JTE-Sponsored Major Forum:  
*Equity, Access, and the Digital Divide: Challenges for Teacher Education*

Wednesday, 24 February 2016
Welcome & Forum Goals
Forum Speakers:

Hardin Coleman  
Dean, School of Education  
Boston University

Nichole Pinkard  
Associate Professor, College of Computing and Digital Media  
DePaul University, Chicago

P. G. Schrader  
Associate Professor  
Dept. Teaching & Learning  
University of Nevada, Las Vegas

Pegeen Wright  
Director of Digital Learning  
WGBH-Boston
OVERVIEW

Each of our guests will share perspectives informed by their commitments and expertise. Each presentation will be roughly 13 minutes. After these presentations, we will devote the remainder of the time we have to questions you would like to pose. There are mics located at several strategic spots around the room for this purpose.
HARDIN COLEMAN
Dean and Professor
Boston University School of Education
Equitable access to a high quality learning experience for ALL children

FOCUS: The focus of this presentation will be on the challenges to traditional schools of education in our efforts to create educational systems that provide equitable access to a high quality learning experience for all children.

Process
What are gap closing schools
Are our CAEP standards relevant
Next Steps in Equity
Characteristics of Gap Closing Schools

Shared Leadership – Shared Learning
Data Driven Instruction
Academic Rigor and Student Support
CAEP Standards

Standard 1: Content and Pedagogical Knowledge
Standard 2: Clinical Partnerships and Practice
Standard 3: Candidate Quality, Recruitment, and Selectivity
Standard 4: Program Impact
Standard 5: Provider Quality, Continuous Improvement, and Capacity
Next Steps

Focus on the role of a highly skilled educator in closing the gaps
Be deeply engaged with our partners in the field to prepare gap closing educators and support their progress to mastery
Support the development of systems that allow us to be data driven
Preparing gap closing educators, who will be technologically
PEGEEEN WRIGHT
Director of Digital Learning,
WGBH-Boston
Perspectives on the Digital Divide

from a

PK-12 Digital Media Producer
PBS LearningMedia

www.pbslearningmedia.org

• Largest content producer
• STEM Lead
• Testing models for digital media:
  - for STEM learning
  - to support underserved students, with a key focus on English Language Learners
  - blended learning professional development
• Media partner with MA Department of Elementary and Secondary Education
• Work directly with educators and students around the Commonwealth
• U.S. students rank 17th in science & 25th in math in the world.
• STEM occupations are projected to grow by 17% from 2008 to 2018, compared to 9.8% growth for non-STEM occupations. STEM workers command higher wages, earning 26% more than their non-STEM counterparts.
• Women, African Americans and Latinos comprise only 20% of the STEM workforce today, yet are projected to make up 70% of the total workforce by 2017.
About 5.3 million English Language Learners, or one in nine public school students, are enrolled in U.S. schools.

Texas: 1 million ELL students, making up 18 percent of the school population -- 88% of students in the class of 2014 graduated. ELLs have the lowest graduation rate of all subgroups, at 71.5%.

California: 2010-11, 80.8% graduated with their class in 2014. The graduation rate among ELLs was 65.3%.

Massachusetts: “While some ELLs thrive academically, this student group has, on average, chronically underperformed against grade level benchmarks, even falling behind the DOE’s designation of "high needs students."”
WGBH Urban STEM Education Initiative

• Boston students come from 135 countries.
• Nearly 50% of students speak a language other than English at home. ELL students speak 75 different languages.
• Boston students are racially diverse – 45% Black, 30% white, 18% Hispanic, 4% Asian, 4% other.
• One in five students is enrolled in special education programs.
• More than 75% of students live near or below the poverty line.
Digital Media to Support English Language Learners

High School Physics

Background Essay

Video Transcript

English & Spanish

MCAS Practice

STEM Vocabulary
Digital Media to Support English Language Learners

A Closer Look at the Conservation of Energy

Introduction

The ups and downs of a roller coaster ride bring thrills and screams. But how does a roller coaster work? [Listen]

Roller Coaster Design

A roller coaster is a perfect example of the conservation of energy in action. In this video, you will meet Chris Gray, a mechanical engineer who designs roller coasters. Watch and listen for the ways that Chris used his understanding of physics to design an exciting roller coaster ride. Click on the left to watch the video. Then, answer the question in the Notes box below. [Listen]

What do energy and gravity have to do with the design of a roller coaster? [Listen]

Essay + Viewing Questions

Trebuchet Diagram

Vocabulary List
“All means all. When I talk about students, I mean all students, regardless of race, disability and demographics.”

U.S. SECRETARY OF EDUCATION ARNE DUNCAN
IDEA Leadership Conference, July 2013

Thank you!
pegeen_wright@wgbh.org
P. G. SCHRADER
Associate Professor
Dept. Teaching & Learning
University of Nevada, Las Vegas
The Digital Divide: Three Prevalent Myths

The Dyad Myth
The Myth of Empowered Technology
The Myth of Access
The digital divide is often defined as the gulf between those that have access to computers and the internet and those who do not.
The Dyad Myth

Myth: The divide refers to differences between two main groups, the haves and the have-nots.
Common barriers:
- Race or ethnicity

Other barriers:
- Culture, geographic location, community type, age, disability, or language

PROBLEMATIC
Dispelling the Dyad Myth

Reframes the discussion in a broad way, drawing and adding awareness to the issues
Draws attention to the relevant barriers that may limit access, rather than individual characteristics
Empowers teachers to engage in meaningful discussion of the issues
Disentangles solutions into infrastructure and practice
The Myth of Empowered Technology

- Myth: Adding technology can solve social and systemic issues.

DANGEROUS

Risk making decisions to purchase tools for unattainable goals. Technology cannot solve system social issues.
Dispelling the Empowered Technology Myth

Dispels the false notion that technology is some panacea for issues well outside its realm of influence. Reframes responsibility of systemic ills to those responsible:

- Community
- Government
- Schools
- Colleges of Education and Teacher Preparation
The Myth of Access

Myth: Providing technology is what makes a difference.
Focuses the conversation on the tools
Barriers are not equivalent to promoting success
Collaterally limits resources for teacher training

DAMAGING
Dispelling the Access Myth

Eliminates the issue of wasted resources
Diminishes the potential negative public perception of failed projects (or limited success)
Reframes questions to notions of best practice
Empowers teachers to maximize influence, rather than criticize resources and access
Challenge #1

Advocates are often our own worst enemy
Multiple intelligences
Digital natives
Mutitasking
Science of Educational Research
Challenge #2

Removing a barrier is not equivalent to promoting learning, but this misconception persists.
Promoting knowledge: EASY
Challenging misconceptions: HARD
Challenge #3

Tools do nothing independent of practice, but people believe they make a difference. More than 100 years of research indicate that adding new resources or technology has little or no impact on learning outcomes. Comparisons (treatment vs. control) yield unreliable results.
Thoughts

Questions about access are half formed…
Questions about practice are half formed…
Solution requires a combination of removing impediments and promoting effective pedagogies.
As Educators...

Provide authentic, integrated experiences
Provide culturally relevant and technology purposeful pedagogies
Educate teachers about those barriers
As Researchers

Address our own misconceptions
Identify barriers that are capable of being changed
Reach out to the encapsulating context and culture
Focus science on best practices and classroom strategies
NICHOLE PINKARD
Associate Professor
College of Computing and Digital Media
DePaul University, Chicago
Bridging the Digital Divide by Connecting Caring Adults Across Formal, Informal and Online Spaces

Nichole Pinkard, PhD
DePaul University
Digital Youth Network
The school is not and cannot be . . . the exclusive provider in a community’s educational system. . . . There is not one agency, but an ecology of institutions educating — school, home, places of worship, television, press, museums, libraries, businesses, factories, and more.”
Burgeoning K-12 Online Learning Space
Promises of Online Technologies

- Can connect underserved communities to interest-based projects, content experts, learning resources, and ways to share work and ideas

- Solving issues of space and $$

- Resolving issues of equity

- Scale
**Connected Learning**

**Equitable, Social, and Participatory**

**Production Centered**
Students focused on producing a "day of learning" (promoting, planning, creating materials, facilitating).

**Interests**
In planning and creating materials, students tried to anticipate peer interest: "We developed ideas of things to keep our participants' interest by keeping them engaged and entertained."

**Shared Purpose**
Parents, teachers, and community members participated in discussions, center activities, and labs alongside students.

**Peer Culture**
Student ownership of the process helps develop a culture of peer leadership.

**Openly Networked**

**Academic**
Bioethics Day served as the culminating event of a cross-disciplinary (English, Biology) study of The Immortal Life of Henrietta Lacks.

**Active Relevant Real-world Effective Hands-on Networked Innovative Personal Transformative**
How can we create connected learning communities that afford youth equitable opportunities to develop the skills, knowledge and dispositions necessary to succeed in tomorrow’s society by “working” on their passions?

- What are the technical and social supports necessary to support youth, teachers, mentors in connecting these opportunities together?

- Where are the spaces where learning will occur outside of the classroom?

- Who are the caring adults that will collaborate to support connecting learning?
## Connected Learning Activities

<table>
<thead>
<tr>
<th>Self Pace Online Activities</th>
<th>Events</th>
<th>Tech Hubs*</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Flappy Code" /></td>
<td><img src="image" alt="Destination: Chicago Winter Break" /></td>
<td><img src="image" alt="Tech Hubs*" /></td>
</tr>
</tbody>
</table>

### Programs
![Programs](image)

### Pathways
![Pathways](image)

### Peer Communities*
![Peer Communities*](image)

Harold Washington Library Maker Space
Computer science students

High school students who took the AP computer science test in 2013:

Boys 81.3% 25,310
Girls 18.7% 5,807

Source: College Board

KARL KAHLER
BAY AREA NEWS GROUP
Approach

- **Teachers, mentors and peers** who teach, model, support, and encourage
- **Artifact-based content** that intertwines digital and traditional literacies
- **Integrated learning** spaces and showcase opportunities
- **Tech-based social learning and community tools** to facilitate integration across spaces and people
- **Social practices** contextualized to the uniqueness of each environment
Developing a Connected Pathway

- Self-paced online activity
- Summer Program
- Friends/Peers
- Local hack-a-thon meet-up
- Jr mentor at CPL YOUmedia
- Showcases opportunity
- Internships

YOUmedia

Chicago Public Library

Microsoft

Destination Chicago Winter Break
The 4 Components of the Digital Youth Divas Model

- Project-based Curriculum
- Narratives
- OSLN
- Caring Adults
Developing a Connected Pathway

- Summer Program
- Self-paced online activity
- Mentors
- Jr mentor at CPL
- YOUmedia
- Internships
- Showcase opportunity
- Friends/Peers
- Local hack-a-thon meet-up
# 3 Types of Caring Adults to Connect Learning

<table>
<thead>
<tr>
<th>Teachers</th>
<th>Online Assessors</th>
<th>Content Mentors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focused on facilitating activities and are personally connected to youth</td>
<td>Dedicated to reviewing work and providing feedback</td>
<td>Content creator or specialist</td>
</tr>
<tr>
<td>Mainly face-to-face, sometime online interaction with youth</td>
<td>Online interaction only, mostly one-way</td>
<td>Occasional face-to-face and online interaction with youth</td>
</tr>
</tbody>
</table>
## Working Together to Activate Connected Learning

<table>
<thead>
<tr>
<th>Audience</th>
<th>Collaborator</th>
<th>Define/Present</th>
<th>Encourager</th>
<th>Evaluator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learner</td>
<td>Learning Broker</td>
<td>Model</td>
<td>Monitor</td>
<td>Organize student interaction</td>
</tr>
<tr>
<td>Promoter</td>
<td>Prompt</td>
<td>Resource Provider</td>
<td>Seed Work</td>
<td>Socio-cultural Friend</td>
</tr>
</tbody>
</table>

*This is work adapted from Brigid Barron from Stanford a long time Collaborator of DYN*
Visualizing Multiple Interactions Across Connected Adults

Individual role key (nodes)

- Youth
- Content Mentors
- Assessors
- Teachers
Students in DYN had experience with significantly more media production activities than those students in the Silicon Valley sample \( (p<.01) \)

Students in DYN had gone into depth in significantly more areas of media production than those students in the Silicon Valley sample \( (p<.01) \)

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**Breadth**

Students in DYN had experience with significantly more media production activities than those students in the Silicon Valley sample \( (p<.01) \)

**Depth (Engagement)**

Students in DYN had gone into depth in significantly more areas of media production than those students in the Silicon Valley sample \( (p<.01) \)
but Requires Diverse Creating a Connected Village of Caring Adults

![Bar Chart]

- Afterschool Club
- Father
- Mother

- Silicon Valley
- Chicago

Percentage of students
Message:

Needs Schools of Education to create mechanisms to connect and educate all caring adults concerned with educating youth.
Thank you!

Digital Youth Network

www.digitalyouthnetwork.org

@digitalyouth