Increase Students’ Engagement, Learning and Achievement in a Mathematics Classroom Using Teacher Made and or Web-Based Videos - the Flipped Instructional Classroom Model.

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Flipped Instruction?

- Reversal of traditional instructional approach
- Teacher made /web-based videos before class
- Students in charge before during and after class
- Activities during class
- Concept mastery/Application/Collaboration during class
- Checking for understanding/Reviewing key concepts
- Accessing more resources
- Instructor facilitates/provides needed assistance to students

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Traditional Vs Flipped Instruction

**Traditional**
- Today’s Lecture: $6x - 5 = 9$
- Homework: $10x - (2x + 3) = 4$

**Flipped**

**Activities**

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Traditional Vs Flipped in Blooms Taxonomy

**Traditional Model**

- Students listen to lectures through out and do homework problems.

**Flipped Model**

- What students are engaged in during class:
  - Remembering
  - Understanding
  - Applying
  - Analysing
  - Evaluating
  - Creating

- What students are doing outside class:
  - Remembering
  - Understanding
  - Applying
  - Analysing
  - Evaluating
  - Creating

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Some Research on Flipped Instruction

Many research studies have shown positive effects on students’ achievement, engagement in different fields of study:

- Talley and Scherer (2013)- Students appreciated learning outside class
- The Flipped Learning Network (FLN) Reports
  71% increased grades and 80% improved student attitude
- Gerald Robert Overmyer (2014)- PHD Dissertation in Colorado State University shows higher students’ scores
- Clintondale High School in Michigan- Showed decline in failure/discipline rates across many subjects

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Two Key components of flip:

- Educational Technology
- Activity Learning

Both have tremendous effects on the learning environment.
Transforming Flipped classroom to Flipped Learning

• According to the Flipped Learning Network (FLN), flipped learning is achieved under the following four pillars of Flipped instruction:
  ❖ Flexible Environment
  ❖ Learning Culture
  ❖ Intentional Content
  ❖ Professional Educator

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Some Misconceptions about Flipped

- The teacher can be replaced by the videos
- Teachers must flip their entire class
- Flip is the same as an online class
- Teachers need to be in the videos they create
- It does not work
- It has to be done a certain way
- Only works with Certain subject areas

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Some Benefits

- Student Engagement
- Student centered learning at the pace they want not that of teacher
- Students Collaboration
- More accessible content to students
- Increased student achievement
Some Drawbacks

- Affordability of internet/devices by low income students
- Attendance may drop as student have content on video and see no need to attend class
- A lot of work /Preparation
- No way to check if students actually washed the videos

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My college Algebra Student’s Impressions about the use of Web-Based Videos

- Huge benefit: 60%
- No big difference: 20%
- No Benefit: 10%
- Do Not use videos: 10%

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Some Video Making Websites

- https://screencast-o-matic.com/home
- https://www.educreations.com/
- http://www.nchsoftware.com/software/recording.html

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Questions/Discussion

What is your experience with using web-based/teacher made videos in your classrooms?

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Thank you for listening
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