Pedagogy and Play: Creating a Playful Curriculum for Academic Achievement and Engaged Learning

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Key Summary Points

1   Using instructional techniques based upon play can improve achievement

2   Standardization has created more problems than it solved

3   Three case studies are presented as demonstrations of the framework

Key Terms

Play
Assessment
Learner Centered Practices
Instructional Communication
Curriculum
Cognitive
Affect
Classroom
Instructional Design
Learning

Introduction

Welcome to the playful classroom. This chapter will present ways to increase academic engagement and achievement through play. The following outline provides a map:

- A review of the research on the relationship between play and academic achievement
- Background and implications of standardization vs. play
- Key frameworks for constructing a playful classroom
- Three examples of playful classroom activities
- Key Findings
- Best Practices
- Future Needs
- Resources

The Benefits of Play

Play is not only an imaginative activity of amusement. Play and games serve important roles in cognitive, social, and affective development (Dubbels, 2014; Fisher, 1992; Frost, 1998; Garvey, 1990). In pre-industrial times, pastoral and foraging societies, children did not learn sequestered away from adult contexts (Thomas, 1964). Instead, children participated in playful variations of adult activities, where they could observe adults at work, and were able to imitate and emulate these activities through play without the danger of failure and consequence (Bock, 2005; Rogoff, 1994).

Rubin, Fein, and Vandenberg provided a thorough psychological overview of the early role of play in their chapter in volume four of the Manual of Child Psychology (1983). They observed that humans play longer relative to other mammals that play. Lancaster and Lancaster (1987) built upon this position and state that this extended period of play is essential for development. Bjorklund, (2006) expands upon this view, and states that humans play longer because they are adaptive organisms, and, that extended play is essential, allowing humans the skills and knowledge to become independent in complex environments.

When children engage in complex peer play, they exhibit greater gains in levels of symbolic functional and oral language production, as compared to if they are interacting with an adult (Pellegrini, 1983). Additionally, when a learner experiences learning through play, where they can experience and role-play adult work, they report the activities are more meaningful, and that the activity did not feel like learning (Dubbels, 2010). This aligns with Winkielman & Cacioppo, (2001), who found that when learning new information is experienced as easy, processing is experienced as pleasant and effective.

Play has been Removed from Schools by Non-Educators

It was not psychologists, educators, or child development researchers that removed play from schools. According to McCombs & Miller (2007), the emphasis on performance testing and standardization was led by a campaign of politicians and corporate interests to influence what happened in the

classroom. With government reports such as Nation At Risk (1983), the National Governors Association (1989) worked to create Goals 2000 (1994) and called for greater levels of accountability for student achievement and rigorous academic standards. They called for more focus on standardized content, standardized content delivery, and standardized tests. This campaign to standardize schools worked to change classroom curriculum, but it contradicted and ignored 100 years of psychological research about human learning (McCombs & Miller, 2007).

The new standards and assessments became mandated performance indicators on how schools were evaluated. For a school to be rated as competent, their students had to meet federal and state performance guidelines, and school funding was tied to student performance on standardized assessments. This situation became so desperate for some schools, that entire school districts (superintendents, principals, and teachers) committed fraud by falsifying assessment data (Dayen, 2015).

Political Reasons for Standardization Over Play

Elected officials and journalists reported that American students had fallen behind other industrialized nations in math and science, and the proof was in American student performance on international testing tests called PISA and TIMMS. They warned that without improvements in student performance in math and science, the USA would no longer be competitive on the world stage (US Committee on Prospering in the Global Economy of the 21st Century, Science, & (US), 2007).

Reports such as these were political in nature. When American student scores are compared to students of the same income level, students in the United States did significantly better than all other countries:

> For every administration of PISA and TIMSS, when controlling for poverty, U.S. public school students are not only competitive, they downright lead the world. Even at home nationally, when controlling for poverty, public school students compete with private school students in Lutheran, Catholic, and Christian schools when analyzing NAEP data (Ravitch, 2013).

Poverty plays a central role in student performance. Schools serving lower-income students tend to be organized and operated differently than those serving more affluent students. Poverty is the most significant impact on academic performance. It does not matter if these schools are big or small, private, or religious. Poverty is the most significant predictor of poor academic performance (McNeil & Valenzuela, 2000; Rumberger & Palardy, 2005). Students in poverty often come to school without the social and economic benefits held by many middle-to-high SES students, such as access to books, food, parental support with schoolwork, and financial stability (Sirin, 2005).

In wealthy schools, students are more likely to experience playful activities and learner centered pedagogy (Anyon, 1980). Schools that serve children in poverty, not only struggle the most, but are also often the first to get the standardized education, reduction in play, and elimination of electives such as music, arts, and training. We may be compounding the problem, rather than offering a solution by removing these things from children in poverty.

Children in poverty also experience greater exposure to threat and violence, which contributes to play deprivation. Play deprivation has arisen as a medical diagnosis. It means that children do not experience the essential cognitive, social, and affective benefits of learning through play (Milteer, Ginsburg, Health, & Mulligan, 2012). Play is an essential element of learning and development. Removing play in favor of standardization is a mistake.

Standardization is Profit-Centered, not Student-Centered

If anything was learned from the standardization campaign, it was that the creation of standards and content has proven to be very financially lucrative to testing companies, and very destructive for school districts (Dayen, 2015). These policies have led to change of control, where classrooms are now legislated through national education standards, and this legislation is often influenced, if not written by, lobbyists that work for the companies that profit from selling tests and curriculum, rather than the people who have experience working with children and child development research (Leistyna, 2007).

The shift to standardized assessment and curriculum has also led to instability. It is very profitable to have standards change. When standards change, schools are required to meet those new standards, and this is often accomplished by paying for new tests and new curriculum. State-based initiatives on Common Core—the standards and assessments—change every 4 years (Porter, McMaken, Hwang, & Yang, 2011). Each shift in standards constitutes a form of educational whack-a-mole, where districts are forced to purchase new curriculum, and states must create new assessments. This is a lucrative market, over $2 billion annually (Strauss, 2015).

To cultivate financial opportunity, educational publishers have been very involved in this process; Pearson Education, ETS (Educational Testing Service), Houghton Mifflin Harcourt, and McGraw-Hill collectively spent more than $20 million lobbying in states and on Capitol Hill from 2009 to 2014 (ibid). In many ways, standardization and accountability initiatives have exacerbated the "problems" they set out to solve, and instead, created a lucrative market for pre-packaged curriculum and tests, the deprofessionalization of teachers, and significant cost to American taxpayers.

Standardized methods of assessment often lack the long view, and do not pass the tests of time, retention, and adaptation. According to Atkinson & Mayo, (2010) focus on subject matter and facts only serve to limit student motivation, learning and choice, and reduce the potential for innovation. Additionally, high stakes tests, and the practice of evaluation during instruction is an unreliable index of whether the long-term changes, which constitute learning, have actually taken place (for review, read Soderstrom & Bjork, 2015).

Parents Opt-Out of Standardization

Interestingly, many parents and stakeholders have begun to embrace the long view, and begun to doubt the value of testing; they have begun to "opt-out", which is now called the "opt-out parents movement" (Layton, 2013). The opt-out movement indicates a trend towards more play-based and learner-centered

practices, advocated for by the American Psychological Association (APA) (Alexander & Murphy, 1998; Barbara, 2004; Cornelius-White, 2007; McCombs, 2001; McCombs & Miller, 2007; Weimer, 2013).

Key Frameworks

The Promise of Learner Centered Practice and Play-Based Approaches

If the goal is to take the long view, then learner centered practices (LCP), and play-based approaches offer great promise. In LCP, students are empowered in how they learn, and what they learn—the same conditions that enable play. Students engaged in play have been shown to feel more ownership and control over the learning process, and learn more (Pellegrini, 1983).

LCP and play both require skilled instructional communication to convey:
1. Positive teacher disposition
2. Process-orientation
3. Choices in assessment and content

1. Positive Teacher Disposition

What is important in the classroom is to motivate learners to engage, and sustain engagement. This can be done though play, even with the most reluctant and oppositional learners. What is essential in creating a positive classroom climate and interpersonal relationship is that fear of failure is removed. This can be accomplished when communication with students are grounded in unconditional positive regard. When students are exposed to happiness and play through activities and feedback, rather than fear and criticism, they tend to perform better, may experience trait change, from being oppositional to participation in classroom activities.

When this practice was used with oppositional children for forty-four days, the oppositional children exhibited trait change, and showed a greater likelihood of accepting new tasks and participating in on-task behavior (Peed, Roberts, & Forehand, 1977). Similarly, Parpal & Maccoby (1985) showed that this technique also reduced opposition, and increased prosocial behavior in children with no diagnosis for opposition. The key here is that play is the opposite of fear. Children seldom exhibit playful traits in the face of fear and criticism (Sutton-Smith, 2001). Playful learning necessitates a sense of safety, as play can make one vulnerable (Dubbels, 2014). Positive communication can help change an individual's personality traits from being oppositional, fixed, and rigid, to being playful, open, and tolerant, similar to what Dweck (2006) has characterized as the difference between a fixed and a growth mindset.

Learning Mindset: Growth Mindset vs. Fixed Mindset

When a child has had limited exposure and opportunities to play, they may not approach activities with a playful mood. Their disposition may be similar to traits that Dweck, (2006) calls a fixed mindset,

which may be a symptom of what Brown (1998) has called play deprivation. Both fixed mindset and play deprivation present traits such as rigidity in outlook, oppositional behaviors, and fixed ideologies. This does not mean the individual does not think they are smart, it predicts the individual will look for situations where they can prove they are smart, and avoid new challenges from growth, and when faced with a challenging assignment, problem, and/or situation, are more likely to give up (Dweck, 2007).

Conversely, individuals with a growth mindset are more likely to persevere in challenging contexts, because they believe that with effort they will learn and grow to meet the challenge (Yeager & Dweck, 2012). Growth traits are created through play, because the learner is given a sense of control, and threat is reduced. This can be accomplished through playful instructional communication, based upon encouragement, opportunity, and unconditional positive regard (Reddy, Files-Hall, & Schaefer, 2005).

Emotions in Learning: Fear vs. Happiness

Where fear prepares the body to respond to threats, happiness can signal an invitation to play and interact. One can communicate a playful mood as an invitation to play, just as one can communicate threat as a warning (read Dubbels, 2014 for a review). Fear and happiness are communicated as emotions, they are brief in duration and consist of verbal, physiological, behavioral, and neural mechanisms (Fox, 2008). Regular exposure to these emotions can create changes in personality (as traits) and physiology.

Extended exposure to fear or threat can lead to neurocognitive degeneration called neurotoxicity, which causes measurable deterioration of the hippocampus (Gunnar & Quevedo, 2007; Lupien, McEwen, Gunnar, & Heim, 2009). The hippocampus is the area of the brain responsible for processing new memories and new learning. Conversely, exposure to happiness, and play response can be restorative, and lead to cognitive, physical, social, and emotional well-being (Ginsburg, 2007). When learning new information is experienced as easy, and processing is experienced as pleasant, learners are more likely to engage and seek out that experience again (Winkielman & Cacioppo, 2001).

Emotional Context of Learning Through Play

Play is often described as a pleasant experience; one might equate being in a playful mood as happiness. A mood such as playfulness can be encouraged or discouraged through exposure to happiness and feelings of safety and belonging. In contrast, fear of failure will undermine any attempt to engage a learner in play (Sutton-Smith, 2001). It can be said that many learners will refuse to participate in any activities where they fear failing in public (Kohl, 1992, 1994). One can increase motivation and engagement by emphasizing learning through play. It is essential to take the fear out of learning. The practice of high stakes testing, and standardization is in many ways, a fear-based pedagogy. Play happens in the absence of threat, and in the presence of feelings of safety and unconditional positive regard. Many learners have expressed a sense of pleasure and timelessness in play.

Timelessness in Play

The feeling of timelessness is not new to learning research. Timelessness has been reported in situations of both threat and play, where high levels of arousal lead to attention narrowing. Attention narrowing is defined as a decrease in the range of cues that an organism can take in and perceive from the stimulus and its environment (Easterbrook, 1959). This narrowing shuts out thoughts and feelings that are not related to the experience of the activity, allowing for greater acquisition and mastery of new information (Elliot & Covington, 2001; Elliot, Gable, & Mapes, 2006; Gable & Poole, 2012; Sackett). However, play seems to provide a greater sense of ease and pleasure in learning. This is an important distinction between fear and play, as students reported that when learning new information was experienced as pleasant and easy, processing was experienced as pleasant and effective (Dubbels, 2010; Winkielman & Cacioppo, 2001).

Setting the Mood

To create a playful mood, the teacher should expose learners to low-intensity feelings through images, words, and behavior related to the targeted mood. This can influence behavior and decision-making (Forgas, Burnham, & Trimboli, 1988), and lead to learner trait changes (Lay, Waters, & Park, 1989). Additionally, the teacher needs to reduce fear of public failure in learning activities. To do this, teachers must empower students by designing learning activities and assessment as a collaborative, developmental process (Alexander & Murphy, 1998).

2. Process-orientation

To design for play, we start with powerful ideas (Papert, 1980). Powerful ideas are concepts such as the idea of "feedback". Imagine you push a button, and something happens—that is feedback. Feedback exists in many experiences. Not only in engineering, but also in biology and social sciences. Powerful ideas like "feedback", are ideas with leverage, they are applicable to any number of systems. This allows the student to explore the powerful idea in relation to their interests and prior knowledge, and may provide a common experience to leverage new knowledge and make processing pleasant and easy (Resnick & Silverman, 2005).

Resnick & Silverman, (ibid) use the analogy of a house for designing learning activities. They describe a leaning activity as a house, built upon a powerful idea, with a low floor, high ceiling, and wide walls (p. 119):

- The foundation: an idea with leverage, like exploring the concept of "feedback"
- The floor is low: novices can easily get started
- The high ceiling: potential for complexity and sophistication
- The wide walls: offering a range of student choice and explorations
- Blueprints: allow the student to compose a plan and create a vision, where they create the learning process. This is called emulation.

Learning Through Emulation

Emulation is an activity that promotes exploration, discovery, and creation (Whiten, McGuigan, Marshall-Pescini, & Hopper, 2009). Emulation is different from imitation (for a review read: Dubbels, 2014).

- Emulation happens when learners observe behaviors and strategies performed by others, but then recombine elements of these behaviors into novel variations. In an emulation, the learner creates the process or model that serves as evidence and constructs an outcome (Tennie, Call, & Tomasello, 2006; Whiten et al., 2009).
- Imitation happens when the learner is led through a process, and imitates the steps. Through imitation, the learner can experience key characteristics, behavior, and function of a selected physical or abstract systems, or process models (Banks, Carson, Nelson, & Nicol, 2001).

There are two major benefits to emulation:

1. New insight and innovation are produced (Bateson, 2005; Bruner, 1972; Fagen, 1981; Sutton-Smith, 1966).
2. Learning through emulation comes with minimal costs, because the learner constructs their own model/process. (Bateson, 2005; Burghardt, 2005; Spinka, Newbury, and Bekoff, 2001).

There is one major benefit to imitation:

1. Imitation does not require the creation of process by the learner. The learner follows a pre-constructed model, and experiences learning with limited range of choice. This can be advantageous for learners with little prior knowledge and problem solving experience, as the learner does not have to fill in the gaps, but rather explore and learn through trial and error.

Discovery through Practice

Numerous experiments in the domains of perceptual-motor learning and verbal-conceptual learning have shown that conditions that induce the most errors during acquisition are often the very conditions that lead to the most learning (for a review, read Soderstrom and Bjork 2015), which reinforces the importance of emulation and the experience of failure and recovery through play. Emulation is a form of play, that can be co-constructed between students and teacher.

To invoke play in learning is to invite and guide exploration, wrong answers, and discovery through practice over time. This is the core of innovation, and this pedagogy can help students understand that getting the wrong answers can lead to the right answer.

3. Choices in assessment and content

Informative assessment is a learner-centered practice and is the method of choice for promoting playful academic learning. Using informative assessment can minimize fear of failure. There are three major types of assessment, and they are defined by their usage:

- **Formative assessment:** Formative assessment is used as a performance indicator. It is an example of an external tool added on to the learning activity to gauge progress. It is often used as a pretest, or an external measure that happens during the lesson.
- **Summative assessment:** Summative assessment provides a final evaluation or summarization of learning. A typical summative assessment is a standardized test. Summative assessments are often tools external to the learning activity, and serve as an end marker in learning.
- **Informative assessment:** An informative assessment informs the learner during instruction. It acts as a road map, directing the learner towards instructional outcomes. It acts as a marker for learning as way finding.

Assessment theorists, Black and Wiliam (1998), Shepard (2000), Brookhart (2003), and Wiggins (1998), describe informative assessment as a moment of learning that can engage students in decision-making, and help them to invest in activities where they can exercise choice. The essential difference is that an **informative assessment** occurs within the flow of learning, and provides guidance like a roadmap.

There are four practical reasons to use informative assessment:

1. Data-informed, rather than data-driven evaluation.
    a. Students co-create learning goals from the assessment criteria
    b. Consider evidence about quality of their work based upon academic coaching.
    c. Create process, integrating the assessment criteria and qualities into their learning goal.
2. Can be aligned to build upon student interest
    a. Foundation – exploration of a powerful idea
    b. Low floor – easy to start
    c. High ceiling and wide walls—allows greater range and complexity
3. Organizes and focuses academic communication
    a. The instructor becomes a coach.
        i. Model the practice of a growth mindset and reflection
        ii. Summarizing, question generating, clarifying, and predicting
    b. Directs encouragement towards effort and understanding of criteria and qualities
4. Increases likelihood of play, and thus engagement and learning.

Informative assessment is a learner-centered practice. It helps teachers collect data about student learning, helping them to avoid assumptions or jump to conclusions, which is the basis for becoming an effective teacher (Danielson, 2009). Using informative assessment can increase feelings of playfulness, minimize fear of failure, and present the teacher and student relationship as a roadmap, with opportunity for discussion, and sharing that, *"I too am always learning. Right now I am learning about how you understand this activity, and what I can do to help you."*

Case Study One: Boat Racing as a STEM Engineering Unit

Context: This activity took place in a 9th grade course on engineering at Washburn High School in Minneapolis, MN. The curriculum was designed as direct instruction. There were hands on activities, but these activities were teacher-directed, and lecture-based. There was a clear scope and sequence, a textbook, prepackaged teacher PowerPoint's, and data-driven assessments. This was a scripted curriculum.

There was discord in this classroom. The teacher had been removed, and the new teacher (the author of this chapter) took over midway through the first quarter. In the beginning students were often oppositional and off-task. To counter this, the new teacher modified the prepackaged curriculum to be more play-like, with the intention of increasing on-task behavior, improved academic outcomes, and a reduction of academic disturbances.

Purpose: Learn the difference between design and engineering.

Description: To create this emulation students were given an initial general goal (build a sailboat), a role (boat designer), and shown a range of resources and tools to be used in service of designing and building the boat they were to race.

Key vocabulary: design, naval architecture, marine engineering, mechanical drafting, the engineering notebook, measurement, engineering and design principles, and scientific principles such as buoyancy, displacement, force, turbulence, reasoning, hypothesis testing, data collection and interpretation of the data.

The initial emphasis in the lesson was a boat race. Students were told that they would be designing and building a boat. There would be four different competitions:

1. Speed: first boat across the pool
2. Weight-Bearing: boat that could carry the most weight
3. Stability: boat that could handle rough water best
4. General Purpose: best average scores across competitions

In getting ready for design, students were asked, "What is the difference between engineering a boat, and designing a boat?" By building a boat, students began to learn about engineering and design, using rubric criteria, available tools, resources, and information to improvise a sailboat. In order to provide guidelines for assessment, a rubric was created for each station, which served as a roadmap (Table 1, next page).

Table 1. Station One Rubric Boat Building Emulation

	Purpose & Plan	Isometric Sketch	Vocabulary	Explanation
Level up	Has identified event and hull design for appropriateness	Sketch includes height, length, and depth by lines 120 degrees apart in scale.	Correct use of five key terms from the word wall to justify hull design.	Clear connection between the hull design, event, sketch, and terms for building prototype and testing
Approaching	Has chosen a hull that is appropriate for event, but cannot connect the two.	Has drawn a sketch where height, length, and width are represented.	Uses five key terms but struggles to demonstrate understanding	Describes design elements, and execution, but cannot make the connection on how they work together.
Do it again	Has chosen a hull, but it may not be appropriate for event.	Has drawn a sketch, but height, length, and width are not represented	Does not use five key terms from word wall	No clear connection between design, concepts, and execution

For one of the first activities students created an annotated isometric sketch in their engineering notebook. This required knowledge of vocabulary, description of design goals, demonstration of an isometric sketch, and an explanation of how their initial plans were going to work. This included the dimensions, materials, and reasoning in the engineering notebook. Through this, the student could level up with review and assessment from the teacher. A passing score allowed the student to move to the next station, or resulted in suggestions of making changes to their boat, and improve their score on the rubric, and grade in the grade book.

Figure 1. Image of Boat Building Emulation Stations

A word wall informed each step of the process with key vocabulary. A word wall is a collection of words, which are displayed in large visible letters on a wall, bulletin board, or other display surface in a classroom. In this lesson, the word wall contained key vocabulary for the activity such as: design, naval architecture, marine engineering, mechanical drafting, the engineering notebook, measurement, engineering and design principles, and scientific principles such as buoyancy, displacement, force, turbulence, reasoning, hypothesis testing, data collection and interpretation of the data.

The assessments worked to inform students of criteria and quality to move forward; to focus student/ teacher coaching, check progress, and provide encouragement directed towards progress on the assessment.

Students moved station to station by meeting the criteria and qualities on each assessment. To move to next workstation (figure 1), students had to check in with the teacher for a review and sign-off. The sign-off worked as a running record, where students would use the language of the rubric and word wall and explain how they had met the criteria, and make a case for their score. This negotiation led to improved comprehension of the concepts and terminology, and provided common understanding of quality (Dubbels, 2010).

When students received a lower score than they wanted, they were encouraged to make changes that were aligned with the rubric quality criteria. This process continued station-to-station. Once students had their plan approved, they leveled up, putting on their safety glasses and began to craft their hull based upon the plan detailed in the annotated isometric drawing. This included cutting and constructing the Styrofoam hull, creating the sails, and eventually participating in the competitions.

Key Findings:

Results from the STEM boat building activity were very positive. In a report presented at the National Science Foundation (Dubbels, 2010), data analysis showed a significant increase in engagement, a significant reduction in classroom behavior incidents (written referrals), and improved successful academic performance, including recall and comprehension. Additionally, the students reported enjoying the class, specifically the activities. They shared that they liked having more choice, and making the boats.

Instructor reflection indicated the activity was more fun to teach. The emphasis on playful mood made a difference in classroom climate. Changing the activity from direct instruction to emulation required more up-front planning, and required some practice maintaining the playful mood. At times it was a challenge to be responsive to students, rather than reactive. In the beginning, students could be challenging and test the limits of the activity—and the teacher's patience. It was essential to remain detached, and treat students with unconditional positive regard. The key was to always go back to the rubric, the system, and the stations. After a few students were getting through, and seeing the cool stuff other students were doing, there was a bit of a snowball effect, and most of the students engaged.

Central to this activity was identification and reinforcement of good behavior. This was done through identifying students on task, and praising them on their effort, and progress using the assessments as roadmaps for successful behavior. In the boat design activity, the assessment, classroom, teacher, and classmates all became resources to help facilitate ideas, and each learner could apply what they observed and build their boat. The assessments happened in the flow of the activity. This process integrates the assessment into the flow of learning, in what is called an informative assessment (Black & Wiliam, 2009; Forster, 2009; Wiliam, 2007; Wiliam & Thompson, 2007).

This approach removed the threat of assessment and learning, and positioned the quality of work as a negotiation, where the student developed the outcome and qualities through the process of trial and error, where the key processes and concepts were imbedded in service to building the boat. This removed the threat of judgment and evaluation, by allowing mastery learning, so that the student built their knowledge and skill, while building their boat. This activity depended heavily on improvisation and a playful approach, where observation, trial and error, and learning from mistakes were a natural part of the learning (Dubbels, 2013).

A successful strategy called a "sunshine call" was immensely helpful in creating and maintaining a playful learning mood. A sunshine call is when the instructor calls home and praises the student effort in class. The teacher does this in the flow of the classroom session. If the student agrees, the teacher calls home and asks if they can share a proud moment about the child with the child's parent. The teacher describes the positive academic behavior, and shares that they are proud of the student, and wanted to celebrate the student, and that the caretakers should be proud.

Although this might seem disruptive, and potentially embarrassing, it has been very effective in changing the classroom climate. When the author first did this, the classroom became oddly silent, and the atmosphere changed. Not only did students soften, they began to gravitate more towards the activity, and open to the teacher. The parents were surprised and expressed gratitude for the positive call. After just one of these public calls, other students asked how they might get such a call, and the author was able to direct the student to the rubric and show the roadmap for success. Sadly, part of the experience of making sunshine calls was that the author learned from parents and students that they had never received a positive call home. This simple act had a significant impact on class moral.

In addition to the celebration of positive behavior, if the adult can practice open-ended questions, take care in listening, and offer playful activities like role-playing, and then tap into LCPs, attachment formation and trust are more likely to occur. This kind of communication is in contrast to authoritarian leadership, which is composed of warnings, criticism, and directives toward children—which is antithetical to creating a playful mood. Playful communication style should be manifest not only in verbal interaction, but also in curriculum materials and classroom management (McCombs & Miller, 2007).

Students appreciated being data-informed in their work and progress. When rubrics and scales were used in an informative way, students were more likely to use assessments as roadmaps, and this helped to clarify quality performance. When the assessment was used as part of the learning cycle, students were able to:

1. Create and synthesize goals from assessment criteria
2. Consider evidence about quality of their work
3. Create process to integrate assessment criteria and qualities with their learning goal

This created greater engagement and ownership in the activity, and students were able to look beyond performance targets and the formal processes promoted by the school district, and help the students co-create activities for further development.

Additionally, students shared that they liked the emulation activity. They liked taking on the role of a marine engineer. Many students reported that they did not know there was such a profession. In reflection, it would have been exciting to have had naval architects and marine engineers visit, in the same way that Shaffer (2006) had engineers lead design groups.

Administrators reviewing the revised curriculum and approach had prior experience with a range of instructional approaches, and connected pedagogically with what the teacher was trying to accomplish with motivation, engagement, and play. By modifying the standardized curriculum with learner centered practices (informative assessment, emulation, unconditional positive regard), observational data, surveys, and assignment completion, students showed greater engagement, fewer behavioral incidents (written referrals), and improved academic performance (criteria referenced grades). For a more thorough analysis of this activity and outcomes, see (Dubbels, 2010).

Case Study Two: Language Arts (Rhythm & Flow)

Context: The activity was designed by the author to support ESOL students and reluctant readers. It was first taught at Green-Central Elementary School in Minneapolis, MN in a multiyear classroom composed of fifth and sixth graders. It was also presented the following year as curriculum for adolescent mothers at the Broadway High School, with the intent of training advanced college reading placement.

Purpose: To improve reading fluency and comprehension. Students were taught that in reading:

- *How you say it, is just as important as what you say.*

Description: In this unit, students learned powerful ideas in reading fluency and comprehension through performance reading. The students created poems, read selections of novels, and song lyrics, and were taught to trust their voices, make reading pleasurable by recreating the voices from the page during silent reading.

Key vocabulary: prosody, volume, pitch, emphasis, and composition.

The Rhythm & Flow activity is an emulation that trains students in reading fluency and oral reading. In Rhythm & Flow, the learner takes on the role of a media personality—they could be an entertainer like Kanye West, Jennifer Lopez, or Katy Perry, whomever the student feels an affinity. They use this media persona to interpret texts, asking questions like, *"How would Kanye sing this?"*

Not only does the student perform, but they also create lyrics, borrowing and interpreting from texts such as poems, newspaper clippings, and found texts. They learn that anything can be a lyric, and then they seek to perform and produce recordings, surrounding the vocal with sounds and instrumentation—they put a beat behind it.

In order to provide some structure, an informative assessment was used. A reading fluency scale was modified to be more playful and learner-centered to guide students in different qualities of oral reading and interpretation. The values of using this assessment tool is that it provided the student and instructor with shared language so they could describe aspects of their performance and eventually relate elements of that performance into silent reading.

Table 2. Modified Fluency Scale for Rhythm & Flow Emulation

	Scale for Fluent Reading
1	I have chosen a challenging book. I read with hesitation with emphasis on single words—I am trying to learn them in isolation from one another. The "flow" in my reading is a little clunky like a telegraph with word–by–word reading.
2	I just read with two to three word phrasing. My reading seems very hesitant, like I might be unsure, with considerable pausing. I am blending and decoding the words. I am naming the words rather than letting them flow.
3	I am pausing for ending punctuation, but am not making inflection changes from sentence to sentence. I read in phrases but I am lacking in tone necessary in fluent understandable reading.
4	Most of the time, I have, "flow" and phrasing. It is like telling a story to my friends, with vocal intonation and prosody that indicates awareness of punctuation for pausing and breath, and appropriate inflection (i.e., happy voice). I have a knowledge of emphasis (lengthen/shorten words), volume, and pitch for meaning, and where to use pauses with punctuation and phrasing.
5	I should be doing Shakespeare! My performance is characterized by reading with body movement and I EMOTE! "My voice changes to reflect meaning changes in the passage. My inflections are consistently appropriate, and my reading is fluent and smooth, generally easy to listen to and understood.
	Adapted from Table 1. from Marston, Mansfield, cited in (pg. 81 Heineman, in Fountas and Pinnell, 1996) by Dubbels (2003).

This scale was modified to valorize the student effort. The original reading fluency scale is composed with formal, objective language, typical of standardized assessments, and serves as a curriculum based measure (Deno & Marston, 2006). In Table 2 (above) the formal language of the standardized measure has been translated to a more playful mood. This simple modification changed usage from a formative assessment, to an informative assessment—from a formal data-driven collection tool, to a tool capable of informing students of their progress, like a roadmap. This tool was used to enhance instruction, allowing the teacher to act as a facilitator, and allow the student to develop a vision and an ear for what success might look like, and sound like in oral reading, and to help them to make more dependable judgments about the quality of their own work.

The instructor starts by arranging a coaching session; sits next to the student and, talks about what each category in the scale sounds like. This provides two benefits:

1. The student gives permission
2. It provides guided practice for close reading of an assessment.
3. It provides reciprocal teaching, so that the teacher can provide an example that the student can emulate.

Close reading is a careful, sustained, interpretation of a brief passage of text. This is an important skill for students, but one that is not often taught or practiced. It emphasizes paying close attention to individual words, syntax, and the order in which sentences and ideas unfold as they are read (Fisher & Frey, 2012).

To make this into emulation, it was necessary to bring in playful activities, where the students might pretend to be a media personality. This allowed some distance between the student and the performance, and gives them permission to say, "I was just playing". Surrounding this oral interpretation fluency scale with emulation further reduces threat and increases engagement.

Learning as someone else provides some distance through pretense, so that failure is not seen as personal incompetence, but playing towards mastery. This approach is representative of play, emulation, and the growth mindset described earlier in this chapter. This idea is important, as the student is free to role-play, exaggerate and improvise, and make mistakes.

Additionally, the student learns the elements of oral interpretation and expression as powerful ideas. They learn the function of volume, pitch, and gesture in expressive reading, as well as how rhythm, emphasis, and punctuation can change meaning. They learn that how something is said, may be more important than what is said. How a word is expressed can change the meaning.

The unit was highly motivating, as it drew upon high interest activities like popular music and sound production techniques for composition. This emulation promotes the integration of comprehension and composition skills often emphasized in strategy instruction. Rather than composing for the teacher, the student can play the role of a popular music artist, and through role-play, produce music recordings as musical "hits" using easy-to-use software called GarageBand.

Figure 2. GarageBand User Interface from Gavenda (2005)

GarageBand is a music creation studio, which includes pre-recorded loops or musical instruments, Foley effects (everyday sound effect), or even creating their own (Gavenda, 2005). The student can add a guitar, a bass line, and use the microphone to add their voice. *GarageBand* captures the audio and turns it into digital files the student manipulates and shares using recording, mixing tools, and broadcasting tools.

Key Findings

The Rhythm & Flow curriculum structured the development of reading fluency and prosody through the use of key criteria mapped as informative assessment. Through this process, the student learns that there are different styles and genres in text, just like there are in music. They become familiar with a variety of genres, and record their oral interpretations as musical texts. The curriculum draws on role-play, epistemic games (Shaffer, 2006) and to some degree, construction and design. The unit uses a simple scale of oral interpretation as a roadmap toward fluent oral reading and performance.

The students were asked to take on roles and learn genre through the production of media from performance reading. The music production software and role-play made the learning fun and off-loaded the complexity, making the assessment and coaching work together as a roadmap for success and guidance of the learning process. The result of this emulation was improved reading outcomes.

This activity was identified and presented as a best practice by the Minneapolis Public Schools Professional in Practice conference. Along with an explanation of the activity, evidence was presented for improved engagement as on-task behavior, improved reading outcomes in fluency and comprehension. In the course of this activity, students were often able to improve their reading performance by at least one cut score of the scale, and reported improved feelings about their ability to read, and began to use the concepts and terminology in describing their reading (Dubbels, 2008).

Case Study 3: The Constitutional Compromises Emulation

Context: The activity was designed for secondary students taking remedial history courses at the General College at the University of Minnesota, and as part of a Freshman Composition course in the College of Liberal Arts at the University of Minnesota.

Purpose: The Constitutional Compromises Emulation provides experiences to help students understand the way that decisions were made in the creation and structure of the federal government.

Description: This classroom emulation brings together themes from critical readings about the issues surrounding the American Constitutional Convention of 1787. The students read a variety of genre prior to the simulation. Readings included the *Constitution*, and the 23rd, 47th, 51st, 72nd, and 78th in the series of *Federalist Papers*.

Key vocabulary: Constitution, Senate, House of Representatives, states, legislature, slavery, representation, voting, representation, delegates.

Students act as delegates at the Constitutional Convention. Each state has one vote in any decisions made by the convention. The student role is to negotiate and compromise with other states in an effort to secure the maximum number of votes for your state. The recipes for votes listed in Table 3 are an assessment of the relative benefit to the student's state for the possible resolutions on each issue. The points have no relationship to student grade, they serve as a game mechanic to motivate and guide negotiations with other states (student groups).

Representation: The best-known compromise at the Constitutional Convention concerned the method for determining representation and ultimately resulted in the current Congress with the Senate having equal representation for each state and the House of Representatives being based on population.

- Students must consider their state's concerns as a representative. States choose between methods for voting and representation. They can receive points for a one-house legislature with the number of state representatives based upon the state's population; points for a one-house legislature with every state having equal representation; points for a two-house legislature, one based upon population, and one based upon equal representation. Choosing the right voting structure will be important for small states to be the equals of large states in voting power and governmental decision-making.

Counting Slaves: This issue was much more complicated at the time than is usually portrayed in history textbooks. The issue of counting slaves for purposes of representation is usually focused upon with the infamous 3/5 compromises being the result.

- Slaves counted towards population, and could influence the number of possible representatives for each state. However, some states felt that slaves should not count as a "whole person". The student groups must consider their state's concerns about slaves, and how to count them. How slaves are counted will influence the state's representation for purposes of taxation. If slaves are counted as 3/5ths of a person, this will also influence representation and taxation.

Slave Trade: The New England states of Massachusetts, Connecticut and New Hampshire had abolished slavery in the wake of the American Revolution, but small numbers of slaves continued to exist in New York, Pennsylvania and New Jersey where various gradual emancipation plans had been enacted.

- Students must consider their state's concerns about the slave trade. Points will be vary based upon whether slave trade is abolished, restricted, or if a 20 year extension/limit is approved for trading slaves.

The Convention: Students then begin interacting with other state delegations, discussing alternate resolutions, negotiating compromises and concluding political bargains either openly or behind the scenes. Students or the instructor can initiate votes on any issue, in any order, using secret ballot or a simple show of hands. A two-thirds vote (eight of the twelve states) is required to pass any resolution. After the votes have been determined on each of the three issues, students assess how favorable these decisions are to their state by counting the number of points achieved. Students score the outcome of the convention using the Constitutional Compromises scoring table (table 1, below):

Scoring Table

Points listed on the Constitutional Convention scoring table (see Table 3) represent an assessment of the relative importance to each state of alternate resolutions to the three divisive issues explained above. Some compromise is necessary to achieve the required number of state votes and a 3/5 ratio (2 points) had been suggested in 1783. New England and the Lower South were on opposite sides of the slave trade issue (0 or 3 points) but the other two regions were more flexible. All four regions could accept the delayed abolition of the slave trade as a partial victory (2 points).

Table 3. Scoring Table for Constitutional Convention Emulation

A: Representation				B: Slave Count			C: Slave Trade		
State	Equal	Pop	EO/Pop	Rep	Tax	3/5	AB	Tax	NR
NH	3	0	2	0	3	2	3	2	0
Mass	0	3	2	0	3	2	3	2	0
Conn	3	0	2	0	3	2	3	2	0
NY	0	3	2	0	3	2	2	2	0
NJ	3	0	2	0	2	2	2	2	0
Penn	0	3	2	0	2	2	2	2	0
Del	3	0	2	2	0	2	0	2	2
Mary	1	1	2	2	0	2	0	2	2
Vir	0	3	2	3	0	2	0	2	2
NC	1	1	2	1	1	2	3	0	2
SC	1	1	2	3	0	2	0	2	3
Geo	1	1	2	3	0	2	0	2	3

Description of Table 3 (legend):

Column A: Representation
Equal: means an equal number of representatives for each state
Pop: means number of representatives based upon population
Eq/Pop: means one house based upon population, and one house equal for each state
Column B: Slave Count
Rep: means slaves count for the purposes of representation
Tax: means slaves count for the purposes of taxation

(con't) **Column B:** Slave Count
Both: means slaves count as 3/5 of a person for taxes and representation
Column C: *Slave Trade*
AB: abolish slave trade immediately
20 Years: postpone issue for 20 years
NR: no restriction on the slave trade

Key Findings

The Constitutional Compromises Emulation provides a structured, game-like experience that provides an opportunity for students to play the roles of state representatives deciding upon how the government of the United States should be organized for policy making and enforcement. The checks and balances often seem to be arbitrary, until the students begin to negotiate for their state's best interests. This is a fairly simple activity to organize and provides huge insights to students as they negotiate for their state's future power. Students often need help in understanding how to debate and how to manipulate other states. The outcome is not guaranteed to simulate what happened in the real constitutional convention, but as emulation, it provides the experience of compromise, negotiation, and debate that created the current government of the USA. It is important that students are encouraged to present their positions, and why their view should be accepted by the other states. A turn–taking structure, along with the opportunity to respond and vote is important, so that each student is ready to know their position, as they get ready to present it to the groups, and persuade that their position, is the correct position. When the voting is done, the students can debrief to compare what happened in class to what happened in 1787 as a class discussion. Grading can be conducted through participation, such as the quality of proposal, alignment with state's actual views, and their persuasiveness.

Best Practices

This chapter summarized key research on play to make a model for designing learning activities. In summary:

- Play is an innate and powerful form of learning. It is not just for early childhood development. Evidence was presented in the key frameworks section of this chapter that indicate using a playful approach to designing and implementing learning activities lead to reduced opposition, increased compliance, on-task behavior, improved recall, comprehension, and an increased likelihood of unique, innovative solutions to problems.
    - o   The way one learns may be more important than what one learns.
- Play-based activities offer a strong contrast to threat-based activities and promote improved engagement and academic performance.
- Growth mindset, Learner Centered Practice, and Responsive Play share characteristics with play.
- Play increases recall, and reduces difficulty in learning new skills and content. By creating a playful mood through communication, and maintaining this mood with learners, according to the summarized research in this chapter, oppositional behavior, and "fixed mindset" can be changed to create compliance and openness, even in children with an oppositional /defiance diagnosis.
- To create a playful classroom requires activities that promote: unconditional positive regard, choice, trust, intrinsic motivation, control, and process orientation.

- Informative assessment is a powerful tool for developing a playful classroom and should work as a cycle.
  - Informative assessments such as rubrics and scales can provide a roadmap for student learning and teacher insights about their teaching practice.
  - These are constructed through:
    - Making the introduction to activities accessible, interesting and easy, so novices can get started (low floor)
    - Allowing for activities that can become complex and sophisticated so that as competency and expertise grew, learners can extend the activity (high ceiling).
    - Give students a variety of ways to explore the project through choice and effort (wide walls).
    - Build activities around key concepts, which help students to apply formal vocabulary to concepts of which they had previously had only an informal understanding (powerful ideas).
- A playful classroom requires a playful approach to learning on the part of the teacher.

Benefits of Play

Learning generated in the context of play, especially social play, can lead to greater engagement, improved recall, comprehension, and be more innovative. Juveniles can observe behaviors and strategies performed by adults but then recombine elements of these behaviors in novel routines in play (Bateson, 2005; Bruner, 1972; Fagen, 1981; Sutton-Smith, 1966). For example, the levels of children's symbolic functional and oral language production are more varied and complex in peer play, relative to when they are interacting with an adult (Pellegrini, 1983). More importantly, play is a low-cost and low-risk way to learn new behaviors and acquire new skills and knowledge (ibid). Conversely, one could suggest that a limitation of direction instruction, observation, and imitating adults is that this kind of instruction will only transmit existing practices.

Offering activities to children in a playful mood can increase a willingness to take direction, and on-task behavior (Moore, Underwood, & Rosenhan, 1973; Rosenhan, Underwood, & Moore, 1974; Underwood, Froming, & Moore, 1977). To create a more playful mood, participants engage in playful communication, with emphasis on reducing or eliminating all commands, questions, and criticisms.

Play acts as an important organizing principle during developmental growth (Brown, 1998). Play is not only an imaginative activity; play also allows children to imitate and emulate adult work activities without the danger of failure. Children role-play activities from the adult world, and learn to use the tools, rules, and language of adult work. Play is an important part of academic learning. When children play, they develop new strategies and behaviors with minimal costs (Bateson, 2005; Burghardt, 2005; Spinka, Newbury, and Bekoff, 2001).

Future Needs

Using a playful approach in the classroom represents a fundamental change in assessment, offering a philosophy of playful and data-informed assessment, as compared to standardized, data-driven assessment. To be data-informed, assessments are used to guide the way, not to indicate that learning is accomplished. In play-based assessment, one can inform and improve student learning, increase motivation and engagement, and improve our school's programs by learning from our challenges, progress, and performance.

A playful structuring of assessment using the model in this chapter allows one to integrate play, and utilize assessment as a form of instructional communication, reducing threat, and emphasizing play. The value of such an approach is that it provides support for a range of students, including specialized support to educationally disadvantaged populations, including economically disadvantaged students, English Language Learners, students with disabilities, and students who are at risk of not meeting state academic standards.

Resources

Books and publications

A Child's Work: Freedom And Play In Froebel's Educational Theory And Practice: Joachim Liebschner
A Child's Work: The Importance of Fantasy Play: Grace Paley
Animal Play Behavior: Robert Fagan
Animal Play: Evolutionary, Comparative and Ecological Perspectives: Marc Bekoff and John A. Byers
Free-Range Kids, Giving Our Children The Freedom We Had Without Going Nuts With Worry: Lenore Skenazy
Handbook of Child Psychology, Vol 4: Socialization, Personality, And Social Development
Language and Symbolic Power: Pierre Bourdieu
Man, Play And Games: Roger Callois
Media Use By Infants and Toddlers: A Potential For Play: D. Weber
Persuasive Games: The Expressive Power of Videogames: Ian Bogost
Play: Garvey
Play, Dreams And Imitation: Jean Piaget
Play-Fighting: Owen Aldis
Play: How It Shapes The Brain, Opens the Imagination, and Invigorates The Soul: Stuart Brown
Playing Their Way into Literacies: Reading, Writing, and Belonging in the Early Childhood Classroom. Language
        & Literacy Series: Karen Wohlwend
Play, Playfulness, Creativity and Innovation: Patrick Bateson
Steps to an Ecology of Mind: Collected Essays in Anthropology, Psychiatry, Evolution, and Epistemology:
        Gregory Bateson
The Absorbent Mind: Maria Montessori
The Ambiguity of Play: Brian Sutton-Smith
The Art of Failure: An Essay on the Pain of Playing Video Games: Jesper Juul

The Complete Book of Children's Play: Ruth Edith Hartley and Robert M. Goldstein

The Cultural Origins of Human Cognition: Michael Tomasello

The Genesis of Animal Play: Testing the Limits: Gordon M. Burghardt

The Montessori Method: Maria Montessori

The People in the Playground: Iona Opie

The Play of Animals: Karl Groos

The Play of Man: Karl Groos and Elizabeth Baldwin

Video Games and Learning: Teaching and Participatory Culture in the Digital Age: Kurt Squire

Women, Fire, and Dangerous Things: What Categories Reveal About the Mind: George Lakof

Games and websites

Video Games as Learning Tools
> http://vgalt.com

Play and its role in the Mental Development of the Child
> https://www.marxists.org/archive/vygotsky/works/1933/play.htm

6 Types of Play: How We Learn to Work Together
> http://www.spring.org.uk/2008/07/6-types-of-play-how-we-learn-to-work.php

Meaningful Play Conference
> http://meaningfulplay.msu.edu/

The National Institute for Play
> http://www.nifplay.org/

Play England
> http://www.playengland.org.uk/

Games Learning and Society
> http://www.gameslearningsociety.org/

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