

Flipped Learning: Improve Student Engagement and Learning

Byron High School

“Learn, Share, Innovate, Inspire”



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<http://troyfaulkner.com/>

Peer Instruction

At the beginning of class students are asked a series of conceptual questions about the topic learned on the video lesson. They answer it initially without talking to anyone then they start discussing/arguing/debating their answer and reasons with each other. During discussions students are totally engaged in the learning process.

Why would a teacher/professor who is an "expert" on the subject want a novice, who has just learned the material within the last 24 hours, explaining the concept to someone who does not understand? Typically, the teacher made the jump from not understanding to understanding years before and does not remember what it took to make that jump from not understanding to understanding. However, the peer who has the correct answer made that leap from not understanding to understanding within the last 24 hours so he/she remembers what it took to make that leap and can help the student who is not understanding to be able to make the leap to understanding. Learn more about peer instruction at <https://goo.gl/uYY35c>

Mastery Learning

All students are working individually at their own pace. Students still have the direct video instruction at home and use class time to practice with the teacher and peers to assist them. After practicing a concept(s), they take an assessment. If they get 80% or above on the assessment, they move onto the next objective. If they did not get 80% or above, they go back and relearn the material and try the assessment again. After students have passed the individual assessments for a unit then they will take the unit test. The student's grade is often based on how many objectives the students master in the course.

More information about flipped learning, types of flipped learning, peer instruction and mastery learning is available at <http://troyfaulkner.com/>

Mastery Flipped Learning <http://www.flippedmath.com/>

Flipped Learning Resources

- <http://troyfaulkner.com/> web site of Troy Faulkner, information on flipped learning, peer instruction and other topics
- <http://flippedclassroom.org/> A professional learning community for teachers using screencasting in education.
- <http://flippedlearning.org/> provides educators with the knowledge, skills, and resources to successfully implement Flipped Learning.
- <http://jonbergmann.com/> website blog of John Bergmann, a pioneer of the flipped classroom

Math Curriculum Resources

- www.mrpethan.com/ Free statistics curriculum
- <http://www.kutasoftware.com/> Homework and test generator
- <http://www.ck12.org/> Free digital open source high school textbooks
- Math in Movies <http://www.math.harvard.edu/~knill/mathmovies/>
- <https://www.desmos.com/> Online Graphing Calculator

Converting Formats

- <http://www.bullzip.com/products/pdf/info.php> Print anything as a PDF
- <http://www.wisdom-soft.com/downloads/downloadfiles.htm> ScreenHunter Free
- <http://keepvid.com/> Download and convert videos
- <http://zamzar.com/> Convert from one video format to another

Remediation

- <http://www.aleks.com/> The software that Byron uses for our remedial courses.

Interactive nuggets

- <http://www.wolframalpha.com/> nice interactive nuggets
- <http://nlvm.usu.edu/> National library of virtual manipulatives
- <http://nrich.maths.org/public/index.php> Cool extension activities
- <http://mathillustrations.com/figureGallery/index.php> Geometry Images