Problem-Based Enhanced Language Learning:

Ensuring Access to Both Language and Content

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Inside:

The Changing Landscape of American Schools

Over the past twenty years, the student population of American schools has changed dramatically. The number of English language learners (ELLs), a student whose primary home language is one other than English and subsequently struggles to communicate or learn in the language, has steadily increased. Public school students in the United States classified as ELLs in 2015 was nearly 10%, or approximately 4.8 million students (National Center for Education Statistics). In states like Nevada and California, this represents roughly 20% of the overall student population (NV 17%, CA 22%). ELLs have also been identified as the fastest growing student population, "growing 60% in the last decade, as compared to 7% growth of the general student population" (Grantmakers for Education, 2013). Another critical aspect to consider of this rapidly changing student landscape is the number of ELLs that are born in the United States. No longer can it be the assumption that our ELL students immigrated to the United States. Rather, the majority of ELLs enrolled in our schools were born in the United States. In fact, "85% of pre-kindergarten to 5th grade ELL students and 62% of 6th to 12th grade ELL students are born in the U.S." (Zong and Batalova, 2015).

Importance of Adjusting our Approach

Educators can often feel underprepared to meet the unique needs of the ever-transforming diverse student population in the United States. Additionally, with the introduction of the Common Core State Standards (CCSS) in 2009, educators have seen a demand for increased rigor in classrooms across the country (National Governors Association Center for Best Practices, Council of Chief State School Officers, 2010). This increase in rigor can be seen not only on the part of the educators, but also in the language demands placed on students as they work to master the content and skills taught. See Figure 1 for an illustration of the increased rigor in language demands across content areas taken from the CCSS and Next Generation Science Standards (NGSS Lead States, 2013).

English Language Arts

- Emphasis on text complexity and language.
- Expectation that students will produce and use evidence in text to justify their views.

Science

- A technical vocabulary that is particular to each science discipline, requiring students to code-switch from everyday uses of language to the language of science.
- Information conveyed not just through texts, but also through visual representations including pictures, diagrams, graphs, charts, and equations.

Math

- Scenarios outlined in problems are language rich and require multiple steps.
- Text can require students to translate between and among words, numbers, tables, diagrams, and symbols.
- Students determine relevant ideas and the reasonableness of an answer.

Historically, language development has been relegated to the study of formal language, such as sentence patterns, grammatical rules, and the parts of speech. These elements of language are often seen as being separate from content. As a result of this practice, ELLs are often not afforded the opportunity to learn and practice the skills outlined in the CCSS and NGSS. A new perspective on language views it as an important element of all learning and recommends that all content areas should have a deliberate and focused emphasis on language development. This shift involves learning content and language in tandem and, as a unique cohort of students, ELLs require specific and targeted instruction to promote the approach. ELLs need to be engaged in meaningful learning opportunities that encourage their language development beyond the traditional focus on formal language (van Lier & Walqui, n.d., p. 4). Through the pedagogy of Problem-Based Enhanced Language Learning (PBELL), outlined below, we are proposing that learning language through content, rather than learning language then content, will better serve the language and knowledge/skills acquisition of our ELLs.

Check out Buck Institute's tool for developing a driving question or problem: https://www.bie.org/object/document/driving_question_tubric

What is ProblemBased Enhanced Language Learning (PBELL)?

Recent discussions of educational reform and accountability have centered on the concepts of student engagement and standards-based instruction. One of the most promising approaches to addressing these challenges is ProblemBased Learning (PBL). PBL is an educational pedagogy rooted in constructivist theories in which students learn content through an open ended, student-centered, experience (Mills, Bonner & Francis, 2006; Moshman, 2017). An effective PBL inquiry experience begins with a meaningful problem that is relevant to the student population and is grounded and evaluated through standards based subject matter. A PBL lesson requires students to work collaboratively researching the problem and developing potential solutions. Using books, articles, web resources, interviews, hands-on experiences, and other methods, students seek a variety of solutions and share those solutions with their authentic audience.

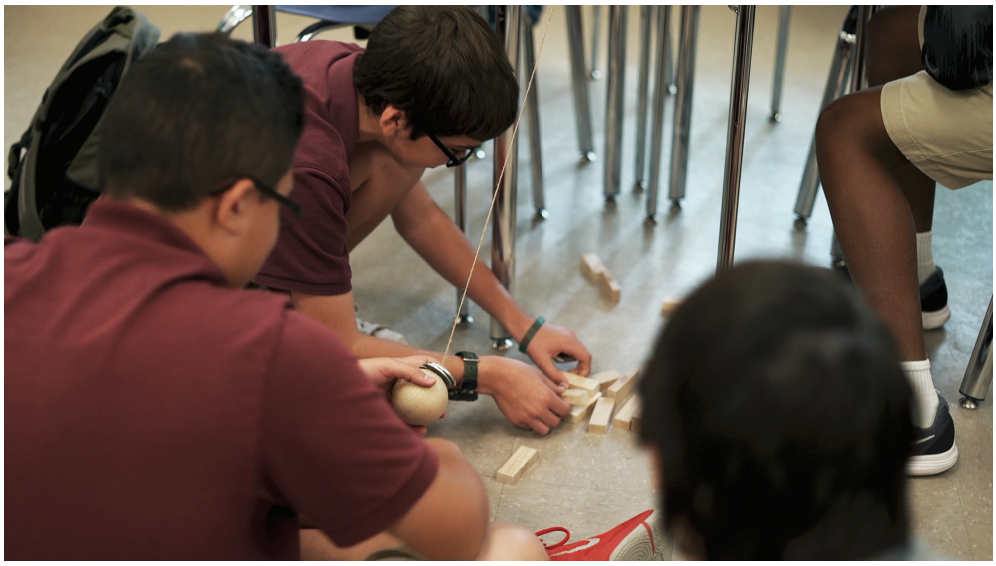
Learn more about iTeachELLs through our Story Map: http://arcg.is/2s4ySm2

iTeachELLs unique approach to problem-based learning takes the established PBL pedagogy and enhances the student experience through supporting and developing specific language skills (Buck Institute for Education, 2014). This approach is called ProblemBased Enhanced Language Learning. Within a PBELL environment, students utilize language collaboratively in order to access prior knowledge, research new topics, brainstorm and discuss potential solutions, and present their findings to an audience. In a classroom using PBELL, all language is considered an asset in supporting even more opportunities for rigorous learning. The inquiry based approach of PBELL, specifically, addresses the needs of ELLs by ensuring students have access to both content and language learning in parallel. This is accomplished by providing opportunities for students to read, write, speak, and listen throughout the PBELL experience and ensuring that scaffolds and supports are built in. The main component distinguishing a PBELL focused lesson from that of PBL, is the intentional focus on language. In order to ensure that both the content and language objectives are accessible to all learners, instruction must include support and strategies for ELLs. The foundation for these supports and strategies were developed by the Council of Chief State School Officers and serve as the foundation of supporting ELL students. They were designed to help

"PBELL is accomplished through a deliberate and focused emphasis on language as a tool to access content."

students develop language competency in the disciplines of English language arts, science and mathematics (Council of Chief State School Officers, 2017). These standards support defining the language, knowledge, and the skills that ELLs need. To plan for these experiences, educators must be able to develop lessons that are developmentally appropriate for the language learner.

PBELL is accomplished through a deliberate and focused emphasis on language as a tool to access content. The learning experience must include opportunities for students to read, write, speak, and listen using specific language scaffolds. PBELL helps to ensure that language is no longer just a measure of content-specific vocabulary, but rather a way for students of all language backgrounds and abilities to communicate meaning-making and engage in math, science, or social studies discourse.



PBELL in Practice

Meaningful Problem

In ProblemBased Enhanced Language Learning, students work collaboratively to solve a meaningful problem.

In the example lesson entitled "Wrecking Ball," a local football stadium is being redesigned, with a small portion of the stadium needing to be torn down. In the simulated experience, students act as a company hired to design the most effective wrecking ball in order to accomplish the project's goal. Their problem: "How can we, as a company, design a wrecking ball with the most effective characteristics to demolish part of the football stadium?" Wooden block towers represent the football stadium and a small, medium, and large sphere attached to twine represent the wrecking balls that are available to the company. Students must knock down the top five layers of the tower, representing the portion of the local stadium being redesigned. In teams, students conduct a series of experiments where they alter specific variables of the wrecking ball (i.e. height of the swing and/or size or weight of the wrecking ball, etc.).

Photo credit Mariano Guerra

Language and Content in Tandem

In PBELL, the approach to mastering both instructional content and language requires intentionality on the part of the educator.

In Wrecking Ball, science content and language content are taught in tandem. Language plays an essential role in helping students access and interact with the content (i.e. concepts, definitions, etc.) in the most meaningful and impactful way. The following strategies are evident in Wrecking Ball:

Exploring the Problem - Exploring the problem helps students understand the problem and connect it to their own lives. In this lesson, watching videos about wrecking balls helps students consider both the purpose of the tool and where it is utilized in their everyday life.

Accessing Prior Knowledge - Using prior knowledge to predict possible outcomes of a problem/project enhances a student's ability to build connections independently, and as a group. After students have a chance to explore the problem, the educator prompts learners to access prior knowledge. For this lesson, students write three anticipatory questions using sentence stems like "what if…" and make a prediction about the most effective wrecking ball to accomplish the project's goal.

Working With Peers – Learning in a peer group increases the opportunities to gain a shared/enhanced vocabulary and a shared understanding of new concepts, improving each student's overall learning. In this lesson, students work in teams to conduct experiments to determine which bob size, height swing, and bob mass are most effective. For each experiment, students complete three trials in which they alter a single variable and ensure their results are accurate. Results are documented on student and class graphs.

Using Scientific Language – Using Scientific Language – Using the language of analysis helps uncover how a student's language gap acts as a barrier to mastering content. After each round, students make observations and draw conclusions using the language of analysis (utilizing specialized vocabulary, processes for recording, etc.).

PBELL Components:

Meaningful Problem
Language and content in tandem
Assessment of content and language

Supports and strategies

Forming and Sharing a Claim - Forming a scientific claim, and then sharing it with others, increases both individual students investment in the learning and their confidence sharing it. At the end of the experiment, students write a proposal to the owner of the stadium of the most effective wrecking ball and support this proposal with both results from their experiment and data collected from their peers.

Assessment of Content and Language

In PBELL, educators assess both the instructional content and the acquisition/use of the language.

The teacher assesses both the language of analysis used in the writing and the student's ability to use scientific evidence from controlled experiments to support their claims. Rigorous science content and language content are melded together in a lesson designed to enhance students scientific and language skills.

PBELL Support and Strategies Implemented

In order to ensure 100% of the content is accessible to 100% of students, PBELL lessons are structured to include scaffolds and strategies that provide access to both the language and the content.

In order to support the use of prior knowledge, students look at varying types and examples of pendulums (i.e. a swing, a piñata, the pendulum in a clock). They discuss the common characteristics and elements of the pendulums including a bob with a mass at the bottom and the swinging motion they each make. This discussion of characteristics help students identify possible variables for the experimentation process. Additionally, students watch a short video of a wrecking ball, ensuring they each have a shared understanding of what a wrecking ball is and what is does. Students work in groups intentionally designed to promote interactions in a shared learning environment. Doing so promotes learning and growing from not only the teacher, but from peers as well. In order to support student language development, groups are encouraged to access their native language while making observations during each of the experiment phases. Groups utilize sentence stems to support their analyses conversations after each experiment. Sentence starters like "After thorough analyses, we can conclude…" and "_____ is/is not significant because…" support students' analysis of the observations and promote the use of evidence in describing them. Students document their thinking on a graphic organizer designed to organize the evidence students will use in their analysis conversations.

Where do I start?

(1) ground learning in real-life, relevant experiences

(2) recognize that language is the tool students use to process and share new learning

Call to Action

It should be recognized that Problem-Based Enhanced Language Learning may not be incorporated into our classrooms overnight. PBELL involves several components; these components can be incorporated into a classroom over time. Not sure where to start? We challenge educators to start with these two key components: (1) ground learning in real-life, relevant experiences for students, (2) recognize that language is the tool students use to process and share new learning and that it should be explicitly taught and modeled in all learning experiences.

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