	Class	Learning Ability
1	1	Low
2	1	High
3	1	Low
4	1	Average
5	2	Low
6	2	Average
7	2	High

The interviewees were selected to represent the three learning ability groups: high ability, average ability and low ability. The aim was to compare the responses of the students from the different ability groups to the flipped classroom approach.

To meet the second objective to assess if students were able to apply the content and vocabulary that they had learnt from the flipped classroom in their speaking and writing activities, rubrics were created and used to grade writing assignments. These are presented in Tables 3 and 4 below.

Table 3  
*Rubric Used in Flipped Lessons 2 and 5*

CATEGORY	4/5	3	2	1
Organisational Structure	Content is organised using the Level of Response structure. Each level is well developed using the PEEL/PREP Structure.	Content is organised using the Level of Response structure. At least two levels are well developed using the PEEL/PREP Structure.	Content is organised using the Level of Response structure. At least one level is well developed using the PEEL/PREP Structure.	Content is not organised using any known structure. There is at least one undeveloped paragraph consisting of only one sentence.

CATEGORY	4/5	3	2	1
Vocabulary	The pupil is able to identify and use at least four relevant and appropriate vocabulary items from the reading materials.	The pupil is able to identify and use at least three relevant and appropriate vocabulary items from the reading materials.	The pupil is able to identify and use at least two relevant and appropriate vocabulary items from the reading materials.	The pupil is able to identify and use at least one relevant and appropriate vocabulary item from the reading materials.
Transfer of Content Learning	Content from reading materials is used to support point of view/personal opinion in at least three paragraphs.	Content from reading materials is used to support point of view/personal opinion in at least two paragraphs.	Content from reading materials is used to support point of view/personal opinion in at least one paragraph.	Content from reading materials is not used to support point of view/personal opinion in any paragraph.

Table 4  
*Rubric Used in Flipped Lessons 6 and 7*

CATEGORY	4/5	3	2	1
Organisational Structure	Content is well organised using an argumentative structure.	Content is organised using a somewhat argumentative structure.	Content is organised using another structure other than the argumentative structure.	Content is not organised using any known structure. There is at least one undeveloped paragraph consisting of only one sentence.
Vocabulary	The pupil is able to identify and use at least four relevant and appropriate vocabulary items from the reading materials.	The pupil is able to identify and use at least three relevant and appropriate vocabulary items from the reading materials.	The pupil is able to identify and use at least two relevant and appropriate vocabulary items from the reading materials.	The pupil is able to identify and use at least one relevant and appropriate vocabulary item from the reading materials.
Transfer of Content Learning	Content, especially anecdotes, from the reading materials is cleverly used to support personal opinion.	Content, especially anecdotes, from reading materials is used as an effective introductory technique.	Content, especially anecdotes, from reading materials is used as an introductory technique but the technique may not be effective.	Content, especially anecdotes, from reading materials is not used to support personal opinion at all.

## Results of Study

### Teacher Observations and Feedback

The observing teachers made the following observations and provided the following feedback during the Lesson Study on 28 July with Class 2:

Task 1: Observe whether the students are able to make use of the content from the reading materials

- One group asked for the population of China which could be seen as an attempt to use content from the video/reading materials as facts and supporting evidence.
- Students seemed to have enough content to write about.

Task 2: Observe whether there is a transfer of learning. Are the students able to apply the technical vocabulary which they have learnt?

- During the pair work, some students used appropriate vocabulary for the discussion.
- However, the teacher needed to highlight the choice of words.

Task 3: Observe the engagement level of the students. Are they on task? Try to observe what the quieter students are doing or if there are any students who are losing interest. Are there any reasons for that?

- Engagement level was high as every student was seen to be on task, typing into the tablets.
- Use of the tablets enhanced student engagement level.
- The lesson was more student-centred.
- Students were engaged in keying and posting their responses on Padlet, an online virtual 'bulletin' board.

Task 4: Observe whether the students are able to apply the impromptu speech structures which they have learnt. (Please refer to Appendix 2 for the two-point format and PEEL structure.)

- Students seemed familiar with the two-point format and PEEL Structure but they needed to be reminded to type two separate paragraphs.
- Every pair was able to type quite a well-developed paragraph.

### Perception Survey and Interviews with Students

The seven selected students were asked the following questions:

#### Do you like the Flipped Classroom? Why?

One student in the interview said the flipped classroom approach was a new experience. The other students said flipped lessons were more fun and interesting. This is supported by the following findings from the survey:

Q1. How enjoyable were the flipped classroom lessons, on a scale of 1-4? (4 being most enjoyable and 1 being least enjoyable)

Class	1	2	3	4
Class 1 (31)	2	7	17	5

Class 2 (30)	4	7	16	3
Total (61)%	9.8	23	54.1	13.1

A student in the interview enjoyed the themes or topics, citing the example of the theme on altruism. Students also enjoyed using the tablets. For some of the students, it was their first time holding a tablet and they were really excited. Again, this is supported by the following findings from the survey:

Q5. How far do you agree that the use of the tablets has made lessons more interesting for you?

Class	Very Small Extent	Small Extent	Large Extent	Very Large Extent
Class 1 (31)	3	11	10	7
Class 2 (30)	4	7	13	6
Total (61)	11.5	29.5	37.7	21.3

As shown in the survey results, most of the students agreed that the flipped classroom had helped them improve their English as they had learnt new vocabulary and were able to use some of the new words.

Q4. How useful were the tablets in helping you to learn during lessons? (4 being most useful and 1 being least useful)

Class	1	2	3	4
Class 1 (31)	4	1	16	10
Class 2 (30)	6	10	7	7
Total (61)	16.4	18	37.7	27.9

### **What are some of the strengths of flipped learning? How effective is the flipped classroom?**

Again, the students interviewed cited new topics e.g. altruism as one of the strengths of flipped learning. They had learnt new words and were able to apply the content and vocabulary in their spoken Interaction. With the flipped classroom, the students noticed more opportunities for speaking and oral presentations in class. As a result, they had become more confident in their speech. This is supported by the results of the survey.

Q6. How confident are you now in crafting an essay / impromptu speech, having gone through the whole duration of the flipped classroom approach?

Class	Far Too Little	A Little	Quite A Lot	A Lot
Class 1 (31)	1	10	18	2
Class 2 (30)	4	13	13	0
Total (61)	8.2	37.7	50.8	3.3

Surprisingly, besides the expected strengths of flipped learning, one student mentioned an improvement in attitude. The student learnt values like handing in work punctually and being prepared for lessons.



### Have you benefitted from the use of the tablets? How has it benefitted your learning?

Besides the usual answers like the tablets helped to make lessons interesting and fun, a student mentioned the chance to discuss with a buddy before typing down thoughts and responses. This was because two students shared a tablet. Thus, they could discuss their ideas before keying and posting their responses on Padlet, an online virtual 'bulletin' board. As all discussions were captured on the virtual 'bulletin' board, students could read what others had written. This student read what her best friend and top EL student had written and adapted some of the ideas when recording her own Spoken Interaction as a follow-up activity to the lesson. This comes across most clearly in the following results to the survey:

Q7. Have you benefitted from the series of Flipped Classroom?

Class	Yes	No
Class 1 (31)	30	1
Class 2 (30)	29	1
Total (61)	96.7	3.3

### What is your favourite lesson? Why was it so?

Lesson	Reasons for liking the lesson
Internet Addiction	<ul style="list-style-type: none"><li>• Use of tablets during the lesson</li><li>• Students learning vocabulary that is useful for spoken interaction</li><li>• A theme that students could relate to</li></ul>
Altruism	<ul style="list-style-type: none"><li>• Interesting topic</li><li>• New content to do with people</li></ul>
Water Conservation	<ul style="list-style-type: none"><li>• Sharing of personal stories by teacher</li></ul>

### How else can the flipped lessons be improved?

A student suggested getting students to explain the difficult words instead of the teacher providing the meanings. It was also suggested that teachers might also want to check with students the type of activities for flipped lessons that would be enjoyable. It was also not surprising that one of the suggestions was to have more preparatory worksheets on the news articles since 85.2% of the respondents said the amount of preparation work required for the lessons was just right as shown below:

Q3. The amount of preparation work required for the lessons was ...

Class	Far Too Little	Too Little	Just Right	Too Much
Class 1 (31)	0	2	26	3
Class 2 (30)	0	0	26	4
Total (61)	0	3.3	85.2	11.5

## Discussion

In Chong Boon Secondary, we are hoping the flipped classroom approach can promote Self-directed Learning. Hopefully, students will take ownership of their learning and come to class

prepared. More and more students will be motivated to prepare for lessons and truly embrace the Chong Boon 3Ps Learning Model (Prepare, Participate, and Practise). However, it is a challenge to get our students to come prepared for the flipped lessons.

In lesson 5, the teacher in Class 1 uploaded lesson preparation materials onto Facebook but some students did not have a Facebook account or Internet access at home. As a result, less than ten students came to class prepared for the flipped classroom. As the teacher did not print a hard-copy of the worksheet for the students and some students did not have a printer at home, there were students without worksheets during the lesson.

To counter the problems faced in Lesson 5, the teacher asked the whole class to stay back after school the week before the next flipped lesson. Lesson preparation materials were uploaded onto a student portal (EL-portal) instead of Facebook so that all students could access the materials. The teacher also printed hardcopies of the worksheet for each student. Arrangements were also made for students to borrow the tablets to access the materials to complete their worksheets.

The following table summarises the problems encountered in the flipped classroom in Class 1 and the measures taken to overcome them:

Table 5  
*Some Difficulties in the Flipped Classroom*

Flipped Lesson 5 - Problems encountered	Flipped Lesson 6 – Solutions to the problems
Less than 10 students prepared for the flipped classroom.	Whole class agreed to stay back after school the week before the flipped lesson to complete their pre-lesson worksheet.
Teacher did not print a hard-copy of the worksheet for the students and some students did not have a printer at home.	Teacher printed hardcopies of the worksheet for each student.
Teacher uploaded lesson preparation materials onto Facebook but some students did not have a Facebook account.	Teacher made use of the EL-portal.
Some students did not have Internet access at home.	Teacher arranged for students to stay back after school to borrow tablets to complete their worksheets.

Lesson 6, to a large extent, was able to address the common problems faced in a flipped classroom, mainly the challenge of getting students to complete the lesson preparation prior to class. To motivate the students to prepare prior to class, we introduced the tablets. The use of the tablets was effective in getting students to prepare for the flipped lesson.

This study shows that the structure of the flipped classroom has the following advantages:

- 1) It affords flexibility and allows the teachers to be creative. Teachers can select interesting articles and introduce novel topics like altruism and teen Internet addiction that students can relate to. This increases students' engagement in the materials.

- 2) It flips classroom teaching from teacher-centred to a more pupil-centred classroom. There are more opportunities for speaking activities like Impromptu Speech and group discussions in the classroom. Not only does this increase interactions between students and students, it also increases interactions between students and teachers.
- 3) Following the use of the four key elements of a flipped classroom, there is a more structured approach to homework and this helps save classroom time for higher level cognitive activities to be carried out. In this way, classroom time is more efficiently used. Students are able to use their new factual knowledge during the speaking activities or group discussions. They are able to correct their misconceptions with the immediate feedback from peers and the teacher. They organize their new knowledge to reapply it in the follow-up writing activity after class.

## Conclusions and Implications

The first objective of checking on the effects of tablets on student engagement level in self-directed learning (SDL) when preparing for the flipped classroom and during the flipped lesson was met to a limited extent. In this study, the two classes were taught by two different teachers who were not matched on gender, age or IT savviness. The effect of the use of the tablets on student engagement level at 59% (the total percentages for the Very Large Extent and Large Extent columns in Question 5) is lower than expected and this could be due to the teacher factor.

Question 5: How far do you agree that the use of the tablets has made lessons more interesting for you?

Class	Very Small Extent	Small Extent	Large Extent	Very Large Extent
Class 1 (31)	3	11	10	7
Class 2 (30)	4	7	13	6
Total (61)	11.5	29.5	37.7	21.3

Besides validating the findings on the benefits and strengths of the flipped classroom as stated in the literature review, an interesting finding is the differing responses from the two classes with respect to the use of the tablets. This could be due to the influence of the teacher in each class. Each class had had the same English teacher from Secondary One. Teacher A, who taught Class 1, was 48 years old while Teacher B, who taught Class 2, was 27 years old. Teacher A was not IT savvy while Teacher B championed the use of ICT in the English Language Department. From the responses from the interviewees, the influence of the teachers could be stronger at lower secondary levels. This could be a factor for consideration when deploying teachers to teach lower secondary classes as teachers might influence and affect the likes and dislikes of their young charges.

The students in Class 1 wanted their teacher to print hard copies of the worksheet for them. They complained of difficulty in reading on tablets as the print was too small. They also could not jot down notes on tablets. The class experienced frustration in using tablets due to a poor and slow Internet connection. Some students also forgot their passwords.

In contrast, Class 2 wanted to go paperless. They asked for more flipped lessons with tablets, more online reading and even online research. They even requested for online submission of their assignments. They also asked for more apps to be installed on the tablets.

The following table is a summary of the feedback from the two classes with respect to the use of

the tablets:

Table 6

Feedback from the Two Classes with respect to the Use of the Tablets

Class 1	Class 2
<ul style="list-style-type: none"><li>• Teacher should print hard copies of the worksheet.</li><li>• It was difficult using the tablets (e.g. forgotten passwords, poor Internet connection).</li><li>• It was difficult reading from the tablets as the print was too small.</li><li>• Students could not write notes on the tablets.</li></ul>	<ul style="list-style-type: none"><li>• Students wanted more flipped lessons with tablets.</li><li>• Teacher should assign online articles to read.</li><li>• Students should do more online re-search</li><li>• More apps should be added to tablets.</li><li>• Students should be able to submit work online.</li></ul>

However, the second objective was met to a large extent. During the Lesson Study, teachers observed that the students were able to apply the content and vocabulary acquired from their flipped reading or viewing to their writing or Spoken Interaction. The students' writing showed evidence of the transfer of learning from the content and vocabulary acquired from the flipped reading/viewing of materials. Interviews with the participants also confirmed that the students had benefited from the flipped classrooms in terms of content and vocabulary.

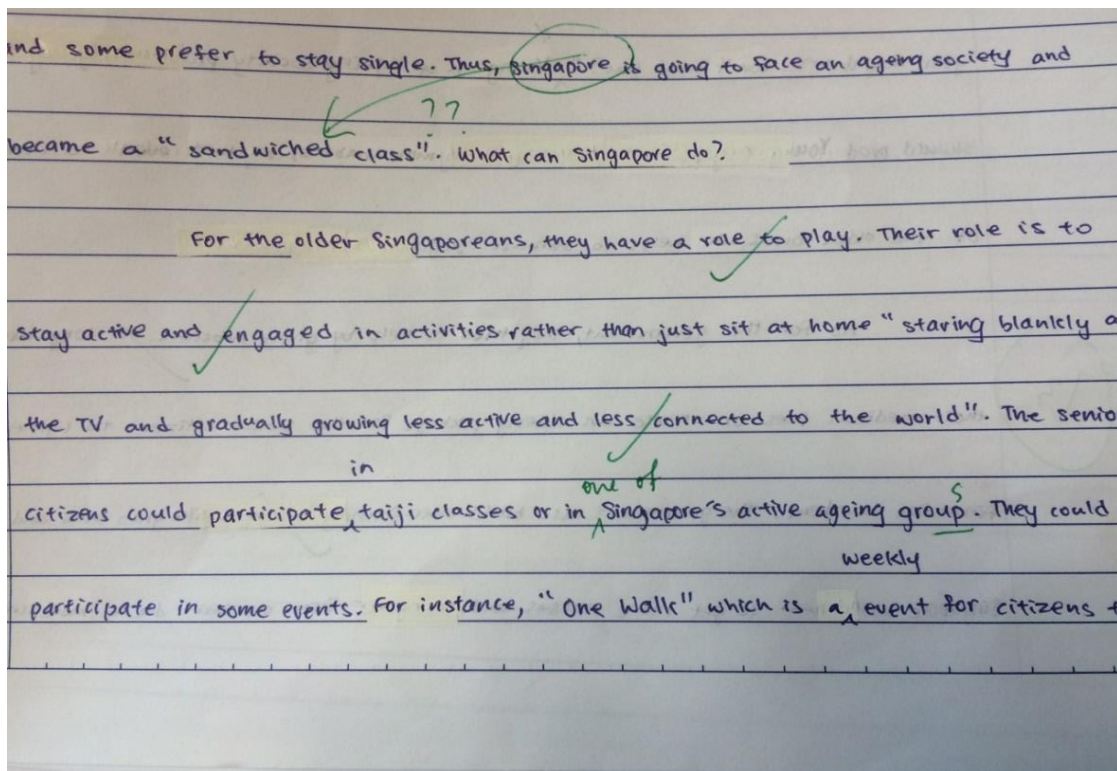


Figure 1. Extract from a student's written work.

Figure 1 shows a sample from flipped lesson 2 on the theme of the elderly. This student was able to use ideas and phrases from the article. The students tried to use the term 'sandwiched class' but there was an incorrect reference to Singapore.

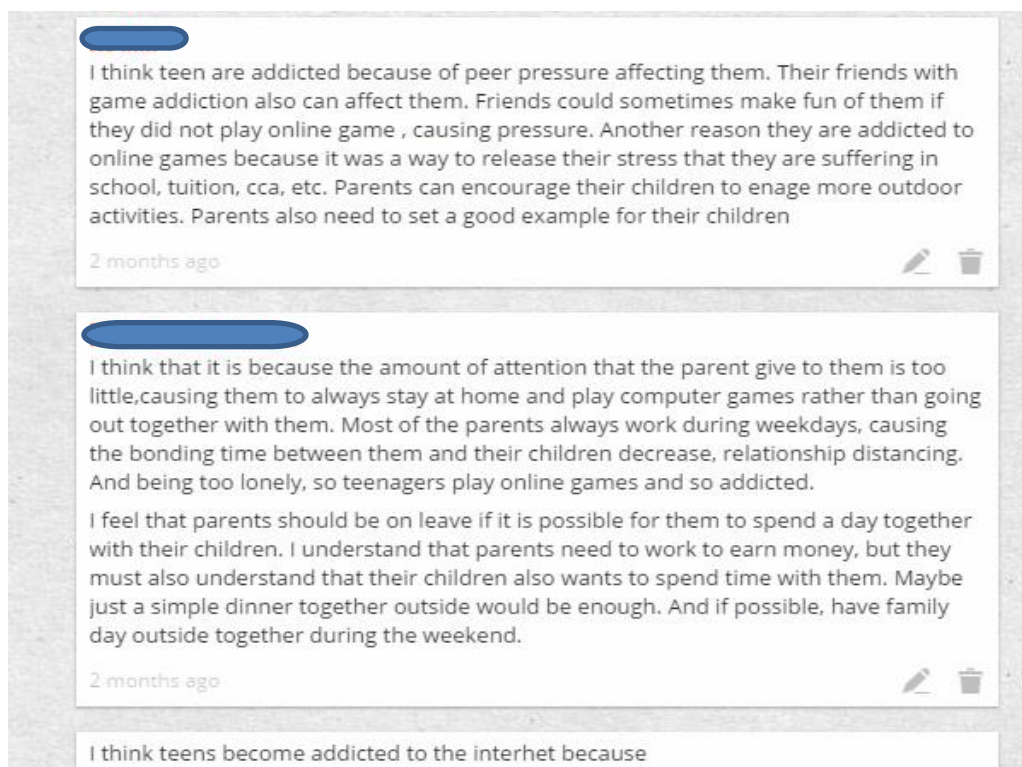


Figure 2. Extract from students' typed responses on Padlet, an online virtual 'bulletin' board.

The Figure 2 text is from flipped lesson 6 on Internet addiction. In that lesson, a pair of students shared one tablet. They typed their responses in real time using Padlet.com, an online virtual 'bulletin' board. Again, the students were able to use ideas from the video and accompanying news articles.

The results from the following two survey questions show that the weaker class benefited more from the flipped classroom and, thus, appreciated the flipped classroom more too. (Refer to Table 1 for class profile.)

Question 6: How confident are you now in crafting an essay / impromptu speech, having gone through the whole duration of the flipped classroom approach?

Class	Far Too Little	A Little	Quite A Lot	A Lot
Class 1 (31)	1	10	18	2
Class 2 (30)	4	13	13	0
Total (61)	8.2	37.7	50.8	3.3

Question 8: Would you want to have more lessons using the flipped classroom approach?

Class	Yes	No
Class 1 (31)	24	7
Class 2 (30)	18	12
Total (61)	68.9	31.1

## Recommendations

The team recommends that the flipped classroom be extended beyond the two experimental

classes, and beyond the Express Stream to the Normal Academic (NA) students. The reason is the NA students, who are weaker, may benefit more from the flipped classroom in terms of content and vocabulary support. The use of the tablets outside class may motivate the NA students to prepare for the flipped classroom. It is also recommended that the same teacher teaches the same stream for research purposes.

The structure of the flipped classroom is student-centred. Students really like the new experiences and interesting topics that they have not come across before, e.g. altruism. They also appreciate topics that they can relate to, e.g. Internet addiction. They like samples that they can refer to and samples help them craft and refine their own work. Students like to be consulted and they want student-centred activities, e.g. ICT-based lessons, group discussions and projects.

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## Appendix 1 – Results of the Flipped Classroom Survey

1. How enjoyable were the flipped classroom lessons, on a scale of 1-4? (4 being most enjoyable and 1 being least enjoyable).

Class	1	2	3	4
Class 1 (31)	2	7	17	5
Class 2 (30)	4	7	16	3
Total (61) %	9.8	23	54.1	13.1

2. How relevant do you think the content of the lessons were, on a scale of 1-4? (4 being most relevant and 1 being least relevant).

Class	1	2	3	4
Class 1 (31)	1	6	17	7
Class 2 (30)	2	8	15	5
Total (61)	4.8	23	52.5	19.7

3. The amount of preparation work required for the lessons was:

Class	Far Too Little	Too Little	Just Right	Too Much
Class 1 (31)	0	2	26	3
Class 2 (30)	0	0	26	4
Total (61)	0	3.3	85.2	11.5

4. How useful were the tablets in helping you to learn during lessons? (4 being most useful and 1 being least useful).

Class	1	2	3	4
Class 1 (31)	4	1	16	10
Class 2 (30)	6	10	7	7
Total (61)	16.4	18	37.7	27.9

5. How far do you agree that the use of the tablets has made lessons more interesting for you?

Class	Very Small Extent	Small Extent	Large Extent	Very Large Extent
Class 1 (31)	3	11	10	7
Class 2 (30)	4	7	13	6
Total (61)	11.5	29.5	37.7	21.3

6. How confident are you now in crafting an essay / impromptu speech, having gone through the whole duration of the flipped classroom approach?

Class	Far Too Little	A Little	Quite A Lot	A Lot
Class 1 (31)	1	10	18	2
Class 2 (30)	4	13	13	0
Total (61)	8.2	37.7	50.8	3.3

7. Have you benefitted from the series of Flipped Classroom?

Class	Yes	No
Class 1 (31)	30	1
Class 2 (30)	29	1
Total (61)	96.7	3.3

8. Would you want to have more lessons using the flipped classroom approach?

Class	Yes	No
Class 1 (31)	24	7
Class 2 (30)	18	12
Total (61)	68.9	31.1



## Appendix 2 – The Two-point Format and PEEL Structure

