Learner-Centered Instruction and Problem-Based Learning

What Teachers Make
2016 ACSI Teaching and Learning Conference
October 28, 2016

Emmanuelle C. Manalang
Outline of Presentation

• What are the key problems and issues in education today?
• Who are the 21st Century learners?
• How can teachers help their students meet the demands of the 21st Century literacies?
Round-Table Sharing

What are the key problems and issues in education today?
21st Century Learners

How well do we know our students?
Let’s start with…

A Quick Quiz

How aware are you of the differences between the generations?
Which generation is this?

BOOMERS   GEN X   GEN Y   GEN Z
Which generation is this?

BOOMERS  GEN X  GEN Y  GEN Z
Which generation is this?

BOOMERS    GEN X    GEN Y    GEN Z
Which generation is this?

BOOMERS  GEN X  GEN Y  GEN Z
My daughter's name is Anna. She had a hard time adjusting to high school life, socially and academically, when she was in first year high school. This made her have a low esteem of herself.

*NOT HER REAL NAME*
About Anna…

To cope with her feelings and experiences then she decided to write what was happening to her in a story.

At this time, she discovered Wattpad on the internet. She then tried publishing her story by chapter and was thrilled that there were readers who were following her story.
About Anna...

What especially thrilled her were the professional book/story writers from all over the world commenting on her work as soon as she published it. They not just commented on her work but gave her helpful suggestions on how to improve her story. She responded to these suggestions and they continued to help her with her writing. When she finished her story, they all congratulated her.
Mystery

Whatever you're into, it's all free on Wattpad: the world's largest community for readers and writers.

Continue

Username
Email
Password

Start Reading

I agree to Wattpad's Terms of Service and Privacy Policy.
Be part of the experience

See how others reacted to that crazy twist. Wattpad's inline commenting lets you share thoughts and interact with the story while you are reading.

Watching the selfie flashes accelerate I considered when New Years had changed. At what age did the night's mass attendance make it such a pressured cliché? All conquering FOMO forcing everyone to constantly weigh their night against something potentially better.

I used to love New Years Eve. Planned months in advanced -

This means trouble.

I'm in tears.

I'm already hooked!
About Anna...

This experience improved Anna's confidence in herself and encouraged her to write some more. She felt she was doing good and getting better at her writing with all the advise, acknowledgement and prodding she got from her small group. I remember thinking what a great classroom this website was for her... This classroom gave Anna feedback almost as soon as her story was uploaded and these were from experts who wrote for a living, experts who knew their trade. Their feedback is not only timely but credible, meaningful and truly helpful.
About Anna…

She ended writing 2 more stories and got a full scholarship from the Ateneo de Manila University in Communication but finally decided to stay in Cebu for college.
https://www.zooniverse.org/project/hubble

http://science.nasa.gov/citizen-scientists/
Canadian girl 'youngest to discover supernova'

A 10-year-old girl in Canada has become the youngest person to discover a supernova - an exploding star which can briefly outshine a whole galaxy.

Kathryn Gray was studying images taken at an amateur observatory which had been sent to her father.

She spotted the magnitude 17 supernova on Sunday.

Supernovas - which are rare events - are stellar explosions that mark the violent deaths of stars several times bigger than the Sun.
21st Century Learners

What helped Achara, Malala, Anna and Kathryn achieve all of these?
Gen Z: multi-tasking across 5 screens
DIGITAL IN THEIR DNA

Have never known a world without laptops, tablets, smartphones, and 24/7 high-speed wireless Internet

They have integrated technology seamlessly into their lives and used it from the youngest age. It is almost like the air that they breathe, permeating almost all areas of their lifestyle and relationships...

Globally focused, visually engaged, educationally transformed, socially defined. It is the generation that will experiment Google glass, nano-computing, 3-D printing, driverless cars.

Students are collaborators
self-navigators

...with or without us

shared physical space
shared virtual space.
- **Home carer** Helps care for elderly people in their own homes
- **Elderly well-being consultant** Specialises in holistic and personalised care for the elderly
- **Body part maker** Creates living body parts for athletes and soldiers
- **Nano-medic** Creates very small implants for health monitoring and self-medication
- **Vertical farmer** Farms crops upwards rather than across flat fields to save space
- **Waste data handler** Disposes of your data waste in a responsible way
- **Climate controller** Manages and modifies weather patterns
- **Avatar manager** Designs and manages holograms of virtual people
- **Memory augmentation surgeon** Helps preserve and improve memory in an ageing population

Tom Friedman and Tony Wagner say.

In this century, it’s not what you know that matters.

What matters most is what you can do with what you know.
“Today, because knowledge is available on every Internet-connected device, what you know matters far less than what you can do with what you know. The capacity to innovate—the ability to solve problems creatively or bring new possibilities to life—and skills like critical thinking, communication and collaboration are far more important than academic knowledge.

As one executive told me, ‘We can teach new hires the content, and we will have to because it continues to change, but we can’t teach them how to think—to ask the right questions—and to take initiative.’”

(Friedman, 2013, in Lenz, Wells, & Kingston, 2015, p. 45).

With RADICAL CHANGE being the only constant,

what should our students

KNOW

UNDERSTAND

BE ABLE TO DO

to survive and thrive in the future?
K-12 STANDARDS

What are the expectations from our K-12 graduates?
SHS STANDARDS

ASEAN Integration

European Union

Globalization

College/Business/Work Ready
Holistically developed Filipino with 21st century skills.

<table>
<thead>
<tr>
<th>Information, Media and Technology Skills</th>
<th>Learning and Innovation Skills</th>
<th>Communication Skills</th>
<th>Life and Career Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Media literacy</td>
<td>2. Critical thinking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Basic, scientific, economic and technological literacies and multicultural literacy</td>
<td>problem solving skills</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Flexibility and adaptability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Initiative and self-direction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Social and cross-cultural skills</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Productivity and accountability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Leadership and responsibility</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Ethical, moral and spiritual values</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Creativity and curiosity
2. Critical thinking problem solving skills
3. Risk taking

1. Collaboration and interpersonal skills
Theories and Principles

THE 4 C'S OF EDUCATION

Communication
Collaboration
Creativity
Critical Thinking
Theories and Principles
1. Mastery of *CORE academic content*
2. The 4 Cs
3. Fluency in the 3 Rs + New Literacies
Round-Table Sharing

How can teachers help students meet the demands of the 21st Century literacies?
Essential Question

• What age are you preparing your students for?

Agricultural Age

Industrial Age

Information Age

Concept Age
Essential Question

• How do you prepare students for a largely unknown, complex, radically-and rapidly-changing world?

*Digital learners prefer…*
- receiving information quickly from multiple-media sources
- accessing hyper-linked multimedia information
- learning “just in time”
- processing pictures, sounds, color, and video before text
- networking simultaneously with others
- relevant, active, instantly useful, and fun learning
- instant gratification and immediate rewards

*but teachers prefer…*
- slow and controlled release of information from limited sources.
- providing information linearly, logically, and sequentially
- teaching “just in case”
- providing text before picture, sound, and video
- students to work independently before they network and interact
- compelled to teach memorization of the content in the curriculum guide
- deferred gratification and delayed rewards

(Jukes, McCain, and Crockett, in Sheninger, 2014)
Essential Questions

How does the youth of today learn?
• Creating

• Evaluating

• Analyzing

• Applying

• Understanding

• Remembering

New Concepts, Approaches and Theories are established.

Strengths are reinforced and weaknesses are addressed.

Inconsistencies and misconceptions are surfaced.

Circumstances and conditions of the application are explored.

Classifications and Discriminations are presented.

Concepts, Theories and Terms are defined.
Theories and Principles

- Create
- Evaluate
- Analyze
- Apply
- Understand
- Recall

Blooms 21

- Remembering
- Understanding
- Applying
- Analyzing
- Evaluating
- Creating

Start Here!
Which of these problems is most difficult for a beginning algebra student?

**Story Problem**

When Ted got home from his waiter job, he multiplied his hourly wage by the 6 hours he worked that day. Then he added the $66 he made in tips and found he had earned $81.90. How much does Ted make per hour?

**Word Problem**

Starting with some number, if I multiply it by 6 and then add 66, I get 81.9. What number did I start with?

**Equation**

Solve for $x$:

$$x \times 6 + 66 = 81.90$$

They scored 66 percent on the story problem, 62 percent on the word problem, and only 43 percent on the equation.
IPad Apps to Support Bloom's Revised Taxonomy
Assembled by Kathy Schrock

C - Creating
- Storytelling
- Video Editing
- Videocasting
- Mixing
- Animating
- Podcasting

E - Evaluating
- Moderating
- Conferencing
- Networking
- Posting
- Collaborating
- Critiquing

A - Analyzing
- Outlining
- Structuring
- Organizing
- Surveying
- Deconstructing
- Mashing

P - Applying
- Interviewing
- Simulating
- Demonstrating
- Presenting
- Editing
- Illustrating

U - Understanding
- Categorizing
- Annotating
- Tweeting
- Blogging
- Subscribing
- Explaining

R - Remembering
- Recalling
- Listing
- Bookmarking
- Searching
- Mindmapping
- Word Processing
Theories and Principles

Heidi Hayes Jacobs’ New Literacies

- Communication
- Numerical
- Digital
- Media
- Global
Digitally literate people can...

**ACCESS** – proficiently use of keyboarding, voice, and touch technology

**SELECT** – most appropriate tool, application, site to match problem/task at hand

**CURATE** – tag and organize source material for efficient reference, e.g., a personal clearinghouse of sources

**CREATE** – craft new solutions and forms (e.g., generating an original app or new software platform)

By Heidi Hayes Jacobs
Media Literacy: RECEIVING

- Recognize bias
- Critique media
- Question sources

in imagery, text, framing, audio

Media Literacy: GENERATING/PRODUCING

MODERN LITERACY CONTINUUM

TRADITIONAL CONSUMER MODERN PRODUCER

Global Literacy

How to investigate the world
How to recognize and respect various perspectives
How to communicate ideas
How you connect and use connections to explore global issues and generate solutions/ take action

Recognize perspectives
Communicate ideas

- Skype
- Student TED Talks
- Worldmapper
- Gapminder
- Worldwide Student News Service
- Curriculum 21 Resource Hub
- UN Cyberschoolbus
- newspapermap.com
Generation Z + K-12 curriculum = Technology in Instruction

***Suggestion for ICT-enhanced lesson when available and where appropriate

K to 12 Senior High School STEM Specialized Subject – Pre-Calculus December 2013
THANK YOU
for
PARTICIPATING
ACTIVELY!!!

contact me at:
sirnoelmanalang@yahoo.com