Best Practices in the Blended STEM Classroom

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Set The Table...

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- **Best Practices**
  - Research
  - My Personal Experience
  - Your Experience

- **Blended**
  - Using some type of online delivery method
  - Specific to STLinATL -> hybrid blended learning

- **STEM Classroom**
  - Proliferation of online content providers
Best Practices - Research

- Research is mixed
  - "Does an Algebra Course with Tutoring Software Improve Student Learning?" by the RAND Corp., funded by the U.S. Department of Education and released in 2013.
  - Demonstrated improvement of eight percentage points = double amount of math high school learns in a year
  - "Personalized Instruction: New Interest, Old Rhetoric, limited results and the need for a new direction for computer-mediated learning," from the National Education Policy Center, released in 2013.
  - Personalized instruction to yield modest educational improvements at best, and in some cases, none at all

- Not necessarily applicable to our school environments
Best Practices - Research

- Studies a school-wide implementation
- Studies a turnaround effort
- Studies a virtual school environment
My Personal Experience

- My course may be the student’s only blended course
- Students do not have an option for traditional course
- AP courses / elective courses
- BYOD environment
- Support from administration is vanilla
Your Experience

- Elective or required course?
- Option for traditional course?
- Your experience in teaching curriculum?
- Technical environment?
HYBRID ZONE

1. Rotation model
   - Station Rotation
   - Lab Rotation
   - Flipped Classroom

2. Flex model
3. A La Carte model
4. Enriched Virtual model

BLENDING LEARNING

BRICK-AND-MORTAR

ONLINE LEARNING

https://www.christenseninstitute.org
Blended Learning: Disruptive Examples

- Using some type of online delivery method
  - Posting homework online is not blended learning!

- Flex
  - Online is the backbone, students move at own pace

- A la Carte
  - Online course + prof in addition to traditional courses

- Enhanced Virtual
  - Entire curriculum online
Blended Learning: Hybrid Examples

- Using some type of online delivery method
  - Posting homework online is not blended learning!
- Station Rotation
- Lab Rotation
- Flipped Classroom
- Individual Rotation
Blended Learning: My Personal Experience

- Using some type of online delivery method
  - Posting homework online is not blended learning!

- CodeHS online curriculum

- Students meet on a rotating daily schedule

- BYOD
My Hopes and Dreams for Blended Learning

● Encourage student-directed learning
  ○ More one-on-one time to spend with students

● Support technically-talented students
  ○ Meet them where they are at

● Monitor their progress in real-time
  ○ Less grading, more time generating feedback and data analysis

● Improve their AP experience
  ○ Scores on AP exam
Good

Bad

neutral
My Hopes and Dreams for Blended Learning

- Encourage student-directed learning
  - More one-on-one time to spend with students
My Hopes and Dreams for Blended Learning

- Support technically-talented students
  - Meet them where they are at
My Hopes and Dreams for Blended Learning

- Help with data
  - Less grading, more time generating feedback and data analysis

Good  Bad  neutral
My Hopes and Dreams for Blended Learning

- Improve their AP experience
  - Scores on AP exam

- Good
- Bad
- Neutral
Immediate Plans for Next Year

- Teaching my students basics of metacognition
  - Learn how they learn

- Back to basics in Computer Lab
  - Course packet, paper textbook chapters, notes & labs by hand

- Complete more labs together sans computer
  - Whiteboard, think:pair:share, course packet, AP practice

- Improve their blended classroom experience
  - Better learners, better classmates, better classroom environment
Blended STEM 2.0
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