

The effects of planning instruction and self-regulation training on the achievement and motivation of Primary 3 and 4 pupils in composition writing

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Abstract

This study looked at the effect of the use of PLAY, a planning instruction strategy, on the achievement and motivation of Primary 3 and 4 pupils in composition writing. The study sought to explore whether improvement in pupils' perceived competence in writing via the use of the planning instruction strategy, PLAY, would lead to better achievement in writing. It also sought to explore if the use of PLAY would lead to a reduction in the pressure on pupils' and their feelings of tension when writing tasks, thus leading to higher motivation and better achievement in terms of composition test scores.

The results indicated that there was a significant improvement in achievement in composition test scores for the Primary 3 pupils though the improvement in pupils' perceived competence in writing was not significant. Moreover, the use of PLAY led to a reduction in pressure on pupils' and their feelings of tension when writing tasks although the result was not significant. Nevertheless, the decrease in pressure on pupils and their feelings of tension when writing tasks could have led to a significant increase in their interest in and enjoyment of the writing tasks.

However, for the Primary 4 pupils, though an improvement in the results for Paper 1 from Pre-test to First Semestral Assessments (SA1) was observed, there was no significant improvement in the results from First Semestral Assessments (SA1) to Second Semestral Assessments (SA2). There was also no significant improvement in the pupils' perceived competence in writing. Similar to the result for the Primary 3 pupils, the use of PLAY led to a reduction in pressure on the Primary 4 pupils and in their feelings of tension when writing tasks although the result was not significant. Moreover, with a decrease in the pressure on pupils and in their feelings of tension when writing tasks, there was a decrease in their interest and enjoyment in the writing tasks as well.

Introduction

We live in an era in which the development of both reading and writing skills is not just a choice for young people but a necessity. These skills are becoming increasingly important elements across curricular areas. Many researchers assert that reading and writing skills are accurate

predictors of academic success (Nevills & Wolfe, 2009; Santangelo & Olinghouse, 2009). Moreover, with the globalisation of our world, learners are expected to be effective communicators. Yet, it was stated in the article, 'Why Johnny can't write, and why employers are mad' (Holland, 2013), that surveys have shown employers are complaining about job candidates' inability to speak and write clearly. As a result, it is evident that significant barriers in education, employment, and other life pursuits could be created due to a deficiency in these skills.

The authors were conscious of the importance of the key literacy skill of being able to write well. Therefore, they recognised the need to implement effective writing instruction explicitly as well as to gain insights into the motivation of learners in writing tasks. The authors hoped to reduce the number of learners who developed writing problems as a result of poor instruction and ease the effects of writing difficulties and frustrations experienced by learners.

The authors observed that learners generally did not engage in any overt planning prior to writing. In some cases, it was observed that learners were having difficulty getting started on the writing task and they ended up writing and rewriting several times. Some would request help on what and how they should write. Similarly, it was noted that a substantial number of learners were unable to write stories that included elements such as a plot, a setting and characters. Their compositions were generally responses of poor quality, more descriptions of the picture prompts they had been given than coherent stories.

Literature Review

In their search of the literature, the authors found an instructional approach which they thought had the potential to help the learners reduce their apprehension towards writing, and give them a sense of confidence and a structure for the writing process. Asaro-Saddler and Saddler (2010) reported on the self-regulated strategy development (SRSD) model developed by Harris and Graham (1996), an instructional approach designed to improve a writer's strategic behaviour, knowledge, and motivation. In essence, there are three objectives to SRSD instruction. The first objective is for students to learn to carry out routine planning through direct instruction, guided and independent practice. The second objective is for students to develop the knowledge and self-regulatory courses of action they need to utilize the appropriate writing strategies while planning. The last objective is for students to develop specific motivational aspects such as self-efficacy and effort influenced by SRSD.

In their study, Asaro-Saddler and Saddler (2010) found that instruction in planning and story writing utilizing the SRSD approach improved the quality of story writing for three young children with Autism Spectrum Disorder (ASD). This finding supported the results reported by other researchers (Saddler, Moran, Graham, & Harris, 2004; Harris, Graham, & Mason, 2006; Graham, 2006) that SRSD had a strong, positive effect on writing quality and it improved the writing performance of students with a range of abilities including those with learning disabilities, struggling writers without a disability and average writers.

Stories were selected as the instructional genre in the study as stories are frequently assessed on standardized examinations. Asaro-Saddler and Saddler (2010) selected younger writers as participants in their study as they believed that early intervention in writing would be more effective than attempting to tackle the writing problems at later grades. In addition, the extent to which children with ASD could transfer their knowledge of writing a story about fictional characters using pictures to a story about themselves using a written prompt was examined for the first time in their study.

Graham and Harris (1993) recommended that, to teach a strategy using SRSD, the teacher should work recursively through six stages of instruction, that is, develop background knowledge,

discuss the strategy, model the strategy or self-instruct, memorize the strategy, support or collaborate on practice, and practise independently.

In their study, Asaro-Saddler and Saddler (2010) adopted a planning and story writing strategy that included a mnemonic device, POW, developed by Graham and Harris (1993), to help students organise the planning and writing process by encouraging them to:

- **P**ick my ideas (i.e., decide what to write about);
- **O**rganize my notes (i.e., develop an advanced writing plan); and
- **W**rite and say more (i.e., expand the plan while writing).

They also utilized a second mnemonic, WWW, What = 2, How = 2, to remind students to generate notes for seven basic parts of a story during the second step of POW. Each letter of this mnemonic cued the students to write notes in response to each of the following questions:

1. **W**ho are the main characters?
2. **W**hen does the story take place?
3. **W**here does the story take place?
4. **W**hat do the main characters want to do?
5. **W**hat happens when the main characters try to do it?
6. **H**ow does the story end?
7. **H**ow do the main characters feel?

In another study, Patel and Laud (2009) recognised the benefits of goal-setting and reiterated the significance of ensuring that students understand an assignment and its purpose before they set goals and start to write. As a result, Patel and Laud (2009) designed and introduced the mnemonic, PAW before PLANS, to give greater emphasis to the goal-setting dimension of the strategy (PLANS). The PLANS strategy (Graham, MacArthur, Schwartz, & Page-Voth, 1992; Mason, Snyder, Sukhram, & Kedem, 2006) is a three step writing strategy that enables writers to successfully create effective goals while they engage in authentic writing. Patel and Laud (2009) eventually modified the mnemonic from PLANS to P(paw)LANS. The first step is to use the strategy embedded in the mnemonic to plan. The second step is to write and the last step is for pupils to check their writing.

PLANS	P(paw)LANS
Pick goals	Purpose of writing (Pick topic, Audience, Why am I writing?)
List ways to meet goals	List goals
And make...	And make...
Notes	Notes
Sequence Notes	Sequence Notes

Using the self-regulated strategy development (SRSD) model developed by Harris and Graham (1996), Patel and Laud (2009) followed the six stages to teach P(paw)LANS to a fifth-grade student who had a language-based learning disability. Findings from the study indicated that the student had made gains according to two criteria, namely the length of the story and the presence and quality of the following story elements: main character, locale, time, starter event, goal, action, ending, and reaction.

From their study, it was found that the modified PLANS strategy had helped the student to

develop a method for understanding and following the assignment as well as to be more introspective about his writing skills, hence making it possible for him to be a more effective writer. As for the gains in length, it seemed that the strategy had provided a structure that enabled the student to be more confident and comfortable with writing, and, possibly, even find writing enjoyable.

In their study, Graham, Berninger, and Fan (2007) reported that the role of motivation in writing is receiving increased interest. They emphasized that by and large, motivation is a vital catalyst in academic learning, particularly in writing. It was stated in their study that there was evidence to support the notion that skilled writers scored higher on measures of motivation as compared to less skilled writers. Similarly, it was evident that instructional procedures designed to enhance motivation had a positive impact on students' writing.

In their study, Graham, Berninger, and Fan (2007) investigated the structural relationship between attitudes towards writing and writing performance, and the proposition that attitudes towards writing improve with schooling. Their findings supported Graham's (2006) conclusion that writing attitude shaped students' writing performance. That is, children with a positive attitude towards writing were more likely to put in more effort to write as compared to children with a negative attitude towards writing. The latter would very likely put little energy into writing and would choose to avoid writing whenever possible. Graham, Berninger, and Fan (2007) pointed out that there was no evidence from their study that supported the proposition that motivation increases with schooling or age.

In some experiments related to intrinsic motivation and self-regulation, the Intrinsic Motivation Inventory (IMI), a multidimensional measurement device, was used to assess participants' subjective experience related to a target activity in laboratory experiments. The instrument, with six subscale scores, assesses participants' interest/enjoyment, perceived competence, effort, value/usefulness, felt pressure and tension, and perceived choice while performing a given activity. Strong support for its validity was found in a study by McAuley, Duncan, and Tammen (1987).

The interest/enjoyment subscale of the IMI gives us the self-report measure of intrinsic motivation. The perceived choice and perceived competence concepts have proved to be positive predictors of both self-report and behavioural measures of intrinsic motivation while pressure/tension is a negative predictor of intrinsic motivation. Effort is a separate variable that is relevant to some motivation questions. The value/usefulness subscale is used in internalization studies (e.g., Deci, Eghrari, Patrick, & Leone, 1994) as it has been observed that people internalize and become self-regulating with respect to activities that they experience as useful or valuable to themselves.

In our study, our aim was to explore if improvement in pupils' perceived competence in writing via the use of the planning strategy, PLAY, would lead to better achievement in writing. It also sought to explore whether the use of the planning strategy, PLAY, would lead to a reduction in pupils' feelings of pressure and tension when doing writing tasks thus leading to better motivation and achievement. To measure the pupils' motivation, the IMI was administered to pupils before and after the use of the planning strategy, PLAY.

Our research question was:

Does the use of the self-regulated strategy development (SRSD) model affect motivation and achievement in composition writing for all Primary 3 and 4 pupils in a Singapore primary school?

Methodology

Samples

For this study, 70 Primary 3 and 89 Primary 4 pupils in a school in Singapore formed the experimental group. The experimental group in Primary 3 included 34 boys and 36 girls while the experimental group in Primary 4 included 50 boys and 39 girls. It was not possible to form a control group due to the school's small enrolment and its practice of subject banding. As a result, there was only one class per ability group per level and hence it was not feasible to create a comparison group with matching variables.

Similarly, as a result of subject banding, it was not viable to ensure that the same teacher was deployed to teach all the classes though it was expected that this would have reduced any possible effect due to differences in teaching style other than that focused on in the study, that is, the use of planning instruction and self-regulation training. Because of the practice of subject banding, all the classes had English Language lessons at the same time.

Intervention

Since the beginning of the academic year, that is, from January 2014, when teaching composition, the teacher introduced the intended planning instruction strategy for writing, that is, PLAY. PLAY was a strategy adapted from POW by Asaro-Saddler and Saddler (2010) and P(paw)LANS by Patel and Laud (2009).

P - Pay attention to the question / prompt

L - List the seven story elements (WWW, What=2, How=2. Refer to Appendix A)

A - Add transition words, 'million dollar words', different kinds of sentences

Y - Yip Yip Hooray! Check Content, Tenses, Spelling, Punctuation

To help students internalise PLAY, the SRSD instructional model was implemented. Initially, when PLAY was first introduced, the teachers worked recursively through the six stages of instruction. During the first stage, PLAY was introduced and its importance discussed and explained. Each pupil then practised the mnemonic until he/she could explain what PLAY stood for, and its importance. Subsequently, the mnemonic device WWW, What=2, How=2 (Graham & Harris, 1989) was introduced as a 'trick' for remembering the seven parts to include in a story. Pupils were then provided with opportunities to practise until they were able to identify all the parts required in a story. Pupils were also taught to identify the story parts from the question prompts provided and to include the missing parts if necessary.

For the second stage, a review and some practice of PLAY and the story parts reminder strategy were carried out for every writing lesson until all the pupils could provide and explain each entirely from memory. Pupils were then tasked to analyse their baseline writing to identify the number of story parts present. Next, ways in which the missing information could be included were discussed. Similarly, the teacher discussed and explained how an included story part could be made better.

For the third stage, the teacher modelled the process of writing a story using PLAY and the story parts reminder with a graphic organiser while the pupils provided the ideas. During this process, the teacher verbalized self-instructions, that is, she thought aloud or made the thinking visible. A discussion of the importance of self-instructions was also carried out. The types of self-instructions that could be used while writing were discussed.

During the fourth stage, a collaborative writing experience was incorporated, in which the teacher and the pupils crafted a story together using PLAY and the graphic organiser. At this stage, the pupils were supposed to lead the process with the teacher only providing support as needed. This stage enabled the teacher to verify whether students had successfully memorised the mnemonic.

For the fifth stage, the pupils and teacher set goals including using all seven story elements of PLAY. At this stage, instead of being provided with the graphic organiser, the pupils were supposed to plan each part of the story on a piece of rough paper before writing and they were reminded to use their self-instructions. The teacher continued to provide support and encouragement as needed. After the story had been completed, the teacher and pupils checked whether the story met the goals of PLAY. Once the pupil was able to handle the writing task without the use of a graphic organiser and a self-statement list, he/she could proceed to the last stage.

For the sixth and final stage, the pupils wrote stories without the use of support or assistance.

Data collection

A Writing Task Evaluation Questionnaire adapted from the Intrinsic Motivation Inventory (IMI) was administered to all Primary 3 and 4 pupils at the beginning of the academic year of 2014, that is, by the end of Term 1 Week 1. This was carried out to gather information on the writers' interest/enjoyment, self-perceived competence, self-perceived choice and the pressure/tension felt prior to the implementation of the planning instruction and self-regulation training. A pre-test was also conducted in Term 1 Week 1 to collect the pre-test writing scores for the Primary 3 and 4 pupils to serve as the baseline.

The Writing Task Evaluation Questionnaire was also administered to all the Primary 3 and 4 pupils at the end of Term 4 Weeks 4/5 to gather information on the writers' interest/enjoyment in writing, perceptions of their own competence, self-perceived choice and their feelings of pressure/tension after the implementation of the training in planning and self-regulation. The scores were then analysed to assess the effects of planning instruction and self-regulation training on the motivation of writers.

In addition to the Writing Task Evaluation Questionnaire, the pre-test, the First Semestral Assessment (SA1) and the Second Semestral Assessment (SA2) composition writing results were analysed to assess the effects of self-regulation training on the achievement of pupils. Interviews were conducted with some pupils, selected based on the total scores from the Writing Task Evaluation Questionnaire, to obtain information on the pupils' perception of the value of PLAY and to assess the effectiveness of the teaching procedures.

To determine whether there had been a significant increase in the level of pupils' perceived intrinsic motivation and the pupils' achievement after 10 months of intervention, a *t*-test was used to compare the changes in the pupils' perceived level of intrinsic motivation and the pupils' achievement between the pre- and post-intervention.

Results

Table 1 below shows the average scores of composition writing for the pre-intervention test, and first and second Semestral Assessments.

Table 1
Average Writing Scores of Primary 3 and 4 Pupils (SD in Parentheses)

Grade	Pre-intervention	SA1	SA2
Primary 3	7.59 (3.41)	10.32 (3.36)	11.31 (2.82)
Primary 4	10.72 (3.17)	11.76 (2.45)	11.86 (2.33)

Note. The maximum possible score was 20.

As can be seen in Table 1, the average score attained by the Primary 3 pupils was 7.59 before the intervention began. An average score of 7.59 indicated that the Primary 3 pupils did not achieve a pass for composition writing before the intervention. The score for composition writing increased to an average of 10.32 after four months of intervention. A *t*-test indicated that the scores were significantly different, $t(70)=-10.801, p < .0001$. After another four months, that is, at the end of the intervention, the scores increased to an average of 11.31. Similarly, a *t*-test indicated that the scores from SA1 to SA2 were significantly different, $t(70)=-3.486, p < .0004$.

As for the Primary 4 pupils, the average score attained was 10.72 before the intervention. The scores increased to an average of 11.76 after four months of intervention. A *t*-test indicated the scores were significantly different, $t(89)=-5.718, p < .00001$. Unexpectedly, there was only a slight increase after another four months, that is, at the end of the intervention, with the average score increasing to only 11.86. A *t*-test indicated the scores from SA1 and SA2 were not significantly different, $t(89)=-0.641, p = .2614$.

Table 2 below shows the average interest/enjoyment subscale scores pre- and post-intervention.

Table 2
Average Interest/Enjoyment Subscale Scores (SD in Parentheses)

Grade	Pre-intervention	Post-intervention
Primary 3	31.66 (8.55)	36.79 (9.36)
Primary 4	34.37 (8.83)	34.21(9.46)

In the IMI, the interest/enjoyment subscale is considered to be the self-report measure of intrinsic motivation. As can be seen in the table above, the average subscale score increased to 36.79 at the end of the intervention for the Primary 3 pupils thus indicating an increase in the perceived level of intrinsic motivation. A *t*-test indicated the subscale score was significantly different, $t(70)=-4.358, p < .00002$.

In contrast, for the Primary 4 pupils, the average subscale score decreased slightly to 34.21 at the end of the intervention but a *t*-test indicated the subscale score was not significantly different, $t(89) = .189, p = .425$.

Table 3 below shows the average self-perceived choice and self-perceived competence subscales scores pre- and post-intervention.

Table 3
Average Perceived Choice and Perceived Competence Subscales Scores (SD in Parentheses)

Measure	Pre-intervention	Post-intervention
Perceived Choice		
Primary 3	21.24 (4.00)	21.89 (4.85)
Primary 4	21.37 (3.08)	23.10 (4.82)
Perceived Competence		
Primary 3	20.36 (6.21)	21.81 (5.93)
Primary 4	21.96 (5.55)	21.91(6.26)

In the IMI, the pupils' perceived choice and perceived competence measures are understood to be positive predictors of both self-report and behavioural measures of intrinsic motivation. As can be seen in Table 3, the average pupils' perceived choice and perceived competence subscales scores increased to some extent at the end of the intervention for the Primary 3 pupils. For the Primary 3 pupils, a t-test indicated the perceived competence subscale score was only just significantly different, $t(70) = -1.718$, $p = .0451$. However, a t-test indicated the perceived choice subscale score was not significantly different, $t(70) = -.933$, $p = .1770$.

For the Primary 4 pupils, the average perceived choice subscale scores increased while the average perceived competence subscale scores decreased somewhat at the end of the intervention. A t-test indicated the perceived competence subscale score was not significantly different with $t(89) = .075$, $p = .4703$. Conversely, a t-test indicated the perceived choice subscale score was significantly different, $t(89) = -3.246$, $p = .0008$.

Table 4 below shows the average pressure/tension subscale scores pre- and post-intervention.

Table 4
Average Pressure/Tension Subscale Scores (SD in Parentheses)

Grade	Pre-intervention	Post-intervention
Primary 3	18.03 (4.66)	17.30 (4.86)
Primary 4	18.25 (4.37)	17.46 (4.75)

In the IMI, pressure/tension is understood to be a negative predictor of intrinsic motivation. As can be seen in Table 4, the average pressure/tension subscale score decreased at the end of the intervention for both the Primary 3 and 4 pupils thus suggesting an increase in the perceived level of intrinsic motivation. However, again, for the Primary 3 pupils, a t-test indicated the change in the subscale score was not significant, $t(70) = 1.007$, $p = .1588$. Likewise, for the Primary 4 pupils, a t-test indicated the change in the subscale score was not significant, $t(89) = 1.431$, $p = .0779$.

Discussion

The results above indicate that using PLAY as a strategy for writing did help to improve composition results. This is consistent with the findings by Patel and Laud (2009) and Asaro-Saddler and Saddler (2010).

There was an improvement in the composition results for both Primary 3 and 4 participants. Both groups showed significant improvement in their results in the SA1. The Primary 3 participants also showed significant improvement in the SA2.

However, the Primary 4 participants did not show significant improvement for SA2. This could be due to variation to the adherence to the use of the strategy, PLAY. PLAY was the only strategy introduced to Primary 3 participants and hence adherence could have been higher compared to the use of the strategy by Primary 4 participants who learnt other strategies. This was supported by the findings from the interview conducted with the pupils.

There was a significant increased level of perceived interest and enjoyment for the Primary 3 participants. This could be due to the fact that PLAY provided a structure that helped the Primary 3 pupils to be more comfortable with writing. Moreover, with more practice in the use of the structure, pupils were less fearful of the writing task and hence writing. However there was a slight decrease in the level of perceived interest and enjoyment for the Primary 4 participants though the change was not significant.

Another reason for the lack of significant increase in the level of perceived interest and enjoyment for the Primary 4 participants could be due to the gaps in implementing the strategy, PLAY, in the classroom. It was likely that each teacher implemented PLAY differently to suit the ability levels in their classes.

Neither group showed significant improvement in their perception of their own competence in writing, although, there was a slight increase in that of the Primary 3 participants. This could be due to the fact that the expectations for the writing task were more demanding in Primary 3 compared to the writing task in Primary 2. As a result, the Primary 3 pupils were still not confident in writing. There was an increased level of pupils' perceived choice towards writing observed among the Primary 4 participants. However, there was no significant change in the level of perceived choice for the Primary 3 participants. Perhaps, the exposure and flexibility in applying various strategies in writing could have contributed to the increased level of perceived choice for the Primary 4 participants.

Both groups appeared to feel less pressure and tension when writing although the results were not significant. This reduction in feelings of pressure and tension could have been due to an increase in confidence from knowing what steps to take when faced with a composition question. The change may not have been significant because of the fact that the writing assignment was part of their SA1 and SA2 papers and the test results contributed to their overall examination results, leading to some level of test anxiety.

There also appears to have been an increased level of self-reported motivation for writing for the Primary 3 participants. This increase was not seen in the Primary 4 participants and, in fact, there appears to have been a decrease in the level of self-reported motivation though this decrease was not statistically significant.

Conclusion

The results of this study support the idea that the use of PLAY during the writing process leads to a significant improvement in writing results for Primary 3 and 4 participants. The results also suggest a slight improvement in intrinsic motivation towards writing but the results are not significant.

The authors realised that despite the varied adaptations, it is important for the strategy to be reinforced in the classroom during all writing lessons. From the pupils' pen and paper survey, it

was noted that most participants did not know what CTSP was, even though it was a part of ‘Y’ in PLAY (as in Content, Tenses, Spelling, Punctuation). Similarly, the authors felt that although the participants were instructed to add (‘A’ in PLAY) extensive vocabulary, coined as ‘million dollar words’, appropriately in their writing, pupils needed to be taught explicitly how to use the words that were introduced to them.

Moving forward, teachers might need to focus on reinforcing PLAY and teaching pupils explicitly how to use the ‘million dollar words’ in their writing to better engage readers. With these changes, intrinsic motivation for writing tasks might increase, which could lead to an increase in achievement. Future studies could focus on addressing the gaps in the implementation of PLAY such that self-perceived intrinsic motivation for writing could be improved. Future studies would thus need to factor in close monitoring to ensure that teachers make use of PLAY in the classroom for all composition lessons.

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