

I. Overview of Project:

Instructors for the Advanced Academic Achievement 109 (AAA 109) class within the Developmental Education (DE) department at the Community College of Denver (CCD) are requesting funding for the *Achieving College Competencies Achieving Student Success (ACCESS)* game. The proposed ACCESS game will be a web-based game modeled after the board game “Life” that will enable AAA 109 instructors to offer the course in a flipped format—allowing students to receive information that would traditionally be gained through lecture in the classroom via online videos, podcasts, downloadable lectures, web-based articles, social media, and out-of-class readings, while in-class time will be spent applying this knowledge by playing the ACCESS game on CCD’s classroom sets of iPads.

AAA 109 is a critical part of CCD’s approach to DE—working to ensure that DE students have the support they need to succeed in college and graduate—and it provides DE students with essential basic skills including campus resources and study skills. DE courses—designed to bring community college students up to college level in basic skills including math, reading and writing—pose a critical issue for community colleges statewide, and for CCD where 49.1% of students took at least one DE course during the 2009–2010 academic year,¹ and studies show that the longer students must spend in DE courses, the less likely they are to persist and graduate. In addition, trends toward game-based learning (GBL) experiences are of particular interest within the field of DE, as DE students not only have basic skills deficits but are typically from minority, low-income and first-generation families who often have limited access to technology and limited technology skills.² Many researchers are exploring the use of GBL within DE, both in math³ and in English and reading,⁴ and sources agree that this is an area with emerging promise.

CCD is a current state leader in DE, as is demonstrated by the success of the FastStart program—a recognized model for providing DE courses in an accelerated learning community model that has a 44% higher completion rate among students than that of a comparison group.⁵ As such, CCD is also well positioned to develop and implement game-based learning experiences that will further enhance the success of DE students and serve as a model to be shared with other community colleges across the state.

ACCESS: CCD offers 45 sections of AAA 109 each term, and it is a requirement for all entering students who need to take one or more DE course. AAA 109 meets once per week for three hours. In the flipped model used in ACCESS, in-class time will be “game-day,” so the information gathering and skill building that students have been engaged in on their own time throughout the week can be put to the test through their in-class participation in ACCESS. Because access to technology is often a barrier with the target population, instructors will use the college’s classroom sets of iPads so that each student will have his or her own iPad to play the game on. ACCESS will look very similar to a board game, with a home page that shows the route that each player must take around the board; players will interact with the game using the touch screen. Each step along the route will correspond with a question or challenge that is

¹ Colorado Community College System. 2011. *Academic year 2009-2010 remedial enrollment and course completion rates*. Retrieved from www.cccs.edu

² American Association of Community Colleges.

³ Liska, K. (2011). *Using game based learning in algebra courses with community college students*. Presented at game-based learning conference 2011, SUNY Empire State College. Retrieved from www.slideshare.net.

⁴ Frederick, P. (2010). *Using digital Game-Based Learning to support vocabulary instruction for developmental reading students*. Dissertation at Nova Southeastern University. Retrieved from www.proquest.com.

⁵ Ibid.

linked to the course topics and learning outcomes. A different topic will be covered each week such as: time management, study skills, or career choices, and students will have half of the class time to play through the weekly section of the game. For instance, one challenge presented to students in the game will be interview skills. The game will simulate an interview, where an interviewer will ask a question such as, “why are you interested in this position?” A variety of possible answers will appear, and the student must choose the best answer in order to advance to the next question. If an incorrect answer is given, the student will have to continue to guess until the correct answer is chosen. When all questions have been answered correctly, the student will advance to the next level. Although students will essentially be playing individually, the in-class format for playing the game will allow for peer-to-peer teaching opportunities, as students can help each other out along the way. This format will also provide a rich environment for the instructor to help students individually and work with small groups.

Out-of-class time will be spent learning course content through a variety of technology mediums. In addition to videos, web-based articles and textbook readings, students will learn through progressive learning tools. Lectures and podcasts that cover course material will be made available for students to download and listen to online or with an mp3 player. The course will also incorporate social media such as Facebook, Twitter and Pinterest. A Facebook page will be made for the course on which students can learn course content through updates, which will appear in their Facebook news feed. A Twitter hashtag will also be created for the course where students can share course-related tweets and pictures for classmates to see. Finally, students will have the option of creating Pinterest boards that relate to course content where they can post resources.

II. RFP Priorities:

1. Projects must be collaborative in nature. The CCD Developmental Education department is highly collaborative as it utilizes the Learning Communities model to provide courses across disciplines so that students can build critical academic skills while working toward core content knowledge acquisition. All AAA 109 classes are paired with a DE class such as reading, writing or math. In addition, the AAA 109 classes are collaborative in nature as the class content works to connect students with all of the campus resources that are available to them.

2. Proposals should incorporate student ideas and feedback. Student ideas and feedback will be embedded in the design of the course, as students will regularly provide feedback regarding their experience with the ACCESS game, and will be competing for the opportunity to have their ideas incorporated into the final program design. During spring term—the preliminary design phase—students will participate in surveys and focus groups to provide initial design ideas. During summer term—the test phase—a small cohort of students will test the program for usability. During fall term—the pilot phase—the program will be used in five sections with 25 students in each. Within each class, students will meet regularly in design groups to assess and report out on their experience using ACCESS. At the end of the term, each design group will report their recommendations to the class. Each class will then nominate the best team, who will present their ideas to a panel of expert judges who will choose a final set of recommendations to be incorporated into the program design before it is brought to scale across the department. The embedded design competition will ensure that student voices are heard during the design phase while also providing students with real-world experience and software design competition as a resume talking point.

3. Must incorporate behavior motivation considerations. Because ACCESS is goal oriented and task driven, the student is in the driver’s seat throughout the time spent playing the game in the

classroom, whereas in a lecture-style traditional classroom almost the entire class period is instructor-driven. As self-regulated learners, students have the opportunity to move quickly or slowly depending on their skills. For example, a student who is struggling with a particular skill may need multiple supports to move from one step to the next along the game board, whereas another student may be able to complete that particular section quickly and then act as a peer support coach for a fellow student. To encourage students to continue to play, ACCESS will have points and encouragement built into the design, as the goal will be to complete each game section within a certain period of time—this individual time information will be posted into a leaderboard that students will be able to see as they play along. The student-driven competitive re-design of the game will also provide motivation as instructors can offer extra credit and other incentives for the winners. Each class session will end with students working in small groups to debrief their experience with the game and capture their design feedback.

4. *Proposals should address instructional design needs/resources.* The CCD DE instructors will be developing the program and then working with a consultant to finalize the actual gaming platform so that it is user friendly on the iPad and customizable for evolving course needs. In addition, the AAA 109 instructors will need training on how to best use ACCESS with students.

5. *Must track student learning outcomes and include evidence-based evaluation strategy.*

During the pilot phase, student outcomes—including persistence, retention and performance—from the sections using ACCESS will be collected, and these outcome data will be compared with outcome data from other sections that are not using ACCESS. A detailed explanation of anticipated student outcomes is included in Section 4 of this proposal.

6. *How will other faculty in the CCCS will learn about and incorporate your solution.*

The CCD DE department will pilot the ACCESS game in five AAA 109 sections in the fall of 2013 and will then bring the project to scale by offering the use of the ACCESS game to any of the instructors of the 45 sections of AAA 109, with the hope of having the game become an institutionalized piece of the AAA 109 curriculum by fall 2014. After this, the CCD DE department will distribute information to other schools within CCCS regarding the successes and challenges from the project; this report will include evaluation feedback from student participants and instructors.

7. *Demonstrate a shift in pedagogy – using games/immersive technology in support of learning.* The ACCESS game will enable students to use a model that is interactive and student driven or discovery based, therefore the use of the game in DE courses represents a shift from instructor-driven to student-driven pedagogy. In addition, the use of technology and the flipped classroom format move the technology usage from static—watching a video—to dynamic, where the user must continuously make decisions, adapt and move the activity forward.

8. *Identify the technology-based resources needed as part of immersive strategy.* The DE department will purchase two iPads for the instructors who are developing ACCESS, and will purchase Voice Thread or other software to enhance production of web-based content for out-of-class time. The other resources needed are available through the CCD's technology department.

9. *Priority will be given to projects that move from 100% classroom based to “hybrid” or “blended.”* Using the ACCESS game in conjunction with course content made available through CCD's online learning portal, Desire 2 Learn (D2L), will enable the CCD DE department to provide AAA 109 as “blended”—including the flexibility of online learning (time and place) and the structure and engagement of the in-person classroom experience—and “flipped”—doing things outside of class that used to be done in class (such as lectures), and will use class time for collaborative activities. This will fundamentally change the course delivery but not the content.

Preference will be given to proposals demonstrating the ability to meet major accessibility standards: In order to make the materials accessible for all students, the ACCESS designers will implement the following: 1) text alternatives for images that will provide visually-impaired users with the purpose/idea of the image; 2) transcripts of audio content, including closed captioning; and 3) all materials will be examined with web accessibility toolbars, which are tools that examine webpages for accessibility compliance. The project manager will also work with the CCD Accessibility Center to ensure that materials meet accessibility guidelines.

III. Project Management and Evaluation:

Angie Generose, CCD Adjunct Professor: Ms. Generose holds an M.A. in Educational Psychology and is working toward a post-graduate certificate in Online Teaching that focuses on the use of web tools, social media and games to create and implement online courses. Her certificate combined with her teaching experience will enable her to effectively work with the software design consultant and to develop and implement the use of ACCESS.

Naomi Wahls, CCD Adjunct Professor: Ms. Wahls holds an M.A. in Information and Learning Technologies with an emphasis in Designing e-Learning Environments. In addition, Ms. Wahls will utilize skills and knowledge gained from her work for CU Online at the University of Colorado, where she worked with both faculty and students in the online learning platforms of Blackboard and eCollege to develop and implement the use of ACCESS.

Evaluation: Preference will be given to solutions that generate rich data and analytics:

Students will be observed and their feedback measured a number of times from the design phase to the project's execution. In the design phase, students in AAA 109 classes will be surveyed about what they'd like to see within the ACCESS game. In the testing phase, students and faculty members will participate in usability sessions. Their feedback will be incorporated in product revisions. In the implementation phase, students in the pilot class will be evaluated on their satisfaction with the materials and overall experience and the results compared to a similar evaluation completed by their non-pilot study counterparts. Forty faculty members will be surveyed during the implementation phase to determine successes and challenges for instructors.

IV. Project Outcomes

Scaling outcomes:

1. In fall 2013, CCD will include five classes that use the ACCESS game and five that use a traditional model for data comparison, with 25 students in each: total 150 students.
2. In spring 2014, CCD will include 45 sections for AAA 109 classes, which will have 25 students in each: total 1,125 students.
3. In fall 2014, CCD will disseminate a report that outlines successes and challenges of ACCESS to encourage adoption of the game with a focus on schools in the Denver metro region with similar capacity and student population, such as Aurora Community College.

Student outcomes:

1. Content mastery will increase as measured by a 10% increase in scores on topic quizzes and final exams among student participants in the ACCESS model.
2. Course completion rates will increase from 70% to 80% among student participants in the ACCESS blended model.
3. Retention will increase by 10% among student participants in the ACCESS blended model.
4. Graduation rates among students who take one or more DE courses will increase by 10% by 2016.