

Improving Critical Thinking & Communication with Problem-Based Learning

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Overview: Introduction and Definition

A QEP that brings together critical thinking, communication, and problem-based learning would address a desire that consistently comes up in surveys and reports of employers' desired attributes in college graduates. For example, in the 2013 AACU report "[It Takes More Than a Major](#)," 93% of the 318 employers surveyed responded that "a demonstrated capacity to think critically, communicate clearly and solve complex problems is more important than a job candidate's undergraduate degree" (1).

While communication and critical thinking will be familiar to stakeholders, "problem-based learning" (PBL) needs to be defined: it is a model where students work in teams to engage a complex problem and propose a solution. PBL originated in medical schools and was designed to connect knowledge learned in the academy to that needed for the workplace. The problem is often introduced as a case study with a rich context, multiple facets, competing stakeholders, and no "right answer." A PBL model also foregrounds the *process* of problem-construction and -solving rather than the product, and in this way intersects with critical thinking and communication as learning outcomes; reflection is also a crucial component. It is important to note that PBL can be a learning outcome, a method of achieving one, or both.

Although there are variations, the team-based approach tends to follow a specific protocol. An instructor enacting a PBL pedagogy in its purest form adopts the above model by organizing students into teams and giving them a real world context or problem to engage. Oral communication is enhanced through collaboration and teamwork (O'Grady, et al, 2012); writing may be integrated as writing-to-learn activities, writing in genres specific to the problem and context (progress reports, proposals, etc.), and reflection. Students engage in critical thinking through identification and exploration of: the problem, assumptions underlying stakeholders' positions, potential solutions, and so on. The instructor's role changes radically, as he or she becomes a facilitator of student-directed learning rather than a lecturer or locus of authority (Chan, 2009).

PBL is much more common in STEM courses, pre-professional programs, and law schools than Humanities courses. However, "problem-based," "case-study," or "scenario" writing and speaking assignments are also gen-ed appropriate ways of teaching critical thinking and communication. For these assignments, students are presented a scenario or context and asked to formulate a response to it (Bean, 2011). Depending on the assignment, the problem can be given or it may be left to the student to identify or construct. The assignment itself can

also vary in scale, from a simple written description for a one-time assignment to a semester-long situation elaborately constructed by supporting documents or artifacts. Problem-based writing and speaking assignments may put the student in a hypothetical situation (“Imagine you are on a committee that will recommend whether or not to fund...”) or ask her to explain the ethical implications of different courses of action for a complex real-world situation. These types of assignments tend to appear in the literature on teaching writing and critical thinking as examples of teaching students to apply knowledge or take community/civic action.

When PBL is adopted in a QEP, it is often seen as a way to increase student engagement and persistence and enhance critical thinking and writing performance (Cooke and Moyle, 2002). PBL is also implemented to enhance behaviors, attitudes, and dispositions such as persistence, civic engagement, or personal responsibility (Woods, 1991).

How this Topic Can Meet Institutional Needs:

- **Parents and Alumni Interests.** To the extent this overlaps with the QEP category “real world skills,” it has the potential to address what the “HPU Survey Results--Final Report” identified as the primary interest of parents and alumni.
- **Student Satisfaction.** Due to the perception that solving real-world problems makes one more marketable, it may help address a “challenge” identified on the 2014 Student Satisfaction Inventory: “The education I receive at HPU will help me obtain my desired career or admission into my first-choice graduate school.”
- **Faculty Interests.** This topic would address two faculty interests: PBL is currently viewed as an “effective pedagogy,” and it could increase “rigor” by enhancing critical thinking and oral and written communication.
- **Advising.** If this topic was implemented in gen-ed courses, students may have a stronger sense of what scholars in different disciplines “do”--how they think, how they communicate, the problems they research and solve--and therefore make better choices in their major; if advisers were made aware of the problem scenarios for courses, they could share this information with students.
- **Writing and Communication.** As ENG 1103 is currently the only writing-intensive gen-ed course, a focus on this topic would give HPU students more opportunities to develop fluency and sophistication in their writing. If implemented in the gen-eds, it would introduce oral communication as a learning outcome.
- **Existing Programs.** It complements but does not duplicate HPU’s emphasis on experiential learning and holistic education.
- **Curricular Coherence.** Finally, it may have potential to address what the “Final Report” calls HPU’s “identity crisis” by pedagogically bridging the inquiry orientation of the liberal

arts (reflected in the LEAP outcomes) and the real world pragmatism of the pre-professional programs.

Best Practices and Examples

Readers should note that this section discusses standouts from the “Sample QEPs” section below. While critical thinking and communication are goals frequently adopted as QEPs, problem-based learning tends to be folded into larger initiatives such as active-learning, engagement (Georgia Perimeter), or undergraduate research (University of Houston).

However, a few QEPs have bundled PBL with other learning outcomes: Palo Alto College created a “Problem-Based Learning” [QEP](#) that included critical thinking and communication as learning outcomes. The University of South Alabama has made available their very thorough 2013 [proposal](#) to improve student persistence and learning in STEM courses through PBL. In this QEP, STEM courses were targeted for their low passing rates and PBL identified as an effective pedagogy to improve learning and persistence in STEM. PBL is the foundation of the University of Delaware’s Institute for Transforming Undergraduate Education, and the Institute makes a variety of [PBL resources](#) public, including sample syllabi, projects, evaluation forms, and a database of sample problems called the “PBL Clearinghouse.”

John Carroll University adopted a “critical thinking” QEP that clearly integrates problem-solving and communication, visible in its [QEP Critical Thinking Assessment Rubrics](#). In making “Writing as a Citizen” one strand of their [“Educating Excellent Writers” QEP](#), Elon University offers an example of real-world problem-solving, written communication, and critical thinking.

Best practices for writing should take into account WAC/WID research (Writing Across the Curriculum/Writing in the Disciplines). This body of research sees writing as an intellectual activity (and therefore a method for thinking critically) and a way of constructing knowledge that is deeply context-bound (Hall, 2006). Old Dominion University’s “Improving Disciplinary Writing” [QEP](#) is a good example of this, as its goal is to improve reasoning and problem-solving in the major by improving writing. Learning goals that conceive of writing as a discrete and generalized skill are ineffective; rather, writers continually learn how to write new genres for new contexts, purposes, and audiences, and add these to their repertoire.

Learning Outcomes and Assessment

Readers may want to begin by consulting the AACU VALUE rubrics for the learning outcomes relevant to this topic: “critical thinking,” “oral communication,” “written communication,” “problem-solving,” and “teamwork.” It is worth emphasizing here that the VALUE rubrics indicate benchmarks across four years of study and not levels of achievement within a course. Sample QEPs also offer models for assessment.

While “problem-solving” and “teamwork” are themselves AACU learning outcomes, they do not have to be adopted as learning outcomes for this topic. Due to its pedagogical effectiveness, PBL is often implemented as a method to improve “critical thinking” or “communication” outcomes; in such an instance PBL is not the learning outcome but the method of teaching it (O’Grady, et al, 2012). (A QEP that utilizes PBL as a method to improve critical thinking and communication is implied in how the topic is phrased now, but that may have been unintentional). If this topic is pursued, it will be important to articulate the desired learning outcomes and if “problem-solving” and/or “teamwork” are desired ends in themselves or the means to improved critical thinking and communication.

Resources and Participation

Faculty development would require the bulk of the resources to implement this topic. This means we would need to establish the equivalent of a Center for Teaching and Learning and hire one or more professionals with a strong record of training faculty in PBL and improving student performance in critical thinking and communication learning outcomes. Any department or student population could feasibly participate, but for practical reasons courses and sites will need to be specified. We could focus on gen-eds, upper-division, or both. The topic lends itself well to a capstone experience of some kind--this could be implemented in the majors or earlier in a strategic way. Method of implementation would require further research and input.

Advising and admissions would be directly involved. There is great potential for students to propose solutions to problems that can be implemented through student organizations, further integrating the learning experience by bridging students’ academic and social lives.

Challenges & Possibilities

The greatest challenge this topic poses is that while it may be pedagogically familiar ground for some faculty members, it would require a complete redesign for most participating faculty (Ertmer and Simons, 2005). The University of Delaware’s PBL page states: “The challenge in teaching a PBL model is creating strong problems that lead students to realize the intended course learning outcomes.” For this QEP to be successful, the participating faculty’s commitment and the administration’s commitment to faculty development would have to be high; a tepid effort may only result in ill-conceived courses and lowered student satisfaction in academics (Chan, 2009). There are currently few campus resources to draw on.

The possibilities lie in its potential to: speak to parents’ and students’ concerns about “real world” skills; address an oft-cited employer concern (while mindful that addressing stated concerns does not directly translate into employment); make academic inquiry authentic and potentially part of student life; bring coherence to a bifurcated curriculum; innovate

pedagogically (including hybrid/online courses); offer research and publication opportunities for participating faculty; and provide meaningful opportunities for more oral and written communication.

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Sample QEPs

Critical Thinking QEPs:

Florida Agricultural & Mechanical University

<http://www.famu.edu/index.cfm?qep>

NC State University

<http://accreditation.ncsu.edu/qep>

Parker University

<https://www.parker.edu/uploadedFiles/SACS/Parker-University-QEP.pdf>

Pfeiffer University

<http://www.pfeiffer.edu/about-pfeiffer/qep>

St. Petersburg College's

<https://www.spcollege.edu/CriticalThinking/about/qep.htm>

Oral & Written Communication QEPs:

Bethune-Cookman University (Written)

<http://www.cookman.edu/academics/oaa/qep.html>

Converse College (Oral and Written)

<http://www.converse.edu/about/accreditations-and-affiliations/converse-qep>

Eastern Carolina University (Written)

<http://www.ecu.edu/cs-acad/qep/>

Eastern Florida State College (Written)

<http://www.easternflorida.edu/faculty-staff/institutional-effectiveness/quality-enhancement-plan/documents/whitepapers/commskills.pdf>

Elon University (Written)

<http://www.elon.edu/e-web/administration/provost/qep/default.xhtml>

Lagrange College (Oral)

http://home.lagrange.edu/qep/oralcommunication_qep.pdf

LeMoyne-Owen College (Oral)

<http://www.loc.edu/academic-affairs/sacscompliance-qep/Documents/QEP.Draft.Complete.pdf>

Mississippi State U (Written)

<http://www.qep.msstate.edu/>

Old Dominion University (Written)

<http://ww2.odu.edu/ao/sacs/qep/>

Houston Baptist U (Written)

<http://www.hbu.edu/About-HBU/Resources/Office-of-Institutional-Research-and-Effectiveness/Compliance-and-Accreditation/SACS-Quality-Enhancement-Program/QEP-Background.aspx>

Savannah State University (Written)

<http://qep.savannahstate.edu/>

Shaw University (Written)

<http://www.shawu.edu/Administration/QEP.aspx?id=1316>

Tennessee State U (Written)

<http://www.tnstate.edu/write/documents/WRITE%20QEP.pdf>

University of Kentucky <http://www.uky.edu/IRPE/ie/QEP.pdf>

University of Mississippi (Written)

<http://www.olemiss.edu/qep/qepfaqs.html>

University of Southern Mississippi (Written)

<http://www.usm.edu/qep/finding-voice-improving-oral-and-written-competencies>

Problem-Based Learning QEPs:

Palo Alto College

https://www.alamo.edu/uploadedFiles/PAC/Faculty_and_Staff/QEP/QEP-Fact-Sheet.pdf

Georgia Perimeter College

[http://depts.gpc.edu/engage/aQEPdocument\[a\].pdf](http://depts.gpc.edu/engage/aQEPdocument[a].pdf)

University of South Alabama

<http://www.southalabama.edu/qep/qepdoc.shtml>

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