

Traces of Writing Competency

Surfing the Classroom, Social, and Virtual Worlds

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Abstract – Understanding the development of students' competence in writing poses significant challenges, given the complexity of the writing process, the skill levels of students, the types of writing activities offered to students, and the volume of data concerning writing as a whole. While language is taught from elementary school up to university courses and even beyond, the pattern of learning a language has remained much the same for decades. This proposal advocates that distributed social environments may provide a new paradigm for students to learn the discipline. Students need not be confined to just classrooms; they can engage in authentic learning in real-world or virtual-world scenarios. Further, whether real or virtual, the writing software itself can assume a proactive role in supporting not only the students but also the instructor. We emphasize the need for ubiquitous, situated, mixed-initiative writing support for students where underlying technology platforms can be extended to measure individual competencies, identify writing competency-gaps, and promote means to address these gaps. This proposal discusses several ideas, including peer feedback, collaborative writing, book annotation, integrated instructor interfaces for grading, and the effects of mixed-initiative, immersive, social and agent-oriented assessment on writing competence.

Keyword-component; writing; collaboration; mixed-initiative; social networks

I. INTRODUCTION

In the realm of language writing, the traditional approach usually involves students reading material on mechanics: grammar and spelling rules. These rules are then practiced through exercises, observed through literature readings, and put to the test in longer writing assignments. In this traditional case, the student often completes the writing tasks alone.

II. STUDENT'S FEATURES

By making the language writing process collaborative, institutions could offer much more immersive environments to students. Rather than assignments submitted and feedback received only from a teacher, the student would have feedback from his or her fellow

students as well. There are a number of features that a social environment might contain to facilitate this many-to-many style of feedback.

Rather than an assignment being submitted via a form and saved for the teacher's eyes only, the entire process of a student working on the writing assignment could be traced, summarised, and viewed by all the other students, who could then leave feedback on the work [1]. The interface for this environment should support tools that make it simple for participants to comment on individual sentences (or even individual parts of sentences), how exactly these sentences were constructed, comment on the types of mistakes were made and corrected, suggest improvements, and assign a numerical rating. The author would view the feedback items individually, or be presented with an overall report that contains all of the suggestions made in regards to the writing.

Writers could also be encouraged to work collaboratively. Using a forum-style mechanism, they may be paired or grouped together to write a single story or essay. The software in this case would track which students made which contributions and corrections. This approach would also be entertaining for the students, allowing them to engage in a role-playing game of writing stories.

Major literature readings, if available in electronic formats, could be made available within the environment. Students would be allowed to annotate the text to comment on portions of it that they liked or disliked. It may be possible for them to flag the text and ask for help if they don't understand the author's meaning.

III. INSTRUCTOR'S FEATURES

For the teacher, these features may involve a significant amount of data to assess. Ideally, the environment would provide a way for the instructor to view each student's activity at a glance. Such an interface

would include summaries of their assignments, the feedback from other students on their assignments, their social activity, their participation in collaborative projects, and the number of annotations they contributed to the readings. The environment should make grading these different activities easy, and should provide sufficient documentation so that instructors can learn the system quickly.

IV. MIXED INITIATIVES

A mixed-initiative system is one that gathers data on a learner's interaction with the system, creates statistical and heuristic inferences, and uses these inferences to proactively offer feedback to the learner at instructionally opportune times [2]. In addition to traditional academic performance data, mixed-initiative systems collect a range of learning-process data that is not easily observed or recorded by the instructor. For example, in the context of writing, such learning-process data may include information on when learners correct grammar, modify complex sentences, split larger paragraphs into smaller ones, and attempt to revise vocabulary.

Mixed-initiative technologies enable feedback to come not only from other students, but also from an intelligent software agent. This agent could analyze a student's writing and provide suggestions in the same way that a fellow participant might. Mixed-initiatives could also be useful in creating summaries of students' writing environment-wide. It could, for instance, identify problem words, specific grammar trouble, and various metrics that could give insight into a student's particular writing style.

Students can learn to write as and when the situation presents itself, indoors or outdoors, ubiquitously, rather than confining students to learn to write only in classroom situations. In this respect, mobile devices do provide established communication channels between mobile learners, the instructor, and the ubiquitous writing system.

Augmenting these mobile communication channels with mixed-initiative protocols and augmented reality interactions is a feasible option, and would create the possibility of providing real-time writing process feedback to student writers in mobile learning contexts. That is, students do not have to wait for typical feedback to arrive after the instructor has manually looked at the intermediate or final submission corresponding to the writing exercises. Instructors now have the possibility of allowing students to receive authenticated, realtime, context-specific feedback from the mixed-initiative

writing system. Such an ever-present feedback mechanism not only has the potential to reduce the workload of the instructor but also improves students' learning efficiency. We perceive mixed-initiative as a ubiquitous feedback and competency assessment mechanism, quite analogous to someone watching over the shoulder of each student, as and when they engage in a writing task, at a pace of their choice. Such a ubiquitous writing platform could not only measure individual competencies in writing, but also identify writing competency gaps that can be addressed proactively.

V. CONCLUSION

Social and collaborative environments provide many opportunities to develop new learning paradigms for many disciplines. In several cases, these have been implemented. But few efforts have been made to apply them to learning to write. Such a collaborative environment could teach a broad array of skills to the individual student, and help to immerse him or her in the learning of the language. The addition of mixed-initiative components would also assist the student's learning process.

Most learners expect to enter a career that involves computer- or mobile device-mediated written communication. A situated, mixed-initiative mobile learning model has severe yet advantageous implications for modern student writers. The challenge, however, is in the mechanism that interlaces classroom, social, and virtual world interactions of the learner in the context of assigned writing exercises and perceived writing competencies. We will discuss methods that engage learners in smooth transitions between the worlds and personalise writing activities based on the evolution of their individual and collaborative writing competencies. We will also discuss model tracing techniques that interlace task-level writing activities with metacognitive activities that promote writing competencies. At the workshop, we will showcase a prototype system that enables a student to seamlessly surf among traditional, social, virtual worlds of interaction.

REFERENCES

- [1] V. Kumar, C. Gress, A. Hadwin, P.H. Winne, "Assessing process in CSCL: an ontological approach," *International J. of Computers in Human Behavior*, vol 26, no 5, pp. 825-834, 2010.
- [2] J. F. Allen. "Mixed-initiative interaction," *IEEE Intelligent Systems*, September, 14-16 (1999).