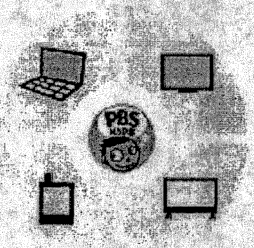


EXPANDED LEARNING THROUGH TRANSMEDIA CONTENT

INTRODUCTION

Building on more than 40 years of partnership in service to our nation's children and unparalleled experience in the production of award-winning children's media, the Corporation for Public Broadcasting (CPB) and the Public Broadcasting Service (PBS), as joint applicants, have developed a new vision to expand learning opportunities for children most in need of educational support. In cooperation with strategic partners the Chicago Public Schools and Boston University's School of Education, as well as the National Summer Learning Association and the Collaborative for Building After-School Systems, CPB and PBS will deliver a next-generation educational ecosystem of integrated transmedia games, media properties, and learning experiences in literacy and mathematics that are aligned with rigorous academic frameworks and state standards. Community-based implementation of these transmedia resources will enrich and support the vital work of families, teachers, and community educators —linking home and school —to motivate and raise achievement among high-risk children ages 2–8. The project's evaluation plan meets the criteria of the Competitive Preference Priority for Scientifically Based Evaluation Methods.

1. NEED FOR THE PROJECT

1(a). Improving Students' Skills in Literacy and Early Math Concepts. The 2009 National Assessment of Educational Progress (NAEP) results show that two-thirds of fourth graders read below proficient levels. Recent NAEP findings also show no increase in fourth grade math skills since 2007, with more than 60 percent of students still performing below proficient levels. NAEP reports gross disparities in reading and math proficiency among African-American and Hispanic children when compared to White and Asian children, and among low-income children (students eligible for the National School Lunch Program) when compared to their middle-class peers. Children who qualify for school lunch programs tended on average to score as much as 25 points lower than their higher-income peers.

The early grades have been identified as a critical time for intervention with young learners to remedy literacy deficiencies and better prepare them with the skills that will be vital to their future academic success (Gee, 2008). Attainment of math skills in the early years has been shown to be not only a strong predictor of later mathematical achievement, but also the greatest predictor of students' later achievement in both math and reading (Duncan et al., 2007).

Given the urgency for students to develop their abilities in literacy and early mathematics concepts so they can attain long-term academic success, the proposed project will deliver transmedia resources, content conveyed through the connected use of multiple media platforms, in both literacy and mathematics to help children develop vital skills.

1(b). Gaps in Educational Services Available to High-Risk Children Are Manifested in the Following Specific Needs to Be Addressed in the Proposed Project.

Need to Offer Young Children High-Quality Transmedia Learning Experiences. Children are now consuming media at record levels (Kaiser Family Foundation, 2010). Most media

content that children in the early elementary grades consume is not educational, and struggling students tend to have the poorest media diets (Sharif & Sargent, 2006). However, evidence suggests that educational media, when coupled with technologies children already embrace, may be particularly effective in engaging and teaching struggling students (e.g., Neuman, 2008).

CPB and PBS are uniquely well-positioned to harness the power of high-quality transmedia content to reach and help struggling children get on the path to academic success. More than 21 million children watch PBS KIDS on television, and more than 20 million engage with PBS KIDS online each quarter. Furthermore, Hispanic, African-American, and low-income homes represent a disproportionately higher number of PBS KIDS viewers and Web visitors, compared to their representation in the U.S. population (Nielsen Television Index, 2008–09; Google Analytics, 2009). In support of academic achievement, the proposed project will deliver: (1) direct, any-time access to a wealth of transmedia storytelling experiences in literacy and math that capture children's imaginations and have a positive impact on learning; and (2) transmedia resources and support for families and educators of young children.

Need for High-Quality Transmedia Educational Resources in Schools. The nation's poorest schools are often those least likely to be able to provide their teachers with powerful new teaching tools and professional development opportunities (Luebchow, 2009). This project will provide teachers nationwide with open educational resources (OER) in the form of (1) high-quality transmedia learning resources ready for use in classrooms; (2) sophisticated tools that identify and aggregate resources for customized student learning and provide a snapshot of student learning progress; (3) online modules and applications that offer new forms of technology-embedded —just-in-time‖ professional development; (4) virtual communities of practice; and (5) opportunities to connect with parents and promote family engagement in

learning.

Need to Engage Children in Learning Outside of the School Day and School Year. A number of studies have shown that effective expanded learning opportunities (ELOs), such as afterschool and summer programs, make a pronounced difference in students' learning (e.g., Durlak & Weissberg, 2007; Zief & Maynard, 2006). Yet often the neediest students do not have sufficient access to high-quality learning opportunities in afterschool or summertime settings (Clapp & Deich, 2007). The effects are particularly acute when students are not engaged academically during the summer months, as they tend to lose important skills and begin the next grade at a disadvantage (e.g., Cooper et al., 1996; Downey & Broh, 2004).

To address this need, we will: (1) partner with ELOs to facilitate the use of our transmedia resources and skills-based content to motivate and effectively address the learning needs of children in these settings, and (2) provide professional development opportunities and transmedia resources to support implementation and tools to customize students' learning experiences.

Need for Content to Support Individual Differences and Differentiated Instruction. A large body of research indicates that not all children learn in the same ways. The Universal Design for Learning framework (Center for Applied Special Technology, 2010) recommends providing multiple methods of presenting information (including the use of digital platforms) to support individual differences in learning.

The proposed project will provide: (1) searchable, transmedia learning resources that strategically use multiple media formats to meet the individual learning styles of children; and (2) a progress tracker to assess individual student performance levels. The tracker will provide insight to which content is most effective for an individual child and find similar resources that

continue to advance that child's learning ability.

Need to Foster Family Engagement and Support Home Learning. The involvement of parents and caregivers in children's learning has been shown to have positive effects on students who are struggling academically (e.g., Bailey, 2006; Ortiz, Stowe, & Arnold, 2006; Justice, Weber, Ezell, & Bakeman, 2002). However, children in low-income families are likely to receive fewer educational experiences in the home. According to Risley and Hart (1995), a 4-year-old child living in a family on welfare has had 30 million fewer experiences with words than a child from a professional family. Higher-income parents also engage children more frequently in dialogue related to mathematical topics, helping to foster young children's numeracy development (Vandermass-Peeler et al., 2009). Overall, striking differences in material resources and the quality of parents' interactions with children in the home contribute to the social stratification of knowledge and achievement (Neuman & Celano, 2001).

The proposed project will provide: (1) around-the-clock access to free, high-quality transmedia learning resources through PBS' outlets; (2) parent-specific content and structured transmedia opportunities for families to learn together; and (3) a progress tracker tool that will empower parents and educators to gain insight into what children are learning. In collaboration with local partners, the project will also support community engagement to introduce families to transmedia learning resources and foster stronger home-school-ELO connections.

2. SIGNIFICANCE

Utility of Products and Services in the Next Generation of Ready To Learn (RTL). CPB and PBS will build on the knowledge gained during the past five years to take children's transmedia content to an even higher level of significance and utility. Under this project, CPB and PBS will partner with producers, math and literacy experts, outreach partners, and evaluators

to develop a comprehensive ecosystem of transmedia learning content and employ innovative strategies to increase use at home, in the community, and in schools and ELOs.

To enhance utility and impact among target audiences, the project will:

- Focus on improving core literacy and math skills in children ages 2–8.
- Use and test a variety of story-driven transmedia content on multiple delivery platforms: new video content, interactive online games (including 3D-rendered collaborative challenges and immersive games), mobile applications (including augmented reality games), and interactive white-board applications.
- Encourage and facilitate parent and educator use by developing innovative tools, including a personalized progress tracker for tracking a child's learning, a transmedia content wrapper to connect all content on a single device and to the progress tracker, and modding tools to enable teachers to adapt content to their classroom needs.
- Employ an iterative production process that will guide development and assess effectiveness.
- Create and align content with rigorous academic frameworks and state standards in literacy and math to ensure high-quality measurable outcomes.
- Collaborate with content and technology experts to create transmedia learning content in math and literacy that motivates children and raises achievement levels.
- Work closely with advisor Creative Commons, a nonprofit organization that provides the global standard for open content licenses, to optimize and deliver our OER components, making them widely accessible and reusable. (See Appendix H for Creative Commons License Chart.)
- Partner with schools, expanded learning organizations, and other community

organizations to facilitate widespread use of transmedia tools and resources.

- Conduct an overarching summative evaluation to assess the efficacy of our approach on increasing literacy and math skills and raising student achievement.

The project will focus on these technologies and interventions because we believe they hold the most promise for delivering effective and engaging educational content to the widest audience possible, including low-income audiences. For example, video content, —when it has been produced with the intention of instructing viewers … has been found to successfully impart academic information and support a child's school readiness‖ (Wainright, 2006). Furthermore, PBS KIDS already delivers video content to 40 million children every quarter via television and pbskids.org/video, with many additional viewers watching content through iTunes and YouTube (Nielsen NTI, 2009; Google Analytics, 2009).

Online games (including 3D-rendered games and immersive worlds) are another powerful and engaging educational tool that will support our project. In a pilot study using the RTL-funded PBS KIDS Island (readytolearnreading.org), participants demonstrated increases in fluency, rhyming awareness, and letter recognition (Linebarger, 2009). Online games can be easily shared through pbskids.org, a premiere online portal for game distribution with an average of 20 million unique visitors per quarter, and as embeddable objects on school Web sites.

Mobile content is a major keystone in our project largely because mobile devices are in widespread use among lower-income households, especially among African-Americans (Wareham et al., 2002), and mobile content is easy to deliver through the iTunes App Store, Google Android Marketplace, and pbskids.org/mobile. Research suggests that —the strengths of the mobile platform—its portability, context sensitivity, connectivity, and ubiquity—make it ideal for learning games‖ (Klopfer, 2009). In a 2010 research trial conducted on iPhone apps for

RTL-funded programs Super Why and Martha Speaks, significant learning increases in rhyming, vocabulary, and visual vocabulary were seen among low-income participants after just two weeks of playing these educational apps (Rockman et al., 2010).

Because of the growing prevalence of in-classroom technologies, such as interactive white boards, we will develop and deliver games through pbskids.org/whiteboard. PBS will also work with SMART Technologies to create at least four games for the new SMART Table, a touch-screen table for multiple players ages 4–7.

Over the last five years, under the leadership of CPB and PBS, RTL pioneered groundbreaking transmedia content designed to encourage children to learn, practice, and reinforce key skills and build connections that bridge home and school environments. These innovations have captured the attention of children and the adults in their lives. Educational content found on PBS television and pbskids.org (PBS KIDS Island, the Great Word Quest, and others) reaches millions of disadvantaged children every day. More than 50 research and evaluation studies conducted by CPB- and PBS-funded researchers provide evidence that public media content has a profound impact on learning, particularly for low-income children.

Likewise, the content and technology that will be developed through this project will have wide-reaching value: (1) for children, we will deliver fun and engaging educational experiences in formal and informal settings; (2) for teachers, we will develop new models for integrating techniques and technology to advance learning objectives in reading and math; and (3) for parents, we will enable a radical shift in how they recognize and facilitate learning moments with their children, making it easier for families to engage in learning activities anytime, anywhere.

3. QUALITY OF THE PROJECT DESIGN

The overarching goal of this project is to improve math and literacy achievement among young children in high-need communities by: (1) delivering engaging, story-driven, curriculum-based transmedia content in math and literacy with built-in progress tracking; (2) conducting rigorous research on the efficacy of the content; and (3) ensuring broad distribution and use of the content on multiple platforms through strategic national and local partnerships.

3(a). Knowledge from Research and Effective Practice. Multiple studies show that educational media designed using high-quality, scientifically based reading research principles enhance low-income children's literacy skills (Penuel et al., 2009). For example, although television exposure alone is sufficient to support literacy development, combining it with ancillary classroom activities and other media, teacher training, and mentoring further solidifies literacy development (Penuel et al., 2007). The gains that low-income and underserved children make from viewing RTL content on PBS and playing related online literacy games are equal to or greater than national estimates of the achievement differences in early literacy skills between low- and higher-income preschool children and minority and majority preschool children (e.g., Linebarger, 2009).

The proposed project design marries broader research in current and cutting-edge transmedia technologies (including, but not limited to, Druin, 2009; Gee, 2003; Ginsburg, 2003; Klopfer, 2009; NCTM, 2002; U.S. Department of Education, 2010; National Reading Panel, 2007) with CPB and PBS' research and experience in developing and delivering high-quality, narrative-driven, effective children's transmedia experiences.

3(b). Improve Teaching and Learning and Support Rigorous Academic Standards. CPB and PBS have developed a fully-integrated educational ecosystem that includes the

following components: (1) curriculum frameworks; (2) transmedia content development with existing and new children's media properties; (3) transmedia learning through games; (4) bilingual transmedia tools and virtual communities of practice for educators, parents, and caregivers; (5) implementation of transmedia resources in schools, expanded learning settings, and home; and (6) formative and summative research.

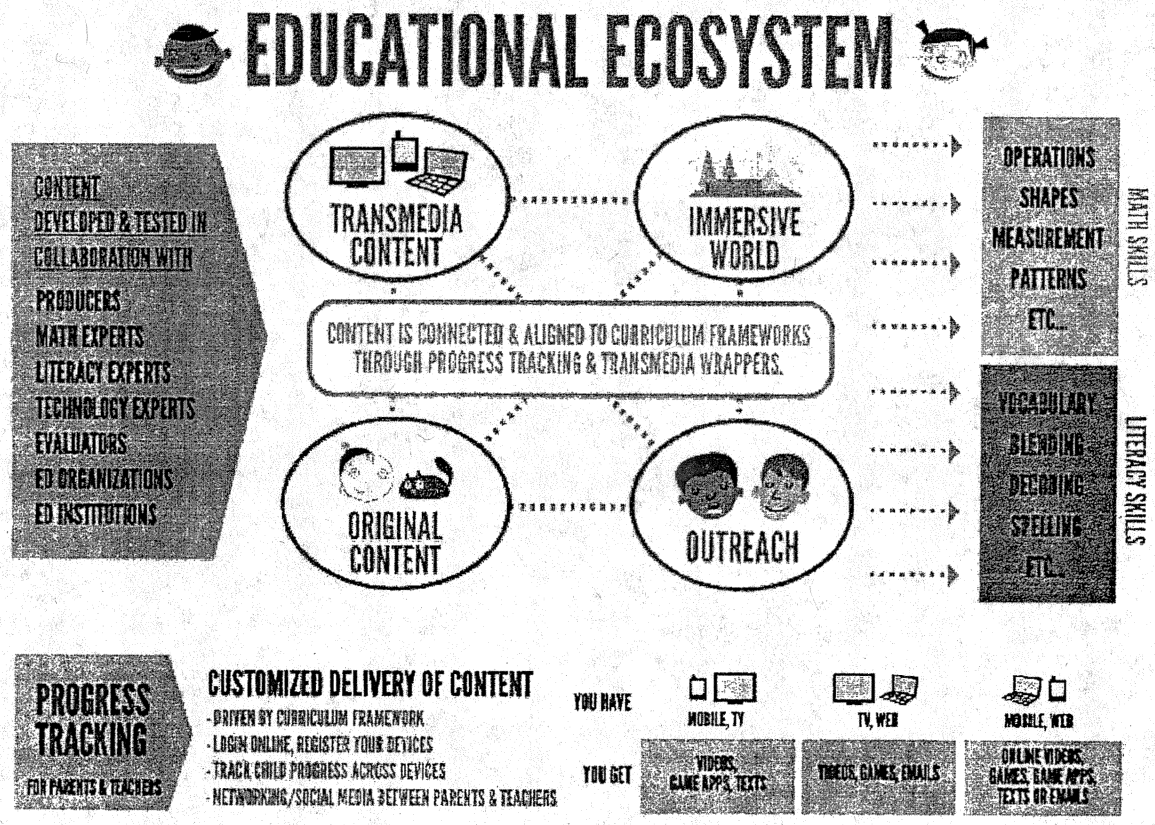


Illustration 1

Educational Ecosystem

CPB and PBS will develop a transmedia collection—a combination of video content, interactive games, mobile apps, and white-board applications. These transmedia tools will be developed and tested in collaboration with producers, math and literacy curriculum experts, technology experts, evaluators, and educational organizations and institutions. Content will be aligned to curriculum frameworks and connected through a progress tracking system and

transmedia wrappers that will aggregate content and tools within a single application. An iterative production process to develop, test, improve, and launch content to the public, and then test again, will yield high-quality content that will raise student achievement.

Curriculum Frameworks

All content and tools developed for this project will be aligned with a new mathematics curriculum framework and an enhanced literacy framework to ensure that they reflect rigorous academic standards, learning progression, and current research in these subject areas, and lead to improved learning outcomes. In addition, these frameworks will serve as the backbone of a progress tracking system that will sequence games across both properties and platforms, providing feedback to parents and teachers about student progress.

New Mathematics Framework: CPB and PBS will develop a rigorous mathematics curriculum framework to guide the production of all math content across multiple platforms. Among the sources and research that will be considered in the development of the new framework are the National Council of Teachers of Mathematics (NCTM) Standards for Pre-K–Second Grade; PBS Parents Child Development Tracker, an age-by-age breakdown of the core academic and social competences for children ages 2–8; Big Math for Little Kids, a pre-K and kindergarten math curriculum developed by Herbert Ginsburg, Carole Greenes, and Robert Balfanz; and the new Common Core State Standards for Mathematics. This math curriculum framework will focus on three major content areas: (1) numbers, operations, and measurement; (2) geometry and spatial reasoning; and (3) algebra and data analysis. These three content areas will be broken down into discrete math skills and sub-skills that align with NCTM standards. CPB and PBS will work with an advisory council of mathematics and STEM experts and early childhood educators led by Art Baroody, a professor of early childhood and elementary

mathematics education at the University of Illinois at Urbana-Champaign. This team will ensure that the framework provides a comprehensive, sequential set of skills and concepts. Existing content will be mapped to the framework to determine which skills are addressed and which new content areas need to be covered, with the goal of delivering comprehensive math resources that address all listed skill areas. Based on the framework, the project will develop content that makes connections among math concepts and integrates key Habits of Mind skills, such as problem-solving, reasoning, and critical thinking, to ensure that children ages 2–8 develop a real-world, contextualized understanding of mathematics.

Enhanced Literacy Framework: The CPB and PBS RTL literacy framework was developed with the support of U.S. Department of Education-funded RTL literacy programs. The literacy framework is aligned with the recommendations of the National Reading Panel and the literacy recommendations of NAEYC. CPB and PBS will review the framework with a team of literacy experts to ensure that it reflects the latest and best thinking in the field. It will also be aligned to the new Common Core State Standards or other state standards, as appropriate.

Transmedia Content Development with Existing and New Children's Media Properties

Transmedia Content Development with Existing Children's Media Properties: PBS KIDS programs are praised for their appeal and educational value by parents, children, industry leaders, and educators (GfK Roper Public Affairs & Media, 2009). The success of these programs is based on our consistent innovation with content for this audience and our commitment to sustaining content that has proven learning outcomes for young children. CPB and PBS have identified a dynamic collection of recognizable properties with demonstrable impact for this project. The properties identified in Illustration 2 are premier examples of the highest-quality children's media that engage, motivate, and promote math and literacy achievement.

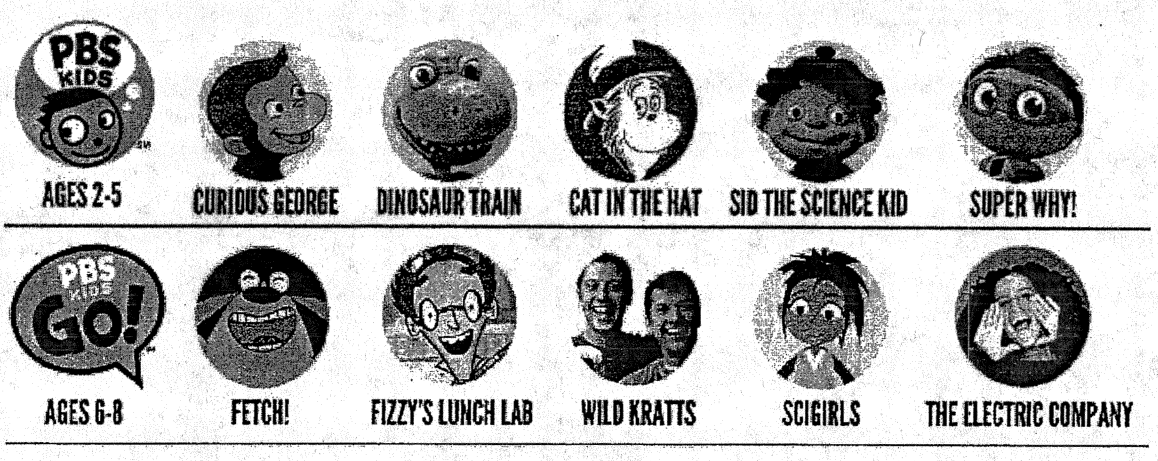


Illustration 2: Properties confirmed for this project. See Appendix G for program descriptions.

Transmedia Content Development with New Children's Media Properties: CPB and PBS have identified three new math properties for children ages 3–5 to develop into television and game pilots. These properties exemplify engaging, age-appropriate, character-driven transmedia storytelling that seamlessly integrates a focused research- and standards-based early childhood math curriculum. They focus on key skill areas such as numbers and operations, measurement, geometry and spatial reasoning, and data analysis and probability. CPB and PBS will support video production of these preschool math pilots with non-RTL funds. Below are excerpts from the three new properties:

Peg + Cat (Snowflake Films): Peg has to make pizza for six pirates and six parrots with only one pepperoni and clean up after three dinosaurs with one pooper scooper! She wakes up with a new word problem each day. Peg + Cat is led by Jen Oxley (former Creative Director of The Wonder Pets! and Director of Little Bill on Nick Jr.) and Billy Aronson (former Writer for The Wonder Pets! and Backyardigans for Nick Jr.).

Mini & Max (Triangle Films): There is a mystery in Parktown, but with everyday tools and displayable math skills, Mini and Max always get the job done! Triangle Films is led by Diane Kredensor (former Creative Director of WordWorld and a former Director on Nick Jr.'s

Pinky Dinky Doo), Jeff Buckland (a former Director on Nickelodeon's Doug and Pinky Dinky Doo), and Jack Spillum (former Producer of Doug for Nickelodeon).

Astroblast (Scholastic, Inc., and Soup2Nuts): Rocketing through space and feeling a little hungry? Then zip on over to the Astroblast Snack Shack for the tastiest, healthiest food in the universe, run by five animals in spacesuits who solve culinary conundrums using math skills. Astroblast is a production of Scholastic and Soup2Nuts (creators of WordGirl and the upcoming music-based broadband-only project, *Chuck Vanderchuck's Something Something Explosion).*

All three transmedia pilots will debut on pbskids.org with original video content and online games for children as well as resources for parents and educators. Associated with these products, CPB and PBS will initiate an innovative national campaign to engage children in voting for their favorite new properties. Researchers will conduct in-depth focus group testing with children, parents, and educators to measure the appeal and educational efficacy of the content and consult the math curriculum advisory team to determine which properties best support math learning outcomes. At the conclusion of this review, one of the pilots will be expanded into a full RTL PBS KIDS television and multiplatform series in 2012, and at least one other will be developed as an RTL PBS KIDS broadband-original property. In the latter half of Year 2, we will repeat the development process, with the intent to fully launch a second RTL television and multiplatform series for children ages 6–8 by fall 2014.

Transmedia Learning Through Games

Working with the characters listed in Figure 2 and new producers participating in the math pilot process, we will develop three new digital content storytelling models that focus on game-based learning: (1) transmedia gaming suites (with augmented reality games); (2) an immersive world; and (3) 3D-rendered collaborative games. Research shows that when games

are designed with defined learning outcomes and age-appropriate interactives, they have the power to motivate students to learn, immerse them in the activity so they learn more effectively, and encourage them to learn from their mistakes through repeat play (Perry, 2008).

Digital Content Model #1—Transmedia Gaming Suites: Our approach to transmedia gaming suites leads to greater gains in student literacy and math outcomes than any media property by itself. Working with partner producers, the project team will build a series of transmedia gaming suites—thematically linked content that includes a short-form video component, an online game, a mobile phone activity, and an in-classroom digital game. To ensure consistency across platforms, the narrative arc and content plan for these transmedia gaming suites will be developed by a team of television producers, online game developers, and content and mobile experts. The impact of these transmedia gaming suites on student learning will be tested through a series of formative and summative experiments.

After we conduct efficacy research on individual games and full suites and make research-informed enhancements to the content, the transmedia gaming suites will be launched and tested with the live PBS KIDS audience. Games within a suite will be connected through cross-promotion on each platform. For example, when a child watches a Curious George video on pbskids.org/video, the site will prompt the child to play the connected online game. That online game, based on the same educational goal as the video, will prompt the child and his or her parent to try a connected Curious George mobile game and will also recommend the connected Curious George interactive surface table game for the child's classroom. Regardless of which game is accessed first, and whether by a parent or teacher, each experience or entry point will direct the visitor to the other related experiences. In future years, each child's experience with these games will be guided through the progress tracking tools, which will

report back to parents and teachers. See Appendix E, Experiment 1 for a detailed example.

Augmented Reality Within Transmedia Gaming Suites. The second set of transmedia gaming suites will be created for older children, ages 6–8, who tend to be more social and savvier consumers of technology. This set of gaming suites will follow the construct outlined above (including video, an online game, and a classroom game) and introduce augmented reality (AR) components into its mobile game. In AR games, real photos, objects, and online videos can be augmented, allowing children to see realistic 3D-rendered images on the screen.

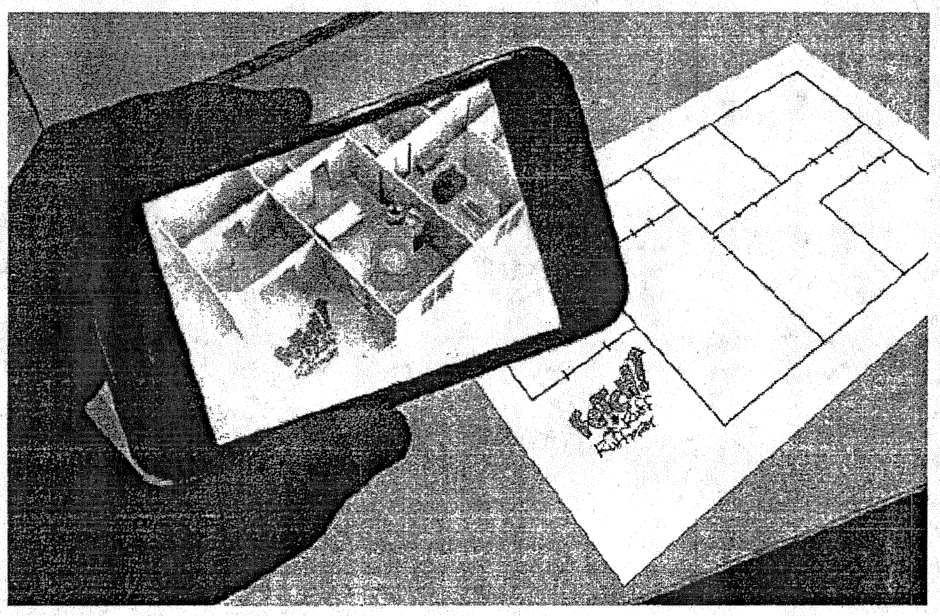


Illustration 3

AR in game play can be a powerful tool for math and literacy by motivating students to interact with 3D-rendered models in real environments. AR encourages diverse thinking, allowing investigation of a problem from many visual perspectives (Weng, 2008).

Through an established working relationship with advisor Professor Blair MacIntyre and his colleagues at the Georgia Institute of Technology School of Interactive Computing, CPB and PBS will research each game developed with this technology to determine: (1) how easily the target age group can use these tools; (2) whether the 3D-rendered enhancements support or

distract from both the game play and the educational goals; and (3) whether individual AR games themselves are effective in addressing their target skills. See Appendix E, Experiment 2 for a more detailed description.

Digital Content Model #2—Immersive World Game: Immersive worlds are characterized by the presence of avatars, complex and personalizable environments, and a virtual community. —Studies have shown that immersion in a digital environment can enhance education in at least three ways: by allowing multiple perspectives, situated learning, and transferl (Dede, 2009).

Using The Electric Company, we will develop —Adventures in the Electric Worldl (working title)—a curriculum-based, interactive, replayable virtual quest where children practice literacy skills, including numeracy vocabulary, through a game-rich immersive world and in the company of a virtual mentor from The Electric Company cast. Through a series of short, animated videos appearing both on television and online, The Electric Company heroes will enter a comic-book world and introduce an episode-based problem, prompting viewers to visit the Electric World online. Once there, visitors create an avatar and become apprentices to The Electric Company heroes. Visitors ages 6–8 will play a series of games that test and build their skills in literacy and early math concepts. As the adventure unfolds, so do the narrative and the map of this immersive world. Visitors will explore different parts of the map and return to solve the next challenge. In the Electric World, vocabulary words are math based, helping children master terms and concepts that are essential to success in both reading and math. For example, a narrative might focus on exploring and practicing the math-based vocabulary words —estimate,l —measure,l and —heightl through video and interactive digital challenges. CPB and PBS will research this technology to determine: (1) whether children are able to transfer skills learned in the Electric World to the real world (classroom and informal learning settings); (2) whether an

immersive world supports or distracts from game play and its educational goals; and (3) the role of a virtual mentor in motivating and enhancing learning. See Appendix E, Experiment 3 for a more detailed description.

Digital Content Model #3—3D-Rendered Collaborative Games: Over the past year, a number of 3D-rendered games (e.g., Cartoon Network's FusionFall) have launched in the children's media landscape. Many gaming experts believe that 3D-rendered games will soon be in the mainstream (G4TV & XPlay, 2010). This increasingly accessible technology offers exciting educational and research opportunities, as 3D-rendered models can be —… authentic models of real-world situations, allowing for strong transfer of understanding to real-world situationsl (Klopfer et al., 2009). In Year 1, our project team will bring to life a working 3D-rendered game featuring PBS KIDS GO! property Fetch! With Ruff Ruffman for testing in schools with students ages 6–8. We will investigate the role of 3D-rendered models in furthering math skills acquisition and the role of collaboration in creating successful learning moments between peers, both within single classrooms and through distance learning scenarios. Applying the research results from the first game, the project team will build a second 3D-rendered game featuring another property in Year 2, working toward developing a reusable, multiplayer gaming engine for producers (meeting OER standards, with customizable tools for teachers). All 3D-rendered games developed for this project will be mapped to the PBS KIDS curriculum frameworks and incorporated into the progress tracking system. See Appendix E, Experiment 4 for a more detailed description.

Bilingual Transmedia Tools for Educators, Parents, and Caregivers

This project will develop at least three innovative tools that: (1) track a child's educational progress; (2) leverage transmedia tools to empower parents and educators to take full

advantage of the full suite of learning content; and (3) enable customization to reflect learning differences. The tools will be bilingual—in English and Spanish—and will increase the project's flexibility, utility, and value as a resource for improving student outcomes in math and literacy.

Progress Tracking Tools: CPB and PBS will develop a series of progress tracking tools that track students' learning through the games and activities developed for this project, enabling parents and educators to measure student progress in real time. For example, when parents visit pbskids.org, they can create an account to track a child's progress through math or literacy content. At that time, parents can also choose which technologies and platforms are available in their household so that the tracker can, for instance, send them text messages with weekly progress summaries for their child and extended offline activity ideas. Whether a child plays a game online or on a mobile device, the tracker records all of the progress from each platform in a central location. A preschool teacher can acquire data for each student and access a group-level progress tracker to compare all children's progress. As progress tracking tools are developed, launched, and expanded, the tracker and its interface for parents and teachers will be regularly assessed for usability, appeal, and efficacy.

Transmedia Wrappers: We will develop a series of transmedia —wrappersl that will connect content on a single device. For example, all iPhone applications, video clips, and related offline activities and lesson plans can be pulled together into a single app that updates as a child progresses through the content. This app will also be connected to the progress tracking tool. In another example, online games and video clips can be tied together using a technology like Adobe AIR. This application can then be exported to a device like a netbook and played even when not connected to the Internet, uploading any progress tracking information the next time the device is connected. Using the transmedia wrapper tool, parents and teachers will be able to

gather and sort all of the transmedia content. They will be able to create a customizable —playlistl that aggregates resources based on specific target ages, educational goals, and learning setting needs. As these wrappers are developed, they will be incorporated into the summative research evaluation to assess whether learning is enhanced when games and content from multiple properties are sequenced on the same platform.

Teacher Modding Tools: Select producers will deliver versions of online games that can be modified by teachers and caregivers to address children's specific development levels and needs. This process is often referred to as —modding.l Teachers can then publish their own versions of games online and rate and comment on each other's mods. The ratings allow the most successful mods to be easily accessible to the virtual community of practice, and the commenting tools allow teachers to discuss the most effective game design and use strategies.

Research-Based Best Practices Guide: An important project goal is to formalize best practices into a field-building guide for the development of new, original math and literacy games across platforms. To begin this process, PBS will simultaneously: (1) review findings and recommendations from recent mobile game studies, PBS KIDS Island, and literacy games research; and (2) initiate an evaluation of existing PBS KIDS math games with children in the target audience. This evaluation will help determine the efficacy of a game's learning goals and identify which game mechanics work best for specific concepts.

Outreach: Transmedia Resources in Schools, Expanded Learning Settings, and Homes

CPB, PBS, and local partners will support community engagement to introduce families to transmedia learning resources and foster stronger home-school-ELO connections. We will ensure the effective implementation of these high-quality learning tools in schools, expanded learning settings, and homes through strategic partnerships with the Chicago Public Schools and

Boston University's School of Education (BU-SED), as well as the National Summer Learning Association (NSLA) and the Collaborative for Building After-School Systems (CBASS). In addition to reaching millions of disadvantaged children and their parents and teachers directly through PBS' national broadcast distribution channels, Internet, and digital platforms, CPB and PBS will be able to quickly provide unparalleled scale for the project through a powerful model of national-local collaboration. Across the five-year period of this project, CPB and PBS will work closely with NSLA, CBASS, selected Title I school administrators, and local public television stations to identify 15 high-need communities and provide training and technical assistance to summer and afterschool providers to implement transmedia content that will increase student motivation and achievement. In collaboration with our strategic partners, CPB and PBS will create an educational outreach framework—similar to the curriculum frameworks that guide our math and literacy content—to align our transmedia content to in-school and out-of-school settings and common core standards. This framework will feature age-appropriate guiding principles and a roadmap of our content so educators can select the themed materials best suited for their needs. All educator materials will be crafted with oversight from BU-SED, with input from the local group of advisors it will establish across the country. BU-SED will seek representation from the following groups: Boston Public Schools, the Massachusetts Department of Early Childhood Care and Education, Chelsea Public Schools, Thrive to Five, the Office of the Boston City Mayor, Full-Service Schools Roundtable, and Associated Early Care and Education, along with PBS. BU-SED will also focus heavily on creating professional development materials for pre-service early educators; it will determine and create media and materials that best support these teachers.

Outreach Approaches and Resources: In diverse, expanded learning settings, our

transmedia deliverables will be put to use in site-specific ways. For example, in partnership with the Chicago Public Schools, we will build clusters of resources featuring videos, games, and related activities and lessons for their Virtual Pre-K and Kindergarten programs, incorporating transmedia content designed to connect the home and school learning environments. In other settings, we will create new online modules and learning enrichment assets and use existing curriculum-based literacy content that has been tested to fill unique content needs for both formal and out-of-school learning. These resources will first be piloted in the target communities and then be made available to other communities with similar needs or characteristics.

One of the newest and most promising outlets for reaching educators is the PBS Digital Learning Library, an aggregated repository of standards-based, digital learning objects. This immersive OER database is built into 12 digital media services that leverage content, games, and applications so they are available to children, families, and teachers across America.

Virtual Communities of Practice: To provide ongoing support for educators and families in our diverse outreach settings, we will create a Virtual Community of Practice that leverages the mobility and interaction of transmedia content and includes mobile applications, forums, and Webinars that enable educators to share ideas, concerns, and best practices around these new and evolving resources and technologies. Both national and local facilitators from our partnering organizations and target communities will be able to use Web tools, share examples of local innovation, and recognize local efforts. On-the-ground events and traditional communication strategies implemented in tandem with the built-in promotion capabilities of new technology tools multiply the impact of our overall dissemination approach. We will work with our partners, public media outreach experts, and target communities to create models of scalable in-person events and exhibits hosted at local stations, libraries, or community cultural sites (such as zoos,

science centers, or sporting venues). These events will feature intergenerational family game play and hands-on activities that boost literacy and math skills and strengthen parent confidence and ability in using interactive technology tools to support their child's learning.

Building Awareness: Leveraging CPB and PBS' strong communications reach, we will also engage in the following promotional activities:

- On-Air and Online Promotional Spots. These will feature familiar PBS KIDS characters to show that anytime can be learning time by modeling math or literacy concepts in real-life settings.
- TEDx Conference. The project team will develop special content for a TEDx conference, a program that enables local communities to organize, design, and host their own independent conference, based on the larger TED events. The proposed conference would focus on gaming and education. It would feature talks with PBS game designers and technologists, educators, researchers, government and early childhood leaders, digital media experts, and others to spark a dialogue with the wider community of educators and children's content creators. The TEDx conference video would be released under a Creative Commons license so it could be freely shared and reposted.
- Social Media. Continuous interaction with communities through Facebook, Twitter, and YouTube serves more than one half million fans. PBS KIDS videos receive more than 51 million YouTube views.
- Marketing and Communications. The 356 PBS member stations will have access to all of the content, research, and resources developed as part of this project. Stations serve as both community resources and multipliers; they provide extensive reach through television and their own Web sites, throughout their communities, and with partners.

- Media Relations. In addition to traditional broadcast and print outreach, the project team will reach out to publications such as the *Children's Technology Review, USA* TODAY, Fast Company, and many others to tell the U.S. Department of Education's story of commitment to innovation and academic improvement through transmedia storytelling.
- Conferences and Meetings. Project staff will attend or present at conferences such as Games for Change, the Council of Chief State School Officers, the Sandbox Summit, Game Developers Conference, SXSW, and math and literacy conferences for teachers. All presentations will be available online.

4. QUALITY OF PROJECT PERSONNEL

4(a). CPB and PBS are committed to employing women, minorities, and people from underrepresented populations and will not discriminate against any individual on the basis of race, color, religion, national origin, sex, age, pregnancy, marital status, personal appearance, sexual orientation, family responsibilities, physical or mental handicap or disability, matriculation, or political affiliation. As leaders in affirmative action and equal employment opportunities in the broadcast industry, the boards of CPB and PBS annually implement plans to ensure and maintain diversity in their workforces. For example, CPB funds several projects that promote the recruitment of a diverse workforce through partnerships with organizations like the Emma Bowen Foundation, through a CPB-sponsored Workforce Diversity Associates Program, and by supporting and training diverse media content producers to create content targeted for underserved audiences. We will leverage these efforts in the hiring process for this project at both institutions to ensure a diverse candidate pool.

4(b). CPB and PBS are quality-driven partners that have a long history of highly productive collaboration. They will leverage their unique strengths and staff expertise to ensure

accountability, quality, and effectiveness. The project staff will include leadership on several levels: financial and legal expertise and compliance, management, content knowledge, strategic planning ability, skill in building partnerships and interpersonal relationships, and ability to execute the project deliverables on time and on budget.

The project will have support at the highest levels within both organizations. An Executive Oversight Committee will include Chief Operating Officers Vincent Curren (CPB) and Michael Jones (PBS), and Senior Vice Presidents of Education Debra Sanchez (CPB) and Robert Lippincott (PBS). The committee will provide executive oversight for the project. Ms. Sanchez and Mr. Lippincott will also serve as the senior executives overseeing the project.

Debra Sanchez, **Senior Vice President, Education and Children's Content Operations for** CPB: Ms. Sanchez develops and oversees children's content investments and educational initiatives. She works closely with stations to enhance the development and execution of local educational services. Previously, she was Vice President of Government Relations for the Association of Public Television Stations. Prior to her work in public broadcasting, Ms. Sanchez spent eight years in the classroom, where she designed individualized learning and behavioral interventions. Ms. Sanchez holds a B.S. in special education from Indiana University.

Robert Lippincott, Senior Vice President, PBS Education: Mr. Lippincott directs PBS Teachers, the Digital Learning Library, and PBS KIDS Raising Readers, and oversees national education projects and partnerships for PBS Education. He previously served as Senior Vice President and General Manager of the Family Education Network for K–12 and as Director of Interactive Technologies for WGBH Boston. He served on the faculty of Harvard University's Graduate School of Education. He holds a master's degree in interactive technology in education from Harvard University and a B.A. from Swarthmore College.

Operational Management Structure. CPB and PBS have developed cooperating teams within each organization to manage day-to-day operations of the RTL Initiative—a Project Management, Outreach, and Evaluation Team at CPB and a Content Development Team at PBS. Time commitments are described below. As noted in the budget narrative, portions of some individuals' time is covered through resources provided directly by the project partner, and reimbursement is not sought through this proposal.

Project Management, Outreach, and Evaluation Team (CPB)

Pamela Johnson, Ph.D., Executive Director (100 percent of time): Dr. Johnson, who is the current Executive Director of RTL for CPB, will continue to provide operational leadership for the proposed project. Reporting directly to the executive management team, she will be responsible for overall project management, partner relations, community engagement, and research and evaluation. Prior to her appointment at CPB, Dr. Johnson was Vice President for Education and Outreach at WNED/Buffalo-Toronto, where she established an innovative digital learning service called ThinkBright; Head of National Outreach and Web for Reading Rainbow; and Director of Online Teacher Professional Development Service for PBS TeacherLine in New York. Dr. Johnson holds a Ph.D. in educational organization, administration, and policy.

Barbara Lovitts, Ph.D., Director of Research and Evaluation (100 percent of time): Dr. Lovitts will provide leadership and direction in guiding and implementing the RTL Initiative research agenda, ensuring that the grant functions related to the execution and administration of research and evaluation are aligned with and support achievement of the project's educational strategy. Dr. Lovitts' previous experience includes service as a Program Officer at Abt Associates, Inc., and the Center for the Advancement of Scholarship on Engineering Education at the National Academy of Engineering. Dr. Lovitts holds a Ph.D. in sociology from the

University of Maryland.

Content Development Team (PBS)

Senior Director of Content Development (100 percent of time): This position will be filled at the time of award and will be responsible for leading the digital and video Content Development Team at PBS. This person will bring a proven track record of managing complex technical media projects. He or she will report to the Vice President of PBS KIDS Interactive, with a dotted line to the Senior Vice President of PBS Education, and work in close collaboration with the Executive Director. The Senior Director of Content Development will oversee all content development activities including related staff management, budgets, game and video production, producer and vendor relationships, and acquisition of project support and resources. He or she will also ensure integration of project content into the wider PBS distribution strategy.

Kim Berglund, Curriculum Director (100 percent of time): Ms. Berglund will lead the development of the math and literacy skills framework and will work with producers to ensure educational efficacy and age-appropriateness of all new content. Previously, Ms. Berglund worked in children's programming at WGBH Boston, Nickelodeon, and Disney. Before entering the entertainment industry, Ms. Berglund was a second grade teacher. She received her master's in technology, innovation, and education from Harvard University.

Additional Support Staff Positions: The Executive Director will oversee a highly skilled team, including the Research Director, a Project Manager, and a Budget Analyst. The Senior Director of Content Development will oversee a skilled digital media production team that will manage delivery, development, integration, data management, and communications around all new content. This team includes a Content Producer, Curriculum Director, Game Technologist, Designer, Parent and Teacher Content Developer, and Communications Coordinator. The budget

narrative includes a detailed description of staff roles and responsibilities. All of these positions are 100 percent allocated to the grant.

Additional Senior-Level Support (Non-RTL funded)

Sara DeWitt, Vice President, PBS KIDS Interactive: Ms. DeWitt will serve as the Content Development Team's lead executive at PBS and will provide in-kind support to supervise the development of all multiplatform digital experiences. For over 10 years, Ms. DeWitt has led strategies to build connected and immersive experiences on pbskids.org and new platforms. A former preschool teacher, she holds an M.A. in English from Stanford University and a certificate from Stanford's Children, Society, and Public Policy program.

Michael Fragale, Vice President, Educational Programming and Services for CPB: Mr. Fragale will provide strategic counsel to the management team on matters of operations, compliance, policy, and engagement. He leads CPB's strategic education projects and content investments and connects CPB's efforts with public media stakeholders and national educational organizations. He is the former Director of Content and Strategy for the PBS Adult Learning Service, where he managed several initiatives including the successful launch of pbscampus.org and the federally funded LiteracyLink initiative. He holds a B.A. in English and linguistics from Temple University.

Linda Simensky, Vice President, **Children's Programming:** Ms. Simensky will provide in-kind support to oversee the production of original video content for the project. Formerly of the Cartoon Network and Nickelodeon, for the past seven years Ms. Simensky has collaborated with producers to develop and produce series for PBS KIDS and PBS KIDS GO!. Ms. Simensky holds an M.A. in media ecology from New York University.

Sharon H. Philippart, Director, PBS KIDS Communications: Ms. Philippart will provide in-

kind support to oversee marketing and communications and parent and teacher content for the project. She is the Director of PBS KIDS Communications and has served as Project Director of the RTL-funded PBS KIDS Raising Readers for the past four years. Ms. Philippart holds a B.S. in communications from Towson University. See Appendix C for key personnel resumes.

Advisory Council

An external Advisory Council made up of distinguished educators and technology experts will contribute to the development and assessment of each project activity and component. This council will include: Dr. Art Baroody, Professor of Curriculum and Instruction (early childhood and elementary mathematics education) at the University of Illinois at Urbana-Champaign; Alan Gershenfeld, Founder and President of E-Line Media and Chairman of the Board of Games for Change; Dr. Kevin Clark, Associate Professor in the Instructional Technology Program and the Director of the Center for Digital Media Innovation and Diversity at George Mason University; Dr. Jerlean Daniel, Executive Director-Designate of the National Association for the Education of Young Children; Dr. Blair MacIntyre, Associate Professor in the School of Interactive Computing at Georgia Tech University (GTU) and the Director of GTU Center's Augmented Environments Lab; Melanie Cornwell, Vice President of Strategy at Creative Commons; Dr. Jesse Schell, Professor of Game Design at Carnegie Mellon University and the CEO of Schell Games in Pittsburgh, PA; Dr. Dorothy Strickland, Senior Research Fellow at Rutgers University's Graduate School of Education; and Sharon Darling, President and Founder of the National Center for Family Literacy. See Appendix C for full advisor biographies.

5. QUALITY OF THE MANAGEMENT PLAN

5(a). Adequacy of the Management Plan. The CPB and PBS management plan reflects each organization's strengths, its primary function, and an integrated strategy to ensure that

partners are able to achieve the objectives of the proposed project on time and within budget. Each organization also can leverage existing resources to aid in the successful implementation of the proposed objectives.

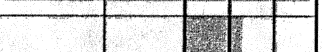
CPB is an organization that invests in innovative public telecommunications services to support the American public. It has a breadth of experience in providing sound fiscal management and research leadership, as well as a track record in funding the leading children's content producers nationwide. As stewards of the federal government's investment in public media, CPB has mechanisms in place to ensure accountability and management quality.

PBS has a long history of working with diverse producers to create effective, high-quality children's transmedia content. As a content development and information dissemination organization, PBS has a nationally-recognized, seasoned senior management team experienced in managing large, federally-sponsored projects and delivering results in a timely and fiscally responsible manner. The corporate management support structure is mature and robust and provides a substantial infrastructure for consistent development and delivery of high-quality educational content.

Having led and facilitated the development and deployment of award-winning and academically-proven RTL content and services over the past 15 years, CPB and PBS will work as partners in this grant. Both organizations are committed to strong governance, accountability, and transparency of operations, including an ongoing commitment to balance and objectivity, diversity, creativity, high quality, effectiveness, and innovation to address the needs of unserved and underserved audiences. The project timeline that follows identifies major project areas under which individual activities are organized, managed, and measured.

TIMELINE

		YEAR 1				2	3	4	5
		q1	q2	q3	q4				
DESIGN & DEVELOPMENT									
Advisory committee meetings	ED								
Curriculum framework development	CD								
Math RFP pilot development and voting (for 3-5 year olds)	CD								
Math series production and launch (for 3-5 year olds)	CD								
Math RFP pilot development and voting (for 6-8 year olds)	CD								
Math series production and launch (for 6-8 year olds)	CD								
Transmedia game suites production (online, mobile, board)	SD								
3D collaborative game prototype	D								
3D collaborative game new game development	CP								
3D collaborative reusable game engine launch	T								
Immersive game development	CP								
Immersive game production	D								
Immersive game launch	T								
Progress tracking development Tool	T								
Transmedia wrapper development	T								
iPhone game wrapper development	T								
Adobe Air game wrapper development	D								
Additional game wrapper development	D								
Teacher modding tool development	CP								
Best practices guide(s) development	CD								
Usability and appeal testing	CP								

OUTREACH		
Needs assessment in target communities	ED	
Educational outreach framework	ED	
Creation of BU-SED advisory group	SD	
Content clusters for target audiences	PT	
Mobile apps and community of practice for educators	PT	
DLL content integration	PT	
Summer and afterschool implementation	ED	
Building awareness activities	SD	
Professional development programs for teachers	SD	
Producing and airing character spots	SD	
TEDx conference	PT	
Social media outreach	SD	
EVALUATION		
Formative and summative studies	ED	

KEY			
Job Title		**Job Title**	
Executive Director Project Mgt, CPB	ED	Technologist	T
Senior Director Content Dev, PBS	SD	Designer	D
Curriculum Director	CD	Research Director	RD
Parent & Teacher Content Developer	PT	Content Producer	CP

5(b). Adequate Project Personnel.

Internal Management. CPB and PBS have a disciplined approach to project planning and have created realistic management schedules, timelines, and budgets. The organization chart, illustrated below, depicts the project's integrated organizational structure. CPB and PBS have a pre-existing memorandum of understanding (see Appendix D) that will enable us to begin work immediately upon awarding of the grant to address first-year objectives and continue in Years 2–5 with sustained effort and high-level performance. Key elements of the project will be managed

with process and performance standards.

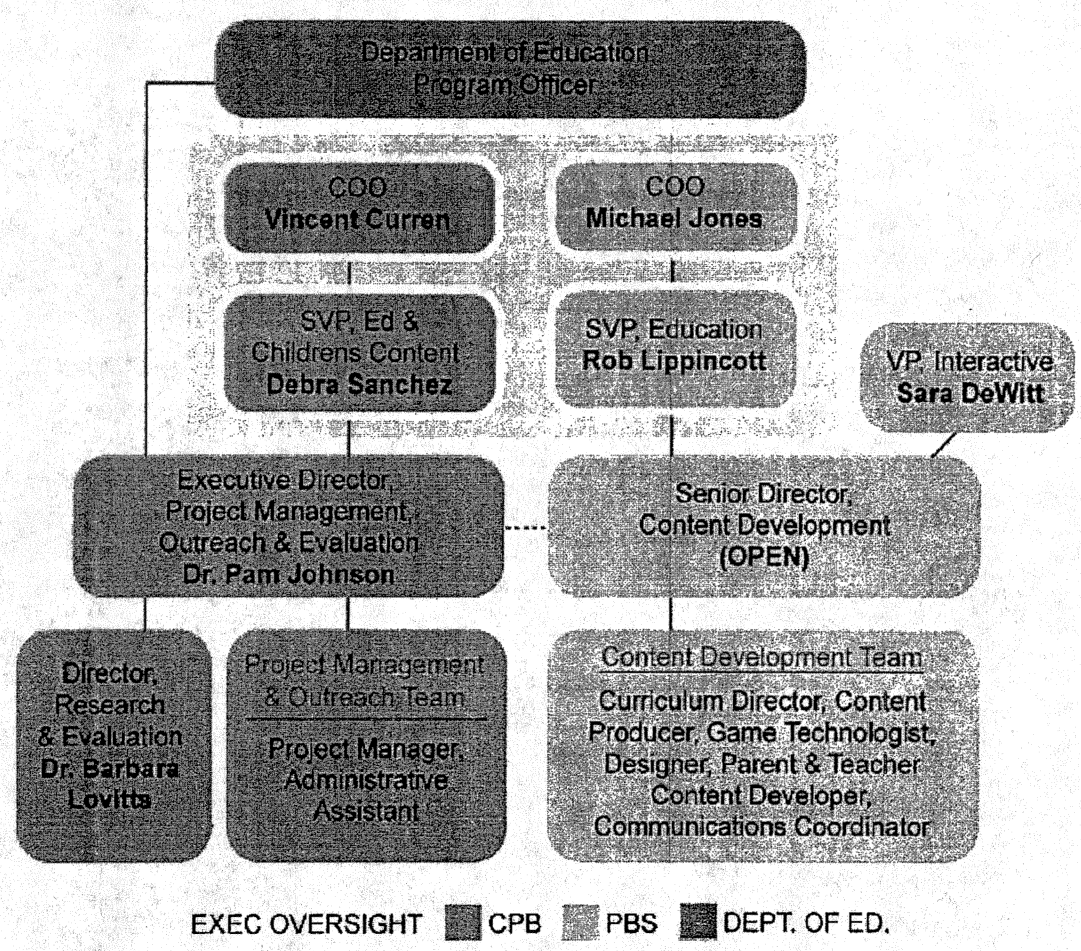


Illustration 4

The structure of the project management plan is designed to ensure appropriate integration of activities across the two partner organizations so that milestones and goals are achieved. The Executive Oversight Committee will meet regularly with the Executive Director and Senior Director of Content Development to provide strategic direction, oversee all decision-making, and ensure that the project is on track with respect to its goals, timeline, and budget.

Adequacy of Time Commitment by Key Personnel. Key CPB and PBS management and program staff have organized resources to ensure adequate commitments of time to accommodate project needs. The Executive Director will serve as the primary point of contact

for the U.S. Department of Education for overall project management and reports. The Project Management, Outreach, and Evaluation Team will include four, 100 percent full-time employees and one half-time employee who will: (1) provide overall administration for the project; (2) manage the evaluation strategy and the project's formative and summative research with West Ed and Education Development Center (EDC); and (3) manage the implementation of outreach activities and project partners.

The Senior Content Development Director will manage the Content Development Team. The Senior Director will be the primary point of contact for all content developed for this project and will work closely with the Executive Director to ensure that all aspects of the project—content creation, outreach, and research—are integrated. The Content Development Team will include seven, 100 percent full-time employees who will manage the relationships with content producers, game production, design and development, technical integration, data management, development of parent and teacher resources, and coordination of media relations and marketing.

Resource levels described here—and in greater detail in the Budget Justification Narrative—are based on decades of CPB and PBS' experience in developing children's educational media content. The Project Management and Content Development teams have extensive experience implementing RTL programs that have proven to be educationally effective with the most disadvantaged children. The Executive Management team will also draw on special skills available to the project, on an as-needed basis, from other senior program staff within CPB and PBS, including education, interactive, member services, and technology and operations.

External Management Resources: Partners, Professional Services, and Advisory Council. CPB and PBS are longstanding organizations that have a 40-year history of working with

nationally-recognized content producers and other partners. In this proposal, CPB and PBS have formed partnerships with nationally-recognized producers, as well as education partners including the Chicago Public School's Virtual Pre-K and Kindergarten programs, BU-SED, NSLA, and CBASS. These partnerships will help ensure that we effectively reach the target population of children, teachers, and parents; sustain relationships in target communities; and support the development of resources that are educationally effective. Each organization, with support from targeted local PBS stations, will help build strong communities of practice by facilitating local engagement initiatives that raise awareness and build strong community and parental support within the preschool, afterschool, and summer school environments. We have included select content producers in this proposal because of the unique and established educational value of the respective characters and content; this content is already associated with public broadcasting, and each property's content goals fit within either the existing literacy curriculum framework or our proposed math curriculum framework. Based on appeal research, skill framework, and pricing considerations, we will, post award, select which of these properties are best suited for new content development within this project and negotiate contracts with all or selected content producers. Other educational partners were selected because of their unique qualifications to help us meet the educational goals and objectives solicited by the RFP. We may also procure external vendors to quickly and effectively achieve the project's goals and deliverables as needed.

CPB and PBS have jointly established and will manage an external advisory council to provide additional perspective and insight from a broad spectrum of highly qualified individuals with expertise representing the content and formal and informal education communities. These advisors will provide guidance and expertise on all aspects of the project, including curriculum

frameworks, outreach implementation, and the technology production plan. They will meet three or four times each year. All council members have already agreed to serve.

5(c). Ensuring Feedback and Continuous Improvement.

Management Feedback: As stewards of the federal government's investment in public media, CPB has many mechanisms in place to ensure accountability, management quality, and continuous improvement of management, including an internal, independent Inspector General (IG). The IG's mission is to: conduct and supervise independent and objective audits and investigations relating to the organization's programs and operations; promote economy, effectiveness, and efficiency within the organization; and prevent and detect fraud, waste, and error in programs and operations.

Production Feedback: Continuous improvement of production and development processes based on research and feedback is central to CPB and PBS' management philosophies. In complex projects such as the one proposed, it is critical that the project team, partners, producers, and vendors engage in collegial discussions and iterative sharing of ideas. The entire project team will use an online collaboration and project management tool, such as Basecamp, to share deliverables and manage shared documents and timelines.

There is a clearly defined process for continuous improvement that builds on best practices, research and standards, program evaluation results, and U.S. Department of Education feedback. The development and production of all proposed new media products will follow the well-devised PBS KIDS Production Process and Web Production Manual (see Appendix F).

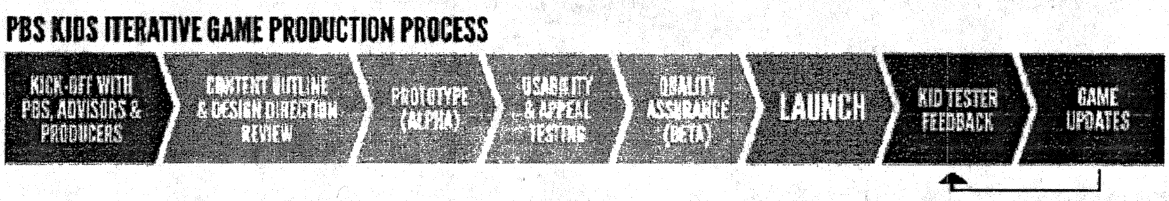


Illustration 5

Expert advice from the project advisors, researchers, and producers' advisors will be solicited from the beginning of each media project, reviewed throughout all formative evaluation, and applied to refine the content in support of the iterative process. Video production will follow a similar model, with added content and appeal testing at the rough-cut or animatic stages. Interim reports on progress and major beta deliverables will be shared with the U.S. Department of Education, and timelines and detailed work plans will be established to provide adequate development cycles, providing input from formative evaluation that informs the project's content, usability, and technical needs.

Audience Feedback: We plan to recruit a team of PBS KIDS beta testers, a group of 10–20 children between the ages of 6 and 10, who are —super usersl of PBS KIDS material. They will serve as testers for games and new technology concepts, giving feedback on game ideas and beta testing new content before it launches. Selected from across the country and representing a variety of economic and ethnic backgrounds, testers will provide valuable feedback and help fuel a nationwide discussion about future game development, while also creating excitement and buzz about their favorite games, shows, and characters among their peers. Through the use of social media tools such as ratings and commenting tools, we will also gather feedback from parents and educators on all videos and online and mobile games. We will keep this community informed about new content releases through social media sites like Facebook and Twitter, which also offer visitors the opportunity to comment and offer feedback.

This iterative production process accommodates formative testing as well as funding for content upgrades once both formal testing results and audience feedback have been received on each section of the project.

6. PROJECT EVALUATION

EDC and SRI International, having led the summative evaluation of the 2006–2010 RTL Initiative, will lead the summative research component. WestEd will bring its considerable capacity in conducting formative research and longitudinal studies to the project's transmedia production and development. Shelley Pasnik, Director of the Center for Children and Technology at EDC; William Penuel, Ph.D., Director of Evaluation Research for the Center for Technology at SRI International; and Steve Schneider, Ph.D., WestEd's Senior Program Director of the STEM Program, will serve as the leaders of these efforts. Barbara Lovitts, Ph.D., Director of Research and Evaluation at CPB, will coordinate and oversee the overall research agenda and strategies of these efforts. Descriptions of evaluators' experience in research, evaluation, media and digital technologies, and early education are listed in Appendix A.

Overarching Research Questions Guiding the Evaluation. The following research questions will guide all research and evaluation activities:

- Can new transmedia learning technologies and accompanying parent and teacher support materials help children ages 2–8 learn critical literacy and mathematics skills and contribute to school readiness?
- How do educators and caregivers perceive and use transmedia products to support literacy and math development?
- How do educator and caregiver actions, as well as characteristics of the expanded learning settings, mediate student learning?
- What are the impacts of transmedia interventions targeting preschool and elementary-aged children on literacy and mathematics learning?

Overview of Evaluation Plan. As part of an integrated program of formative and summative research, research teams will conduct needs assessments, a sequence of quick-response implementation studies, and a series of mixed-methods studies and formative experiments (using random assignment). These studies will examine the effectiveness of individual media properties and platforms and the synergistic effect of transmedia gaming suites created over the life of the project on student learning and parent and teacher engagement. In addition, two cluster-randomized controlled trials of two different interventions will occur in Years 3 and 4—one aimed at preschoolers and a second aimed at elementary-aged children attending afterschool programs. These final summative studies will examine the impact of the complete program of transmedia interventions, including transmedia gaming suites, video, parent components, and professional development for educators, on literacy and mathematics outcomes, using multiple standardized and researcher-developed measures.

Below we describe the evaluation focus areas and then present plans for the formative experiments and summative evaluation impact studies. Complete plans for the formative needs assessment and implementation studies, along with a timeline for all of the proposed studies, are described in Appendix A.

Evaluation Focus Areas

Researchers will focus their efforts on the following areas:

- Designing, recruiting for, and conducting in-depth formative evaluations of transmedia gaming suites, augmented reality games, 3D-rendered collaborative games, immersive worlds, mobile content, and video programming with a diverse constituency of children ages 2–8.
- Designing, recruiting for, and conducting an in-depth needs assessment to determine

market needs and preferences for delivering and engaging children in literacy and math content among a diverse constituency of parents, caregivers, and teachers of children ages 2–8. The need to find the appropriate balance between traditional classroom instruction and the incorporation of media and technology in classroom and afterschool settings is particularly acute.

- Monitoring the ongoing progress of all transmedia content, video, and outreach resources toward intended outcomes using objective performance measures to investigate: (1) changes in measures of literacy, numeracy, and school readiness when compared to controls; and (2) changes in interest and engagement in literacy and mathematics.
- Conducting cross-sectional and longitudinal summative evaluations of the efficacy of the transmedia and intervention products to measure efficacy with the products' intended audiences of children ages 2–8 and their parents and teachers.
- Disseminating research findings, including providing data and analysis for the product developers' use in creating best practices guides for developing literacy and math resources and content for parents and educators.

Formative Experiments Plan

The formative experiments plan aims to answer the question: What are the effects of transmedia gaming suites on student literacy and numeracy achievement for all students and student subgroups? Evaluators will conduct three multisite randomized control trial studies, one in Year 1 and two in Year 3. The Year 1 study will examine pre-K and kindergarten students' use of the first version of the suites, with three games included. The studies in Year 3 will examine: (1) pre-K and kindergarten students, and (2) first to third grade students' use of the

final versions of the suites. The early studies will provide feedback to developers and researchers during the course of the project that will support changes to product design and inform other studies, including the summative evaluation. The study in Year 1 will examine the efficacy of the gaming suites with a completed subset of the proposed games. The studies in Year 3 will examine the gaming suites' education effects after the full set of games is complete.

Study Design. The formative experiments will use an experimental (random assignment) design in which preschool and afterschool programs will be randomly assigned to one of two conditions: (1) treatment group—classroom and afterschool sites that will use transmedia gaming suites, and (2) business-as-usual control group—preschool and afterschool sites that do not have access to the gaming suites. Researchers will collect data on control students' access to and engagement in media-related activities so potential impacts can be properly interpreted.

Sample and Statistical Power Analysis. Evaluators will recruit approximately 60 preschools and 60 afterschool programs in markets serving low-income families in three states. Participation incentives will include free technology access and a modest participation reward.

To determine the appropriate sample size required for the impact analyses, evaluators calculated minimum detectible effect sizes using the procedures described by Murray (1998) and Raudenbush (1997) for cluster-randomized trials. Preschool and afterschool sites will be randomly assigned to one intervention (30 schools) and one wait-listed control condition (30 schools), with approximately 15 students per school (900 students in each study). The minimum detectable effect size estimates assume: (1) equal numbers of students in schools assigned to experimental conditions; (2) school intra-class correlations of 0.15 for student outcomes (Schochet, 2008); (3) between- and within-school student-level R_2 values of 0.50 (Schochet, 2008); (4) Type-1 ( ) error rates of 0.05 (two-tailed); and (5) statistical power levels of 0.80.

With these assumptions, the impact study is powered to detect overall annual impacts of 0.24 standard deviation units.

Measures. Pre-K, kindergarten, and afterschool formative experiments will use multiple standardized and researcher-developed measures of child literacy, numeracy, and school readiness outcomes. These include alphabet knowledge and beginning sound awareness (PALS-PreK), phonological awareness (TOPEL Subtest), and concepts of print (TERA-3 Subtests). Targeted skills and student outcome measures in mathematics include number sense, counting, operations, and geometry (TEMA-3). Targeted skills and student outcome measures for school readiness include vocabulary, numbers, letters, and words (K-SEALS). (See Appendix A for technical qualities of these measures, as well as descriptions of specific implementation and background measures.)

Procedure. Participating pre-K and elementary students will be assessed using pre- and post-measures by trained researchers and their teachers. Researchers will visit pre-K classrooms and work with their staff to evaluate students individually on the prescribed measures of literacy, numeracy, and school readiness. State assessment data for students in elementary school will be provided by participating school districts. In addition, teachers of elementary school students will complete an online survey about each participating student. Teachers will be paid a stipend for their participation. Students in the treatment group will use the transmedia gaming suite for 20–30 minutes a day individually four times a week for three months. Teachers will supervise the students and intervene as needed.

Analysis. Analyses will involve fitting two-level multilevel models (hierarchical linear models) with additional term(s) to account for the nesting of subjects within units of aggregation (e.g., Goldstein, 1987; Raudenbush & Bryk, 2002; Murray, 1998). A random effect for site will

be included to account for within-site clustering. Potential fixed effects include treatment group, baseline (pretest) measures of outcome variables, and other observed covariates such as parental education, race and ethnicity, and gender. The purpose of including statistical controls is to minimize random error and increase the estimates' precision.

Summative Evaluation Plan

The summative evaluation aims first and foremost to answer the question: What are the impacts of transmedia interventions targeting preschool and elementary-aged children on literacy and mathematics learning?

Evaluators will conduct cluster-randomized controlled trials of two different interventions: one aimed at preschoolers and a second aimed at elementary-aged children attending afterschool programs. Each intervention will last between 18–20 weeks and will include both literacy and mathematics transmedia content from broadcast television, the transmedia games suite, and transmedia wrappersl developed during the project. Each study will examine the impact of these interventions on literacy and mathematics outcomes, using multiple standardized and researcher-developed measures.

For each study, evaluators will recruit programs to participate and then randomly assign sites to an intervention group, a treated control group that receives a media intervention in another content area such as health or science, or a business-as-usual control group that implements its regular literacy and mathematics programming. The three-group design enables evaluators to estimate impacts of the intervention compared to typical preschool or afterschool programming (business-as-usual control), and it allows evaluators to estimate the impact of the digital content itself on learning, controlling for possible Hawthorne effects associated with heightened engagement that might result from technology being introduced into the setting and

professional development teachers receive (the treated control group). Because the aim of the summative evaluation is to test the impact of an integrated intervention, the design will not isolate the relative contributions of different forms of media engagement by design. Evaluators will, however, conduct non-experimental analyses of associations between use of particular forms of media and learning gains within the treatment group to develop data-informed hypotheses about the role of specific media in learning.

The evaluation also will examine impacts on preschool and afterschool teachers and their classroom environments, as well as on parents and guardians and opportunities to learn using media at home. Recognizing that home, school, and afterschool represent important settings within a broad learning ecology (Neuman & Celano, 2001) evaluators expect that impacts of the intervention on aspects of these settings (e.g., program quality in extended learning programs) are likely to mediate child outcomes. Therefore, the evaluators will answer the question: How do educator and caregiver actions, as well as characteristics of the expanded learning settings, mediate student learning?

Preschool Intervention Impact Study (Year 3)

The intervention will target both literacy and mathematics skills, include content from multiple properties and the transmedia gaming suite, and include professional development as an integral component. The duration of the intervention will be 18–20 weeks.

Study Design. The impact study will use an experimental (random assignment) design, in which classrooms will be randomly assigned to one of three experimental groups: (1) treatment group—teachers will receive training and professional development to implement the intervention with support from online and face-to-face interactions with coaches; (2) treated control group—teachers will receive similar amounts of professional development and

implement an intervention of the same duration focused on science or health; or (3) business-as-usual control group—teachers will implement their regular preschool curriculum or activities in literacy and math. As described below, teachers and students in the treated control group and business-as-usual group will receive full access to the materials at the end of the year.

Sample and Statistical Power Analysis. Evaluators will recruit a sample of 114 classrooms (38 per group) in early childhood centers that serve low-income children in two or three urban areas. Incentives for participation will include access to curriculum materials and technology free of charge and a modest participation reward.

To determine the sample sizes needed at each level (students and classrooms) for a sufficiently powered design, evaluators conducted a statistical power analysis. Recent experimental evaluations of preschool mathematics curricula suggest that, relative to some other interventions in education and domains, effects can be expected to be large ($0.23 < d < 1.07$; Clements & Sarama, 2008; Klein, Starkey, Clements, Sarama, & Iyer, 2008). Reviews of early literacy programs suggest a much wider range of impacts are possible (Preschool Curriculum Evaluation Research Consortium, 2008). Therefore, for this study, evaluators plan conservatively for the study to detect effects of +0.20 or greater with 80 percent power.

In a two-level statistical model, several important parameters need to be derived to carry out the sample-size calculations. In particular, evaluators need to estimate the intra-class correlation (the proportion of total score variance attributable to between-site variability) and the proportion of variance explained by a pretest at both site and student levels. A recently published review of the literature by Hedges and Hedberg (2007) provides empirical estimates for intra-class correlation and the proportion of variance explained by a pretest at both site and student levels by subject matter and grade level. In this study, calculations are based on an intra-class

correlation of .168 and an estimated proportion of post-test variance explained by the pretest at .693 (between sites) and .603 (within sites). These numbers are based on Hedges and Hedberg (2007, Table 4), citing estimates from the Early Childhood Longitudinal Survey assessments for literacy in kindergarten (since intra-class correlation estimates are higher than for mathematics). The number of students per classroom was fixed at eight. With these parameters, evaluators estimated that 48 classrooms (16 per condition) would be needed to achieve evaluators' statistical power goals under the assumptions of Hedges and Hedberg (2007) and 96 classrooms (32 per condition) under the more conservative assumptions of Schochet (2008). If evaluators assume 15 percent attrition, that would mean recruiting 114 classrooms.

Measures. The study will employ multiple standardized and researcher-developed measures of child literacy and math outcomes, parent and teacher outcomes, classroom quality, and an implementation fidelity measure. Targeted skills and student outcome measures in literacy will be: alphabet knowledge and beginning sound awareness (PALS-PreK), phonological awareness (TOPEL), and concepts of print (TERA-3). Targeted skills and student outcome measures in mathematics include concepts of number sense, counting, operations, and geometry (ECLS-B or TEMA-3), informal concepts of number, arithmetic, space and geometry, measurement, patterns, and logical relations (CMA). (See Appendix A for technical qualities of these measures, as well as descriptions of specific implementation and background measures.)

Procedure. All teachers will be trained in the use of the intervention and have access to online and face-to-face technology support and coaching throughout the period of implementation. Trained assessors blind to conditions will individually test children whose parents have given consent for participation. All children will be pretested within three weeks of the intervention's start, at the midpoint, and within three weeks of completion. If feasible,

children also will be tested at six months after the conclusion of the intervention.

Analysis. Because whole classrooms will be the unit of group assignment and individual children tested will be nested within these classrooms, the evaluators will use hierarchical linear modeling to analyze results and estimate treatment effects (Raudenbush & Bryk, 2002). Estimates of impacts on teachers and parents will be analyzed using multivariate analysis of variance techniques, and the moderating effects of implementation will be analyzed following procedures outlined in O'Donnell and Lynch (2008).

Afterschool Intervention Impact Study (Year 4)

As with the preschool intervention, the afterschool intervention will target both reading and mathematics skills, include content from multiple properties, and include professional development as an integral component. In addition to incorporating content and games from the transmedia gaming suite, the afterschool intervention will incorporate opportunities to play the 3D-rendered collaborative game and immersive game developed by PBS.

Study Design. The impact study will use the same three-group experimental (random assignment) design described above. The only difference will be that the unit of assignment to condition will be the program site, because there are not likely to be multiple classrooms of children per grade level in an afterschool program.

Sample and Statistical Power Analysis. The sample will be drawn from school-based and non-school-based afterschool programs. The evaluation study will focus on a single sample of children in the fall of first grade. Evaluators plan to recruit a sample of 108 program sites for the study (36 per condition). Incentives for participation will include access to curriculum materials and technology free of charge and a modest participation reward.

To determine the sample sizes needed at each level (students and programs) for a

sufficiently powered design, evaluators conducted a statistical power analysis. A review of experimental studies of extended learning programs (Lauer et al., 2006) conducted for the Institute of Education Sciences found positive effects for programs that had certain quality features: longer duration (45–210 hours), tutoring in reading ($+0.21 < d < +0.80$), and mathematics programming that had both an academic focus and strategies for social engagement ($+0.14 < d < +0.33$). Evaluators plan for the study to detect effects of +0.20 or greater with 80 percent power, in the middle of the range for estimates of effective mathematics programs.

Following Hedges and Hedberg (2007, Table 4), evaluators base calculations on an intra-class correlation of .152 and an estimated proportion of post-test variance explained by the pretest at .804 (between sites) and .634 (within sites). The number of students per classroom was fixed at 12. With these parameters, evaluators estimated that 54 classrooms (18 per condition) would be needed to achieve evaluators' statistical power goals under the assumptions of Hedges and Hedberg (2007) and 90 classrooms (30 per condition) under the more conservative assumptions of Schochet (2008). If evaluators assume 15 percent attrition, that would mean recruiting 108 classrooms.

Measures. The study will use multiple standardized and researcher-developed measures of child literacy and math outcomes, parent and teacher outcomes, program site and program quality, and an implementation fidelity measure. Targeted skills and student outcome measures in literacy will be: phonological awareness (CTOPP), receptive and expressive vocabulary (PPVT-4), comprehension of connected text (GMRT-4), and motivation for reading (MRP). Targeted skills and student outcome measures in mathematics include: number sense, properties, operations, and problem-solving (ECLS-K). (See Appendix A for technical qualities of these measures, as well as descriptions of specific implementation and background.)

Procedure. The flow of the study will be the same as for the preschool study, except that researchers will make appropriate adjustments due to differences between preschool and afterschool programs that maintain the integrity of the study design.

Analysis. Because whole program sites will be the unit of group assignment and individual children tested will be nested within these sites, the evaluators will use hierarchical linear modeling to analyze results and estimate treatment effects (Raudenbush & Bryk, 2002). Estimates of impacts on teachers and parents will be analyzed using multivariate analysis of variance techniques, and the moderating effects of implementation will be analyzed following procedures outlined in O'Donnell and Lynch (2008).

Analysis, Reporting, and Dissemination. In addition to providing ongoing feedback to CPB and PBS production and implementation teams, evaluators recognize the RTL Initiative has the potential to shape research and policy. The team will distribute the proposed program of research (findings, newly developed instruments, and design adaptations) to policymakers, educators, and other communities of researchers. The evaluation team will make use of traditional venues (print publications) as well as new media dissemination outlets. EDC, SRI International, and WestEd have strong histories of widely disseminating findings from their work. For example, EDC and SRI International's lead technical report for the 2006–2010 RTL Initiative was one of the few preschool studies cited in the National Education Technology Plan and has been included in the What Works Clearinghouse. WestEd is the lead agency for three Comprehensive Centers: West, Southwest, and the Assessment Center, and the Regional Education Laboratory (REL)-West, and is a major partner with the Northeast and Islands REL and Comprehensive Center housed at EDC. In addition, staff members worked closely with the What Works Clearinghouse, serving as the principal investigator for science submissions and

developing practice guides that help educators learn about research evidence to inform their decision-making and practice. These links provide a strong existing infrastructure for providing leadership and sharing the results of this project's research and evaluation findings.

Budget Narrative

Budget Justification

Attachment 1:
Title: Expanded Learning Budget Narrative Pages: 40 Uploaded File: E:\RTL_budget_package_final.pdf

BUDGET NARRATIVE

The Corporation for Public Broadcasting (CPB) and the Public Broadcasting Service (PBS) are requesting a total of $71,440,157 over a five year period from the U.S. Department of Education (ED) Ready To Learn (RTL) grant to support the CPB-PBS Expanded Learning Through Transmedia Content Project. A summary of major line items are outlined below.

1. PERSONNEL

Year 1	Year 2	Year 3	Year 4	Year 5	Total
$381,900	$393,357	$405,158	$417,312	$429,832	**$2,027,559**

The Executive Director will have overall responsibility for implementing the vision and achieving the goals of the project, including the quality of all elements, rigorous development and use of scientifically based reading research, coordination of partners and the integrity of the project evaluation. The Executive Director will serve as a primary liaison to ED and will report to the Executive Oversight Committee. The person in this position will dedicate 100% of his or her time to the project.

The Research Director will dedicate 100% of his or her time to the project. Duties will include oversight of independent summative evaluation/formative evaluation and quality design and integrity of all research plans, implementation, analysis, and reporting. The person in this position will report to the Executive Director of the project.

The Program Manager will dedicate 100% of his or her time to the project. Duties will include rigorous contract management, compliance, and narrative and budget reporting to ED. This person will report to the Executive Director of the project.

The Budget Analyst will be responsible for managing project finances day-to-day, tracking budget and payments, and assisting in the preparation of reports and analysis. The person in this position will dedicate 50% of his or her time to the project and will report to the Executive Director.

The Administrative Assistant will dedicate 100% of his or her time to the project. Duties will include the management of administrative tasks related to the project including the scheduling, report requirements, and project timelines; this person will also plan project meetings and events to support the oversight of grant activities. This person will report to the Executive Director.

Direct labor charges are based on actual salaries for key project positions plus a factor added to the current base salaries for merit increases at 3% per year during the proposed contract period.

2. FRINGE BENEFITS

Year 1	Year 2	Year 3	Year 4	Year 5	Total
$126,396	$130,517	$133,405	$136,379	$139,443	**$666,140**

Fringe benefits includes Social Security, Medicare, and unemployment taxes, plus CPB's standard employee benefits such as health and dental plans and defined contribution retirement plan. CPB fringe benefits are calculated at an average rate of 33%. The benefits rate is constant for the five year grant term.

3. TRAVEL

Year 1	Year 2	Year 3	Year 4	Year 5	Total
$45,000	$43,200	$43,408	$40,624	$43,849	**$216,081**

In addition to travel expenses, this cost category also includes expenses related to the meetings of the project advisory committee. In Year 1, we plan to have our Advisory Council

meet to aid in the refinement of our Math Curriculum Framework. In the following years, we will gather the Council annually and meet as needed via conference call, Skype or other forms of communication. This budget includes a stipend of $450 per day for two days per year, for up to twelve people and for associated meeting expenses, such as catering and remote conferencing services. The annual budget for the Advisory Council is estimated at $20,000.

Travel is calculated based on an estimate of two staff traveling once a month at $1,000 per person per trip. Costs are budgeted to include transportation, lodging, and meals for CPB Ready To Learn staff. Travel dollars are estimated to cover coordination of professional meetings, conferences, joint planning, and other project events. The budget also includes direct travel costs for non-budgeted staff, such as CPB's executive leadership team (the Senior Vice President and Vice President, Education), who would travel to quarterly oversight meetings.

4. EQUIPMENT

Year 1	Year 2	Year 3	Year 4	Year 5	Total
$12,500	$10,500	$2,500	$2,500	$2,500	**$30,500**

In order for project staff to be fully knowledgeable about the games and other media developed under this grant (and to be able to demonstrate those media), we will procure technical equipment and services to support such activity. Items included in this area are a SMART Board in Year 1, estimated at $10,000; iPads, iPhones, and Androids totaling an additional $2,500 for game testing and staff communication; one SMART Table in Year 2, estimated at $8,000; and related gaming consoles in Year 2 at an additional $2,500. For Years 3-5, we have budgeted an additional $2,500 for hardware add-ons, software, and equipment replacements or upgrades as needed.

5. SUPPLIES

Year 1	Year 2	Year 3	Year 4	Year 5	Total
$6,500	$8,260	$10,090	$11,994	$13,974	**$50,818**

Supplies include miscellaneous office materials, memberships, and subscriptions to support the administration and development efforts of the project.

6. CONTRACTUAL

Assumptions	Year 1	Year 2	Year 3	Year 4	Year 5	Total Grant Five Years
PBS	10,823,513	9,580,438	9,900,496	9,704,339	9,553,017	49,561,803
EDC/Research						
West Ed Research	1,227,950	1,717,633	3,118,559	2,757,243	1,175,857	9,997,242
Community Partners - Implementation						
Consultants	1,059,595	935,895	972,634	1,148,851	842,702	4,959,677
Total Contracted						
	899,000	750,000	731,000	845,000	460,000	3,685,000
	45,000	46,800	48,672	50,619	54,246	245,337
	14,055,058	13,030,766	14,771,361	14,506,052	12,085,822	68,449,059

A. PBS

This line item represents PBS's budget for design, development, and coordination by producers, implementation of transmedia gaming content, and outreach activities and marketing of the Expanded Learning Through Transmedia Content to the RTL target audience. PBS's total budget for this work is $49,561,804 over a five-year period. The detail is as follows:

PBS Budget Budget Categories	Year 1	Year 2	Year 3	Year 4	Year 5	Total
1. Personnel	511,530	526,876	542,682	558,963	575,731	2,715,782
2. Fringe Benefits	160,518	165,334	170,294	175,402	180,665	852,213
3. Travel	52,000	60,000	47,000	45,000	40,000	244,000
4. Equipment	37,828	36,398	36,528	21,528	21,228	153,510
5. Supplies	10,000	10,000	10,000	10,000	10,000	50,000
6. Contractual	8,261,748	7,081,611	7,492,610	7,021,372	6,774,610	36,631,951
7. Construction	-	-	-	-	-	-
8. Other	717,289	750,806	620,252	910,383	1,004,088	4,002,818
9. Total Direct Costs (lines 1 -8)	**9,750,913**	**8,631,025**	**8,919,366**	**8,742,648**	**8,606,322**	**44,650,274**
10. Indirect Costs	1,072,600	949,413	981,130	961,691	946,695	
						4,911,529
11. Training Stipends	-	-	-	-	-	-
12. Total Costs (lines 9-11)	**10,823,513**	**9,580,438**	**9,900,496**	**9,704,339**	**9,553,017**	**49,561,803**

An explanation of line item costs follows:

1. Personnel (PBS)

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Personnel (PBS)	$511,530	$526,876	$542,682	$558,963	$575,731	$2,715,782

Personnel costs provide full-time support for positions noted below. Personnel costs accommodate a 3% salary increase each year, beginning in Year 2 and continuing through Year 5, and include benefits. The following positions are fully charged to the project:

The Senior Director, Content Development, working closely with the CPB Executive Director, will oversee operations of all project content development; manage staff, the budget, and partner/producer relationships; seek additional partners and project support/resources; ensure integration of content within wider PBS distribution strategy; and coordinate strategy for marketing and communications.

The Curriculum Director will oversee development of curriculum framework with advisors, review content deliverables for educational efficacy and age-appropriateness, manage scaffolded delivery of educational content from multiple producers/properties, and work closely with research partners to set goals and objectives for content projects.

The Content Producer will manage day-to-day production of content deliverables across the project, including games, videos, mobile applications and other activities; manage outside producer relationships and review content deliverables for educational efficacy, technical stability, and age-appropriateness; direct content updates based on formative testing results; and ensure on-time delivery of all content deliverables.

The Game Technologist will develop and implement best practice guidelines for all technical aspects of game production within the grant; manage producer technical production partners; ensure stability of scripts and code necessary for efficient delivery of content; manage integration of content with content delivery platforms that could include pbskids.org servers,

iTunes, Google Android Marketplace, YouTube, and other aggregation sites; and manage development of all progress tracking back-end tools and transmedia wrappers.

A Designer/Flash and HTML5 Developer will develop and implement best practice guidelines for design and information architecture of content for children between the ages of two and eight; review content deliverables for age-appropriateness and usability by the target age group, parents, and teachers; and produce all front-end illustration design, Flash, and HTML5 content needed to sequence individual games between properties.

The Parent & Teacher Content Developer will be responsible for overseeing development of all content intended for parents and teachers of target audiences; working closely with the outreach team and partners to design intervention materials and communication strategies for parents and teachers in underserved communities; and working in coordination with the Communications Coordinator on media relations and PR activities to support parent and teacher messaging.

The Communications Coordinator will coordinate media relations and promotion efforts for the grant, working closely with the project team and the PBS KIDS Marketing and Communications team. He or she will also manage production and dissemination of marketing materials and perform administrative tasks related to the project, including producer and content development team scheduling, production timeline coordination, and planning project meetings and events to support the development and distribution of grant deliverables.

2. Fringe Benefits (PBS)

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Fringe Benefits	160,518	165,334	170,294	175,402	180,665	852,213

PBS fringe benefits are calculated at the PBS standard rate of 31.38% of salaries. The benefits rate is assumed constant throughout the five-year grant term.

3. Travel (PBS)

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Travel	52,000	60,000	47,000	45,000	40,000	244,000

PBS calculates average travel costs at $550 per trip for airfare/transportation and $350 per day for lodging, ground transportation, meals, and incidentals.

Content Development staff will travel for production meetings, content update meetings, research observations, outreach activities, and discussions with advisors and producers. Travel and associated expenses will ensure that developers from all functional areas can achieve content goals and narrative products that are consistent across all platforms. The majority of production travel will occur in Years 1 and 2.

Staff, producers, advisors, and researchers will also be supported to make presentations at industry meetings and press events to ensure widespread knowledge and coverage of grant activities. Annually, targeted conferences and meetings could include International Society for Technology in Education (ISTE), Florida Educational Technology Conference (FETC), Game Developers Conference, SXSW, Games For Change, Dust or Magic, Sandbox Summit, Digital Hollywood, the PBS Annual Meeting, and the PBS TEDx Conference in Year 2. This line also includes travel related to marketing activities, including the Math Mentors Community events, and costs for travel related to the Math Mentors program and the Kids Advisory Committee.

4. Equipment (PBS)

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Equipment	37,828	36,398	36,528	21,528	21,228	153,510

To meet all of the development goals of this proposal, PBS will procure technical equipment and devices to support research and associated production components of the project. Items included in this area are technical equipment like servers, an LCD projector for remote

meetings (and related equipment like remotes and bulbs), subscriptions for shared development environment accounts (for example, Basecamp subscriptions, cross-project accounts, and file-sharing systems), iPhones and Blackberrys for game testing and staff communication, and hardware add-ons and updates for equipment like SMART Boards, SMART Tables, and related gaming consoles. These costs are consistent in Years 1 through 5. In addition, in Years 1 through 3, we will purchase up to 100 iPod Touch devices and/or Android phones (calculating $200 per device) with plugs and charging units to be used in formative testing, some of which will become stipends for research participants and some of which will be used for staff prototype testing. We will reuse some of these units in Years 4 and 5, and buy replacements or upgrades when necessary.

5. Supplies (PBS)

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Supplies	10,000	10,000	10,000	10,000	10,000	50,000

Supplies include miscellaneous office materials to support the administrative needs of the PBS grant staff.

6. Contractual (PBS)

Contractual expenditures are allocated for Research and Content Design and Development.

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Content Design & Development	$7,409,653	$6,378,811	$6,742,049	$6,431,811	$6,149,049	$33,111,373
Usability & Appeal Research	$421,095	$306,800	$259,561	$233,561	$269,561	$1,490,578
Outreach Resource Development	$231,000	$246,000	$341,000	$206,000	$206,000	$1,230,000
Boston University	$200,000	$150,000	$150,000	$150,000	$150,000	$800,000
Total	$8,261,748	$7,081,611	$7,492,610	$7,021,372	$6,774,610	$36,631,951

Specific contractual expenditures include the following:

a. Content Design & Development: Video, web-original properties, Games, Parent & Teacher materials (including Spanish resources), Progress Tracking Tools and Transmedia Wrappers

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Video	$3,742,900	$3,000,000	$3,000,000	$3,000,000	$3,000,000	$15,742,900
Broadband - Original Properties	$400,000	$400,000	$300,000	$200,000	$300,000	$1,600,000
Game Development	$3,126,753	$2,758,811	$3,047,049	$2,761,811	$2,464,049	$14,158,473
Progress Tracking Tools	$0	$100,000	$150,000	$100,000	$100,000	$450,000
Transmedia Wrappers	$0	$0	$75,000	$200,000	$190,000	$465,000
Parent & Teacher Content/Modding Tools	$140,000	$120,000	$170,000	$170,000	$95,000	$695,000
Total	$7,409,653	$6,378,811	$6,742,049	$6,431,811	$6,149,049	$33,111,373

1. New Video Content

This portion of the budget includes partial series development and production costs for one preschool math property in Years 1 and 2 and one math property targeted to ages 6-8 in Years 3 and 4. Each series would consist of 40 half-hour episodes. Funds would be allocated and distributed to outside producers who will also be responsible for allocating monies in their own budgets to supplement the costs of series development. Ready To Learn monies combined with monies from outside producers would fully fund development of the following series elements:

Year 1: preschool series bible, episode outlines, scripts, storyboarding

Year 2: preschool series scripts, storyboarding, and/or animatics, rough and final cuts, and appeal testing

Year 3: continued preschool series development (including launch of preschool series) plus school-aged series bible, episode outlines, scripts, and storyboarding

Year 4: continued preschool series roll-out plus school-aged series scripts, storyboarding, and/or animatics, rough and final cuts, and appeal testing

Year 5: continued series roll-out (including launch of school-aged series), plus additional funding to promote and sustain television content by creating special, impactful programming, including themed episodes with potential for national television programming specials, long-form content up to one hour to showcase bigger storylines and associated curriculum, and a

series of short-form pieces that can be broadcast as cross-promotional interstitial content or linked together to create a half-hour special.

2. Broadband Original Content Development

This part of the budget includes costs for development and regular content updates for two broadband-original properties over the course of the five years. Years 1-2 will focus on new content production including character designs, storyboarding, webisode outlines, scripts, game specification documents, and website environment development. In all years, this budget includes costs to port broadband-original games to multiple platforms and for inclusion in the Transmedia wrappers to be developed in Years 4-5 of the grant. Costs for each new broadband-original property assume production of a series of approximately 10 short-form original video pieces per year, development of 3 to 4 games per year, production of parent and teacher support materials, and funds to encode, port, and deliver content through multiple distribution outlets (including pbskids.org, video aggregation sites such as iTunes and YouTube, and both mobile and online game platforms).

3. Games

This section of the budget covers all of the Digital Content Models described in the Project Design section of this proposal. PBS has selected and confirmed a pool of producers of PBS KIDS properties, so that we can use their characters (which are already associated with public broadcasting) and narrative assets within this project and because each property's content goals fit well within either our proposed Math Curriculum Framework or existing Literacy Curriculum Framework. Based on appeal research, skill frameworks, and pricing considerations, PBS will select which of these properties are best suited for new content development within this project.

Best Practices Guides for Literacy and Math Content Development

This project will be developed by grant-funded staff but will require funds for review and approval by outside educational consultants and game play experts and minimal technical development by an outside vendor. The majority of this deliverable will be produced in Year 1, with an update in Year 4.

Transmedia Gaming Suites

This portion of the budget includes development and production costs for ten suites in Years 1, 3, and 5, nine suites in Year 2, and eight suites in Year 4. In this category, funds are allocated for development and iterative production of games and video content and will be distributed to outside producers (such as Universal/WGBH for Curious George, Random House for Cat in the Hat, CloudKid, Inc. for Fizzy Lunch Lab) and third-party game developers. Game development includes costs for at least two iterations of every game on every platform (e.g., launch version + one update following educational impact research results).

The total Transmedia Gaming Suites budget breaks down into funds for development of approximately 47 multi-leveled and replayable online games, approximately 28 multi-leveled and replayable mobile games (for iPhone, Android, and keypad phones), and up to ten Augmented Reality (AR) handheld games over the course of the grant. As part of the expanded learning environment, PBS will contract with producers to create up to seven games for the SMART Table, which requires development on an emerging platform that features a touch screen for multiple users. This portion of the budget also includes porting costs to transfer mobile games to multiple devices (for example, for porting and development from iPhone to iPad, Android phones to other smart phones, online games to SMART Boards), and costs for outside consultants and advisors (for example, Georgia Tech University's consultation on all AR games).

3D Collaborative Game Engine

This part of the budget includes development, production, prototyping, and engine development costs for a 3D-rendered multiplayer gaming engine for use by all content producers. In Year 1, costs will cover development of a 3D-rendered game prototype using assets from one property and for use in a closed appeal, usability and educational impact trial. In Year 2 we anticipate launching the first game and beginning production on the second game. In subsequent years, the game and toolset will be scaled and refined for wider launch on pbskids.org and for use by multiple producers. The budget includes funds for content and technical development and needed producer/character assets for launch of up to three 3D-rendered collaborative games over the course of the grant.

Immersive World Game

This part of the budget includes costs for development, character assets, production, prototyping, and back-end integration for an Immersive World game. Development will begin in Year 1, with testing and further build out in the remaining years.

In Year 1, we will develop the Electric World characters, immersive environments, website infrastructure, games, and animations for this new transmedia content. This experience will launch in Year 1.

For Year 2, the budget includes funds to roll out new webisodes and games in response to usability and appeal testing, and to refresh the site in the later part of the year.

For Year 3, the budget includes funds to create a related iPhone app and continue to create and refresh the webisodes and game content.

For Year 4, the budget includes funds for production of one new game for the site and new webisodes. We will also develop a second iPhone app.

For Year 5 of the grant, the budget includes funds for one new game, additional webisodes, and an iPhone app upgrade based on formative research results.

Data & Usability Research Analysis

PBS will hire a consultant as needed throughout the grant period to provide analysis for various pieces of the project, including Google and online traffic analysis, progress tracker statistics, and overall reports to show usage across all platforms. This cost is consistent across all 5 years.

4. Progress Tracking Tools

This budget includes funds for development of a robust system to track individual child progress through games across multiple platforms, and mechanisms to deliver progress results to parents and teachers on multiple devices. This system will track individual user accounts, allow delivery of "push" messages to visitors when new games and content are available, provide necessary privacy and safety guards to protect visitor information, and gather information from triggers built within games to track individual player progress. This set of tools will leverage the existing PBS KIDS login system developed for PBS KIDS Island and the PBS KIDS GO! Great Word Quest and will be expanded and tested by a third-party technology vendor.

Following a data discovery phase in Year 1, the budget includes money to begin development of the new tools in Year 2 and launch the front end of the toolset to parents and teachers in early Year 3. The project team will expand and refine the tools based on formative testing throughout Years 4-5.

5. Transmedia Wrappers

This portion of the budget will support development of wrappers using available technology and APIs to connect and sequence games for each platform. For example, these funds

will be used to develop an iPhone app, which would sequence and track progress across all iPhone games built within the course of this grant, or an Adobe AIR application that could pull together and sequence all online games developed for this grant for use on a netbook or computer offline from the Internet. These exact wrapper technologies will be chosen in Year 3 for development in Years 4-5, but funding assumes development of at least four content wrappers designed for specific platforms, skill focus, or target age group. The budget includes funds for one transmedia wrapper in Year 3 and two wrappers in both Year 4 and Year 5, totaling five transmedia wrappers over the course of the project.

6. Parent & Teacher Content Development, Spanish-language Resources, and Teacher Modding Tools

In Year 1, the project team will develop an online Best Practices Guide for Parents and Teachers and will update it throughout the life of the grant. Throughout the course of game content development, they will be developing activities, resources, apps, and other materials for use by teachers and parents. These materials could include user guides, offline game suggestions, online tutorials about skills used across the games, etc. Their work with The School of Education at Boston University will also inform the materials we create for pre-K and early elementary teachers to support the game content. In Years 3-5, these funds increase to support development of modding tools, which will allow teachers to modify and customize online game content for students in their classrooms. Producers will also develop high quality learning tools to be used in outreach settings through all partners, to support parents and educators. This budget also includes monies for development of Spanish-language versions of most parent & teacher resources, which will be produced in all five years of the grant.

b. Usability and Appeal Research

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Usability & Appeal Research	$421,095	$306,800	$259,561	$233,561	$269,561	**$1,490,578**

PBS will conduct usability and appeal research for games and associated content developed for parents and teachers. PBS will solicit RFPs for individual projects, to ensure that the games, video content and materials function as designed and that children are engaged and excited about playing the games.

c. Outreach Content and Resource Development

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Outreach Resource Development	$231,000	$246,000	$341,000	$206,000	$206,000	**$1,230,000**

Costs in Years 1 and 3 cover the development of the five thematic modules PBS and the Chicago Public School system will create for Virtual Pre-K and K, including a Teacher Content Development Team and a project management consultant. In Years 2, 4, and 5, we will focus on dissemination of materials to classrooms and family child care settings.

Throughout the five-year grant, the plan is to focus on deep, moderate, and universal implementation plans to scale the work throughout Chicago Public Schools and then to states through partnerships and the PBS Digital Learning Library.

d. Boston University Partnership

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Boston University	$200,000	$150,000	$150,000	$150,000	$150,000	**$800,000**

PBS intends to contract with Boston University to provide small studies on the effective use of instructional media and technology in education and formulate specific recommendations to impact professional development and tools needed by preschool teachers, pre-service education students and faculty. Work will include assessing the appropriate balance between traditional classroom instruction and the incorporation of media and technology in classroom settings to understand the needs of teachers and effective delivery methods and testing of teacher

and parent materials, and transmedia products. This testing will take place every year as new content assets are created and launched

7. Construction (PBS)

No funds are requested in this category.

8. Other (PBS)

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Outreach & Building Awareness	$410,000	$425,000	$275,000	$433,000	$440,000	$1,983,000
Technical Costs	$224,759	$240,800	$257,696	$387,200	$471,200	$1,581,655
Rent	$82,530	$85,006	$87,556	$90,183	$92,888	$438,163
Total	$717,289	$750,806	$620,252	$910,383	$1,004,088	$4,002,818

a. Outreach & Building Awareness

This section of the budget includes funds for:

- Printing and Distribution of the parent and teacher resource materials in English and Spanish. In Years 2-4, printing will increase to meet the needs of the moderate-level implementation plan.
- Webinars to support the development of materials and training with partners and teachers in Chicago and other target communities. This will reduce some travel costs.
- SMS Delivery of text messaging campaigns to participating teachers and families in the Virtual Pre-K project and summer & afterschool settings. Costs increase for Years 2-4 with the increase the number of communities in the project.
- Annual PR Materials to support news and information about the overall project, including announcements about partnerships, research results, and updates, as well as support of the game and online resource launches. This will include the development of electronic press kits, appropriate graphic and video supports, a satellite media tour, press release newswire costs and clipping service costs. This part of the budget includes money

for list purchases to reach key writers, bloggers, diverse media outlets, and regional media. Costs increase for Year 5 to produce final project reports.

- Video Production of On-Air and Online Promo Spots. Year 1 costs are higher because we will be producing 3-5 promo spots; in subsequent years, we will produce 2-3. Costs included are for scripting, hiring a crew, editing and audio time, animation and graphics, closed captioning, rights, and other related production expenses.
- A freelance producer to help produce various elements of our marketing and communication efforts, including production of the video promo spots, the TEDx conference, the Math Mentors materials, and the KIDS Advisory Panel. The need for this producer is estimated at 3 months per year.
- PR Agencies, as needed throughout the grant, to announce major projects or initiatives and to build strategies to reach target audiences.
- Math Mentors Events. In Year 4, PBS will find partners to develop pilot events in one or two cities and create materials to share online that will encourage participation in other cities. In Year 5, PBS will produce 2-3 events. This will culminate in a community event that supports intergenerational family gaming.
- Conferences in which PBS and associated partners will participate to support the goals and activities for the grant.
- PBS KIDS Advisory Panel meetings, including space with computers, and for Webinars.
- A TEDx Conference. PBS will begin planning this for this event in Year 1 to cover any fees associated with identifying speakers, a location, audio visual needs, videographers, catering. The full conference is planned for early in Year 2.

b. Technical costs

These costs cover the distribution and widespread access of content developed within this grant. The PBS KIDS web sites alone currently attract over 9 million unique visitors per month, so the technical delivery infrastructure for this project must be robust and optimized for the best possible experience by all visitors, regardless of the technology used to access the content. These costs have been calculated by comparing similar content currently on PBS KIDS, consulting with bandwidth and storage vendors, projecting traffic increases and price structure changes over the next five years, and by measuring across industry standards.

Technical costs include funds for the following distribution functions:

- Ingesting, editing, and encoding video content for delivery in multiple platforms
- Bandwidth to respond to all server calls for game and video content
- License fees for use of content delivery aggregation services (such as a video distribution platform)
- Server space for storage and delivery of game and video content

Technical costs in Years 4 and 5 increase due to the public launch of the 3D-rendered gaming component, which requires increased server-processing power.

c. Rent and Utilities

PBS budgets rent and utilities at $11,790 per FTE per year plus a 3% annual increase. Rent and utilities for Year 1 of this project amount to $82,530. PBS does not include rent and utilities in the indirect cost rate and it is charged directly to the grant.

9. Indirect Costs (PBS)

Year 1	Year 2	Year 3	Year 4	Year 5	Total
$1,072,600	$949,413	$981,130	$961,691	$946,695	$4,911,529

Indirect costs include corporate/administrative expense. Corporate expense funds the general and administrative costs PBS incurs for its Executive Management Board, Human Resources, General Counsel, Finance and Accounting and Information Technology. For the purposes of this grant, PBS assumes a corporate expense rate of 11% per its agreement with the Department of Education.

10. Training Stipends

No funds are requested in this category.

11. PBS Total Costs

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
PBS Total	$10,823,513	$9,580,438	$9,900,496	$9,704,339	$9,553,017	$49,561,803

PBS total costs over the course of the project is $49,561,803.

B. EDC-SRI

Cost associated with this line item reflect EDC-SRI's budget as an independent summative evaluator of the CPB-PBS Expanded Learning Through Transmedia Content project. EDC-SRI has budgeted a total of $9,997,242 over a five-year period for this work. An explanation of line item costs are as follows:

1. PERSONNEL

Shelley Pasnik will serve as Principal Investigator of the evaluation, devoting 20% of her time during all five years to the project. She will lead the evaluation team and oversee the design and implementation of the study and the write up of reports. She will be the main contact with CPB and PBS. She will also lead dissemination activities during Years 2 through 4.

Naomi Hupert will serve as the project manager and literacy advisor, devoting 50% of her time in all five years to the project. She will manage the nine studies taking place during

Years 1 through 4 and will support data analysis and report development during that time, and also during the final year of the study. She will also contribute to dissemination activities.

Terri Meade will be the mathematics advisor, devoting 20% of her time in all five years to the project. She will advise the evaluation team mathematics research for Pre-K and elementary aged students, and will support materials development for teachers and coaches. She also will contribute to data analysis and reporting activities.

A Project coordinator will devote 50% of his or her time during Years 1 through 5 to the project. He or she will coordinate all phases of the nine studies outlined during Years 1 through 4, will support instrument development, data collection, and analysis activities and will also contribute to report writing and dissemination activities.

A Methodologist will devote 20% time in Years 2 through 5 to the project. He or she will support the analysis of survey, observation, and assessment data collected throughout the project and will contribute to instrument selection for implementation and impact studies. He or she will also contribute to report writing.

A Research Associate will devote 60% of his or her time in Years 1 through 5 to the project. He or she will be the primary contact for communication and planning with day care centers and after school programs, will support the preparation of research materials and instruments, will train and support the assessors, will participate in data collection, and will assist with data analysis and report writing.

A Research Assistant will devote 100% of time throughout the project. He or she will develop materials to support the implementation and impact studies and will participate in field testing and revising these documents. He or she also will support the supervision of coaches in

the study, provide ongoing support for coaches during the efficacy study, and participate in off-site data collection and analysis activities.

A Communications Specialist will devote 20% of his or her time in all years of the project. He or she will support the development of all online and print materials for the nine studies undertaken during Years 1 through 4 and will support report writing and dissemination activities.

An Administrative Assistant will support the evaluation staff, devoting 20% of his or her time throughout the project. This person will help put together materials for each of the summative studies, manage travel arrangements for staff, and undertake other administrative tasks.

Education Development Center, Inc. is an independent, nonprofit organization. Unlike faculty at academic institutions, no senior personnel at EDC have academic teaching appointments. EDC does not operate on an academic calendar year. Almost all of EDC's senior project staff devote 100% effort to direct sponsored program activities. EDC budgets the level of effort of senior personnel based on the effort required to complete the scope of work as proposed. Because there is no other source of funds to cover the effort of senior researchers, EDC requests that the full proposed project effort of the senior personnel be covered.

Salary rates reflect actual salaries anticipated at the beginning of the project and established EDC ranges for unfilled positions. Salary increments are calculated at 3% percent per year.

- Yr 1: FTE 3.4
- Yr 2: FTE 3.6
- Yr 3: FTE 3.6
- Yr 4: FTE 3.6
- Yr 5: FTE 3.6

2. FRINGE BENEFITS

Employee fringe benefits are calculated at 30.05% of salaries. The rate includes FICA, Pension Plan (TIAA-CREF), Tuition Assistance, and the following insurance: Health, Dental, Unemployment, Life, Disability, Workers' Compensation, and Long-Term.

3. TRAVEL

We have budgeted the following travel costs:

Year 1

- One four-person trip to Atlanta (or possible other location) for Program Quality Observation study
- One four-person trip to Chicago (or other possible location) for Program Quality Observation study
- One five-person trip to SRI for project meeting
- Two two-person trips to Washington, DC, to meet with CPB/PBS/ED

Year 2

- One two-person trip to Atlanta for a gaming study
- Two two-person trips to Atlanta for a Pre and Post Pre-Kindergarten Implementation study
- One two-person trip to Chicago for a gaming study
- Two two-person trips to Chicago for a Pre and Post Pre-Kindergarten Implementation study
- One five-person trip to SRI for project meeting
- Two two-person trips to Washington, DC, to meet with CPB/PBS/ED
- Two two-person trips to conferences for dissemination purposes

Year 3

- Two two-person trips to Atlanta for Pre and Post Afterschool Implementation study
- Two two-person trips to Atlanta for Pre and Post Pre-Kindergarten impact study assessment training
- Two two-person trips to Chicago for Pre and Post Afterschool Implementation
- Two two person trips to Chicago for Pre and Post Pre-Kindergarten impact study assessment training
- One five-person trip to SRI for project meeting
- Two two-person trips to Washington DC to meet with funder
- Two two-person trips to conferences for dissemination purposes

Year 4

- Two two-person trips to Atlanta for Pre and Post Afterschool impact study assessment training
- Two two-person trips to Chicago for Pre and Post Afterschool impact study assessment training
- One five-person trip to SRI for project meeting
- Two two-person trips to Washington DC to meet with funder
- Two two-person trips to conferences for dissemination purposes

Year 5

- One five-person trip to SRI for project meeting
- Two two-person trips to Washington DC to meet with funder
- Three two-person trips to conferences for dissemination purposes

4. EQUIPMENT

N/A

5. SUPPLIES

General office supplies are budgeted to reflect comparable EDC experience with a project of similar scope. We estimate an average of $1,500 per yr/FTE. Only actual costs are charged to the project.

6. CONTRACTUAL

We have budgeted for the following consultants:

Year 2, 3, and 4

- 1 regional site coordinator to support recruitment and data collection over three years at one remote site, at $50.00 per hour for 450 hours in Year 2; 1,200 hours in Year 3; and 1,100 hours in Year 4

Year 3

- 7 coaches to support teachers with implementation during the impact study
- 32 RCT assessors to conduct assessments with students for the impact study

Year 4

- 5 coaches to support teachers with implementation during the impact study
- 23 RCT assessors to conduct assessments with students for the impact study

Coaches are budgeted at $14,985.00 each; and RCT assessors at $13,525.00 each.

Subcontract - We have budgeted $4,875,000 for a subcontract to SRI (Year 1: $609,375, Year 2: $975,000, Year 3: $1,462,500, Year 4: $1,340,625, Year 5: $487,500).

7. CONSTRUCTION

N/A

8. OTHER COSTS

We have budgeted $10,000 for the purchase of assessment instruments for Year 2 and $20,000 in Years 3 and 4.

We also have budgeted for the purchase of 45 iPads at $600/each in Years 2, 3, and 4 of the study to support data collection during classroom observations for Years 2, 3, and 4 to support data collection during program, and classroom observations for the Quality Program Observation study, the Implementation studies and the Impact studies.

EDC utilizes the Direct Allocation Method to determine direct and indirect costs as set forth by OMB Circular No. A-122. As defined under these conditions, "joint costs, such as depreciation, rental costs, operation and maintenance of facilities, telephone expenses, and the like are prorated individually as direct costs to each category of each award." EDC has historically and consistently charged rent and maintenance expenses as direct costs to all sponsors, and submits to an annual independent audit as required under OMB Circular A-133. EDC estimates rental costs for its New York City office as follows: $12,860/per FTE for FY11 with a 5% increase each year thereafter as a function of the employee direct labor hour. As with rent, EDC charges telecommunication costs (telephone and internet) as direct costs to the project on which an employee works as a function of the direct labor hour rate. The rate is $2,807 per/FTE for FY11 with a 5% increase each year thereafter.

EDC anticipates that computers, upgrades, repairs, supplies and related software charges will average $1,500 per yr/FTE. Program supplies, copying, printing, postage, books, publications, etc. are based on EDC's experience with projects of similar scope. We estimate an average $1,500 per yr/FTE for these costs. Only actual costs are charged to projects.

Years 1, 2, 3, 4 and 5

Year 1 based on 3.4 FTEs:

- Office Expenses (Duplication, Postage, Program Supplies, Computer Supplies, Books, Publications, Meetings, etc,): $16,320
- Telecommunications: $9,540
- Space Rental: $43,724

Year 2 based on 3.6 FTEs:

- Office Expenses (Duplication, Postage, Program Supplies, Computer Supplies, Books, Publications, Meetings, etc,): $17,280
- Telecommunications: $10,607
- Space Rental: $48,611

Year 3 based on 3.6 FTEs:

- Office Expenses (Duplication, Postage, Program Supplies, Computer Supplies, Books, Publications, Meetings, etc,):$17,280
- Telecommunications: $11,137
- Space Rental: $51,041

Year 4 based on 3.6 FTEs:

- Office Expenses (Duplication, Postage, Program Supplies, Computer Supplies, Books, Publications, Meetings, etc,):$17,280
- Telecommunications: $11,694
- Space Rental: $53,593

Year 5 based on 3.6 FTEs:

- Office Expenses (Duplication, Postage, Program Supplies, Computer Supplies, Books, Publications, Meetings, etc,): $17,280
- Telecommunications: $12,279
- Space Rental: $56,273

9. TOTAL DIRECT COSTS

$8,574,974

10. INDIRECT COSTS

EDC's current rate agreement sets provisional rates of 33.5% of total direct costs (less equipment, subcontracts, alterations and renovations) at 5% on subcontracts. EDC's indirect cost pool does not include expenses that can be prorated individually as direct costs to individual projects. EDC's cognizant audit agency is USAID.

11. TRAINING STIPENDS (PARTICIPANT SUPPORT)

EDC is treating this as Participant Support per our NICRA. We have budgeted the following participant support:

Year 1

- Incentives for 100 programs at $100 per program to participate in survey

Year 2

- Materials for 12 observation sites
- Shipping of observation materials to 12 sites
- Printing of 12 teacher guides
- Printing of 4 coach guides
- Incentives for 12 teachers at $300 per teacher
- Incentives for 12 schools at $500 per school

Year 3

- Materials for 57 sites
- Shipping of observation materials to 57 sites
- Printing of 57 teacher guides
- Printing of 20 coach guides
- Incentives for 57 teachers at $300 per teacher
- Incentives for 57 schools at $500 per school

Year 4

- Materials for 54 sites
- Shipping of observation materials to 54 sites
- Printing of 54 teacher guides
- Printing of 15 coach guides
- Incentives for 54 teachers at $300 per teacher
- Incentives for 54 schools at $500 per school

Year 5

- Materials for 10 sites
- Printing of 10 teacher guides

Printing of 10 coach guides

C. WestEd

Costs outlined in this section incorporate WestEd's budget to conduct formative evaluation studies of transmedia content including items such as game suites, 3D-rendered collaborative games, immersive worlds, mobile content, AR games, and television/video

programming. WestEd has budgeted a total of $4,959,677 over a five-year period for this work.

An explanation of line item costs are as follows:

1. Personnel

Employee salaries are based upon WestEd's fiscal year salary schedule as approved by the agency's Board of Directors. Salaries include the actual days worked for each employee and earned leave, e.g., holidays, vacations, sick leave, etc. Salary rates are current actual rates, increased where appropriate within the proposal dates to provide for probable cost-of-living adjustments, plus 18.3% for earned leave. WestEd's minimum working days for one full-time employee (FTE) are 222 per year.

Staff Name	Project Role	Average days/yr
Schneider, Steven A	Project PI WestEd-	80
McCarthy, Elizabeth M	Project Director Lead Researcher	155
Lepori, Kathleen L	Research Recruitment, Retention Coordination Researcher	55
Tiu, Michelle A	Program Assistant	222
Errickson, Uma M	Senior Researcher Early	111
Klein, Alice S	Math/Literacy Researcher	20
Diaz, Katie	Senior Mathematician-content expert	222
Hauk, Shandy	Research Technology Expert	20
Ringstaff, Cathy	Senior Researcher Early Math/Literacy	55
Starkey, Durward P	Internal IRB Senior Methodologist	20
Hirschman, Rebecca A		1
Hanson, Thomas L		25

2. Fringe Benefits

All of the employees listed in the Personnel section are regular employees. Their benefits rate is 42.3% of regular employees' salaries. Benefits include worker's compensation,

unemployment tax, and FICA for both employee classifications. Regular employees also receive retirement, medical/dental, life insurance, disability insurance, and other staff benefits.

3. Travel

All travel expense reimbursements are based on the Agency's policy. Airfare estimates are based on current average round-trip coach fares provided by the Agency's travel agencies. Lodging is based on average rates for various cities. Per diem is charged at $45/day or $11.25/quarter day. For local travel, per diem is as follows: breakfast—$9.00; lunch—$12.00; dinner—$24.00. For each trip, other expenses include ground transportation (including shuttles, taxis, or trains), parking, tolls, and incidentals. Where appropriate, mileage is charged at $0.50/mile.

Two trips per year to Washington, D.C. to meet with CPB and PBS cost $3,070/year; twelve site visits per year cost $23,160/year.

Training 20 assessors costs $12,800 in Years 1 and 4, for a total of $25,600

3. Equipment – N/A

4. Supplies

The Supplies category includes general office items such as stationery, pens, writing tablets, markers, clips, notepads, and other similar materials. The costs of special purchases such as materials for mass mailings are charged directly to the project and not to the general supply pool.

5. West Ed Contractual

These costs include stipends and incentives for participating school, teachers, and students.

Assessors to conduct individual student assessments Years 1 and 4 20 assessors @ 18 days each in years one and four 360 person days/yr @ $200/day total $72,000/yr * 2= $144,000 doesn't match budget: year 1 contractual budget: $144,100 and Year 4, $102,600

6. Construction – N/A

7. Other

Postage/Telephone

Postage and telephone expenses include general mailing and telecommunication costs.

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Postage/Telephone	$9,133	$9,369	$9,594	$9,529	$8,514	$46,139

Printing/Graphics

Printing/Graphics expenses include general office copying. Special printing and graphics expenses are charged directly to the project contract.

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Printing/Graphics	$4,562	$4,679	$4,797	$4,765	$4,261	$23,064

Information Systems

Information Technology (IT) comprises several different functions or services that directly support projects. It includes:

- Personal Computers—This category represents the depreciation charges for computing software and hardware directly assigned to project staff. This includes PCs, monitors, printers, cables, and software packages. The depreciation cost of this equipment is assigned to individual staff members, and is allocated directly to the project they are working on, based on the hours they report on timesheets.

- IT Support—This category consists of costs related to providing general technical support to staff on issues related to networks, data recovery, software applications, MAC and PC hardware problems, database support, etc.
- Common Network—This category consists of the costs for providing an overall common data network system for the Agency. It includes common equipment such as servers, routers, etc., as well as the maintenance of equipment. In addition, it includes the cost of common operating software as well as software for databases, etc., required to provide WestEd with a data network system.
- Shared Equipment—This category consists of costs of equipment such as common printers, toner cartridges, LCD projectors, videoconference equipment, faxes, servers, and routers at each site.

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Information services	$39,201	$40,084	$40,986	$40,655	$35,995	$196,921

Facility

Facility represents the rent and/or occupancy of project office space at a specific WestEd location.

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Facility	$51,650	$52,945	$54,269	$53,817	$48,049	$260,730

Program Support

Program support includes administrative services and program services. Administrative services represent expenses such as human resources, purchasing, insurance, legal, membership dues, and general administrative. Program services consist of activities involving staff planning, quality review, staff development, work planning, and staff evaluation; they also include library assistance to WestEd staff.

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Program Support	$36,028	$31,105	$34,222	$32,344	$30,014	$163,713

8. Indirect Costs

The Agency's indirect cost rate (overhead rate) is negotiated with its cognizant agency, ED. WestEd's provisional rate is 12.40%. WestEd's indirect cost pool includes Board/Board support, the Executive Director's Office, Resource Development, Communications, Contracts, and Accounting/Finance Services. For each subcontractor, indirect is charged only on the first $25,000.

D. COMMUNITY PARTNERS-IMPLEMENTATION

As CPB and PBS implement transmedia resources in schools, expanded learning settings, and homes, we will work with two lead national partners, the National Summer Learning Association and the Collaborative for Building After-School Systems to assess needs, develop implementation strategies, connect with community affiliates, and provide quality assurance. We will provide a partnership stipend to each organization to support national program staff

participation in this effort at $90,000 in Years 1 and 2, $80,000 in Year 3 and $70,000 in Years 4 and 5 for a five-year total is $400,000.

Our community implementation strategy includes testing and deploying our transmedia learning resources in 15 targeted communities through a staggered roll-out system across 5 years. Each cohort will participate for a total of two years and collaborate with targeted Title 1 school districts, summer programs, after school programs, and local public television stations. Annual costs to support this activity are as follows: Year 1 at $134,000; Year 2 at $335,000; Year 3 at $536,000; Year 4 at $670,000; and Year 5 at $335,000, for a five year total of $2,010,000. This initiative will serve high-need students from 30 Title I schools, 60 summer programs, and 60 after-school programs.

Resources for community implementation will be developed to support the effective use of our transmedia content in diverse community settings for children, community educators and families. High quality outreach content developers will assist CPB in this work at $600,000 in Year 1; $300,000 in Year 2; $90,000 in Year 3; and $80,000 in Year 4; and $30,000 in Year 5 for a total of $1,100,000. Additionally, grassroots awareness materials and user-generated content will be developed and disseminated throughout our communities for $75,000 in Year 1 and $25,000 in Years 2-5 for a total of $175,000.

E. CONSULTANTS

Consultants include the cost of utilizing staff with specific expertise (e.g., communication, audit and legal) that support the development, implementation, and compliance requirements of the Expanded Learning Through Transmedia Content project activities. For example, in each year of the grant, we will conduct a financial A-133 audit with expenses that are budgeted at $25,000 in Year 1 and include a modest increase in subsequent years.

F. CONSTRUCTION

No funds requested in this category.

G. OTHER

No funds requested in this category.

H. TOTAL DIRECT COSTS

Year 1	Year 2	Year 3	Year 4	Year 5	Total
14,627,354	13,616,600	15,365,922	15,114,861	12,715,420	71,440,157

I. INDIRECT COSTS

No funds requested in this category.

J. TRAINING STIPENDS

No funds requested in this category.

K. CPB TOTAL COSTS

Year 1	Year 2	Year 3	Year 4	Year 5	Total
14,627,354	13,616,600	15,365,922	15,114,861	12,715,420	71,440,157

Award #
5A100025

RTL Budget Proposal FY11-15

Assumptions	Year 1	Year 2	Year 3	Year 4	Year 5	(b)(4)
Staff Positions:	(b)(4)					
Exec Director 100%						
Researcher 100%						
Program Manager 100%						
Budget Analyst 50%						
Administrative Assistant 100%						
Total Annual Salary	381,900	393,357	405,158	417,312	429,832	2,027,559
						(b)(4)
Fringe:						
Total Fringe	126,396	130,517	133,405	136,379	139,443	(b)(4)
Total Staff Costs	508,296	523,874	538,563	553,692	569,275	
Other CPB Direct Administrative and Program Costs:						
Equipment	12,500	10,500	2,500	2,500		30,500
Supplies & Materials	6,500	8,260	10,090	11,994	13,974	50,818
Travel	45,000	43,200	43,408	40,624	43,849	216,081
Total Other	51,500	51,460	53,498	52,618	57,823	(b)(4)
Total CPB	559,796	575,334	592,061	606,310	627,098	
Contracts Expected:						
PBS	10,823,514	9,580,437	9,900,496	9,704,339	9,553,017	49,561,804
EDC/Research	1,227,950	1,717,633	3,118,559	2,757,243	1,175,857	9,997,242
West Ed Research	1,059,595	935,895	972,634	1,148,851	842,702	4,959,677
Community Partners - Implementation	899,000	750,000	731,000	845,000	460,000	3,685,000
Consultants	45,000	46,800	48,672	50,619	54,246	245,337
Total Contracted	14,055,059	13,030,765	14,771,361	14,506,052	12,085,823	68,449,060
						(b)(4)
Total RTL Proposal	14,614,854	13,606,099	15,363,422	15,112,362	12,712,920	

Award #
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Transmedia Implementation Budget
(CPB Outreach Budget)

v-#5

June 21 '10

I. Lead National Partners / Advisors (Strategic counsel, needs assessment, research/design of plans & products, training, technical/quality assistance)	Year # 1	Year # 2	Year # 3	Year # 4	Year #5	5-Yr Total
A. National Summer Learning Assoc (NSLA)	45,000	45,000	40,000	35,000	35,000	200,000
B. Collaborative for Building After-School Systems (CBASS)	45,000	45,000	40,000	35,000	35,000	200,000
Annual Subtotal	90,000	90,000	80,000	70,000	70,000	400,000
II. Community Implementation (15) (Implement and test transmedia innovations in high need communities through strategic alliance of schools, out-of-school, parenting, & PTV station collaborative)						
A. Cohort # 1 - 2 Pilot Communities (Yrs 1-2)						
- Title 1 School Stipends (2@2,000/each x 2 communities)	8,000	8,000	0	0	0	16,000
- Summer Program Stipends (4@6,000/each x 2 communities)	48,000	48,000	0	0	0	96,000
- After School Program Stipends (4@6,000/each x 2 communities)	48,000	48,000	0	0	0	96,000
- PTV Station Coordination (2 @ 15,000/year)	30,000	30,000	0	0	0	60,000
	134,000	134,000	0	0	0	268,000
B. Cohort # 2 - 3 Communities (Yrs. 2-3)						
- Title 1 School Stipends (2@2000/each x 3 communities)	0	12,000	12,000	0	0	24,000
- Summer Program Stipends (4@6000/each x 3 communities)	0	72,000	72,000	0	0	144,000
- After School Program Stipends (4@6000/each x 3 communities)	0	72,000	72,000	0	0	144,000
- PTV Station Coordination (3@15000/each)	0	45,000	45,000	0	0	90,000
	0	201,000	201,000	0	0	402,000
C. Cohort # 3 - 5 Communities (Yrs. 3-4)						
- Title 1 School Stipends (2@2000/each x 5 communities)	0	0	20,000	20,000	0	40,000
- Summer Program Stipends (4@6000/each x 5 communities)	0	0	120,000	120,000	0	240,000
- After School Program Stipends (4@6000/each x 5 communities)	0	0	120,000	120,000	0	240,000
- PTV Station Coordination (5x15900/each)	0	0	75,000	75,000	0	150,000
	0	0	335,000	335,000	0	670,000
D. Cohort # 4 - 5 Communities (Yrs. 4-5)						
- Title 1 School Stipends (2@2000/each x 5 communities)	0	0	0	20,000	20,000	40,000
- Summer Program Stipends (4@6000/each x 5 communities)	0	0	0	120,000	120,000	240,000
- After School Program Stipends (4@6000/each x 5 communities)	0	0	0	120,000	120,000	240,000
- PTV Station Coordination (5x15900/each)	0	0	0	75,000	75,000	150,000
	0	0	0	335,000	335,000	670,000
Annual Subtotal	134,000	335,000	536,000	670,000	335,000	2,010,000
III. Resources For Community Implementation (Development of Learning Resources, Parent Engagement models, educator professional development content, community engagement content and deployment)						
A. Expanded Learning Outreach Content						
- Developer #1	400,000	200,000	50,000	40,000	15,000	705,000
- Developer #2	200,000	100,000	40,000	40,000	15,000	395,000
	600,000	300,000	90,000	80,000	30,000	1,100,000
B. Grassroots Awareness & User-generated Content	75,000	25,000	25,000	25,000	25,000	175,000
Annual Subtotal	675,000	325,000	115,000	105,000	55,000	1,275,000
GRAND TOTAL	899,000	750,000	731,000	845,000	460,000	3,685,000

U.S. Department of Education Form ED 524 DATA

PBS Budget Budget Categories	Year 1	Year 2	Year 3	Year 4	Year 5	Total	
1. Personnel	511,530	526,876	542,682	558,963	575,732	2,715,782	1
2. Fringe Benefits	160,518	165,334	170,294	175,402	180,665	852,212	2
3. Travel	52,000	60,000	47,000	45,000	40,000	244,000	3
4. Equipment	37,828	36,398	36,528	21,528	21,228	153,510	4
5. Supplies	10,000	10,000	10,000	10,000	10,000	50,000	5
6. Contractual	8,261,748	6,981,611	7,342,610	6,921,372	6,674,610	36,181,951	6
7. Construction	-	-	-	-	-	-	7
8. Other	717,289	850,806	770,252	1,010,383	1,104,088	4,452,818	8
9. Total Direct Costs (lines 1 -8)	9,750,913	8,631,025	8,919,366	8,742,648	8,606,322	44,650,273	9
10. Indirect Costs	1,072,600	949,413	981,130	961,691	946,695	4,911,530	10
11. Training Stipends	-	-	-	-	-	-	11
12. Total Costs (lines 9-11)	10,823,514	9,580,437	9,900,496	9,704,339	9,553,017	49,561,804	
	9.9%	9.9%	9.9%	9.9%	9.9%	9.9%	

EDUCATION DEVELOPMENT CENTER

Budget Categories	Project Year 1 (a)	Project Year 2 (b)	Project Year 3 (c)	Project Year 4 (d)	Project Year 5 (e)	Total (f)
1. Personnel	248,715	274,111	282,334	290,804	299,529	1,395,493
2. Fringe Benefits	74,739	82,370	84,842	87,387	90,008	419,346
3. Travel	30,000	46,000	48,000	28,000	19,000	171,000
4. Equipment	0	0	0	0	0	0
5. Supplies	5,100	5,400	5,400	5,400	5,400	26,700
6. Contractual	609,375	997,500	2,060,195	1,781,625	487,500	5,936,195
7. Construction	0	0	0	0	0	0
8. Other	74,484	77,097	109,058	103,167	80,432	444,238
9. Total Direct Costs (lines 1-8)	1,042,413	1,482,478	2,589,829	2,296,383	981,869	8,392,972
10. Indirect Costs*	175,537	218,755	450,780	387,210	189,988	1,422,270
11. Training Stipends	10,000	16,400	77,950	73,650	4,000	182,000
12. Total Costs (lines 9-11)	1,227,950	1,717,633	3,118,559	2,757,243	1,175,857	9,997,242

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U.S. DEPARTMENT OF EDUCATION FUNDS

Budget Categories	Project Year 1 (a)	Project Year 2 (b)	Project Year 3 (c)	Project Year 4 (d)	Project Year 5 (e)	Total (f)
1. Personnel	$403,130	$423,285	$444,451	$447,091	$424,569	$2,142,526
2. Fringe Benefits	$144,145	$151,352	$158,920	$159,864	$151,811	$766,092
3. Travel	$39,030	$26,230	$26,230	$39,670	$10,790	$141,950
4. Equipment	$0	$0	$0	$0	$0	$0
5. Supplies	$57,041	$57,120	$57,198	$111,176	$2,843	$285,378
6. Contractual	$144,100	$15,600	$15,600	$102,600	$15,600	$293,500
7. Construction	$0	$0	$0	$0	$0	$0
8. Other	$153,254	$159,060	$162,934	$161,708	$144,122	$783,078
9. Total Direct Costs	$942,700	$832,647	$865,333	$1,022,109	$749,735	$4,412,524
10. Indirect Costs*	$116,895	$103,248	$107,301	$126,742	$92,967	$547,153
11. Training Stipends	$0	$0	$0	$0	$0	$0
12. Total Costs (lines 9-11)	$1,059,595	$935,895	$972,634	$1,148,851	$842,702	$4,959,677