

Problem-Based Learning and Creative Writing

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While creative writing is often taught as something of an afterthought in some high schools and colleges (Knoeller, 2003), many teachers believe that it has value and a special place within the English curriculum. In fact, Knoeller (2003) and Vakil (2008) have both found that teaching traditional literature studies along with creative writing helps learners comprehend the literature more thoroughly, as well as offers learners the chance to express themselves creatively, something they are often not encouraged to do in school settings. Despite this, both Knoeller (2003) and Blythe and Sweet (2008) note that the emphasis on reading and responding to literature in high schools has decreased the time available for teaching creative writing. In some places, creative writing has been cut from the curriculum entirely. High schools, as well as many undergraduate college programs, have instead stressed the development of critical analysis essays (Knoeller, 2003), which certainly develop useful skills, but also tend to have the effect of limiting student creativity.

Like all writing, however, learning to write effective creative prose, poetry, and drama requires an understanding of literary form and fundamentals. In this way, students can practice writing the very forms that they read when analyzing existing literature, helping them form clearer and more reasoned understandings of literature in order to make more reasoned analyses (Flanagan, 1974; Knoeller, 2003). Flanagan (1974) notes that even at the most introductory levels of literature study, creative writing can bolster that understanding, as well as help students make stronger emotional connections to what they read. When students of English connect something they have written to the work of others at deep levels, they are far more likely to have a stronger and more complete opinion of the work's meaning than if they simply read and respond to the literature in a traditional expository fashion.

With this in mind, creative writing has been added as part of the core introductory English curriculum for college freshmen at Purdue University Calumet in Hammond, Indiana, which brings with it both opportunities to increase literary knowledge and analysis ability, as well as concerns related to instructional design and approach. As noted previously, a baseline level of understanding of creative writing principles likely cannot be assumed for incoming freshmen, due to the decreased emphasis on such skills in high school coursework (Knoeller, 2003; Blythe & Sweet, 2008). In addition, without sufficient efforts to make English instruction engaging, young freshman students – many of whom are considered “digital natives” (Presnky, 2001) – may become disinterested unless they have the opportunity to use their knowledge in a creative way. Thus, in order to create a successful introductory English curriculum that considers the needs of college freshman as it prepares them to think creatively about literature, this paper proposes a model lesson based on research in modern instructional design approaches and theories. The anticipated effectiveness and implementation of technology will later be evaluated.

Selecting an ID Model and Instructional Approach

Determining the most effective instructional design model to use in developing creative writing curriculum for college freshmen requires evaluating the characteristics of available models and underlying theory in order to choose the one that is the best fit. Based on the work of Flanagan (1974), Blythe and Sweet (2008), and Tanemura (2010), it has been determined that freshmen at Purdue University Calumet should be able to:

1. Discuss the concepts of character, setting, plot, and perspective, and how they apply to literature and creative writing.

2. Identify and distinguish between different types of perspectives and character voices used in literature, including first-person, second-person, third-person, and omniscient.
3. Apply knowledge of character development to create descriptions of original characters, including appearance, personality traits, and attitudes.
4. Apply knowledge of setting to create descriptions of settings, including time, location, season and weather, and historical influences.
5. Given specific writing prompts, write from first-person, second-person, third-person, and omniscient perspectives, accurately applying principles of each technique as well as principles of plot and setting.

These objectives indicate that students must be able to apply conceptual knowledge to their writing in order to create more effective stories, poems, and other creative works. Vakil (2008) notes that it is difficult for many beginning writers to even start engaging in the writing process without these concepts, as they provide a foundation from which creativity can flow. Beginning a story is often a very complex problem for even expert writers, as without a strong direction it can flounder in its execution, and student writers can become mired in thoughts that appear to lead them down the wrong paths. Some master writers are even of the opinion that creative writing cannot be “taught” at all, and rather is a talent that is developed through practice (Bizzaro, 2004). However, Bizzaro (2004) goes on to note that creative writers should possess several core skills such as understanding audience, genre, and the writing process, and that these skills can indeed be taught. Therefore, in beginning to learn creative writing techniques and developing related skills, students should be guided toward learning how to approach and solve problems in starting a creative venture, using foundational skill as a starting point.

To determine the approach that will offer the best results in creating an introductory creative writing lesson, a review of instructional design models is necessary. It is also helpful to first examine traditional ways in which creative writing has been taught in universities, in order to determine what has and has not been successful in the past. Ritter (2001) indicates that curriculum for creative writing programs, even at the graduate level, is often quite diverse depending on the individual teacher and the institution. Often, curricula focuses on collaboration and peer review, but due to the fact that many creative writing teachers see themselves as more artistic than academic, their lessons may lack structure and cohesion. In their review of models for teaching the subject, Blythe and Sweet (2008) indicate that a collaborative “studio” or “workshop” approach is not necessarily a poor one, and that within such a setting students can learn from experts as well as each other, leading to a continual feedback loop that allows for mastery learning. However, such critique cycles can also lead to the homogenization of ideas, and approaches that ask students to study pieces of literature and imitate them can lead to stunted creativity without the guidance of an excellent teacher (Blythe & Sweet, 2008; Vakil, 2008). A marriage of the best aspects of many of these approaches may be a way to limit these pitfalls, but what would such a curriculum model look like?

Instructional design models may hold appropriate answers to this question. There are two essential views of instruction within modern instructional design theory, the “instructivist” and the “constructivist.” Instructivist models tend to be highly structured and process-based, focusing on the acquisition of learning objectives through teacher-guided instruction (Ke & Xie, 2009). Meanwhile, constructivist models, such as constructivist learning environments (CLEs) (Jonassen & Rohrer-Murphy, 1999) represent an opposing approach, putting students in charge of their own learning through self-directed exploration, group collaboration, and developing their

own interpretations of the subject matter. Kirschner, Sweller, and Clark (2006), in a now-famous discussion of the failings of constructivist and discovery teaching, note that such approaches often fail to ensure that adequate learning takes place, as without guidance, students often do not have sufficient prior knowledge to make strong interpretations. As a result, they may leave a constructivist lesson actually knowing less than they did about the subject before they began.

On the other hand, a common criticism is that instructivist measures often teach skills without acknowledging a “bigger picture” of the subject matter or how skills work in tandem with one another when students engage in complex problem solving (Jonassen, 1997; Jonassen & Rohrer-Murphy, 1999). After all, the real world that university students are being prepared to enter is rife with problems of all sorts, many of them quite complex in nature. Teaching students to solve these problems involves far more than teaching skills that help students arrive at solutions; students must be taught how to apply these skills in dynamic ways, managing a variety of types of information all at once (Jonassen, 1997; Jonassen & Hung, 2008). It can certainly be argued that inventing characters, settings, and plots to achieve the central idea of a story or poem, while utilizing knowledge of grammar, literary form, and writing process, is a complex type of problem. There is no single, “correct” way to write creatively, nor is there a single interpretation of a successful creative work (McVey, 2008). This problem may then be considered an ill-structured design problem, since it is open-ended and subjective, yet requires a great deal of foundational knowledge in order to adapt to situations as they arise (Jonassen & Hung, 2008). Often, writers do not have a clear sense of where a story idea will take them, and they may have trouble when faced with writing prompts such as, “Write a short story where a character deals with the loss of a loved one.” In order to accomplish this task, a student must have knowledge of the writing process, grammar fundamentals, and basic story development, as

well as a conception of how people deal with loss. Facing a prompt such as this is not easy for the beginning writer, as there are no clearly “correct” ways to begin.

Problem-Based Learning, Digital Natives, and Storytelling

Based on the relative success of the collaborative models that tend to be employed in the teaching of creative writing (Blythe & Sweet, 2008), and the fact that writing creatively tends to be a highly ill-structured design problem (Jonassen, 1997; Jonassen & Hung, 2008), it appears that a constructivist CLE approach to designing such lessons is advisable. Such lessons begin with a problem-project space in which students work together to explore the ill-structured problem, and provides scaffolding through related cases, information resources, cognitive tools, collaborative activities, and computer-mediated tools (Jonassen & Rohrer-Murphy, 1999).

While the research, design, and execution of CLEs and environments using the related problem-based learning (PBL) approach may be challenging (Hung, 2011), when thoughtfully designed, they can also serve to bring students to higher levels of competency with the subject.

Particularly with adult learners, Ke & Xie (2009) note that constructivist approaches like PBL empower students to investigate the things that interest them most deeply, as well as encourage them to share with and learn from others. As a result, both motivation and learning levels have a tendency to increase.

There are a variety of models that fall within the spectrum of CLE and PBL, although in most cases, effective prompts to begin a PBL lesson should ensure that the problem is clear, interesting, relevant, promotes teamwork in some way, and stimulates self-directed learning (Sockalingam & Schmidt, 2009). For example, Savery and Duffy (1995) provide a straightforward and adaptable model of PBL based on problem-based implementations in medical schools. A general scenario of a patient and his or her symptoms is first presented to

learners, within which lies a problem that must be diagnosed and treated. As students work through the tasks of identifying symptoms and possible solutions, guidance should be provided through structured scaffolding that is customized to the students' prior knowledge and immediate needs (Savery & Duffy, 1995; Hmelo-Silver, Duncan, & Chinn, 2007). Far from Kirschner, Sweller, and Clark's (2006) view of PBL as minimally guided instruction, a well-planned PBL lesson lends structure to complex tasks to reduce extraneous cognitive load and promote more effective learning as a result (Hmelo-Silver, Duncan, & Chinn, 2007; Schmidt, Loyens, van Gog, & Paas, 2007). This can be accomplished through tutorials, direct instruction, focusing learning tasks, and social interaction and feedback from classmates.

But what form should these scaffolds take, and what should the PBL environment look like within the context of a freshman creative writing lesson? It is important to consider the learners and their preferences, as even the most carefully constructed lesson will fail if students are bored and unengaged, as today's young people often are with traditional modes of teaching (Prensky, 2001; Mabrito & Medley, 2008). These digital natives relish engagement, social interaction, and the ability to direct their own learning, both in the classroom and beyond it, and they are fully accustomed to the fast-paced stream of information found in television, movies, and the Internet. Dickey (2005; 2011) and Gee (2008) found that gaming environments, including video games, simulations, and virtual worlds, can evoke motivation for digital natives in powerful ways by leveraging these values, promoting focus on goals and challenging tasks, offering safety in being able to fail and try again, and allowing for teamwork and shared affiliations with others.

Indeed, immersive gaming environments often provide the balance of scaffolding and freedom of choice that is found in the most optimum PBL environments (Dickey, 2005; Savery,

2006). If it is accepted that a problem-based approach to teaching creative writing is potentially effective, it also stands to reason that game-based principles may be valuable to employ in the freshman English classroom. The ability to appeal to the “Net generation” of students that have always known a world with video games and the Internet lends additional support for the potential effectiveness of such an approach (Prensky, 2001; Mabrito & Medley, 2008). By encouraging Net generation students to find inspiration in digital texts and stories that are “theirs” rather than from the literature of generations past, students will be more likely to find relevance and connections to familiar ideas and stories in the lesson, thus encouraging them to participate more actively (Mabrito & Medley, 2008; Apperley, 2010). Therefore, a creative writing lesson for freshmen should include constructivist as well as game-based principles, in order to promote engagement and connections between the academic and creative worlds.

Teaching Creative Writing Foundations: A Model Lesson

The following discussion will outline a model lesson for freshman students of creative writing in introductory English courses at Purdue University Calumet. The lesson will present an ill-structured problem that involves writing fiction, providing scaffolding through factual information, foundational knowledge and principles related to effective writing (Flanagan, 1974; Blythe and Sweet, 2008; Tanemura, 2010). Consistent with problem-based learning (Savery & Duffy, 1995; Jonassen, 1997; Savery, 2006), the constructivist learning environments model (Jonassen & Rohrer-Murphy, 1999), and game-based learning (Gee, 2008; Apperley, 2010; Dickey, 2011), the lesson will also provide students with prompts that help them make connections between their stories and the real world, thus helping them to develop a unique voice without inducing excessive cognitive load.

Lesson Outline for Learning to Write Creative Fiction: Developing Character and Perspective

Learning Goals:

- Students will be able to develop stories based on interpretations of a complex situation, weaving current and historical fact into their writing.
- Students will be able to write works of short fiction, accurately applying at least one of the four literary perspectives (first-person, second-person, third-person, and omniscient).
- Students will be able to accurately implement principles of plot, setting, and character in creative writing.
- Students will be able to engage in collaborative discussion and peer review of each other's writing, offering feedback and criticism as needed.

Problem Generation: Students must engage in an authentic scenario that involves real-world problems (Savery & Duffy, 1995). These problems are often multidisciplinary in nature and open-ended in that there is not necessarily one correct way to approach the problem or offer a solution. A problem in investigating what happened to a group of modern archeologists who have mysteriously disappeared from an Egyptian worksite will therefore be examined in this lesson, using the problem as a springboard toward developing creative stories.

Problem Presentation: The Heritage Key Foundation (<http://heritage-key.com>) has constructed a very realistic Egyptian archeological dig simulation. Students will be asked to register at the website and download the software to create their avatar – their digital character within the virtual world – to begin to exploring this virtual representation of the Valley of the Kings. They will explore in small teams of three to four. When they get to their destination, however, they find something amiss. Tools are left strewn about, some of them half-buried in

sand, and no one appears to be around. The dig sites are left open and unguarded, and several of them have open entryways to dark tombs of unknown pharaohs. What has happened here?

Where is everyone?

Students are asked to explore as much they wish, taking note of the things their avatars might “witness.” They may chat with other group members as they speculate about what has happened to the archeologists who were once at the site, and they may find clues to prompt them to research archeological work, the dangers of spending time in the open desert, and how to protect oneself from dehydration, sandstorms, and very cold nights. Each student’s task is to write a short story, from the perspective of one of the missing archeologists or from that of his or her avatar, about this mysterious problem, including presenting a solution. What happened, and how did it happen? What details led them to think this way? As students write creatively they will also learn more about the geography and history of Egypt, and they must use this information in order to construct a feasible story-based response to the problem.

Facilitator Role: The instructor serves as a guide during exploration and during the writing process, which includes providing insight into writing conventions as well as guiding students through the use of the virtual world, and leading them to useful resources regarding Egyptian history, climate, weather, and archeological practices. Scaffolding will consist of direct instruction, “hints,” and suggestions as required by the situation. As students work in the simulation in a computer lab setting, the instructor should actively observe students as they work.

Reflection and Debriefing: When students have written their stories they will spend time in peer review, exchanging their writing and commenting on what they see. They must then reflect and make edits as needed. Near the end of the lesson, all students will come together as a

class to briefly discuss their thoughts on the writing prompt, the virtual world, and what they enjoyed or did not enjoy about the learning experience.

Assessment: The completed stories will be assessed by a detailed rubric designed to evaluate their attainment of learning goals, their collaboration activities, and the quality and feasibility of their story. During peer review, students will use this same rubric to assess each other's work, as well as their own, as they make revisions prior to submitting a final draft.

Application of Constructivist and Problem-Based Learning

Problem-based learning is often best applied to ill-structured and complex situations, particularly when these scenarios are authentic and multidisciplinary (Jonassen, 1997; Savery, 2006). The above lesson outline provides just such authenticity through the simulated archeological site, mixing historical and scientific concepts into the development of creative narratives. Because Purdue Calumet students are unlikely to encounter an actual archeological dig, the virtual environment provides a simulation where they can make deeper connections to the real world through interactions with virtual objects, characters, and situations (Dickey, 2011). This type of active exploration allows them to detect clues and find relationships to real-world phenomena in a visual and very hands-on way, a key component in constructivist learning as well as imaginative writing response (Jonassen & Rohrer-Murphy, 1999; Knoeller, 2003). It is from this active engagement that learning can be constructed, helping them create stories based on experience as well as factual information and creative insights.

Constructivist learning environments like PBL should also promote collaboration with teachers, other students, and learning materials as much as possible (Jonassen & Rohrer-Murphy, 1999; Savery, 2006). In the above lesson, students work together during the simulation as well afterward during constructive feedback and revision. This type of collaboration is common in

many approaches to creative writing (Blythe & Sweet, 2008), and allows for a “workshop” or “studio” atmosphere where students with more writing skill can collaborate with those who are struggling to help them see where they could improve. The free exchange of ideas in such a situation often helps all students create better stories, as they gain ideas and learn from one another (Blythe & Sweet, 2008), and the process shares much with theories related to constructivism. Social constructivism serves as a powerful framework for task-centered, collaborative work, emphasizing problem solving, team building, and using technology to facilitate the collaborative process (Mabrito, 2006). Such collaboration can serve to decrease extraneous cognitive load and increase germane cognitive load by helping students stay focused on learning tasks and providing scaffolding, thus helping them work within the zone of proximal development (Schnotz & Kürschner, 2007). This zone represents the balance between what students can do without help and what complex tasks they can achieve with assistance, and when students work within their zone of proximal development, an optimum environment for constructing learning is maintained. The proposed creative writing lesson uses collaboration during the game exploration and during the writing process in order to help students stay within this zone and provide them with the scaffolds they need to bring creativity, science, and history together.

At the conclusion of a PBL lesson, a “debriefing” should take place to explore and synthesize what has been learned, engage in self- and peer-assessment, and finally allow the teacher to assess students toward their attainment of stated learning goals (Savery, 2006). Toward the conclusion of the lesson, students will come together to reflect on what they have learned and accomplished. They will also use rubrics to evaluate themselves and each other, and the same rubric will be used to evaluate student work and attainment of goals. Using so many

layers of evaluation tends to promote inquiry and higher levels of learning in beginning writers, although writers may experience vulnerability and discomfort when attempting to evaluate the work of peers (van Oostrum, Steadman-Jones, & Carson, 2007). However, such discomfort can also lead to greater creativity, and better writing as a result. The use of rubrics allows for more objective and holistic assessment, which is necessary in learning-centered environments (Schiller, 2009). Particularly when dealing with multifaceted PBL projects, Schiller (2009) indicates that assessment should focus on what students are doing as well as why they are doing it, and it should also serve to motivate students toward improvement by providing guidance toward creating a good final product. When assessment is based on a single grade, it can serve to be far more punitive than helpful to students in such settings; therefore, the more feedback students can receive on all learning goals, through evaluations by peers as well as by the instructor, the more effective the learning experience will be overall.

Discussion of Underlying Theory and Technology

There are, of course, many ways to structure writing activities, and there are few examples of combining PBL with creative writing. However, scholars such as Knoeller (2003) and van Oostrum, Steadman-Jones, and Carson (2007) note that creative response to the reading of literature can be a useful tool for learning more about the art of writing as a whole. Particularly when writers reflect on what they have done at the end of the activity, they have been found to be better able to bridge the gap from creation to interpretation, and thus achieve a better understanding of what “good writing” means (Knoeller, 2003; Bizzaro, 2004). PBL, with its constructivist roots in problem-solving, active response, and reflection (Jonassen, 1997; Savery, 2006), provides an excellent venue for creative writing activities that take the idea of creative response to literature a step further. Instead of responding to an existing story or poem,

students are responding to a situation, using factual information and their own interpretations as the springboard toward developing highly creative responses.

As discussed previously, game-like environments can also provide digital natives with an interactive version of such a “springboard” of inspiration. When students respond to literature they can have a tendency to inadvertently copy the styles they read (Knoeller, 2003; Vakil, 2008), but an immersive gaming environment does not allow for this as easily. Instead, plot, setting, and character come to life, allowing students to make visual as well as mental connections to the story, which can prompt them toward creative writing in unique, and potentially more powerful, ways. Games and related simulations also allow for understanding to be situated within authentic, real-world contexts in a way that is transparent, immersive, and constructivist (de Jong & van Joolingen, 1998; Gee, 2008). Knowledge is gained through activity rather than passively attending class, listening to lectures, and completing assignments or exams. Much like Jonassen and Rohrer-Murphy’s (1999) discussion of activity theory and its role in constructivist learning environments, Gee (2008) notes that students become active participants in learning through gameplay, often without even realizing that they are indeed learning. The enjoyment of the situated, game-based context promotes active engagement in authentic problem-solving with built-in scaffolding, and from this, learning occurs quite naturally.

This does not necessarily mean that other media could not have been employed in designing the model lesson. A virtual world was chosen because of its ability to be freely explored without leading learners toward specific conclusions. The virtual world’s open-endedness allows learners to create their own “cybertexts” (Apperley, 2010), allowing them to fully organize and configure their in-game experiences. This kind of exploration allows for better meaning-making within a PBL environment (Jonassen, 1997). However, other

technologies could have provided similar results, including off-the-shelf commercial games such as *The Elder Scrolls IV: Oblivion*, as this game has goals and quests but it also allows for non-linear exploration and almost complete freedom of choice for players (Apperley, 2010). The subject of the PBL prompt may have required modification if the game title and structure were different, but the execution would have been similar. Indeed, other types of technologies, such as surfing the Web or engaging in a multimedia presentation may have been adequate alternatives as well. The important factor is the instructional methods used to achieve the objectives, and not necessarily the media itself (Clark, 1994). Media certainly facilitate the learning process, but Clark (1994) warns that media should not be confused with the message. Depending on availability or even student interest and characteristics, other technologies certainly could have been employed that may have made this creative response problem just as effective.

Analysis of Solution Effectiveness and Ease of Design

Problem-based learning and other constructivist teaching techniques have been shown to be quite effective in promoting deeper learning of content as well as transferrable skills such as inquiry (Jonassen & Rohrer-Murphy, 1999; Ke & Xie, 2009). Jonassen and Rohrer-Murphy (1999) note that traditionally instructivist approaches to teaching can inhibit student creativity and fail to give them the relevant knowledge they will need to work within different contexts. Thus, in order to ensure that students are able to use their writing, inquiry, collaboration, and interpretation skills in a wide variety of contexts, it is important to provide environments that allow for this kind of transfer and deeper learning. A CLE and PBL framework provides this.

However, guided exploration and scaffolding during problem-based activities is important for effective learning. Research has shown that when guidance is minimal, learning

can actually decrease rather than increase (Kirschner, Sweller, & Clark, 2006), so it is important to ensure that enough structure is provided to allow students free exploration without allowing them to wander “off track.” Hmelo-Silver, Duncan, and Chinn (2007) cite a great deal of literature that shows the potential effectiveness of CLEs and PBL activities in increasing learning of content as well as preparing students for future learning. The key is in ensuring that the lesson is well-designed and properly implemented. In a study by Warren, Dondlinger, and Barab (2008), it was found that problem-based inquiry in a virtual space with scaffolding that is gradually faded as the activity goes on can be highly effective in increasing writing skill and fluency. The model lesson in this paper is designed in a way to promote this kind of guidance as well, requiring the instructor to be highly present at all times, as well as offering students the ability to collaborate with each other and engage with game- and Web-based materials to supplement and enhance knowledge as the activity progresses.

However, Warren, Dondlinger, & Barab (2008) also warn that PBL using game environments can take a great deal of time to develop and implement, which can deter many instructors from implementing them. Developing the learning environment, as well as allowing students to adequately explore, write, and collaborate as needed, can take a significant amount of classroom time that many instructors may not be able to take. In addition, when so much time is given to constructivist and PBL lessons that rely on learner exploration, learners can experience excessive cognitive load (Sweller, Kirschner, & Clark, 2007; Erlandson, Nelson, and Savenye, 2010). However, Nelson and Erlandson (2008) noted that when multimedia design principles were implemented thoughtfully into the design of a multi-user game environment, extraneous load was reduced. Ensuring that unnecessary words, graphics, and audio are not included in the selected virtual space used for the model lesson can lead to better focus on actual learning tasks

and related details within the environment. In this way, germane cognitive load can be increased to help move learners toward higher levels of learning (Schnotz & Kürschner, 2007), rather than overloading them with information that may or may not be helpful to their journey toward a creative response to the given problem.

Conclusion

A constructivist learning environment featuring challenging and ill-structured problems can require a great deal of time to design and implement well, but these environments have also demonstrated the ability to help students reach higher levels of critical thought, inquiry, and creativity (Warren, Dondlinger, & Barab, 2008). These skills are essential, as when lessons fail to foster genuine curiosity, they often fail to engage most students, particularly young college freshmen who would be considered digital natives (Prensky, 2001; Dickey, 2005). In addition, creative writing is a field that requires both a sense of curiosity about the world as well as structured guidance (Knoeller, 2003; Vakil, 2008). Beginning writers benefit greatly from prompts, particularly those that lead them toward higher levels of thinking about subjects by providing examples and factual information. Most writers need a sufficient place from which to begin writing creatively, and while reading and responding to literature can provide this (Knoeller, 2003), active exploration of a virtual world can also provide the prompting needed while engaging students at deeper levels. Rather than attempting to copy the style of authors they read, students have a chance to see, hear, and experience events for themselves in a virtual setting, allowing them to develop their own voices more thoroughly. After all, all writing is creative writing in some sense (Flanagan, 1974; McVey, 2008), so it benefits students to find creative responses to problems and experiences they face within the context of history, science, art, mathematics, and all other fields.

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Appendix A: Web Resources

- Five Creative Writing Lessons from Video Games:
<http://diariesofanexistentialist.wordpress.com/2012/02/07/five-creative-writing-lessons-from-video-games/>
- Lesson plans for a creative writing course (college level or high school):
<http://teacher2b.com/creative/creativp.htm>
- Creative writing game and ebook for young learners: <http://www.creative-writing-solutions.com/legends-of-druidawn.html>
- E-How – Creative Writing Activity Ideas: http://www.ehow.com/video_4872321_writing-activities-elementary-students.html
- Video Game Lessons for Real Life: <http://www.kickstarter.com/projects/1328332041/8-bits-of-wisdom-video-game-lessons-for-real-lives>
- Web English Teacher: <http://www.webenglishteacher.com/creative3.html>
- Writing and Playing the Sims: <http://odewire.com/52320/reading-writing-and-playing-the-sims.html>
- Are Games Educational?
http://www.education.com/magazine/article/Video_Games_Educational/
- Prezi presentation from ISTE 2012: <http://prezi.com/xybosve4ty78/creative-writing-problem-based-learning-and-the-technology-enhanced-english-classroom/>

Appendix B: Common Core Standards Application

While the lesson described in this article applies to freshman college students, learners as young as fifth grade may be able to participate in similar lessons with some modification. The following Common Core Standards (see <http://www.corestandards.org>) apply to this lesson:

- Reading:
 - Key Ideas and Details 1, 2, 3
 - Craft and Structure 4, 6
 - Integration of Knowledge and Ideas 7
- Writing:
 - Text Types and Purposes 3
 - Production and Distribution of Writing 4, 5, 6
 - Research and Build Present Knowledge 7, 8, 9

Appendix C: Sample Rubric

Based on the lesson described in this article, a variety of approaches to the evaluation rubric or checklists appropriate for assessment of learning goal achievement may be used. Kathy Schrock’s Guide for Educators (<http://school.discoveryeducation.com/schrockguide>) lists a number of resources for developing rubrics within most common subject areas, as well as tools for assessment of collaboration and cooperative learning, multimedia projects, and even the effectiveness of other rubrics. Thus a rubric designed to assess problem-based learning that integrates virtual worlds and creative writing might include that students will:

Use sensory language effectively, using an approach that shows the reader rather than tells them what is happening.	
Use appropriate, precise word choice.	
Minimize the use of adverbs in description and in dialogue.	
Maintain spelling, punctuation, and grammar conventions of the language in which the story is written.	
Use consistent verb tenses throughout.	
Maintain and develop believable characterization, including ensuring that characters react to conflict or decision-making faithfully as compared to their roles and ambitions.	
Show creativity in the imaginative descriptions and innovative framing of problems and solutions facing characters in the story.	
Demonstrate research abilities in maintaining a link with real and historical facts, supported by believable and referenced evidence.	
Use technology in innovative and effective ways for stimulating curiosity, critical thinking, and knowledge expansion.	
Collaborate effectively by relaying information to teammates and supporting group knowledge development.	
Engage honestly in the peer review process by providing constructive feedback and offering questions related to both positive comments and areas for improvement.	

Flanagan (1974) notes that in literature study, teachers often ask students to contemplate the stylistic choices authors have made. It is not a stretch of the imagination, then, to ask them to do the same for themselves or each other. However, the difference is that creativity is a much different kind of measure than effort, and one should not confuse the two. It is one thing to assess research abilities or peer review participation, but it is quite another to assess the quality

of a student's creative efforts. Teachers must take care to not judge harshly against their own ideas of what good creative writing is, but instead should examine the substance of a student's efforts toward achieving the learning goals. The very nature of PBL and its pursuit of ill-structured problem-solving requires that there is no one correct solution (Jonassen, 1997; Savery, 2006), and teachers experimenting with creative lessons should take this under strong advisement when engaging in facilitation and assessment.