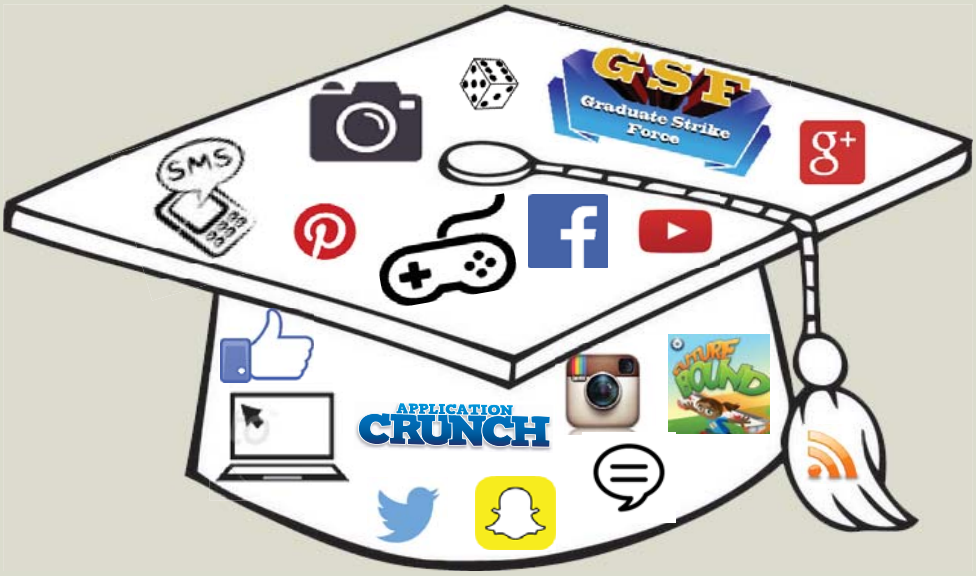
FIRST IN THE WORLD

Improving Access to College through Games, Technology, and Social Media



William G. Tierney
Zoë B. Corwin
Pullias Center for Higher Education
University of Southern California

ABOUT THE PULLIAS CENTER

With a generous bequest from the Pullias Family estate, the Earl and Pauline Pullias Center for Higher Education at the USC Rossier School of Education was established in 2012 (the center was previously known as the Center for Higher Education Policy Analysis). The gift allows one of the world's leading research centers on higher education to continue its tradition of focusing on research, policy, and practice to improve the field.

The mission of the Pullias Center for Higher Education is to bring a multidisciplinary perspective to complex social, political, and economic issues in higher education. Since 1996 the center has engaged in action-oriented research projects regarding successful college outreach programs, financial aid and access for low- to moderate-income students of color, use of technology to supplement college counseling services, effective postsecondary governance, emerging organizational forms such as for-profit institutions, and the retention of doctoral students of color.

ABOUT THE AUTHORS

William G. Tierney is University Professor and Wilbur-Kieffer Professor of Higher Education at the Rossier School of Education and the Co-Director of the Pullias Center for Higher Education at University of Southern California (USC). Former President of the USC Academic Senate, he has chaired both the Ph.D. program for the USC Rossier School of Education and the University Committee on Academic Review. He serves on the International Advisory Board of King Abdulaziz University (Saudi Arabia) and is an Interdisciplinary Research Fellow at the University of Hong Kong. Dr. Tierney is committed to informing policies and practices related to educational equity. He is involved in projects pertaining to the problems of remediation to ensure that high school students are college-ready, interactive web-enhanced computer games for preparing low-income youth for college, and a project investigating how to improve strategic decision-making in higher education. His recent publications include: *The Impact of Culture on Organizational Decision-making*, *Trust and the Public Good: Examining the Cultural Conditions of Academic Work*, and *Understanding the Rise of For-profit Colleges and Universities*. Tierney earned a master's from Harvard University and holds a Ph.D. from Stanford University in administration and policy analysis. Tierney has been president of ASHE, president and vice president of AERA, and is a Fellow of AERA. He was recently elected to the National Academy of Education.

Zoë B. Corwin is an Associate Professor of Research at the Pullias Center for Higher Education. Corwin has served as co-PI on grants supported by the Spencer Foundation, the Bill & Melinda Gates Foundation and the U.S. Department of Education examining college preparation programs and access to financial aid for underserved students, college pathways for foster youth and the role of social media and games in postsecondary access and completion. She is co-editor of *Postsecondary Play: Games, Social Media and Higher Education* with Johns Hopkins Press and *Preparing for College: Nine Elements of Effective Outreach* with SUNY Press. In addition to academic articles, Corwin has published several monographs and online resources designed for practitioners outlining effective college preparation strategies. Corwin is the lead researcher for the Pullias Center's game project which uses game-based strategies and social media to engage students in college preparation, college application, and financial aid processes.

Pullias Center for Higher Education

Rossier School of Education

University of Southern California
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What is a First in the World initiative?

The U.S. Department of Education awarded a $3.2 million grant in November 2014 through its Fund for Innovation in Postsecondary Education's (FIPSE) First in the World program to the Pullias Center for Higher Education. The investment allows the Pullias Center to expand the reach of its online college application game, *Mission: Admission,* created in collaboration with USC's Game Innovation Lab.

The First in the World program announced a total of $75 million in grants to 24 universities in fall 2014. The acceptance rate for proposals was roughly 4%. The grants are intended to spur the development of innovations in postsecondary outcomes, college affordability, and evidence-based practices to ensure that the United States is "first in the world" with regard to college attendance and graduation.

Over four years, the Pullias Center will implement the college application game in schools across California through a Web-based platform. The role-playing game, along with an extensive student-centered social media campaign and support materials for teachers and counselors, offers schools online tools to actively engage students in preparing for college.

The First in the World grant builds upon previous research and evaluation funded by the Institute of Education Sciences in the U.S. Department of Education [R305A110288], the Bill & Melinda Gates Foundation, the Rosalinde and Arthur Gilbert Foundation and the TG Foundation. USC's Office of the Provost provided initial internal support funds.

The project addresses three national challenges pertaining to increasing the rates of underrepresented and low income students enrolling in college:

(1) the need to motivate students to learn about college in relevant and effective ways,

(2) the need to expand access to college and financial aid information and support, and

(3) the need to implement and sustain programs on a wide-scale level.

The key project innovation is in meeting students where they spend time – online and in game spaces – by using games, technology and social media tools to motivate, educate and support students in applying to college and for financial aid. Through a random-control trial study and in-depth case studies conducted at selected sites, we will explore the effects of game-based learning on students' college-going efficacy, college knowledge, FAFSA completion, and college enrollment.

What is the challenge in higher education we are addressing?

Improving college access and completion for underrepresented, underprepared, and low- income students has been a persistent challenge for practitioners, policymakers, and academics for decades. The First in the World program recognizes that the status quo cannot continue. Our approach seeks to address at least part of this problem: improving college access and enrollment for historically underserved students. The project confronts the challenge of improving postsecondary outcomes by developing, implementing, and evaluating a game-based approach to college and financial aid guidance and support for underrepresented and low-income students. The intervention targets the college application process as a key step in ensuring access to college.

In order to successfully gain access to higher education, students from poor and working-class backgrounds need high quality information about postsecondary options and costs as well as support for their college aspirations and plans (Tierney & Colyar, 2009). Otherwise low-income students, even if they have aspirations to attend college and have been high achievers in school, run the risk of not applying to college. Becoming academically prepared, while a strong predictor of college success, does not ensure college access.

Teachers and counselors can play a major role in facilitating (or hindering) access to college. Yet at overcrowded high schools, students are seldom afforded access to meaningful college guidance due to high student-to-counselor ratios (Corwin, Venegas, Oliverez, & Colyar, 2004). Following budget shortfalls, many high schools have cut their college counselor positions leaving students with fewer school-based support providers to guide them through the steps of completing college applications and once accepted, deciding which college to attend (Bruce & Bridgeland, 2012; Harvard School of Education, 2014; McKillip, Rawls & Barry, 2006). Across the nation, student-to-counselor ratios far exceed reasonable numbers. While the American School Counselor Association (ASCA) recommended student-to-counselor ratio is 250:1, the national average hovers at 450:1. College counselor duties and student-to-counselor ratios vary tremendously between public and private schools (McDonough, 2005). In schools where counseling positions have been cut, teachers are often put in a position where they need to provide college guidance despite, while not being officially trained to do so.

Addressing inequities in college access is critical because individuals who attend and graduate from college are more likely to be employed, will earn significantly more over their lifetime, adopt a healthier lifestyle, and become more civically engaged than their counterparts who have attained lower levels of education (Mazumder, 2003). Most experts believe the skills obtained through postsecondary education will become increasingly important in the 21st century as new technology and globalization transform the economy (National Center on Education and the Economy, 1990; Tierney, 2014; Tierney & Sablan, 2014).

Why address these issues through an online intervention?

The Pew Institute (2008) estimates that virtually all high school youth play games (99% of boys and 94% of girls) and that 95% of teens belong to at least one social networking site (2014). A Kaiser Family Foundation study reported that children between the ages of 8–18, spend an average of 7.5 hours per day using computers and/or MP3 players, watching television, or playing video games (Rideout, Foehr, & Roberts, 2010). The target population for this intervention is clearly situated among these statistics.

Initial efforts to make college information accessible to a large audience via online channels took the form of non-interactive websites. In recent years, organizations interested in increasing access to college have heightened efforts to scale college preparation approaches and have developed a variety of games and interactive tools to address varied aspects of the college preparation process (College Summit, 2014; Get Schooled Foundation, 2013; Tierney, Corwin, Fullerton, & Ragusa, 2014). Yet there still appears to be a disconnect between the information and tools students access via digital sources and the actions students take to become college ready, especially for students of low-income and/or minority backgrounds. High school students might know where to find financial aid information, but not follow through on applying for financial aid. Without taking action, college-eligible students can slip through the cracks and not apply to college. This disconnect suggests that passive dissemination of information is not sufficient. In order for students to search for and use information about college, information must be presented to students in ways that are "accessible" to them, i.e., in ways that recognize their backgrounds and worldviews (Perna, 2006).

Finally, college guidance is not limited to counselor-student interactions. College preparation programs, mentoring programs, and college workshops and fairs have been created to boost college-going rates. Often projects are the brainchild of an individual, school district, or college, and are dependent on the charisma and determination of a handful of individuals. Implementation varies widely from site to site, thus jeopardizing the potential benefits to students. Even if these programs are successful, they are costly, and implementation is too variable to be scalable and sustainable in a way to reach all eligible students in need of services. The Internet provides a mechanism for sharing resources and reaching out to students cost-effectively.

How do we propose to increase access?

What is needed is an interactive and engaging form of delivery that recognizes the interests of adolescents and engages them in learning about college options and processes in ways that empower students to take action. The *Mission:Admission* game, support materials, and outreach infrastructure of the grant are designed to assist students in expanding their digital literacy and learning about college through a medium that resonates with students. The intervention draws students into learning about college through games, so they have a chance to engage with the content in fun and meaningful ways. Speaking to students in a way that is more approachable and through tools that they have become comfortable interacting with (games) also creates a different avenue for them to interact with the content. The playful yet robust approach of the college access intervention cultivates increased college-related interactions among peers, teachers, and counselors, which have been shown to foster positive college attitudes and behaviors (Ragusa & Corwin, 2011).

The rationale guiding this project is to "meet students where they are" in their digital use and consequently engage them in different—and potentially more effective—ways than traditional efforts.

The college application process is complex, yet it follows predictable rules and involves a set vocabulary. Our approach moves beyond simply making information available and provides students with opportunities to envision themselves as college applicants, practice college applications strategies, and simulate college decision making skills. The proposed intervention provides the necessary scaffolding and infrastructure to support that learning in institutional settings by equipping teachers and counselors with the training and tools to support the game-based approach.

In his highly influential text on video games and learning, James Gee (2007) points out that video games can be long and complicated, yet young people stick with them for extended periods of time. Games have the capacity to encourage players to apply skills, develop strategies, analyze information, evaluate situations, change attitudes, and create new knowledge (Salen, 2014; Whitton, 2010). Games require players to think in different ways, practice skills, and apply higher order thinking (Fullerton, 2014; Gee, 2004; 2007; Jenkins; 2004; Salen; 2014). Gee (2007) poses the question: how can we entice learners to dedicate the same amount of time and attention that they spend on learning a video game on challenging material in school?

The novelty of this intervention is multifaceted due to the approach proposed and the collaborating partners involved in the project. The approach highlights tools that are game-based and, thus, have the potential to appeal to students in relevant and effective ways. Whereas educational game companies run the risk of creating fun games that are not informed by research (and consequently not effective), and researchers run the risk of creating games that are content heavy and not fun (and consequently not engaging), our project team offers diverse perspectives and expertise conducive to tackling the challenge of expanding postsecondary opportunity through games, technology, and social media.

The overarching goal of the intervention is to increase college enrollment for historically underrepresented students. The project objectives are:

- to leverage technology in order to bring effective college access practices to scale in low-cost ways,
- to measure the effects of participating in a game-based college access intervention on college attitudes and behaviors, and
- to determine the best ways to implement the game intervention program on a large scale.

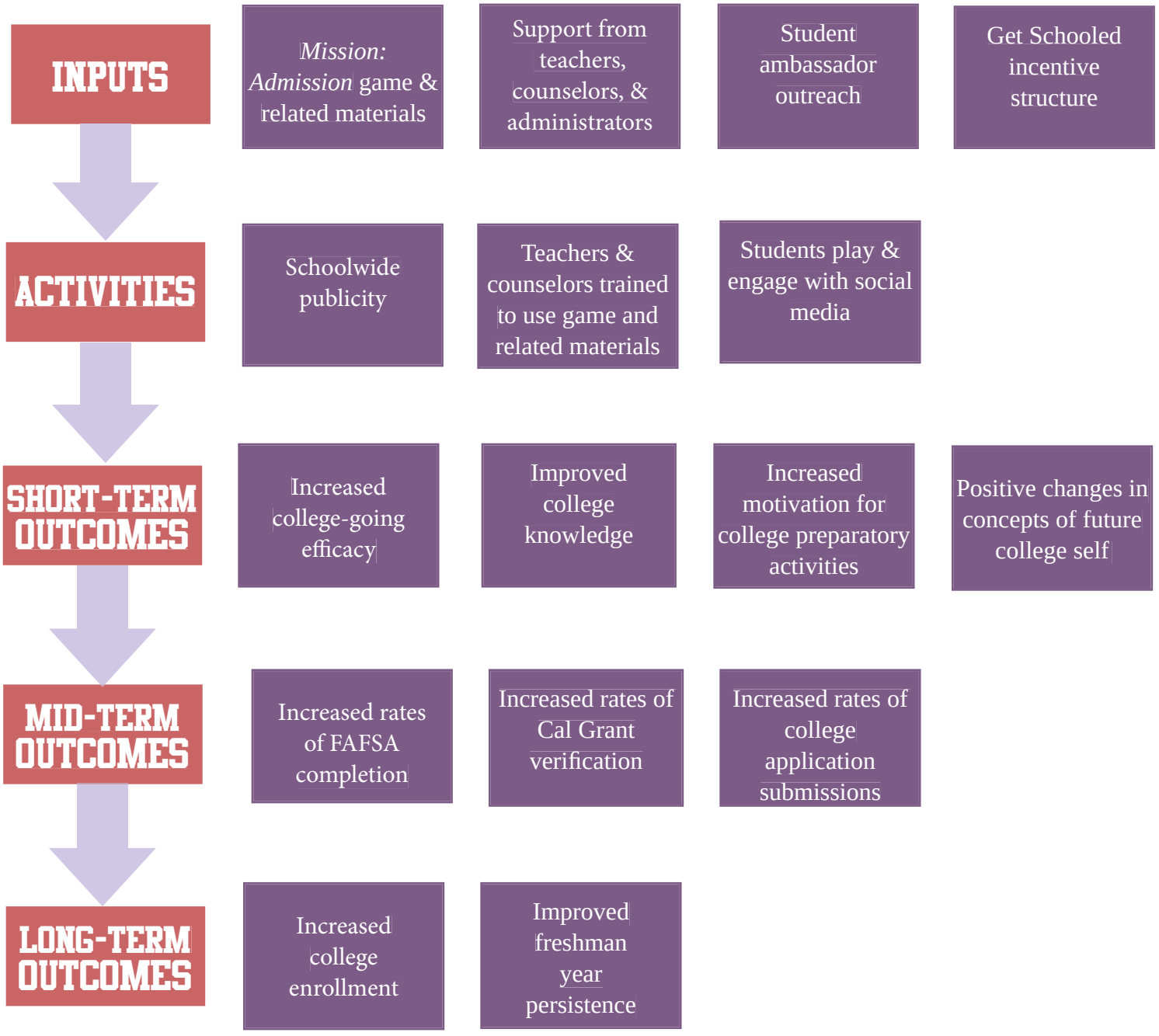
Game-based approaches offer a radical departure from passive modes of information dissemination where the skills and strategies needed to prepare for college are shared without meaningful scaffolds of support and in ways that alienate students instead of engage them. With the prevalence of digital use and game-based play in today's society, it is essential that efforts to enhance higher education outcomes focus attention onto how to capitalize on effective digital and game-based tools to increase access to and persistence in college. This project is significant because it harnesses the potential of technology and alternative strategies to bolster college guidance and support available to students.

Beyond the novel approach proposed to improve college enrollment outcomes, the innovative nature of this project partly hinges on the highly scalable nature of online games. Whereas college preparation programs can be quite costly to run, online tools are cost-effective and available to a wide audience inside and outside of schools. By way of our research, we also are intent on ensuring that the game intervention functions effectively, engages students, and the training and support services work well for teachers and counselors.

By partnering with the California Student Aid Commission (CSAC), regional partners such as California Opportunity and Access Programs (Cal-SOAP), UC Merced's Center for Educational Partnerships (CEP), the Coachella Valley Economic Partnership (CVEP), and the Get Schooled Foundation, the project has high potential to be successfully implemented. CSAC has a well-established infrastructure and strong reputation with practitioners and policymakers. CEP is at the forefront of innovative practices in analyzing college-going data; Cal-SOAP and CVEP projects serve thousands of students in school districts throughout the state. Get Schooled has partnered with us to incentivize program participation; with over 1.8 million visits to their site last year, they are trailblazing the creation of social media tools in the college access space. By partnering with these organizations, we will have the opportunity to examine how to best implement innovative approaches to college guidance and support at a statewide level.

Internal and external evaluation of the implementation process will identify supports and barriers to large-scale program implementation. Findings from research and evaluation studies will inform how to effectively scale up the use of game-based college access tools. By the end of the project, we will have learned how to train teachers and counselors on using the game and related materials and how to scale the program on a national level.

How have we conceptualized the project?



What will the intervention entail?

IN ORDER TO IMPLEMENT THE PROJECT WE WILL CONDUCT THE FOLLOWING ACTIVITIES:

- *Share the value and logic of the intervention with school administrators, counselors, and teachers.*
- *Survey teachers to learn about college culture and digital infrastructure at their schools.*
- *Share web-based resources to support implementation.*
- *Run a month-long game intervention with all juniors in treatment schools during their junior year.*
- *In the subsequent year, run the second month-long game intervention during the fall semester of participants' senior year.*
- *Offer an incentive structure at school sites to increase the likelihood of participation in research and game-based activities.*
- *Conduct research with students to assess the effects of game play.*

What is the research and evaluation plan for the project?

RESEARCH PLAN

All students in junior-level classes at the participating schools comprise the "first cohort." We will collect pretest and posttest data from juniors pertaining to the effects of game play. Through analyses of pretest and posttest data, we seek to document changes in college-going efficacy and college knowledge. These data will also shed light on interest, motivation, views of future self, and intent to visit colleges. We will follow this cohort through their first semester of college.

We will also conduct comparative case studies at six purposively selected sites for program feedback and improvement. Case studies are intended to offer a nuanced examination of school climate and better understand the effects of the intervention on college-going culture at school sites. Data will be collected through interviews and focus groups with students, teachers, counselors, and principals, and through observations of game play and related activities.

A unique aspect of the study is to collect back-end, server-level data on students' in-game behaviors for the treatment group. Analysis of server-level data lets the research team more deeply understand changes in student behavior in response to game play. Server-level data can be matched to pretest and posttest data through student identifiers which leads to nuanced analysis of game effects on a variety of outcomes. In addition, we will survey teachers and principals about the implementation process.

Implementation data collected will include: how many schools implemented the intervention, how many students played the game at each school and for how long, and which places implemented teacher-driven and student-centered activities. We will collect qualitative feedback from staff and faculty about feasibility of implementation.

EVALUATION PLAN

The evaluation plan is designed to empirically determine the wide-scale implementation and effectiveness of the game intervention. To make this determination, the outside evaluation firm of Augenblick, Palaich and Associates Consulting will randomly assign schools to either the treatment or control group. The study sample is comprised of 29 treatment schools and 29 control group schools as part of the impact evaluation. The 58 schools in the sample will be pulled from various regions within California. Schools selected to participate in the sample will be designated into a matched pair with another school that shares similar size and student demographics. Randomization will occur within each pair. In order to be able to participate in the sample, schools must have the technological capacity to implement *Mission:Admission* (e.g., number of computers and available internet bandwidth). All schools (treatment and control) will be offered access to the intervention in year four of the study.

A sample size of 50 schools is sufficient to provide statistical power of 0.8 to detect a 10% difference in proportion of students going to college from treatment and control schools, assuming a minimum college-going rate of 68% in control schools. The research design allows for longitudinal data collection and analysis of college outcomes over the course of three years. The quantitative data will be analyzed in a nested fashion to control for the shared variance of students nested within the same school (Raudenbush & Bryk, 2002).

What are the research questions we are asking?

Year 1:

Prepare to enter field:

- Recruit 60 high schools to participate in sample.
- Randomize sample into treatment and control groups.
- Prepare survey instruments for year two.
- Obtain permission to conduct research in sample school districts.
- Revise game.
- Create social media platform.

Year 2:

1. How effective is the program in increasing: college knowledge, college efficacy, interest in college application & attendance, task value (in the program, and personal value of college)?

2. Does this program facilitate changes in possible/future self formation (I am someone who will go to college)?

Year 3:

1. Are students who participated as Juniors likely to:
   - sign up/complete SAT?
   - complete FAFSA?
   - apply to college?
   - receive college acceptance?
2. What are the best ways to implement Mission: Admission?
3. What can we learn from students' reactions to Mission: Admission?
4. What can we learn from teachers' reactions to Mission: Admission?

Year 4:

1. Are program participants more likely to persist through the first semester in college?

2. What are the best ways to implement the games?

Who is involved?

THE PROJECT INVOLVES SIX KEY GROUPS

1 The USC Pullias Center for Higher Education is devoted to conducting research and developing policies and practices that improve access to postsecondaary education and improve the performance of the postsecondary sector. The Pullias Center has focused its efforts to achieve the goals of greater participation and completion through the following objectives: (1) to increase understanding that greater postsecondary participation leads to economic productivity, and suggest ways that postsecondary sectors might more effectively work together; and (2) to help high schools develop practices that improve college-going rates and increases college-readiness. The Pullias Center has a 20-year success rate of conducting practitioner-and policy-related research that improves the performance of the postsecondary sector and increases access to higher education for low income youth. The Center has continually been ranked as one of the top postsecondary education policy centers in the country. The staff is well-respected and sought out by the media, policy experts, researchers, and educational leaders. Pullias Center scholars include: Dr. William G. Tierney, Dr. Zoë B. Corwin, Dr. Amanda Ochsner, Tattiya Maruco, Antar Tichavakunda, Suneal Kolluri, and Carlos Galan. The Pullias Center will manage research activities and coordinate all facets of the project.

2 Our USC partners include Dr. Gale Sinatra and Robert Danielson from USC's Rossier School of Education, who will oversee the collection and analysis of quantitative data. Their expertise includes motivation, learning theory, knowledge construction, conceptual change learning, literacy acquisition, assessment, and cognitive and motivational processes that lead to successful learning in science. Also a partner on the project is Dr. Dennis Wixon from USC's School of Cinematic Arts. An expert in back-end data analysis, Wixon developed the RITE (Rapid Iterative Testing and Evaluation) and TRUE (Tracking Real-time User Experience) methods; the former has become an industry-wide practice and the latter has been successfully applied to many Microsoft products. Dr. Wixon will oversee server-level data analysis pertaining to *Mission: Admission* game play.

3 The California Student Aid Commission's (CSAC) central mission to make education beyond high school financially accessible to all Californians. The Commission provides financial aid policy analysis and leadership, in partnership with California's colleges, universities, financial institutions, and financial aid associations. The Commission funds Cal-SOAP, a consortia of secondary and postsecondary schools and community agencies dedicated to improving the flow of information about postsecondary education and financial aid. Center for Educational Partnerships is housed with the University of California at Merced and offers student, school and parent-centered services and prgrams that connect K-12 to postsecondary opportunities. The Coachella Valley Economic Partnership is an economic growth collaborative bringing together K-12, postsecondary, and business sectors to increase college completion rates. Cal-SOAP programs, CEP and the CVEP, will provide support for the implementation of study activities at the school level.

4 Futurebound Inc. is a company that creates engaging educational games to prepare middle and high school students to apply to, enter, and find success in postsecondary programs. Their suite of games represents a research-based and highly innovative effort to increase postsecondary educational opportunities for all middle and high

school students through play. Game designers Sean Bouchard and Elizabeth Swensen will oversee development related to the *Mission: Admission* game.

5 The Get Schooled Foundation is a nonprofit that capitalizes on the media and messengers of popular culture to inspire and motivate teens on their educational journey through high school and into higher education. They believe that engaging and motivating today's youth can be as simple as tapping into the "sizzle" that they love while delivering the "substance" they need to be successful. They use the messengers (celebrities, powerful peers, pop culture events) and the means (mobile/SMS, social, web) that resonate with youth, to meet the students where they are (online, curious, etc.), and deliver the resources, tools, and support students need to meet their educational goals. The end result is impact-Get Schooled reaches millions and directly engages hundreds of thousands of students to accomplish real movement on key indicators of educational success.Get Schooled is affiliated with MTV and supported in part by Viacom. Get Schooled Executive Director, Marie Groark, is an integral partner in creating the online interface for the game intervention and research activities as well as a school-based incentive structure to encourage participation in research and game play.

6 Augenblick, Palaich and Associates Consulting (APA) is a privately owned company with extensive experience analyzing public education systems and policies across the United States. Their mission is to help clients solve problems so that they can meet student performance goals and improve the quality, effectiveness, and efficiency of the nation's public schools. APA assists clients in understanding the fiscal, legal and policy implications of implementing education reforms, including short and long-term impacts through the use of a variety of research techniques including surveys and statistical analyses. Robert Reichardt and Abby McClelland will oversee the evaluation study.

ADVISORY BOARD

We are grateful to the following individuals for lending their expertise in an advisory capacity to the project:

- Alan Arkatov, Katzman/Ernst Chair in Educational Entrepreneurship, Technology and Innovation, USC
- Louis Gomez, Professor of Education & John D. and Catherine T. MacArthur Foundation Chair in Digital Media and Learning, UCLA
- Mizuko Ito, Professor in Residence and John D. and Catherine T. MacArthur Foundation Chair in Digital Media and Learning, UCI
- Tara Nell Roth, President, Goldhirsh Foundation
- Michele Siqueiros, Executive Director,Campaign for College Opportunity
- Peter J. Taylor, President, ECMC Foundation

How can I learn more and get updates about the project?

Check out our website periodically: *http://pullias.usc.edu/*

We will be providing periodic updates on all aspects of the project. We also regularly make presentations at national and regional conferences such as AERA and ASHE.

Other related resources available through the Pullias Center:

Pullias Center - First in the World:

http://www.uscrossier.org/pullias/research/projects/games/fitw/

21st century Blog:

http://www.uscrossier.org/pullias/resources/21st-century-scholar-blog/

On Thursdays we will be blogging about the project.

First in the World:

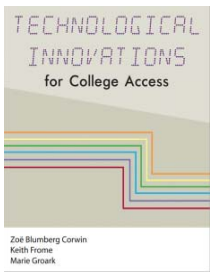
http://www2.ed.gov/programs/fitw/index.html

Gaming The System

http://www.uscrossier.org/pullias/wp-content/uploads/2012/09/gaming_the_system_final.pdf

Ready or Not, Here We Play

http://www.uscrossier.org/pullias/wp-content/uploads/2013/09/Ready_Or_Not_08-2013_web1.pdf



Technological Innovations for College Access

http://www.uscrossier.org/pullias/wp-content/uploads/2014/12/Technological-Innovations-for-College-Access-Monograph1.pdf

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Rossier
School of Education
Pullias Center for
Higher Education

Pullias Center for Higher Education
Waite Phillips Hall, Room 701
3470 Trousdale Parkway
Los Angeles, CA 90089-4037
Phone: 213.740.7218
pullias.usc.edu