Learning in the 21st Century: Blending Strategies for Better Outcomes

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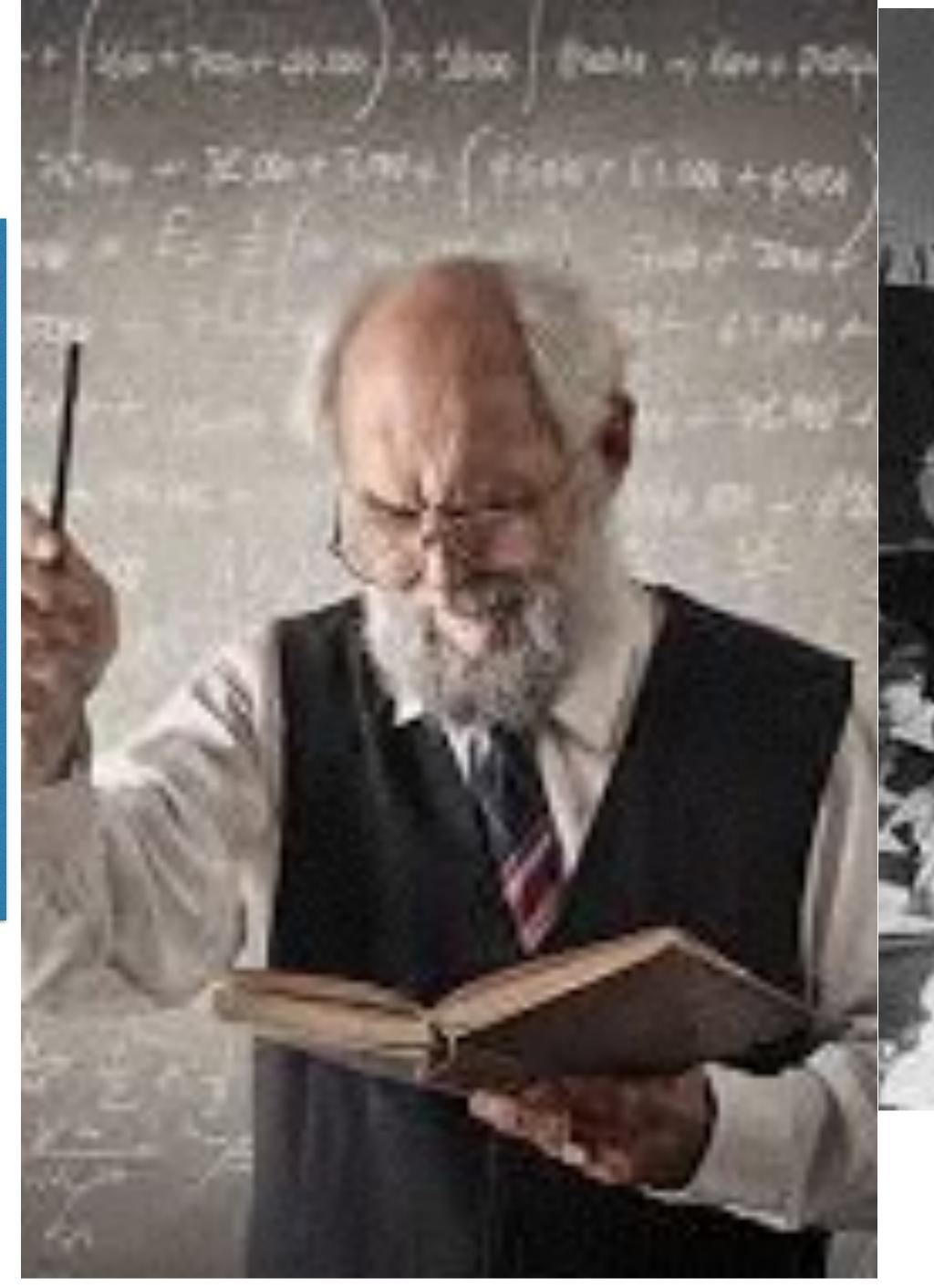56thPPS ANNUAL CONVENTION

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Objectives

- Describe the learning milieu of 21st century learners

- Discuss the significance of outcome-based learning in utilising T-L strategies in the classroom and clinics

- Explain the principles of blended learning

- Enumerate models of blended learning that are feasible and doable for teachers of varied levels of digital competency

Learning in the Past

Recollection Behaviorism

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At Present
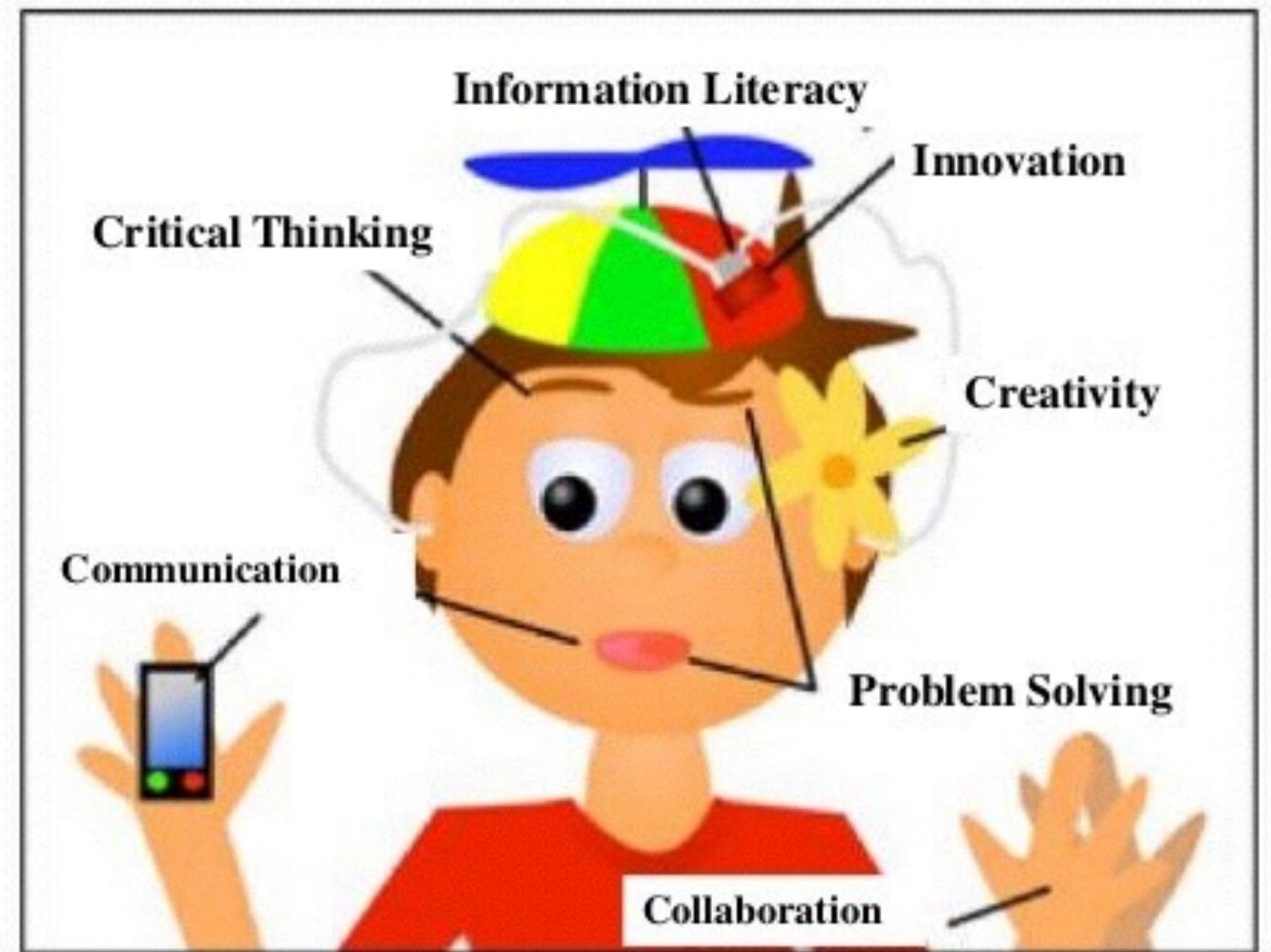
**Collaboration
Constructivism**

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Today's Learners

Melinda Kolk, March 30, 2011
http://web.tech4learning.com/blog

In the Future?

T-L Strategies in Outcome-Based Education

OBE long term outcome: generic skills and attitudes

Less Us, More Them
Creating student-centered contexts for learning

SCRIPT

Learner-Centered approach

- Dependent on extent to which students take responsibility for their own learning

- Cooperative learning

- Provide experiences learners will encounter in the real world (naturalistic setting)
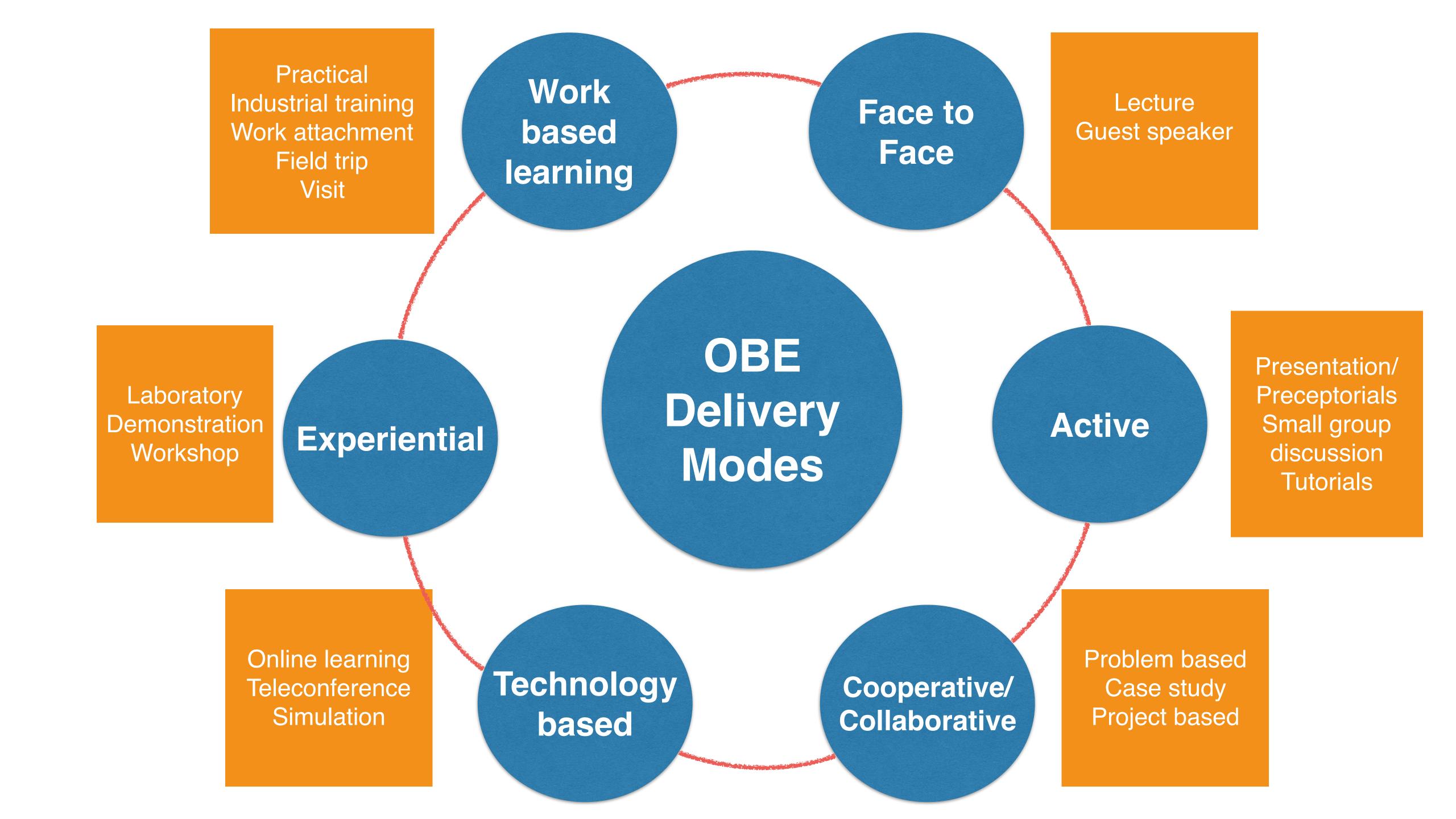
- Teacher, peer or self-managed

Factors to Consider
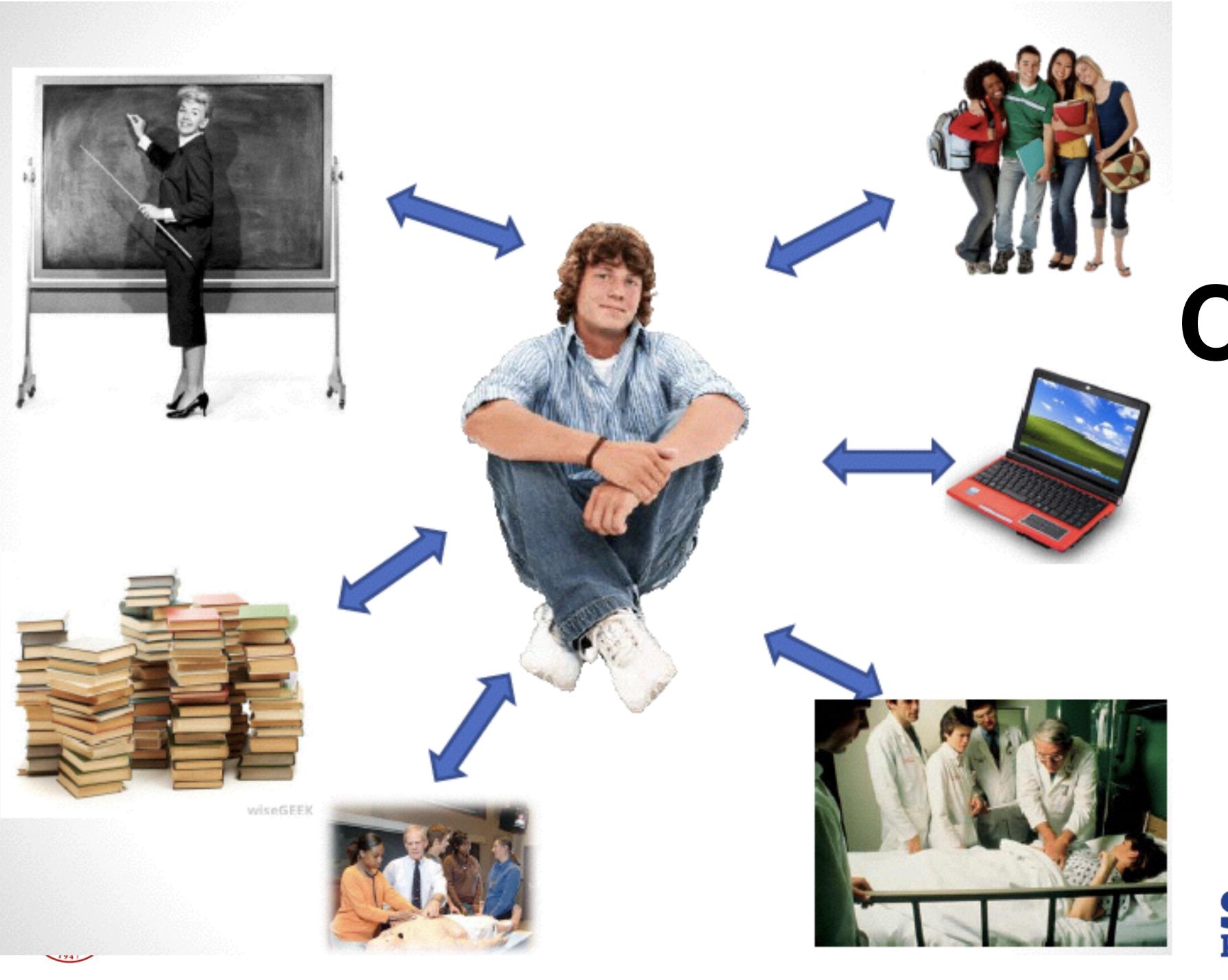# When Planning for Strategies to Use

- Sound knowledge is based on interconnections

- Develop meta-cognitive skills through structured reflection

- Activities should actively involve/ engage students

- Incorporate explicitly stated study skills into learning

- Consider how information technology can support learning and teaching
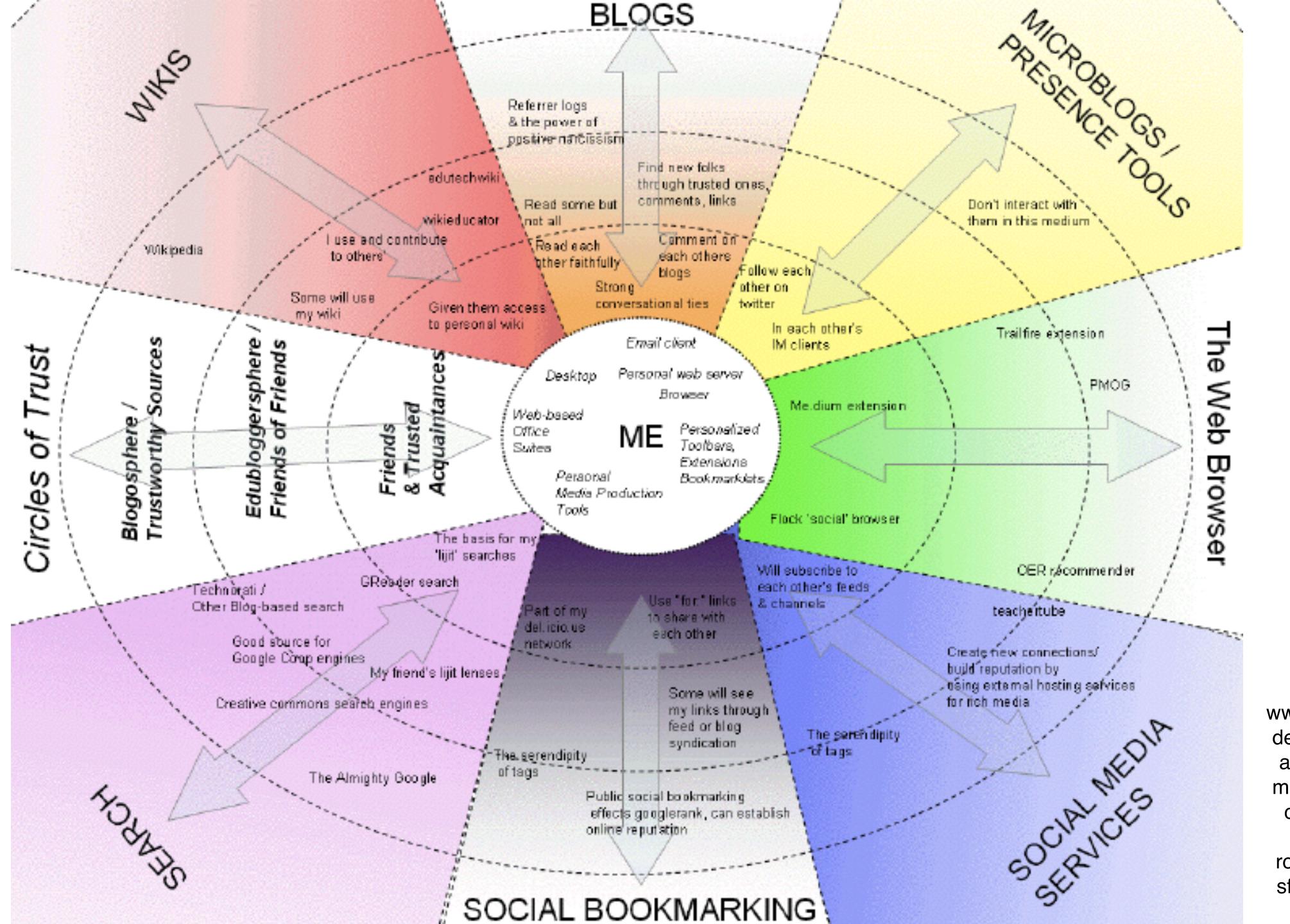
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Connected Learner

https://www.aacom.org/docs/default-source/2014-annual-conference/maximizing-learning-opportunities-in-a-blended-clinical-rotation-d-koch.pdf?sfvrsn=11547e97_0

wiseGEEK

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BLOGS

WIKIS

MICROBLOGS / PRESENCE TOOLS

The Web Browser

Circles of Trust

Blogosphere / Trustworthy Sources

Edubloggersphere / Friends of Friends

Friends & Trusted Acquaintances

Referrer logs & the power of positive narcissism

edutechwiki

wikieducator

Wikipedia

Read some but not all

Find new folks through trusted ones, comments, links

Don't interact with them in this medium

I use and contribute to others'

Read each other faithfully

Comment on each others blogs

Follow each other on twitter

Some will use my wiki

Given them access to personal wiki

Strong conversational ties

In each other's IM clients

Trailfire extension

PMOG

Email client

Desktop

Personal web server

Browser

Web-based Office Suites

ME

Personalized Toolbars, Extensions Bookmarklets

Me.dium extension

Personal Media Production Tools

Flock 'social' browser

OER recommender

The basis for my 'lijit' searches

Will subscribe to each other's feeds & channels

Technorati / Other Blog-based search

GReader search

Part of my del.icio.us network

Use 'for:' links to share with each other

teachertube

Good source for Google Coop engines

My friend's lijit lenses

Create new connections / build reputation by using external hosting services for rich media

Creative commons search engines

Some will see my links through feed or blog syndication

The serendipity of tags

The Almighty Google

The serendipity of tags

Public social bookmarking effects googlerank, can establish online reputation

SEARCH

SOCIAL BOOKMARKING

SOCIAL MEDIA SERVICES

https://www.aacom.org/docs/default-source/2014-annual-conference/maximizing-learning-opportunities-in-a-blended-clinical-rotation-d-koch.pdf?sfvrsn=11547e97_0

What is Blended Learning?

- Combining **instructional modalities** (or delivery media) (Bersin & Associates, 2003; Orey, 2002a, 2002b; Singh & Reed, 2001; Thomson, 2002)

- Combining **instructional methods** (Driscoll, 2002; House, 2002; Rossett, 2002)

- Combining **online and face-to-face instruction** (Reay, 2001; Rooney, 2003; Sands, 2002; Ward & LaBranche, 2003; Young, 2002)

Blended Learning

- A **blend of pedagogy and technology** in any variety of forms

- Number of teaching approaches—> teaching practices which **require students to master some amount of course content before class** through engagement with a number of **rich online resources** such as videos, simulations, and quizzes

- Allows students to **engage in activities during class** that **solidify and enhance this knowledge**

Miles, et al. Arch Med Health Sci 2017, 5:97-102
Torrisi-Steele G, Drew S. Int J Acad Dev 2013;18:371-83.

Why Blend?

1. Improved pedagogy

2. Increased access and flexibility

3. Increased cost effectiveness

Traditional face-to-face Learning Environment

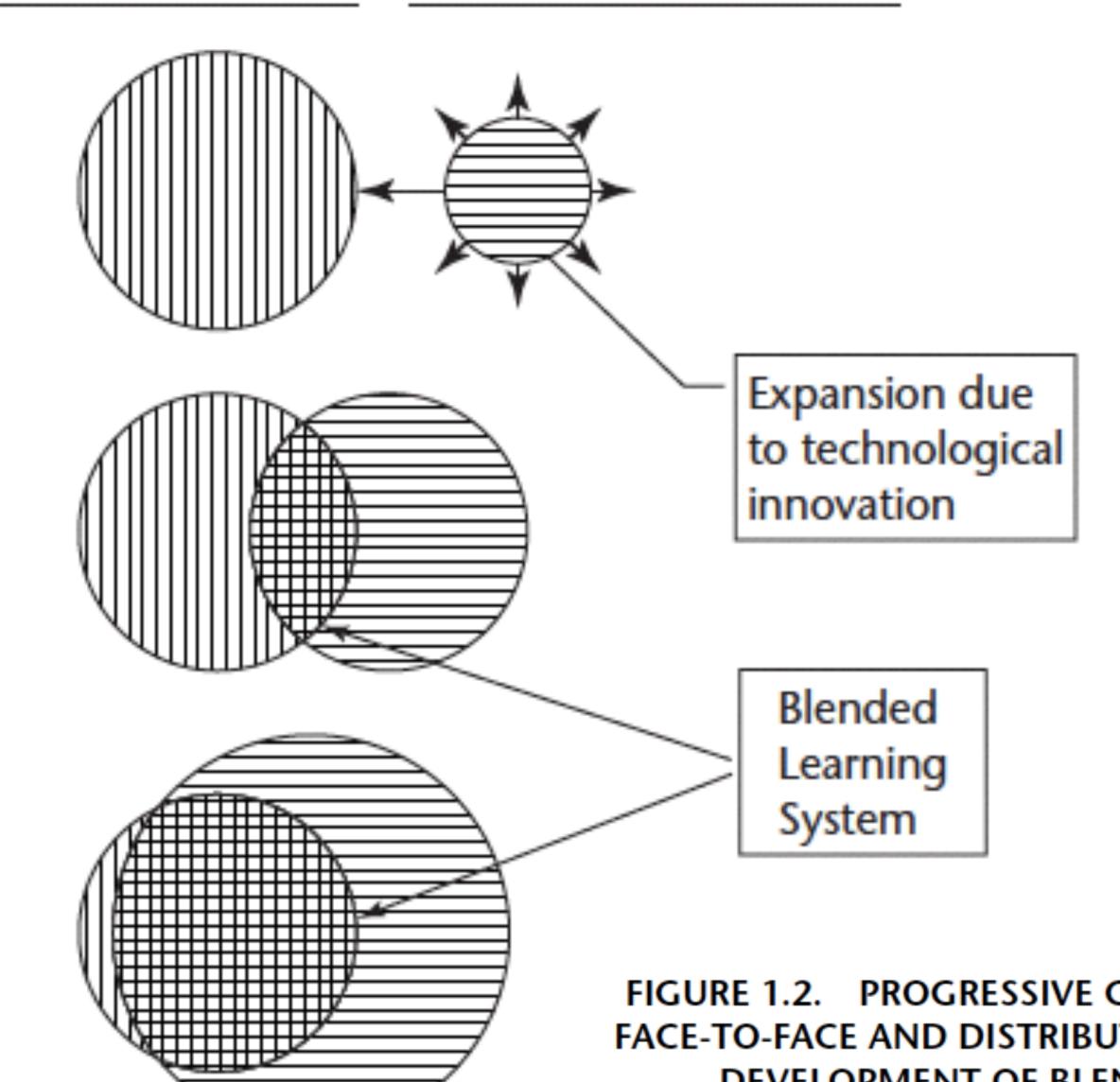Distributed (computer-mediated) Learning Environment

Graham, Allen, and Ure (2003)

Past (largely separate systems)

Present (increasing implementation of blended systems)
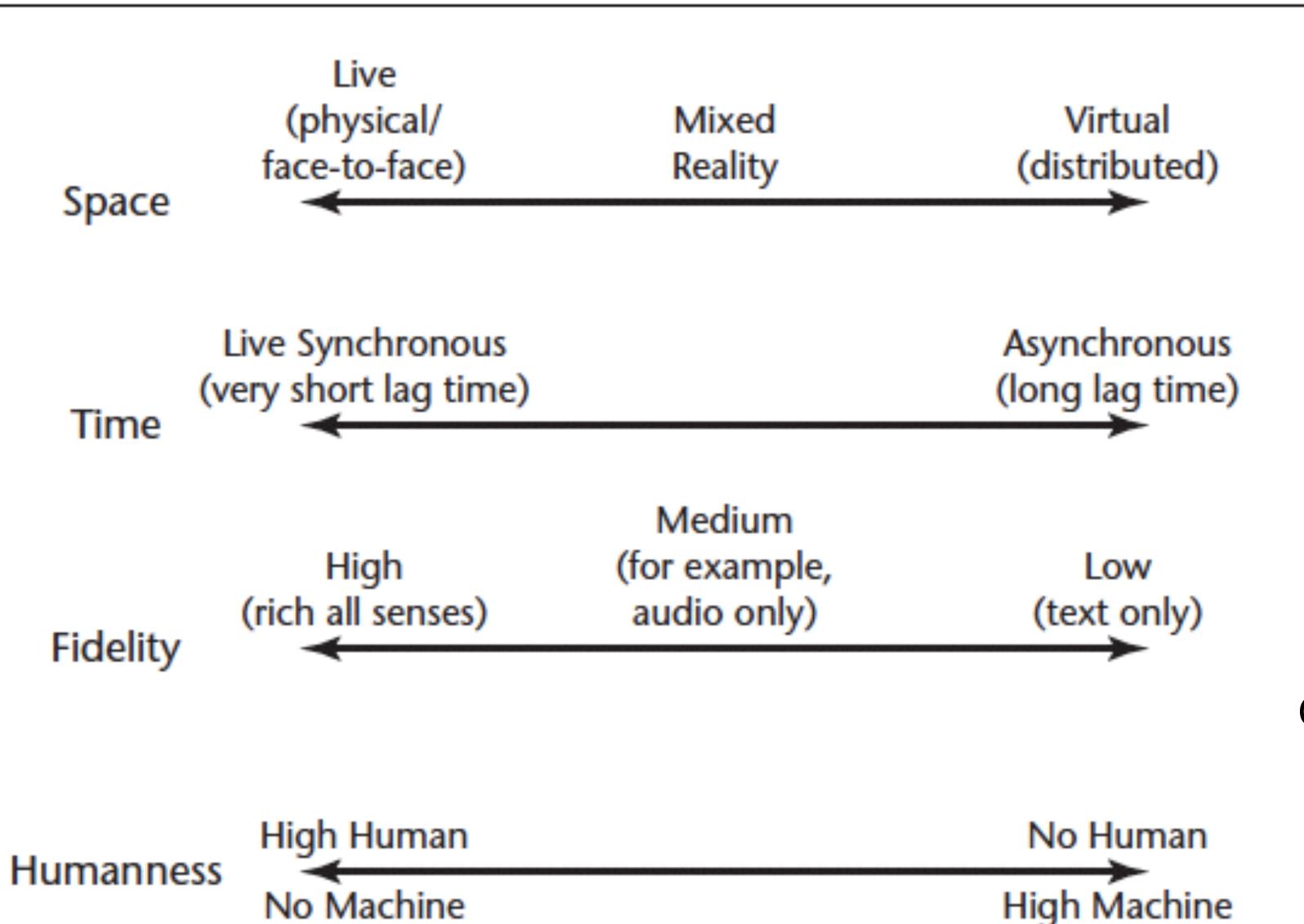
Future (majority of blended systems)

Expansion due to technological innovation

Blended Learning System

FIGURE 1.2. PROGRESSIVE CONVERGENCE OF TRADITIONAL FACE-TO-FACE AND DISTRIBUTED ENVIRONMENTS ALLOWING DEVELOPMENT OF BLENDED LEARNING SYSTEMS.

FIGURE 1.3. FOUR DIMENSIONS OF INTERACTION IN FACE-TO-FACE AND DISTRIBUTED LEARNING ENVIRONMENTS.

Space
Live (physical/face-to-face) ←————— Mixed Reality —————→ Virtual (distributed)

Time
Live Synchronous (very short lag time) ←————————→ Asynchronous (long lag time)

Fidelity
High (rich all senses) ←——— Medium (for example, audio only) ———→ Low (text only)

Humanness
High Human / No Machine ←————————→ No Human / High Machine

Blending Dimensions in Blended Learning

Graham, Allen, and Ure (2003)

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TABLE 1.1.   CATEGORIES OF BLENDED LEARNING SYSTEMS.

Enabling blends	Primarily focus on addressing issues of access and convenience—for example, blends that are intended to provide additional flexibility to the learners or blends that attempt to provide the same opportunities or learning experience but through a different modality.
Enhancing blends	Allow incremental changes to the pedagogy but do not radically change the way teaching and learning occurs. This can occur at both ends of the spectrum. For example, in a traditional face-to-face learning environment, additional resources and perhaps some supplementary materials may be included online.
Transforming blends	Blends that allow a radical transformation of the pedagogy—for example, a change from a model where learners are just receivers of information to a model where learners actively construct knowledge through dynamic interactions. These types of blends enable intellectual activity that was not practically possible without the technology.

Graham, Allen, and Ure (2003)

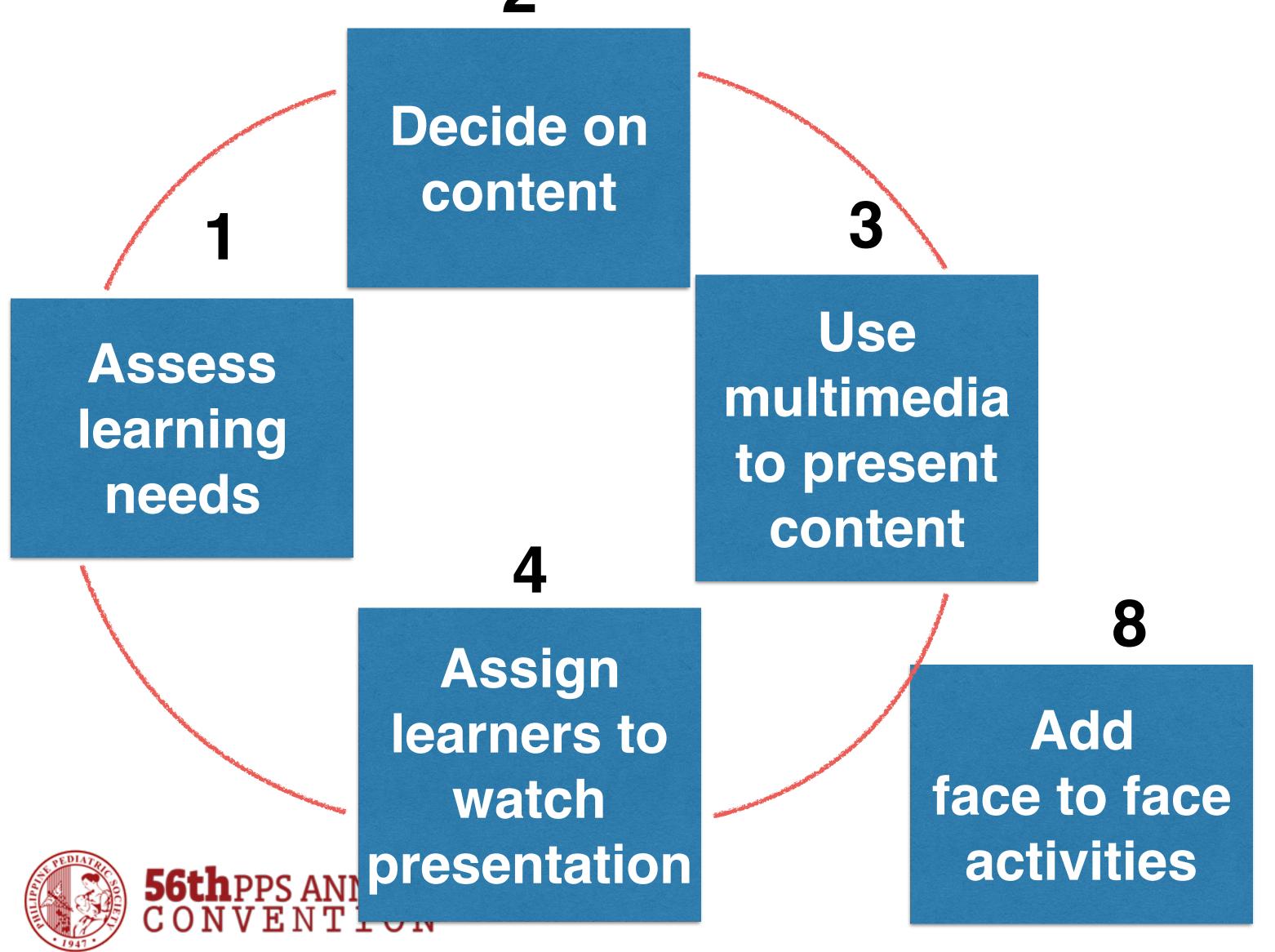A: Implement a BLENDED LEARNING strategy.

BLENDED LEARNING INVOLVES:

1. Courses that integrate online with face-to-face activities.

2. Courses that are taught both in the classroom (face-to-face) and at a distance.

3. Mixing or combining instructional technology with actual job tasks, in order to create a harmonious effect of learning and working.

4. Combining computers with traditional teaching. It's also referred to as reverse teaching, flip teaching, backwards classroom, or reverse instruction.

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12 Types of Blended Learning

1 Outside-In

2 Supplemental

3 Insic-Out

4 Flex

5 Lab Rotation

6 Station Rotation

7 Individual Rotation

8 Self-Directed

9 Project-Based

10 Remote

11 Flipped Classroom

12 Mastery-Based

$E=mc^2$

Blended Learning 2.0

The merging of physical & digital learning spaces to complement one another to personalize the learning of all students based on authentic human circumstance and prevailing local technology.

—Terry Heick

TeachThought

https://www.teachthought.com/learning/12-types-of-blended-learning/

How To Blend

2 Decide on content

1 Assess learning needs

3 Use multimedia to present content

4 Assign learners to watch presentation

8 Add face to face activities

5 Meet learners face to face

6 Present learning objectives

7 Discuss assigned material

How To Blend

- Discuss pre-assigned online material in the classroom

- Complement with a mini-lecture or assess learning through a quiz

<u>www.osmosis.org</u>

Blended Learning Educational Format for Third-Year Pediatrics Clinical Rotation

Erik E. Langenau, DO, MS

Robert Lee, DO, MS

Marci Fults, OMS III

Opportunity

Third year medical students typically learn through supervised patient interaction in a clinical setting, often based in academic or hospital-based training sites. As one of the five medical schools in the Philadelphia area, PCOM strives to find the best training sties for its students in a number of specialties. Due to the increasing number of students in the region as well as a decreasing number of available training sites (as a result of reduced hospitalization rates and lengths of stay), finding suitable training sites for students has been a challenge.

In order to better meet the academic needs of our students, new educational models are required. These models need to address a number of key challenges.

1. Inconsistent clinical exposure to patients whose demographics and presenting problems vary by site.
2. Inconsistent training and quality of clinical preceptors at each of the clinical sites.
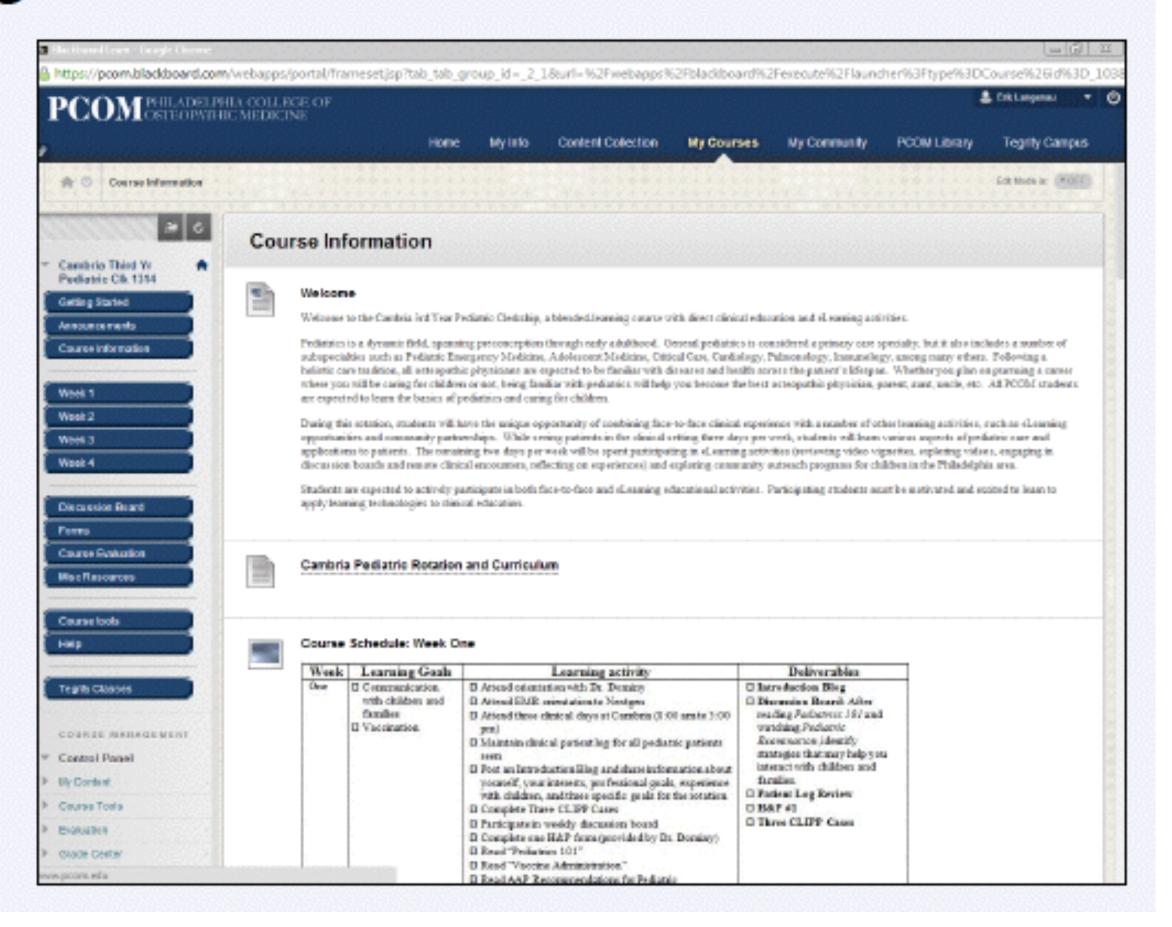3. Insufficient clinic training sites to accommodate expanding class size.

Solution

A four-week blended-learning program for third-year medical students at PCOM has been created in order to combine an online collaborative learning experince with face-to-face clinical instruction supervised by a PCOM faculty preceptor.
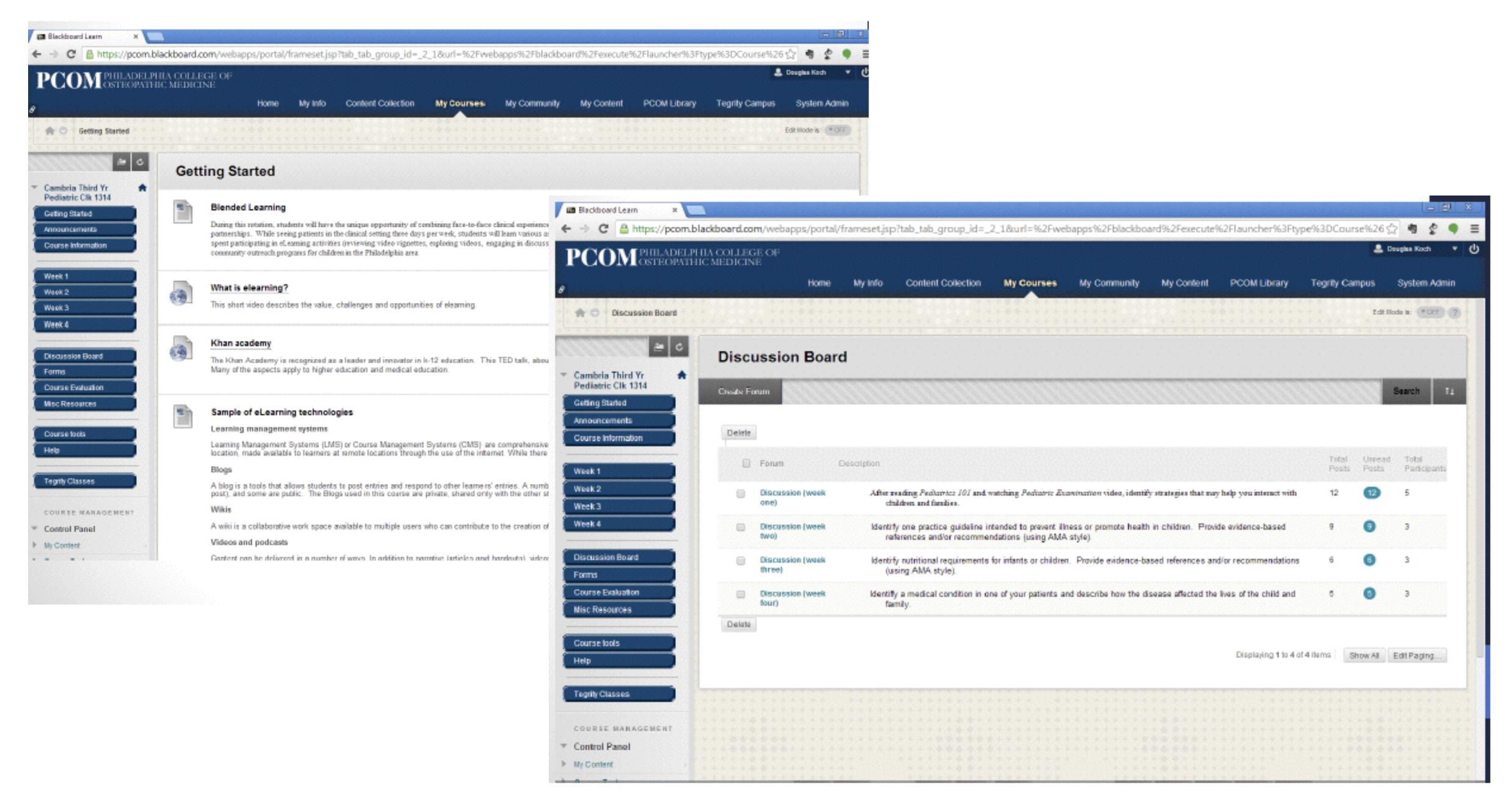
Pedagogical Approach

- **Problem Based Learning (PBL).**[1] Students are presented with a "problem" (such as "I have chest pain") and work together in small groups (6-10) with a "tutor" to clarify the question, research, discuss solutions, and acquire knowledge through discovery and problem solving.

- **Constructivism.**[2] Learners build upon previously acquired knowledge. Not only does this allow learners to take advantage of previously acquired knowledge and experiences, but it also fosters deeper learning.

- **Connectivism.**[3] Learners advance knowledge by making connections between varying fields, ideas, concepts and perspectives.

- **Online Collaborative Learning (OCL).**[2] Learners engage, challenge, and learn from one another in a online collaborative environment.
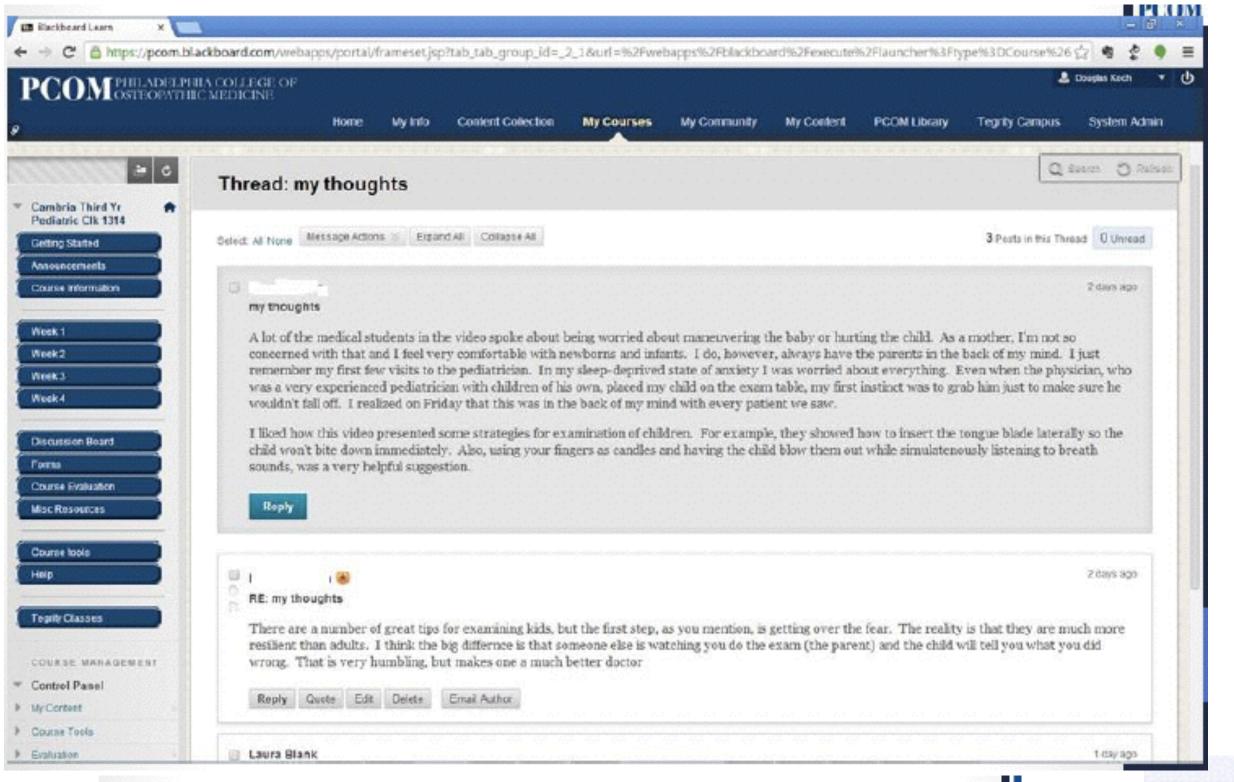
Course

Face-to-face components	Examples and Notes
Clinical teaching (3 days per week)	Clinical precepting with the pediatrician
Direct observation evaluation (two)	Formative assessment completed by the pediatrician preceptor
Oral presentation (one)	Students present to other students and faculty
Case log	Students maintain a log of patients seen during the rotation
History and physical forms (four)	Students submit four H&P forms for patients for specified ages
E-learning components	
Discussion Boards (four)	"After watching the video, *Pediatric Examination*, identify strategies that may help you interact with children and families."
Blogs (two)	"Post an introduction blog and share information about yourself, interests, professional goals and experience with children; note three specific goals you want to achieve for this rotation."
Virtual patient encounters (12-32)	Pediatric Computer-Assisted Learning in Pediatrics Program (CLIPP)[4]
Website Links	Centers for Disease Control and Prevention (CDC). Vaccine Administration[5]
Video demonstrations	American Academy of Pediatrics (AAP). View Through the Otoscope[6]
Narrated presentations	Faculty create Power-Point presentations for students to review
Articles and resources	A number of articles, clinical guidelines and references are posted
Community resource summary	Students identify a Philadelphia-based community resource for patients, write a summary and post in on the course site
Case write-up	Students prepare a formal case write-up and share it with students on the course site
Podcasts	Orientation and summary of learning objectives are presented as podcasts for each week of the course
Online training modules	California Vaccines for Children. EZIZ Vaccine Administration Online Training.[7]
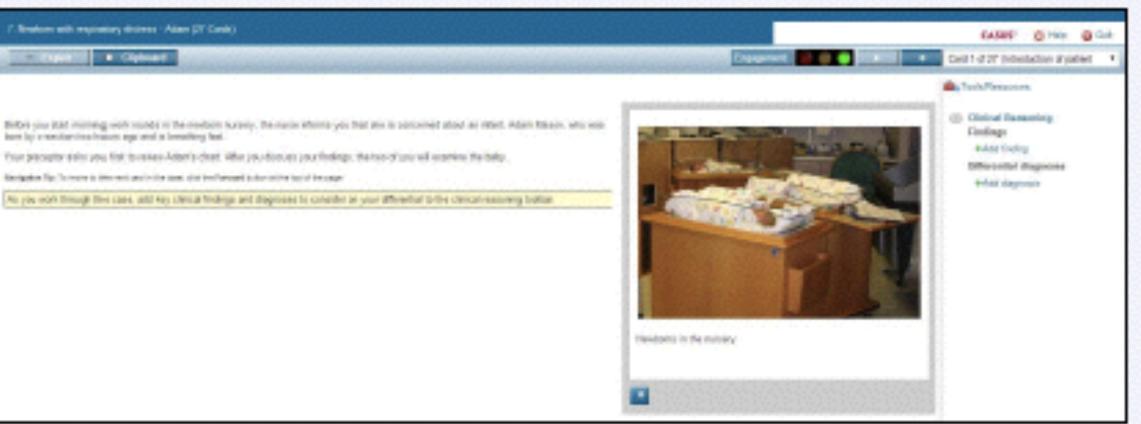
Online training from EZIZ
California vaccines for Children[7]

Virtual Patient (VP) encounters and simulations from

Assessment

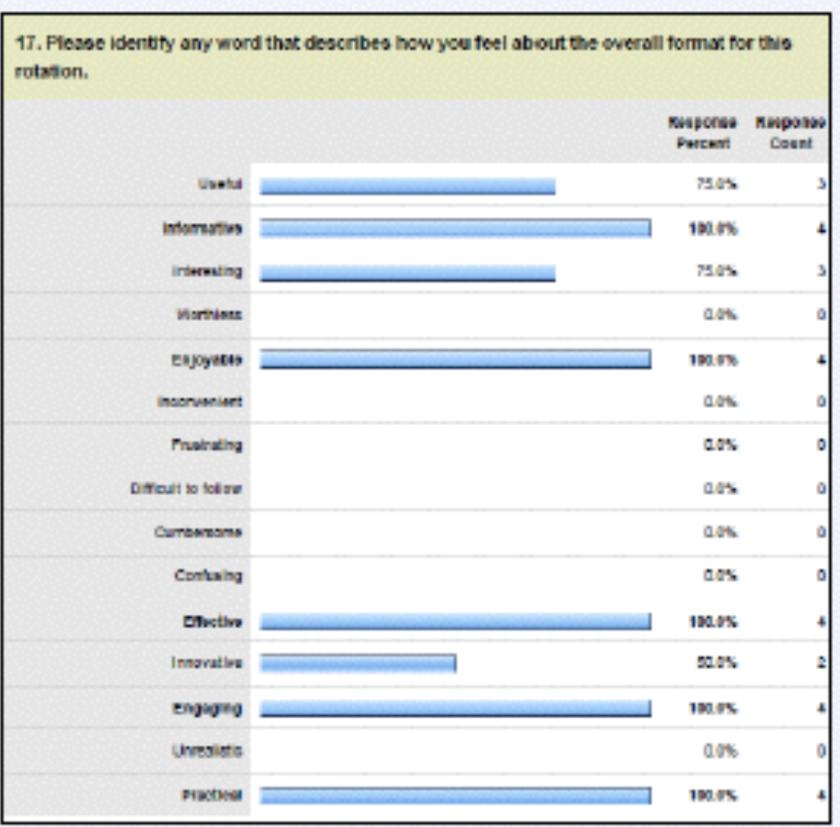- A 51-item survey has been administered to the first two groups of students who completed the program.
- Responses have been overwhelming positive with regard to overall format, discussion boards, blogs, direct observation, CLIPP virtual patient encounters, case w[...] presentation, community resources revie[...] learning objectives.
- 100% Strongly Agreed or Agreed "*I prefe[...] format (eLearning combined with face-to[...] education) to traditional face-to-face rota[...]*
- 100% Strongly Agreed "*I was satisfied w[...] experience.*"
- 100% Strongly Agreed "*I would sign up [...] course like this in the future.*"

17. Please identify any word that describes how you feel about the overall format for this rotation.

	Response Percent	Response Count
Useful	75.0%	3
Informative	100.0%	4
Interesting	75.0%	3
Worthless	0.0%	0
Enjoyable	100.0%	4
Inconvenient	0.0%	0
Frustrating	0.0%	0
Difficult to follow	0.0%	0
Cumbersome	0.0%	0
Confusing	0.0%	0
Effective	100.0%	4
Innovative	50.0%	2
Engaging	100.0%	4
Unrealistic	0.0%	0
Practical	100.0%	4

Written comments included:

"*The combo of clinic and eLearning was awesome. Really gave me some time to learn the information and process what I was learning*"

"*This may sound extreme, but I believe, due to the combined nature of this course and the committed investment of the preceptor, that I have learned more on this rotation than almost any other so far.*"

"*I wish there was more of a patient load, but I appreciated all the resources for learning we were provided with*"
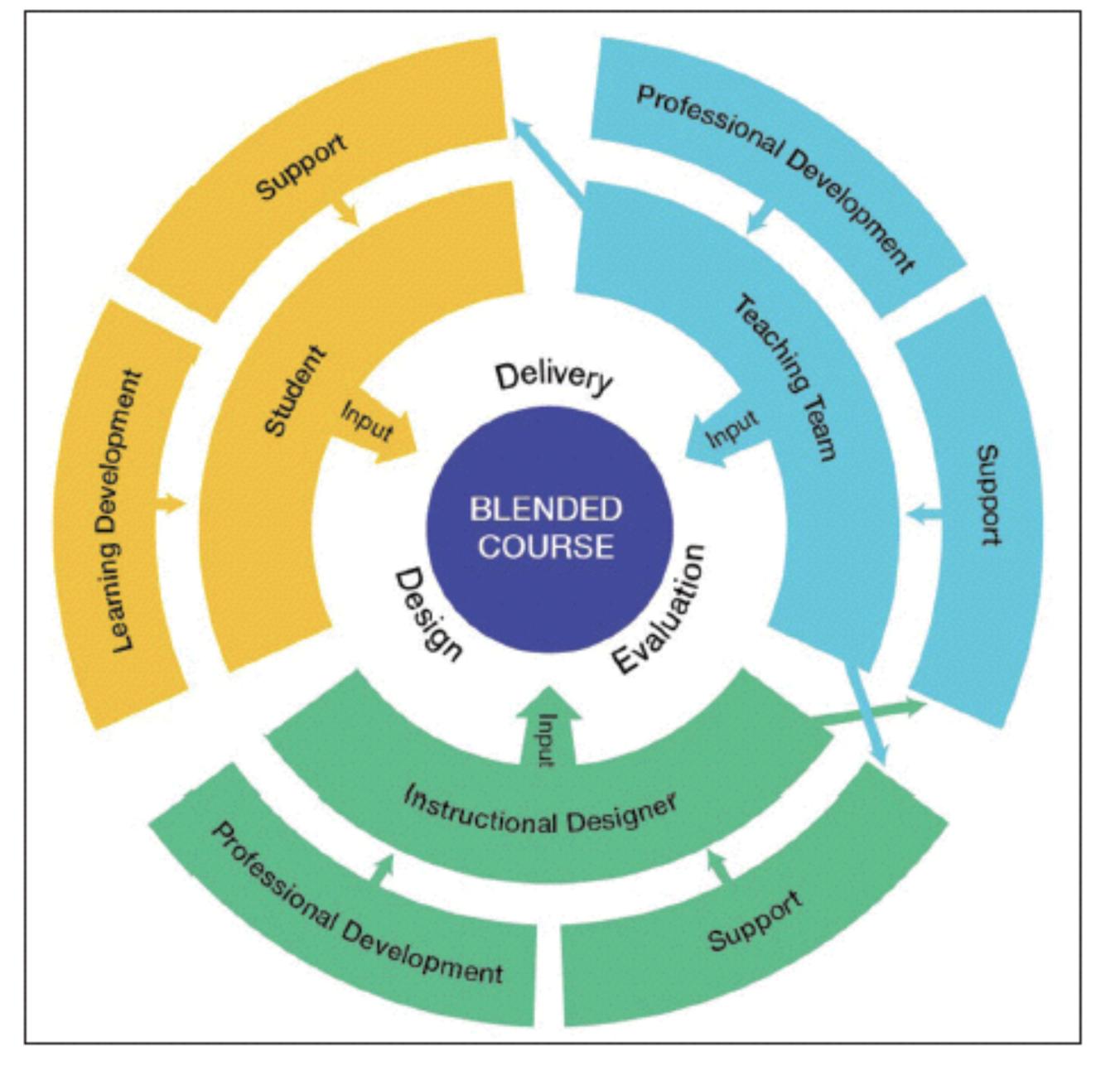
Figure 1: Model for inclusive blended course design, delivery, and evaluation

Miles, et al. Arch Med Health Sci 2017, 5:97-102

Torrisi-Steele G, Drew S. Int J Acad Dev 2013;18:371-83.

Advantages for Teachers

- Teaching is less expensive to deliver, more affordable and saves time

- Offers flexibility in terms of availability

- Access to global resources and materials to meet learners' level of knowledge and interest

- Self-pacing for slow or quick learners reduces stress, increases satisfaction and information retention

- Allows more effective interactions between learners and instructors

Advantages for Students

- Increase student interest

- Keep students focused for longer period of time

- Provides student autonomy

- Instill a disposition of self-advocacy

- Promotes student ownership

- Allow instant diagnostic information and student feedback

- Enables students to learn at their own pace

- Prepares students for the future

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Issues or Challenges
Faced in Blended Learning

1. Role of live interaction- based on learner preference
2. Role of learner choice and self-regulation
3. Models for support and training
4. Digital divide
5. Cultural adaptation
6. Balance between innovation and production

Graham, Allen, and Ure (2003)

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Strengths & Weaknesses

	Computer-Mediated Environment (Asynchronous Text-Based Discussion)	Face-to-Face Environment (In-Class Discussion)
Strengths	*Flexibility:* Students can contribute to the discussion at the time and place that is most convenient to them. *Participation:* All students can participate because time and place constraints are removed. *Depth of reflection:* Learners have time to more carefully consider and provide evidence for their claims and provide deeper, more thoughtful reflections (Mikulecky, 1998; Benbunan-Fich & Hiltz, 1999).	*Human connection:* It is easier to bond and develop a social presence in a face-to-face environment. This makes it easier to develop trust. *Spontaneity:* Allows the generation of rapid chains of associated ideas and serendipitous discoveries (Mikulecky, 1998).

Graham, Allen, and Ure (2003)

Strengths & Weaknesses

	Computer-Mediated Environment (Asynchronous Text-Based Discussion)	**Face-to-Face Environment (In-Class Discussion)**
Weaknesses	*Spontaneity:* Does not encourage the generation of rapid chains of associated ideas and serendipitous discoveries (Mikulecky, 1998). *Procrastination:* There may be a tendency toward procrastination (Benbunan-Fich & Hiltz, 1999). *Human connection:* The medium is considered to be impersonal by many (Benbunan-Fich & Hiltz, 1999), which may cause a lower satisfaction level with the process (Haytko, 2001).	*Participation:* Cannot always have everyone participate, especially if there are dominating personalities. *Flexibility:* Limited time, which means that you may not be able to reach the discussion depth that you would like.

Graham, Allen, and Ure (2003)

WEB PAPER

The role of blended learning in the clinical education of healthcare students: A systematic review

MICHAEL ROWE, JOSE FRANTZ & VIVIENNE BOZALEK
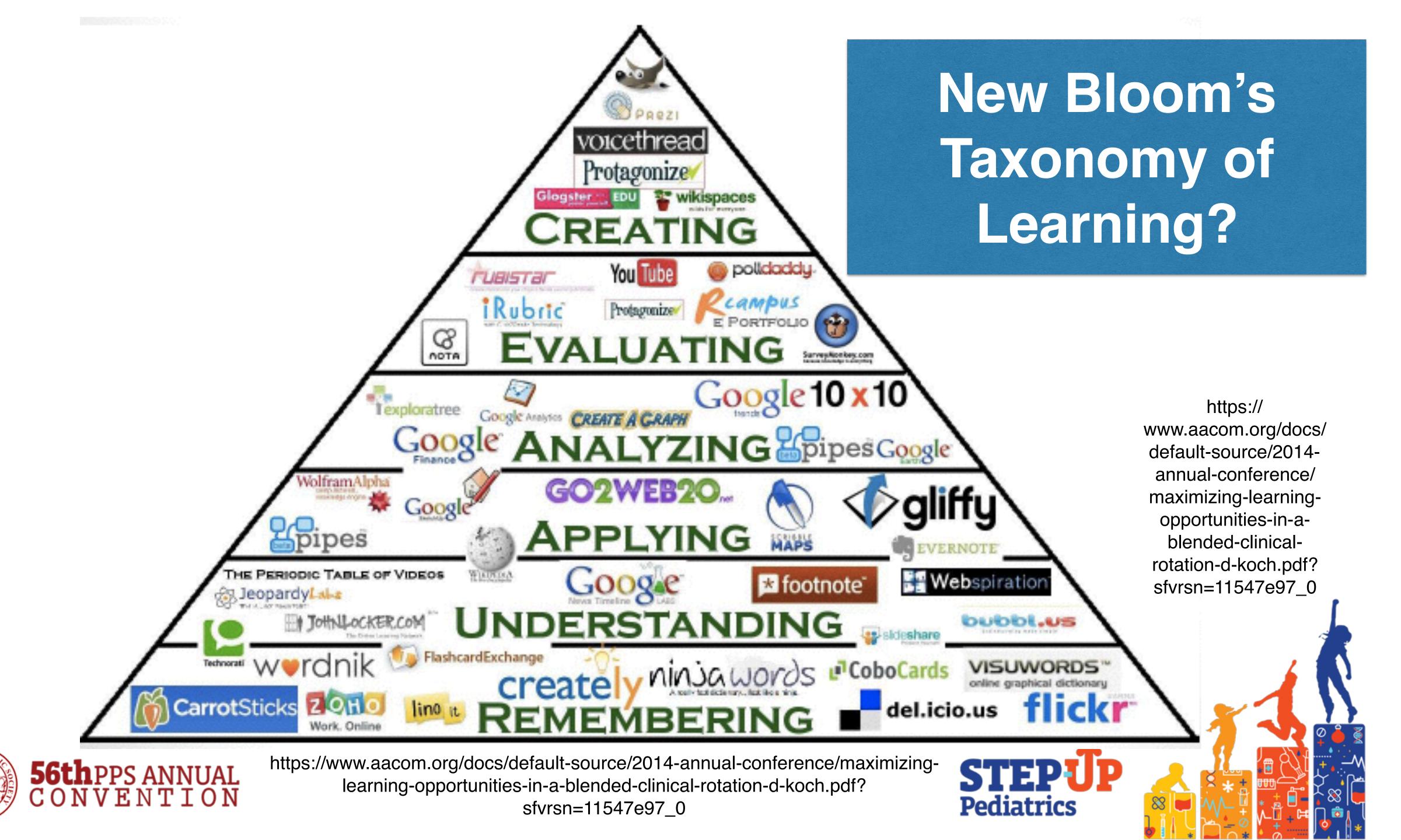University of the Western Cape, South Africa

- Limited research available

- Some evidence of improvement of students' clinical competencies demonstrated

- Did not always manifest in better grades

- **Addressed clinical competencies** important for the development of practice knowledge

- **Improved reflective skills and clinical competencies**, **clinical reasoning** and bridging of the gap between **theory and practice**

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New Bloom's Taxonomy of Learning?

https://www.aacom.org/docs/default-source/2014-annual-conference/maximizing-learning-opportunities-in-a-blended-clinical-rotation-d-koch.pdf?sfvrsn=11547e97_0

Summary

- 21st century education should prepare learners on how to think and work and equip them with tools to thrive in a dynamic, technology-driven world

- Outcome based education provides teaching-learning activities that promote skills used in the real world setting, including use of technology

- Blended learning combines pedagogy and technology to make learners more engaged, resulting in better learning outcomes

"It should be emphasized that blended learning, while generally including some components involving technology and online activities, is **NOT ABOUT THE TECHNOLOGY PER SE,** but more specifically about the **STRATEGY OF HAVING STUDENTS MASTER CONTENT BEFORE COMING TO CLASS** so that they can **ENGAGE IN ACTIVITIES** that will help to **SOLIDIFY AND DEEPEN THIS LEARNING**"

Miles CA, Lee AC, Foggett KA, Nair B.
Arch Med Health Sci 2017;5:97-102.

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