Wicked Problem of Practice

James Paul Gee (2013) discusses how the education system is "frozen" in thought; we continue to use the educational methods from an age-old society, however, these methods no longer work in the 21st century. Using these old methods has created "stupid" people (Gee, 2013). This paper focuses on the first wicked challenge presented by New Media Consortium (NMC): "Rethink what it means to teach and reinvent everything about teaching." In answering the three key questions posed by the NMC regarding this wicked (highly challenging or possibly unsolvable) problem, a potential solution emerges.

Three Key Questions:
1. *What is the role of a venerated teacher?*

A venerated teacher is one that acts less like a fact-spewing lecturer and more like a classroom facilitator; he provides opportunities for problem-solving and critical thinking while modeling metacognition (Bransford, Brown, and Cocking, 2000).
2. *What are the defining attributes of the teachers we need to build on?*

Unfortunately, many attributes of a teacher need to be improved or reshaped in order to change the future of education, but the attributes we should build upon are those that inspire learning through creativity and experimentation (Mishra & Koehler, 2008); learning should be fun and taking risks should be celebrated (Bransford et al., 2000).
3. *What can and should be the key competencies of a teacher?*

A teacher should be able to foster critical thinking, creativity, and experimentation (Mishra & Koehler, 2008). He/She should make his students accountable for their learning (Bransford et al., 2000). In addition, a teacher should incorporate Gee's (2013) concept of the "mind of minds"; the greatest mind is one that comes from many minds. Learning occurs when students collectively create and problem-solve.

Suggested Solution to Problem

In addressing the three key questions it becomes apparent that the model of schooling needs to change as we rethink what it means to teach and be a competent, venerated teacher. We see this change coming in the form of Project Based Learning (PBL) environments. Typically classrooms today incorporate project oriented learning as part of the traditional model where often teachers ask students to complete a summary project to demonstrate their learning at the end of a unit.The issue here is that real learning did not have to occur for students to complete this project, particularly in the 21st century where students can find the answers online. Project Based Learning is a shift to a new model, one that builds upon Dewey's work on experiential, hands-on, student-directed learning (Maida, 2011). PBL requires that the project come first, it is what drives the learning that will occur. Students address meaningful, real world questions and a project is formed to pursue a possible answer; often the student produces a tangible "product" to showcase this as well. Based on this, Project Based Learning is also inline with identified 21st Century learning skills that foster lifelong learning: information and communication skills, thinking and problem solving skills, and interpersonal and self-directional skills (P21). While good teachers have fostered these skills, it is necessary to now deliberately, strategically and

broadly include them in the classroom, and Project Based Learning allows this to occur.

Why we think this will work
Self directed/regulated learning that comes with PBL also encourages students to learn using metacognition, strategic action, and motivation which in turn can lead to "higher test scores, decreased student discipline issues, considerably lower teacher workload, greater student involvement, and improved student ability to connect theoretical classroom instruction with real-life situations" (Corsi, 2010). Teaching and learning in the 21st Century means real world problems, applications, and experiences. Students will learn more when they are engaged in the type of learning that is relevant and meaningful to them (P21), PBL enables this and for learning to extend beyond the walls of the classroom.

Issues/Challenges we foresee
Research has shown that PBL can be hard to implement well, and effective use will depend on the teacher's skill and knowledge (Ravitz, 2008). In a study done by Ravitz (2008) the most frequent issue stated by teachers was lack of time, but also students' lack of experience and skills were seen as roadblocks to using PBL. Lacking experience and self-confidence, students understandably want to know what constitutes a "good" or "bad" decision to the problems they are facing, however, creating a safe learning environment and celebrating risk-taking can allow students to reshape their core philosophy about learning (Bransford et al., 2000).

Summary
Project Based Learning encourages the reconstruction of teaching because learning becomes student-focused. In PBL, the learner must apply critical thinking, creativity, and hands-on experimentation in their learning; the teacher must then facilitate and demonstrate these same competencies themselves. Overall, if we are to rethink teaching, we must also rethink the format of our teaching model. Project Based Learning is a model that will not only address the concerns of the immediate curriculum, but also the learning that will continue long after leaving the classroom.

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