CLOSING THE DIGITAL DIVIDE

Using Web 2.0 Technology to Improve Academic Performance and Increase Digital Literacy Among Students in Urban Secondary Schools

A brief study proposal by

Thomas Spencer D'Agostino, M.Ed.

E-Mail: spencer.dagostino@gmail.com

Abstract

As Web 2.0 technology continues to play an increasingly important role in teenaged students' lives, so too will it continue to influence their education. While this phenomenon poses many challenges for today's educators, they are exacerbated for teachers in low-income urban school systems where the digital divide between the socio-economic "haves" and "have-nots" is extremely visible.

Problem Statement

Background:

- 21st Century Skills are crucial for any secondary student and are a part of every states' standards

- Social technology and Web 2.0 websites like Facebook, Twitter, and YouTube are extremely popular with teens

- Not all social technology is appropriate for the classroom

- Urban public school systems such as the School District of Philadelphia are struggling with cost-effective ways to meaningfully incorporate technology in the classroom

Purpose of Study

The **final** study will aim to:

- Measure use and access to social technology by urban students and their teachers

- Observe student and teacher social technology practices inside and outside of the classroom

- Measure the effectiveness of a digital-literacy course for increasing student academic performance in urban schools

This **preliminary** study aims to:

- Gather foundational data

- Measure the effectiveness of the proposed survey format

Literature Review

- Teenagers consume an incredible amounts of social technology (Rideout, 2010; Lenhart, Purcell, Smith, & Zickuhr, 2010)

- Older and/or economically disadvantaged populations have less interaction with modern technologies than their younger and/or wealthier counterparts (Hudson, 2011)

- This "gap" in technological exposure has been called "The Digital Divide" (Norris & Conceicao, 2004)

Evidence of the digital divide was extremely visible in my classroom among my students, staff, and the school itself

Literature Review II

- Students should not be passive consumers of technology, but rather, active participants working collaboratively to solve authentic problems via the use of social technologies (Jansen, 2010)

- Teachers have used the Technological Pedagogical Content Knowledge framework (a.k.a. TPCK, TPACK) to implement technology into their curricula (Shulman, 1986)

- By creating classrooms that embrace the use of computers and Web 2.0 technology within the TPCK framework, students will increase their digital literacy and potentially improve their academic performance (Banister & Reinhart, 2011)

Research Questions

The final study will seeks to address the following questions:

- How, and to what extent, do teachers use Web 2.0 technology at home versus in the classroom?

- How, and to what extent, do students use Web 2.0 technology at home versus in the classroom?

- What are the components of an effective digital literacy curriculum?

- Will a curriculum that promotes digital literacy and Web 2.0 technology affect student academic performance?

Method of Proposed Study

Participants

- 120 students from 4 classes in grades 11-12 at 2 Title I secondary schools within the School District of Philadelphia

Procedure

- 1.) Online survey: Gather general information, statistical data on social technology use and access

- 2.) Media Studies course and curriculum: Developed using existing PA standards under the TPCK framework

  Purpose:

- 3.) Test/Academic performance: All coursework and standardized test performance data will be monitored

- 4.) Exit interviews: Identify opinions of the course and the technology used

Method of Preliminary Study

Participants

- 36 students (16 males, 20 females) from 2 classes of 12th grade English at a Title I secondary school within the School District of Philadelphia

Design

- All data-gathering tools and results are **preliminary** and will not be used in the final study

- Results will be used to hone hypothesis and test the data-gathering tools before the final study

- All survey results were gathered online using www.kwiksurveys.com

Preliminary Data, Graph A

How many hours do you use the internet per day?
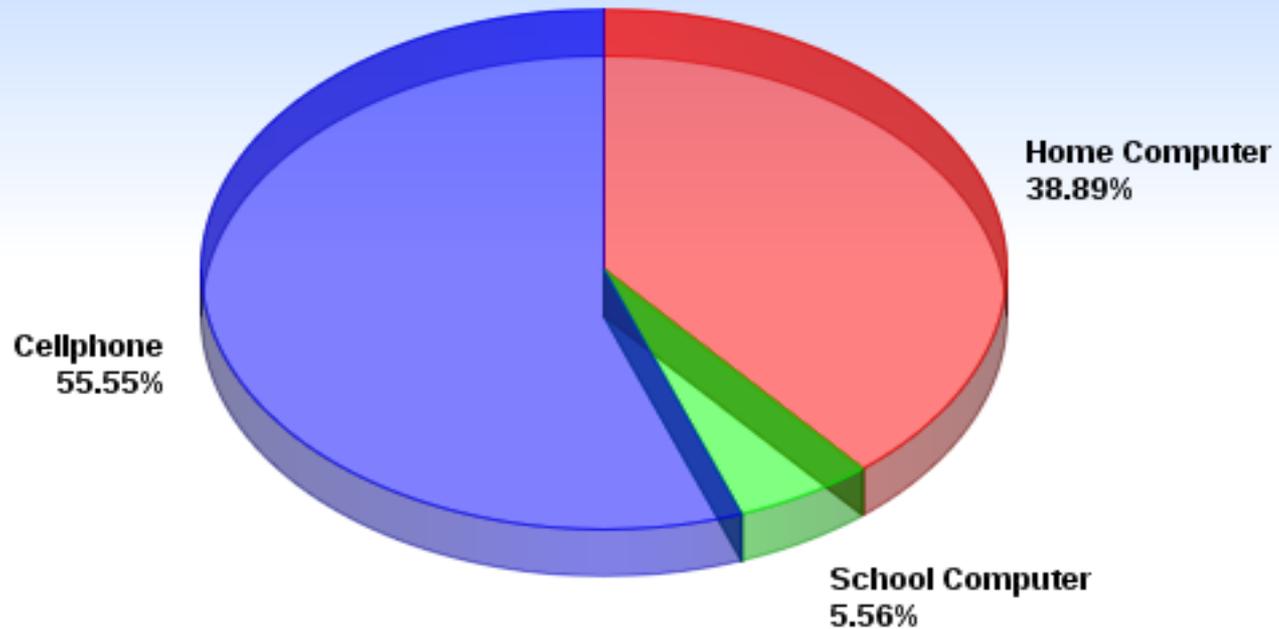
Less than 2 Hours
22.22%

4+ Hours
36.11%

2-4 Hours
41.67%
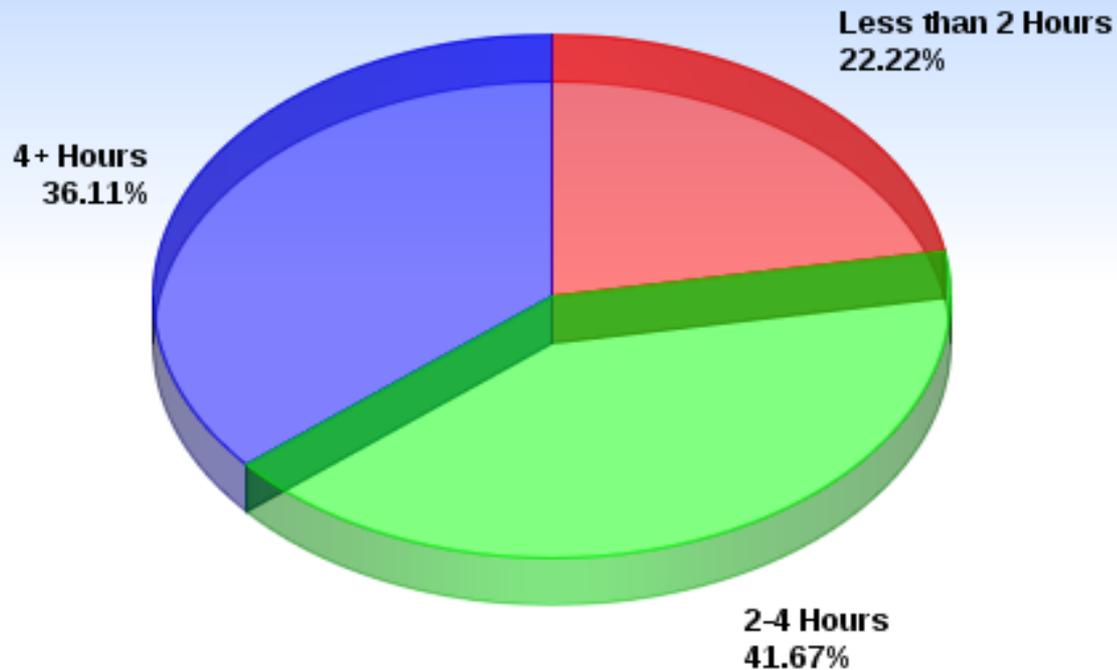
Preliminary Data, Graph B

What technology do you use most to access the internet?

Home Computer 38.89%

Cellphone 55.55%

School Computer 5.56%

Preliminary Data, Graph C

How many times a week do you use computers IN CLASS for assignments?
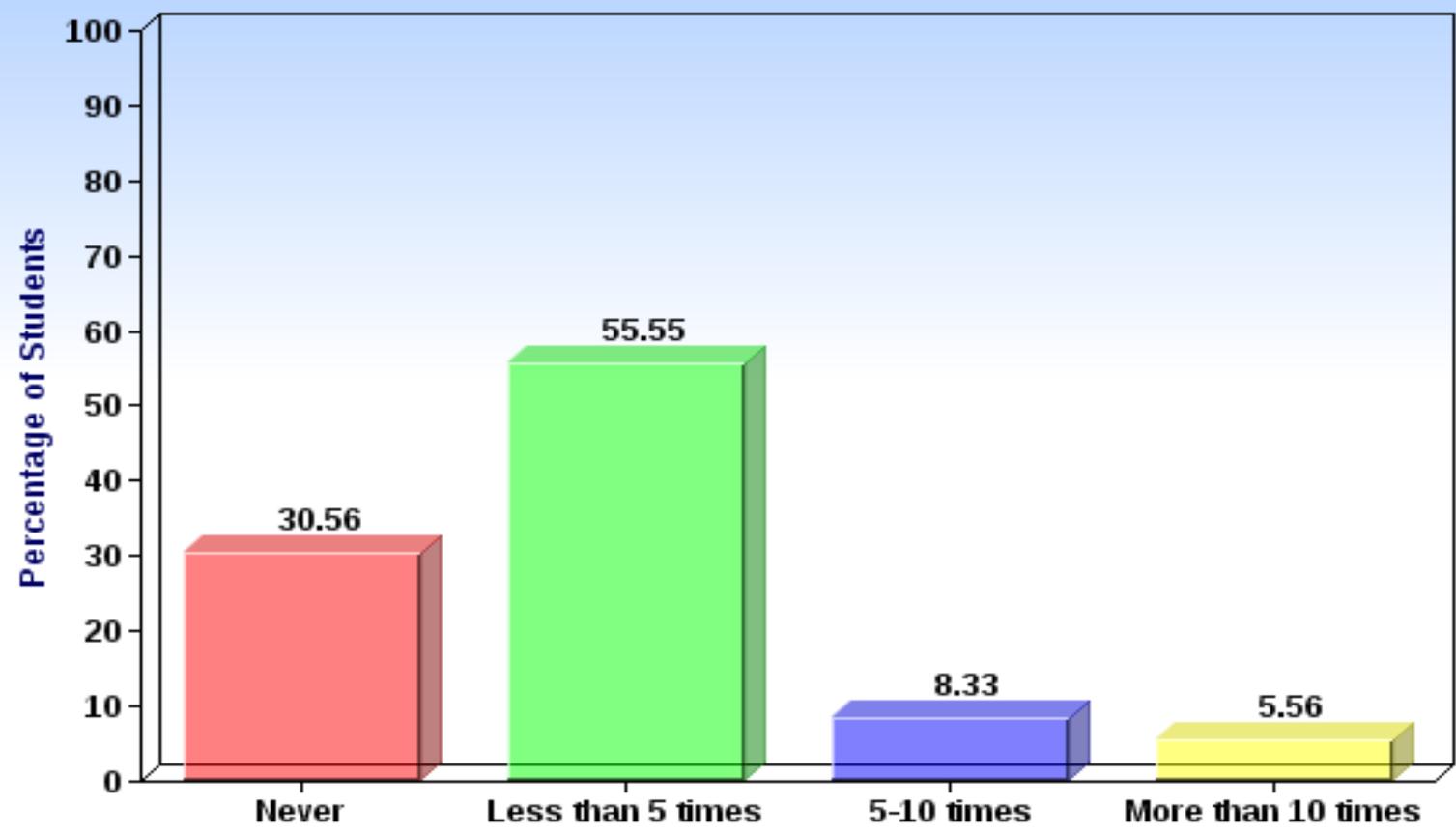
Preliminary Data, Graph D

How many times do you use your phone PER CLASS PERIOD?

- Never 13.89%
- Less than once 5.56%
- 1-2 times 19.44%
- 3-5 times 16.67%
- 6-10 times 11.11%
- 10+ times 33.33%
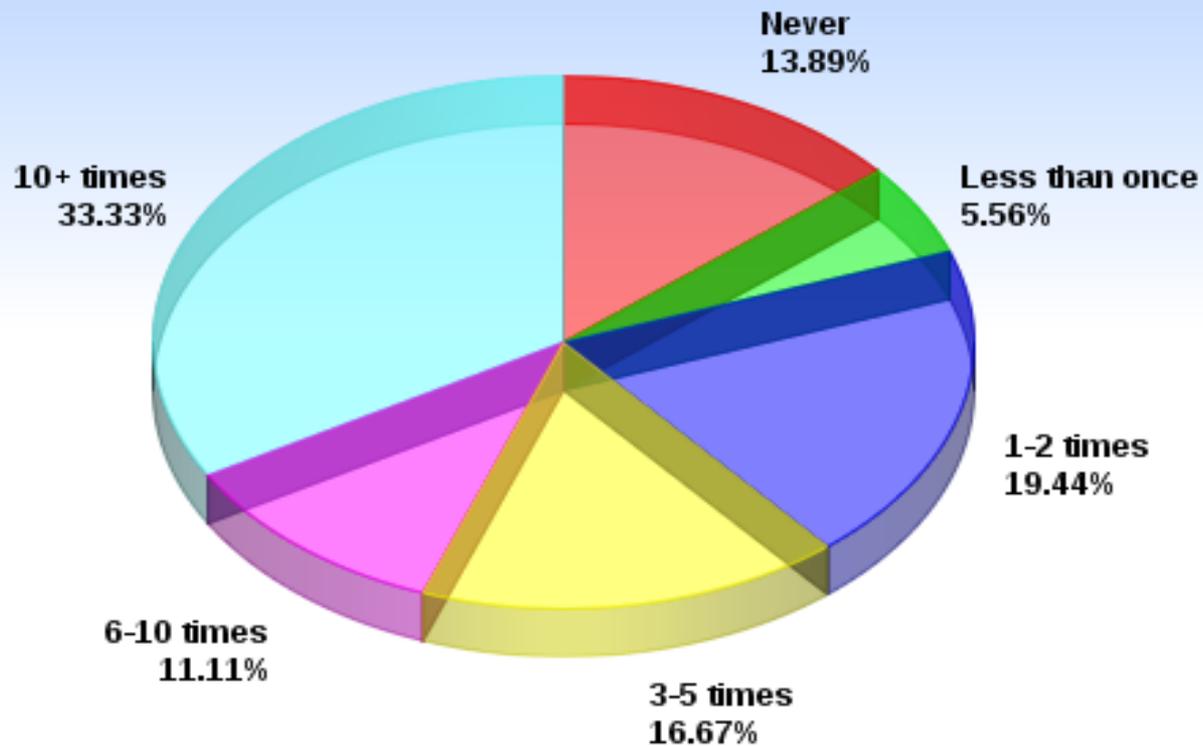
Discussion of Preliminary Data

- In Graph A and E, Internet and social media use among the surveyed group was comparable to the averages presented by the *Pew Internet & American Life Project*, suggesting that the surveyed students use the internet and social media websites like Facebook at similar amounts when compared to their peers in other socio-economic groups

- In Graph B, it is interesting to note the disproportionately high amounts of students whose primary access to the internet is through their cell phone as compared to the extremely low amounts of students who primarily use the internet on a school computer, a 50% difference

Discussion of Preliminary Data II

- In Graph C, evidence of the digital divide begins to emerge as less than 14% of the students surveyed reported using computers in school more than five times a week, despite having access to numerous computer labs and technological resources available

- In Graph D, however, cell phone use in school stands in a stark contrast, showing that over 33% of the students surveyed use their phones more than 10 times in a single class period, roughly once every 5 minutes

Next Steps

- Looking at the possibility of adding non-urban school locations for a control, possibly locally in Iceland

- Continue to improve and modify the Media Studies curriculum with other teachers from other urban school districts

- Develop an interdisciplinary Media Studies curriculum for a possible Social Studies course (the curriculum in its present form is geared towards Language Arts)

- Create a larger, more in-depth student survey

- Create a teacher survey

References

Banister, S., & Vannata Reinhart, R. (2011). TPCK for Impact: Classroom Teaching Practices that Promote Social Justice and Narrow the Digital Divide in an Urban Middle School. *Computers In The Schools*, *28*(1), 5-26.

Chen, P. (2011). From CMS to SNS: Educational Networking for Urban Teachers. *Journal Of Urban Learning, Teaching, And Research*, 750-61.

Drexler, W., Baralt, A., & Kara, D. (2008). The teach Web 2.0 consortium: a tool to promote educational social networking and Web 2.0 use among educators. *Educational Media International*, *45*(4), 271-283.

Greenfield, P. (2009). Technology and informal education: what is taught, what is learned. *Science*, *323*(5910), 69-71.

Hudson, H. (2011). The Digital Divide. *Instructor*, *121*(2), 46-50.

Jansen, B. (2010). Internet filtering 2.0: checking intellectual freedom and participative practices at the schoolhouse door. *Knowledge Quest*, *39*(1), 46-53.

HÁSKÓLI ÍSLANDS
Menntakvika 2012

References II

Johnson, D. (2010). Teaching with authors' blogs: connections, collaboration, creativity. *Journal of Adolescent & Adult Literacy*, *54*(3), 172-180.

Lenhart, A., Purcell, K., Smith, A., & Zickuhr, K. (2010, February 3). Social media & mobile internet use among teens and young adults. *Pew Internet & American Life Project*, Retrieved from http://pewinternet.org/Reports/2010/Social-Media-and-Young-Adults.aspx.

Naufel, K., Briley, K., Harackiewicz, L., Johnson, A., Marzec, K., & Nielsen, M. (2010). How do psychology students use web-based information? Trends and implications from a descriptive study. *North American Journal of Psychology*, *12*(1), 1-14.

Norris, D. T., & Conceicao, S. (2004). Narrowing the Digital Divide in Low-Income, Urban Communities. *New Directions For Adult And Continuing Education*, (101), 69-81.

Olaniran, B. (2009). Culture, learning styles, and Web 2.0. *Interactive Learning Environments*, *17*(4), 261-271.

Pennsylvania Department of Education, (2011). *Academic achievement report: 2010-2011*. Retrieved from website: http://paayp.emetric.net/District/SchoolList/c51/126515001.

References III

Rideout, V. (2010). Generation m2: media in the lives of 8- to 18-year-olds. *Kaiser Family Foundation*, *8010*. Retrieved from http://www.kff.org/entmedia/upload/8010.pdf.

Small, G., Moody, T., Sidarth, P., & Brookheimer, S. (2009). Your brain on Google: patterns of cerebral activation during internet searching. *American Journal of Geriatric Psychiatry*, *17*(2), 116-126.

Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. Educational Researcher, 15(4).

So, H., Seow, P., & Looi, C. (2009). Location matters: leveraging knowledge building with mobile devices and Web 2.0 technology. *Interactive Learning Environments*, *17*(4), 367-382.

Tzeng, J. (2010). College students' self-discrepancy on the internet, from the perspectives of desktop practices, self-control, and academic training. *Cyberpsychology, Behavior and Social Networking*, *13*(5), 495-502.

Wayman, L. C. School District of Philadelphia, Office of Accountability. (2010). *2010 annual report: High school (grades 9-12)*. Retrieved from website: http://webgui.phila.k12.pa.us/uploads/Ky/x_/Kyx_IgwEEp3DR8MQhh4Wlg/HS-Annual-Report-FINAL-Wayman.pdf.