

Online Learning Supplements and the Achievement Gap

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ABSTRACT

This paper briefly explores the problem of the lack of achievement by AP students in Detroit, MI, a low-income community of color, and outlines a study that surveys the usage of online learning supplements to increase student achievement. It includes a literature survey on the culture of power, the advent of online learning, and the achievement gap amongst AP-level students and the ability of online learning to combat that gap in low-income communities of color.

Key terms: culture of power, online learning, asynchronous

The Role of Online Learning Supplements in Combating the Achievement Gap

Section I

Introduction:

About 6 months ago, I was hired as the Ethics and Leadership Fellow at the School for Ethics and Global Leadership here in Washington, DC. My main job, as one might guess from my title, is helping to plan, teach, and evaluate our flagship program, the Ethics and Leadership class, designed by the director of the school. In engaging with the course last semester – the triumphs, like having the students meet Thich Nhat Hanh, and the failures, such as not being able to schedule enough Embassy visits for our HIV/AIDS and PEPFAR case studies – I began to realize what a revolutionary course this was, especially for intellectually motivated high school students. Given my background as an educator in low-income communities of color, however, my thoughts instantly and constantly strayed towards one of the most problematic aspects of any semester program - that of access by those students systemically denied the best educational experiences. Little did I know, the director of the school was constantly thinking of this issue as well. I soon became involved, due to my role as the Ethics and Leadership Fellow and my fairly unique background in teaching (and living in) low-income communities of color and technological know-how, in putting the course online. The course seeks to address one central question: can the online learning format be used to decrease the achievement gap between low-income and high-income high-school students in college-preparatory contexts?

I am concentrating on the college preparatory context due to my particular situation – the course that we will be offering online will be classified, at the Florida Virtual School and elsewhere, as an honors course, as much of the course involves doing work off-line and we tackle issues in the first week that are comparable to an introductory course in Philosophy in college. The other

reason that I am concentrating on this particular context is because of a concept that I will define in my literature – the idea of a “culture of power”, or a hidden culture that those who have systemic power know and follow implicitly, and that those who are outside of the culture of power have to learn to recognize and react to. I believe that one of the main ways in which online education can be utilized is to close the achievement gap between students who are, presumably, equal in intellectual ability, but have a power differential due to a lack of accessibility to resources. These resources do include access to a variety of effective teachers, often outside of the educational system (such as paid tutors) to augment their education, but also meta-skills that are the signature of the culture of power – determination, an ability to manage their own education, study skills, and comfort in places of power like colleges or job interviews.

Problem Statement and Rationale:

As I stated above, the central problem that I am tackling is one of access and, in a word, savvy, and not of intellectual ability. The Advanced Placement, or AP, program, administered by the College Board, is of the educational contexts that highlight these problems with understanding and fixing the achievement gap that often go obscured. As I will note in my literature review, minority students are still underrepresented in AP classes, and in AP passage rates, while AP classes remain an indicator of future college access and success. I believe that not enough attention has been placed on helping low-income and minority students achieve equally with their upper income and white peers, as Lisa Delpit’s research shows, instead focusing on very specific skill sets and content for these students, placing them at a disadvantage when being compared (as they are in AP classes and college admissions) with their suburban counterparts. This research paper, as it looks at online education, and specifically (asynchronous) online classes as supplementary to in-class work, is important because it highlights a stopgap strategy for making up this gap in achievement and access, providing students with the tools of the

culture of power that Delpit and Paolo Freire highlight in their work, and creating real differences in learning outcomes.

Section II

Literature Review:

This literature review serves to offer a theoretical base for my study. The literature review is best described in three parts. The first is an opening explanation of the culture of power and why students of color in low-income communities need specific kinds of learning opportunities. The second is a survey of online learning, defining key terms such as *asynchronous* and describing what a good online course looks like. The third looks at the achievement gap in low-income communities of color in the context of AP courses, and whether or not online learning is effective for low-income communities of color.

Section 1:

Lisa Delpit, *Other People's Children*

Delpit's text acts as a theoretical and practical handbook that guides the basic question of this paper: what is the basis of the achievement gap, especially among students who differ in their socioeconomic status but not in their intellectual ability, and what are the meta-skills that we need to teach them in order to help them succeed while ensconced in the culture of power? In the first two essays of her book, "Skills and Other Dilemmas of a Progressive Black Educator" and "The Silenced Dialogue: Power and Pedagogy in Educating Other Peoples' Children", she lays out her basic argument: that the teacher corps, as it exists, is poorly equipped to deal with difficulties (and triumphs) that the socioeconomic context of most public school students, many of them black and poor, and that the right concoction for success for these students is a mix of appreciation for and adjustment around their context, while simultaneously giving them access to the meta-skills that children who are of the culture of power take for granted. Two anecdotes from her book explain this duality perfectly: she quotes one teacher in her teacher education

program as saying “When you’re talking to white people they still want it to be their way...they think they know what’s best for everybody, for everybody’s children” (pg 21). She goes on to describe “the culture of power”, a central theme in my paper; in short, she believes that there exists “codes or rules for participating in power” – that “if you are not already a participant in the culture of power, being told explicitly the rules of that culture makes acquiring power easier”. (pg. 24) Herein lies the main themes of my paper – that teachers have a certain skill set that they’d like students to adopt (at the chagrin of teachers of color and the mothers and grandmothers of the communities that these students come from, Delpit notes), and that it requires an ability to speak the language of power to acquire that power – something that parents of these children know. Delpit goes on in these articles, and in her book as a whole, to lay out the specific skills that precede success in speaking that language – in other words, “schools must provide these children the content that other families from a different cultural orientation provide at home” (pg. 30)

Paolo Freire, *Pedagogy of the Oppressed*

Paulo Freire, in his seminal text *Pedagogy of the Oppressed* describes another central theme in my studies – the creation of the ideal classroom. Freire defines two terms in his book that are of importance to this paper – critical pedagogy and Freirean dialogue. As Freire writes on page 48: “The central problem is this: How can the oppressed, as divided, unauthentic beings, participate in developing the pedagogy of their liberation? Only as they discover themselves to be ‘hosts’ of the oppressor can they contribute to the midwifery of their liberating pedagogy.” This is the definition of critical pedagogy – it begins at the realization that the culture of power exists, and that, as a low-income youth of color, that power is unavailable to you at the outset, and that true learning begins once you take control of your own education. Dialogue, on the other hand, describes the nuts and bolts of that “true learning”. Freire defines dialogue on page 88 as the “encounter between men, mediated by the world, in order to name the world”; he then

explains that dialogue cannot happen between “those who deny others the right to speak their word and those whose right to speak has been denied them”. In this combination, we find the ideal classroom – a classroom that is not only student-centered but student-led, and one in which students have the opportunity, and, indeed, the responsibility, to navigate the content of the classroom on their own terms, interacting with it and using their own opinions and observations as the basis for their studies as opposed to a textbook. Online education, by its very nature, provides both the substance of the content that Delpit describes, and, at their best, can provide a setting for Freire’s liberated classroom to come to life.

Section 2:

Education Week, “Idaho Sets the State for New E-Learning Requirement

We are in a time in which education is transforming, and educational settings are becoming increasingly virtual. This article in Education Week describes Idaho’s push to become the first state to require online credits for education. Idaho’s logic for this move is fascinating, and is of interest for this study; the state education board president says “we felt in order to really properly prepare our students for postsecondary and career readiness, they needed to complete an online learning component," even though the move is unpopular with many Idahoans, and is being lambasted by the state’s teachers’ union. This highlights another central concern in my paper – diversifying access to content in areas that may not have instruction in career readiness and, broadly speaking, the culture of power. This move to online learning, according to the article, has an explicit purpose of addressing “equity issues”.

B. Hassel, E. Ayscue Hassel, Teachers in the Age of Digital Instruction

This article, by Bryan Hassel and Emily Hassel, looks at the move to online education, and its impact on and relationship to our traditional ideas of what a teacher is, and of what we expect from student learning outcomes. The authors theorize that “solid instruction in the basics will eventually become “flat” available anywhere globally” if the trend towards online education

continues. They also theorize a different idea of what teachers will become, as classes go online and students have access to content and ways of learning that are not bound by geography or socioeconomic status: “Today’s ineffective teachers can be replaced by more effective ones in this new digital-learning world, either through remote instruction or the extended reach of more effective teachers to more students.” My study speaks to this truth – less that the teachers that my subjects encounter are subpar, but, on some level, made ineffective, and that with online education, students can access teachers (including the student themselves) and pedagogical methods that are able to help them learn more effectively.

C. Cavanaugh et al, Examining Communication and Interaction in Online Teaching

INACOL’s review on communication in online teaching is useful for its primer on the various forms that online learning environments can take, and an awareness of the differences in learning outcomes that geographic differences can produce. The authors note that the effectiveness of online learning environments varies based on the “distance learning system, the demands for its content, both the abilities and disabilities of its participants, and the quality and effectiveness of the teacher”. (pg 12) This article informs my study by laying out what a good online learning environment looks like, saying that “teachers need to design relevant content and use the medium to present it effectively... Teachers should use a variety of instructional methods and structure situations to engage students in deep intellectual dialogue” (pg 4); in looking for asynchronous online learning supplements that meet these requirements, either on their own merits or in conjunction with instruction in the student’s traditional classroom, I have been able to ensure the quality of my data.

M Horzum, Developing Transactional Distance Scale

This article, by Mehmet Horzum of Sakarya University, seeks to define a scale for measuring “transactional distance”, or, as Horzum puts it, “a psychological and communication space of potential misunderstanding between the inputs of instructor and those of the learner” (pg

1528); he explains that this space is not merely physical, and is defined by dialogue, or the interaction between teacher and student and the learning environment's ability to cater to each student's needs, and autonomy, or the student's ability to determine the learning activities and evaluation criteria. In evaluating online learning environments on their own merits, those learning environments vary in autonomy and dialogue, and therefore in transactional distance and quality. However, when evaluating online learning environments in the context of using them as an addendum to the content and learning that happen in traditional classrooms, the idea of transactional distance highlights the choice in content and experience that online education can provide.

Section 3:

M. Power, Head of Gold, Feet of Clay – the Online Learning Paradox

This article, by Michael Power and Anthony Gould-Morven, takes a negative stance against online learning in colleges, bringing to light the oft-reported student “dissatisfaction, withdrawal, and attrition” (pg 1). One of the most poignant points that the authors make is that some of the problems of online learning, quoting Kanuka and Brooks, may be unsolvable, saying that online learning can “achieve any two of the following: flexible access, quality learning experience and cost-effectiveness – but not all three at once” (pg 23).

S. Smith-Jaggars, Effectiveness of Fully Online Courses for College Students and Online Learning: Does it Help Low-Income and Underprepared Students?

Shanna Smith-Jaggars' articles (the first with co-author Thomas Bailey) researching the effectiveness of online courses for college students (with the second article highlighting the particular context of low-income and low-achieving college students) highlights a nuance in the argument for online learning previously obscured: the problems that low-income students may have with access to online learning and motivation to complete online coursework, though online learning may be attractive due to the increase in access to content and quality that these courses

may provide. The articles also, however, recommend steps to take for increasing access and retention amongst low-income students seeking to have an online learning experience. In the first article, Jaggars and Bailey highlight the fact that online courses are best suited for high-achieving students, noting that several of their studies were done at selective universities; furthermore, for example, they note that low-income students may find it difficult to participate in online learning due to a lack of some of the meta-skills, such as “self-direction, self-discipline, and help-seeking” (pg. 10) that other students may have been taught at home. In the second article, Jaggars has suggestions to fix some of these articles, such as creating more online classes, staffing them with more and more talented teachers, and teaching online learning skills (pg. 2). This article helped me determine the bounds of my study; I am focusing on closing the gap between students who presumably have the same amount of “raw talent”, having chosen a rigorous academic path, and who have the skills that make for a successful online learning experience.

S. Flores, Strategies for Increasing Advanced Placement Participation for Underrepresented Students

This article, by Sergio Flores and Martin Gomez, focus on the specific context of my studies – rigorous educational contexts like the AP, and helping low-income and minority students achieve in that context. The article begins with its main goal – disabusing educators and parents alike with the idea that only students who have shown outstanding performance in school should take AP exams. They note that, in their study, students who had not been initially recommended for AP courses took those classes, “they gained much more knowledge than they would have in a college preparatory class and positioned themselves to do better in future AP and college courses as they gained important study skills and higher levels of confidence.” (pg 66). They also note the benefits of taking AP classes after high school, which include lower tuition costs, improved writing skills, encouragement to minority students to apply to college,

and a higher likeliness to complete college (pg. 69). The authors stress that these students “rely solely on the programs and services that the school offers and rarely have access to outside resources that are typically available to their middle- and upper-class counterparts” (pg. 72) – and that one of most critical instructional tools that these students are missing is scaffolding, or “role of teachers and others in supporting the learner’s development and providing support structures to get to that next stage or level” (Raymond, 2000, p. 176). In my study, I seek to show that online learning provides the scaffolding that these students need to be successful in these rigorous learning contexts.

Conclusion:

Through this literature review, I have sought to highlight two facts: that there is an inherent quality of context that changes how students of a lower-income, socially “abject” class learn – and this is something to be celebrated and augmented, and that online education can help students help themselves in addressing this context. I am seeking to prove that the gap between intellectually capable but differently resourced students can be closed in a small measure by adjusting to the lives of low-income youth, which include working, having extra-curricular activities, parents who are not as intimate with the culture of power or do not have time to supplement the instruction that their child gets at school, and augmenting their ability to learn with easily-accessible, online tools. In the next section, I will outline my study, and how the students in my study will use those online tools and report on both the quantitative and qualitative learning outcomes from their usage of those tools.

Section III

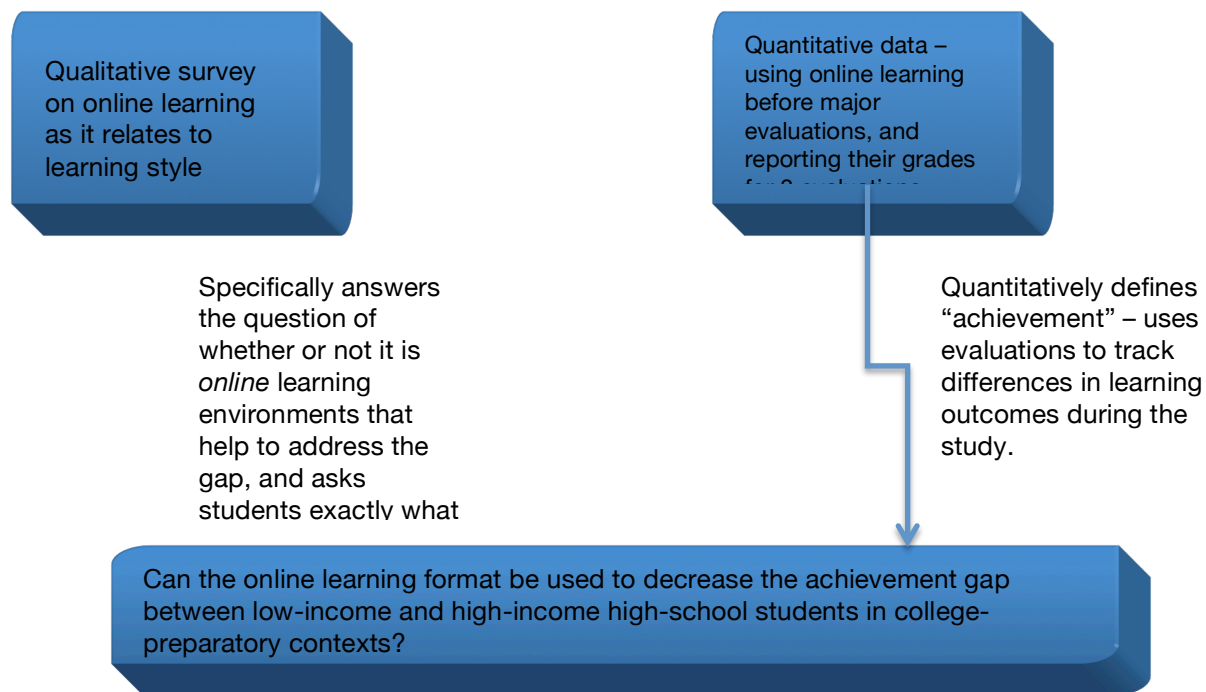
Study Design:

Type of Research Chosen:

I will be using the “Teacher Action Research” mode to complete this study. Teacher Action Research takes into account the insider role that teachers have in educational contexts, using that

subjective, qualitative data that teachers have access to on their students to augment areas of the study, and reveal data in that study that may have otherwise gone obscured. For my study, this type of research is of the utmost importance: without the qualitative data (and ability to craft tools to obtain that data) that I have access to as an educator, my work would simply show gains in test scores, and not highlight the specific role that online educational supplements, as a tool that provides wider access to content, helps students who have different learning styles from the one that is catered to in their traditional classroom, and helps students to do additional scaffolding on their own terms once they get home, has in the study.

Plan for Triangulation:



Participants:

Participants are five students in AP courses in Detroit Public Schools (DPS) who have agreed to take part in the study, in cooperation with their parents. All of our correspondence will be online via e-mail and web survey, as there is no interview as a part of the study. Students from the DPS are being used specifically because of ease of access – I am a graduate and have many professional and personal connections within two of the choice or “test” schools – and because,

as a district, Detroit's school system is in dire need for the kind of intervention that I believe online learning augmentation can provide, attracting negative attention even from the Secretary of Education, Arne Duncan¹.

Data Collection Instruments:

I will be using two kinds of data collection instruments:

1. A ThinkWave gradebook, a free online learning management system, to collect data on the 3 evaluations that I will be tracking. Each student will get a user access code to view data on the study, and to track whether or not their scores are increasing.

- a. I am using this gradebook because it places emphasis on student ownership – I am not merely taking their data, but they also get a chance to track their progress as well. The tool also provides flexibility – I can add students and evaluations with ease, and the tool has a powerful report generator.

2. Two online surveys, a pre- and post-survey, powered by Google Docs to measure the students' experiences using the online learning augmentation. Links to the forms can be found in the Appendix.

- a. As I have said before, the qualitative data in this study is of the utmost importance. Because my study is focused on not just whether or not the students are learning more, but how it is happening and why, I can create opportunities for flexibility – in creating and being able to change specific plans for each student – and it provides an opportunity to strengthen the quantitative data by using the voice of the students as evidence, and to strengthen the recommendations that I will give with specifics on what good online learning supplements look like.

Data Collection Methods:

¹ <http://www.detroitnews.com/article/20090214/POLITICS/902140377>

February 1 – Begin getting permission from study participants using participation form. Participation form will include a clause for them to use the materials that I give them, unless we consult and decide that a different tool should be used.

February 1 – 17 – Complete trial of the study with one student.

February 20 – Send introductory e-mail to participants, with links to ThinkWave gradebook and Google Calendar for marking their evaluations, including the general subject of that evaluation (with specificity, such as “Role of Martin Luther and Protestantism in medieval European politics”) and dates that they will be entering data.

February 25 – Based on the students’ schedules and the information that they have available, begin to lay out specific online augmentation plans for those students to follow during the course of the study. Plan will include one check-in date up to 3 days after their 2nd evaluation, to evaluate which online tools are working for them and which should be changed.

- The online learning supplements that I will be using are from a series of prominent resources offering asynchronous online learning. The main resource that I will be directing students toward is the National Repository of Online Courses (NROC), offering many AP courses and foundational college courses. Alternately, the site HippoCampus, powered by the NROC, offers some courses that NROC does not (in addition to all of the NROC free courses).

February 25 until end of study – Begin to log student data into ThinkWave.

End of Study – Send post-survey to students, giving them one school week to complete.

Pilot Study:

(Taken from “Data Collection Adventure” assignment, with edits to reflect updated information)

1. Which data collection method did you choose and why?

Observation, Interview.

2. What did you do, for how long, with whom?

1 observation in English class one week and one day before a quiz, with one student. The student utilized online learning supplements (short online segments that go over the themes, vocabulary, and main characters of the material, Brave New World, in preparation for a vocabulary quiz). This student is in the 9th grade, comes from a lower-income background, but is in a private school, working at a higher grade level than in a corresponding public school class. The student’s average on the vocabulary quizzes is an 82%. Not an AP class.

3. What data did you get? How did reality match your expectations?

Student was helped significantly by the online supplements, getting a 92% on the quiz that she used the online supplement for; she appreciated the visual nature of the online learning environment, as having the words in front of her (and having certain parts of the book acted out and put to music) allowed for greater comprehension of the work, and that it allowed her to take notes on the subject matter in a way that is impossible in class (slowing down the lecture, going back to parts that confused her).

4. What else did you discover? What surprised you? What confused you?

The student’s statements on the culture of power were fascinating – it revealed a grasp of that aspect of the study that I hadn’t thought about. She felt that, as she’d been in private school for two years, she had the necessary meta-skills to meet the rigor required of her (“I’m used to this level of work”), and merely needed supplementary assistance in some of the finer aspects of the book that she might get from talking it out with someone in her family (“I just need to be able

to talk about [the material] when I get home”). This revealed, again, an ability to do the work, but a lack of an important part of her study habits, and of the study habits of successful students in general – someone at home who has the time, energy, and ability to go through the finer aspects of her homework with her again.

5. What would you do differently? What else do you want to say about this experience?
 If I were to repeat this trial of my methods, I would have a larger sample size, and think more about my access to the students (this was the most difficult part of the trial), and their access after school of the online material (including an able computer, a fast internet connection, and the time to do the supplementary work).

6. What do you know now about this method that may help your group?
 Interviews add qualitative data that brings to light different aspects of the quantitative data. For example, my student’s grades went up after using the online supplements – however, this is only part of the story that the data tells, as her grades went up both because of the nature of the online supplements, and because the supplements fill a gap in her learning and process of metacognition that may have otherwise gone unseen.

Section IV

Plan for Analysis:

Both tools that I am using have powerful reporting features. The ThinkWave site exports both student reports:

Lesley School of Education

2012 Lesley Study
 First Quarter
 Printed: 18 Feb 2012

Student Summary

Student 1

Lesley Study

Teacher: Starling, Christian

First Quarter

Grading Options: Flexible Grading Options

Calculated Grade: None

Test (No Grades)

Date	Assignment	Weight	Result
01 Feb 2012	Evaluation 1	100.0 points	
02 Feb 2012	Evaluation 2	100.0 points	
03 Feb 2012	Evaluation 3	100.0 points	

and class reports:

Gradebook Report

Evaluation 1	Evaluation 2	Evaluation 3
01 Feb 2012	02 Feb 2012	03 Feb 2012
Test	Test	Test
100.0 Points	100.0 Points	100.0 Points

- 1, Student
- 2, Student
- 3, Student

Google Docs also logs form data in an easy-to-use format:

	A	B	C	D	E	F	G	H	I	J
1	Timestamp	1. What was the best part about using the online augmentation tools?	2. What was most difficult about using the tools?	3. Please rate, on a scale of one to five, how easy it was to access the content.	4. What device did you usually use to access the lessons?	Sample Question 2	5. How were the online courses different from your in-class courses?	6. Would you rather...	Why?	7. Please rate, on a scale of one to five, how likely you are to use online courses as a supplement to your in-class learning in the future.
2										
3										
4										
5										
6										
7										

In my post-survey form (featured above), I will be entering the student grade data that I obtain from the ThinkWave reports into a separate column, creating a report for each student on one form, next to their qualitative data obtained from Google Docs. After creating a general report, I will export the Google Document to a suitable Microsoft Excel format, e-mailing it to the students, and then (as the reports are already anonymous), placing them on my presentation website.

The mix of quantitative grade data and the students’ answers will present me with a complete picture of their learning outcomes and how they achieved those results.

Implications:

This study, if done correctly, can highlight a blind spot in the debate over closing the achievement gap – what happens to those students who have the raw material to achieve highly in educational settings, and for some reason do not? And furthermore, what can we do with those students in the short-term? I believe that my study will show that easily accessible online learning supplementary materials will increase not only student achievement, but student

learning as well. The implications here are massive – this means that students who do not have access to many of the trappings of the culture of power can begin to make up that deficit in their classes. The stakes for AP students are especially high – as I have shown in my literature review, access and success in AP-level courses indicate a likelihood of success in the future. Moreover, my study can provide legitimacy to online learning as a way to close the achievement gap, and not merely a cheaper way to provide students with the educational experiences they should be getting anyway. If my research and other work like it does not happen, online learning may remain a political hot topic and not the learning resource that it can be if leveraged properly.

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Appendices:

A. Link to online pre- and post-survey:

<https://docs.google.com/spreadsheet/gform?key=0ArpRHywNPvtEdE1ETIliVzZxX2YwdExjQi0wdVVuWFE&hl=en#style>

B. Link to ThinkWave Gradebook: http://www.thinkwave.com/free/final_grades/ and student access code: PF4U - B2DK - PUWJ - Y5V8

C. Demo Student Participation form:



February 1, 2012

Dear Parent or Guardian:

My name is Christian Starling, and I am currently enrolled in a graduate-level research seminar at Lesley University under the supervision of my professor, Dr. Haavind.

I am asking for permission to include your student, _____ in my study of online learning supplements for AP-Level students in low-income communities.

The scope of this study includes a pre- and post-survey of your child, and data concerning grade for three of their assessments. I will be giving your child an online learning course to help them prepare for each of their assessments, and creating a personalized learning schedule for the duration of this study.

The goal of this paper is to help me become a better educator.

All data that will be shared publicly in my report will be anonymous.

Thank you for your consideration and willingness to participate in this important project. If you have any questions, please feel free to contact me at 313.802.5272.

Christian Starling

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Parent/Guardian Signature:

Parent/Guardian Printed Name:

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Student Signature:

Student Printed Name: