Process Writing: an online collaborative writing environment for primary school students

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Abstract: This paper aims to discuss the design of an online collaborative writing platform for primary school students. With minimal face-to-face input from teachers, students went through process writing (a learner-centric learning approach with brainstorming, drafting, revising and publishing stages), and created their own storybooks with visual support, online scaffolds and communicative features using this online platform. Initial findings suggest that this writing platform can be an effective approach to improve students' motivation towards English learning and writing skills. This paper also proposes that the Process Writing model can be used to facilitate students' writing of different genres.

Keywords: Process writing, creative writing, collaborative learning, learner-centric e-learning application, evaluation of CAL systems

Introduction

Process writing has proven to be a long-lasting and innovative teaching approach since the 1980s [14]. Traditional approaches to the teaching of writing focus on a teacher-centric model and the written product [7]. Students are taught to produce one-shot and discrete writing pieces. They are very seldom encouraged to express their own ideas and meaning of their writing. Students would hardly be involved in text revisions. Teachers merely evaluate students' writing based on the grammatical correctness and their mechanics. As a result, students' writing pieces are rather mechanical, and they also lack the skills needed to do free writing [7]. In addition, struggling students tend to produce writing pieces that are shorter, more poorly organized and weaker in overall quality [6]. They also lack the motivation and confidence in writing [1].

1. Process Writing

1.1 An innovative approach to teach writing

Flower and Hayes [5] are among the first group of researchers who studied writing as a cognitive and problem-solving process. They identify that writing can be viewed as a set of unique thinking processes, and these processes have a hierarchical and non-linear structure. In addition, Flower and Hayes indicate that writing is goal-oriented, and that writers explore and refine their goals through the process of writing (planning, translating, reviewing and

the monitor). Teachers in Hong Kong were introduced to the process approach to the teaching of writing in the 1990s [1][11]. Instead of focusing on the product, teachers will teach students *the way real writers write* [14]. This process-oriented writing instruction puts more emphasis on a learner-centric approach and the basic writing stages – planning, drafting, revising, editing and publishing. Teachers provide students with planned activities so that students can learn the specific writing skills at every stage.

Research studies on teaching process writing to students confirm that this approach can be a workable and effective approach in enhancing students' writing skills [1][7]. It also increases students' confidence in writing and a greater awareness of the different stages in writing.

Despite the long history of its benefits, the process approach to writing is still not being widely adopted by schools in Hong Kong [3][7]. That could have been caused by the lack of teacher training and time constraints on both the students and the teachers. Teachers need to allocate extra lessons to go through the different writing stages and students need the time to do the actual writing.

1.2 Can technology enhance or even transform process writing?

Educators believe that there are many synergies between process writing and the use of technology [14]. Englert, Manalo, & Zhao [4] indicate there are at least three ways that technology can enhance students' writing. First, technology can provide visual support and prompts that can help students better understand properties and specific structures of different genres. Second, technology can facilitate the communication and collaboration among students and their peers and teachers during the writing process. Third, technology can offer appropriate scaffolds at different stages of the writing process to enable students to improve their thinking, problem-solving and organizational skills. Scaffolding might be particularly useful to young students in their writing performance.

Englert, Manalo, & Zhao [4] used the above approach for their research study and results indicated that students wrote more, used more genre specific characteristics and wrote with higher quality when appropriate scaffolds were given. Their texts were rated higher in terms of the introduction, supporting details and conclusions. The study also suggested that scaffolds did have long-term effects on students' writing performance. Cho [2] designed SWoRD (scaffolded writing and rewriting in the discipline), an online writing system which focuses on peer reviews.

Mak [10] conducted a similar study to evaluate the effectiveness of using wikis to develop the writing skills of a group of secondary school students. The use of wikis followed the process writing approach: students used wikis to collaborate and write in context, they could review others' work and provide feedback online to work towards the final product. The study indicated also indicated that students produced a greater quantity of text and this approach boosted students' confidence in their writing and creative skills. Both studies called to adopt these process writing approaches to a wider audience. Kessler's study [8] also demonstrated positive results that students could benefit from an autonomous collaborative environment with careful design and controls.

Another study was done by Liu, Chen, Shih, Huang, & Liu [9] to measure the effects of an enhanced concept map approach on improving students' storytelling and writing skills. The web-based system provided students with a concept map as the storyboard, and scaffolds were given to develop students' meta-knowledge about stories. Results demonstrated that the learner-centric concept map approach could help students develop stories with more complex structure, clearer subjects, more creative ideas, and abundant content. The limitation of the concept map approach is that it only involves an individual task for each

student. Students did not have the opportunity to participate in the peer review and editing steps.

Yeh, Lo & Hwang [15] also report a promising research result that students who use their synchronous scaffolding environment have improved outcomes in content and writing organization. The environment also improves students' motivation in writing.

2. Process Writing Platform: combining the best of both worlds

2.1 Research Questions

This study addresses two research questions: (1) Can visual support, online scaffolds and communicative features of the process writing platform influence students' writing performance? (2) To what extent can this writing environment increase students' motivation to write?

2.2 Design methodology

The current study focuses on the design of an online writing environment ("Process Writing Platform") which is being used to facilitate primary school students' process writing. The web-based platform was designed for primary school students to author their own online storybooks in an autonomous and teacher-less environment. Figure 1 illustrates the conceptual framework of the design.
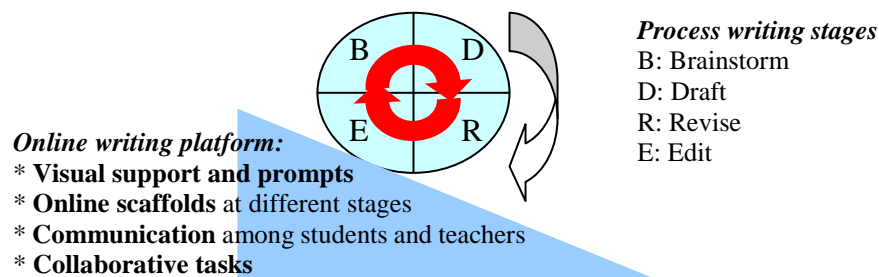

Process writing stages
B: Brainstorm
D: Draft
R: Revise
E: Edit

Online writing platform:
* **Visual support and prompts**
* **Online scaffolds** at different stages
* **Communication** among students and teachers
* **Collaborative tasks**

Figure 1 Process Writing Conceptual Framework

2.3 Visual support and scaffolds

The system will provide visual support and prompts for students. For example, students can read storybooks and complete the associated learning tasks for them to understand the vocabulary and elements of the story.

Students would then go through the writing process (*brainstorming, drafting, revising, editing and publishing*) using various tools and features in the system, including character & scene selection, image scaling, text boxes and dialog boxes to allow students to complete their stories (Figure 2). Students could also upload their own images during the writing process and everything will be under the control of the student, at his/her own pace.
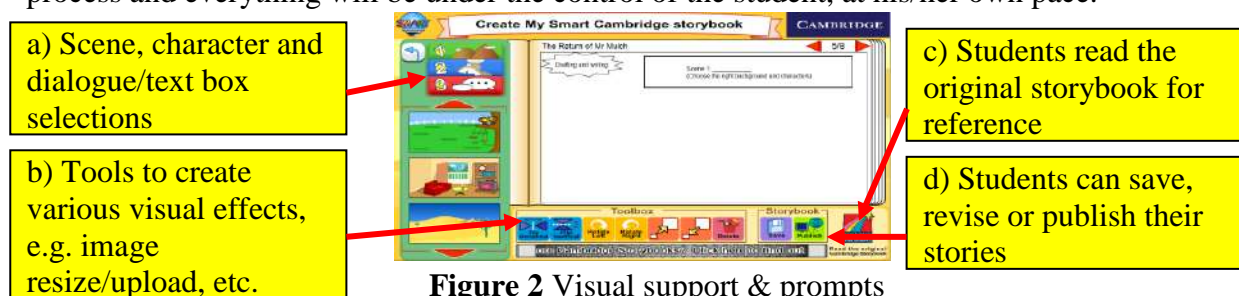

a) Scene, character and dialogue/text box selections

b) Tools to create various visual effects, e.g. image resize/upload, etc.

c) Students read the original storybook for reference

d) Students can save, revise or publish their stories

Figure 2 Visual support & prompts

Different levels of scaffoldings will be also given online to guide students through the writing process. Figure 3 demonstrates sample scaffolds including story mind maps and editing checklists, these features are available within the writing environment. Students could create and edit multiple versions of their own storybooks.

Figure 3 Online scaffold examples

2.4 Communication among students and teachers

Students could *communicate online* with others, review others' work online and vote for their favourite storybooks. It provides students with the opportunity to review and critique their own and others' writing pieces within the *online learning community*. Teachers could also facilitate the learning process by commenting and providing students with feedback on their writing using the *discussion forums*. There were no set limits on how many times students could submit their own, read and review others' storybooks. Leader boards were also established to display storybooks with the most number of votes and schools with the most number of submissions or votes to motivate students to participate.

3. Results and discussion

3.1 Preliminary Results

A total of *6,980 students* from P.1 to P.6 from 50 primary schools used and submitted their storybooks on the Process Writing platform. *15,916 stories* were received and each student therefore submitted *an average of 2.3 stories* during the four-week period. In addition, a total of 12,801 comments and votes were placed by students and teachers during that period. The study adopted a similar rubric as [15] grading rubric to evaluate the writing performance of the students. Students' storybooks were graded based on the content and organization (genre specific features, e.g. does the story have a beginning, middle and end, etc). We examined the top 20 storybooks of each level, and all these stories scored at least 80 (out of a total of 100) in each of the content and organization sections. Students were also invited to tell the stories in front of a live audience in the final.

3.2 Discussion

Preliminary results to the research questions indicate that this learner-centric writing platform can be an effective approach to improve students' motivation towards English learning and writing skills. Follow-up work is being performed with several primary schools to integrate this environment into the school's writing curriculum. With minimal teacher intervention, students will utilize the online scaffolds and the process writing platform to learn and practice the writing skills of a range of genres.

Another project is being proposed to create a mobile learning extension (using iPads or netbooks to include multimedia or video recording and integration) based on the current web-based framework to allow teachers and students to use this platform in cross-curricular collaboration projects.

4. Conclusion

This paper discussed the design of an online collaborative writing platform for primary school students. *With minimal intervention from teachers, students went through process writing (brainstorming, drafting, revising and publishing stages), and created their own storybooks with visual support, online scaffolds and communicative features using this online platform.* Preliminary results suggest that it can be an effective approach to increase students' motivation and writing performance, and has the potential for further research studies.

A follow-up experiment (pre-test and post-test) is being done to examine the effects of this Process Writing platform with a control group of students who have not used the environment at all. Both groups of students will be asked to create a storybook on paper and the same grading rubric will be used. Interviews and questionnaires will also be provided to the students to evaluate their motivation on using this platform.

Work is also being done to use the platform to enhance students' writing of different genres and in cross-curricular collaboration projects by designing appropriate visual support and scaffolds. It may also be interesting to examine the changing role of teachers in this technology-enabled collaborative learning environment.

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