



Restarting School



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Intro



- Broader field of education offers many interesting examples and practices
- Successful in real world
- Goal - learning from those examples and implementing successful practices in our schools
- This approach has the potential to:
 - Engage students
 - Help discovering their interests and potential

Agenda / Topics



- Self/Peer learning
- Gamification
- Encouragement/Motivation
- Research

Self/Peer learning

“No one teaches children language”

Sir Ken Robinson



“Hole in the Wall”



- Stuck computers inside boundary walls of the slums
- Children started teaching themselves and others
- Surpassed the government school in first unsupervised 75 days!
- If we allow the educational process to self-organize, then learning emerges all by itself
- Teacher's role is just to set this process in motion



Sugata Mitra
Winner Ted Prize 2013

Flipped Classroom



- Background 1991- after second unsuccessful explanation: “Why don't you discuss it with each other?”
- New material outside of class (reading lecture, videos...)
- Class time for harder work of assimilating knowledge
- Support of their peers and instructor

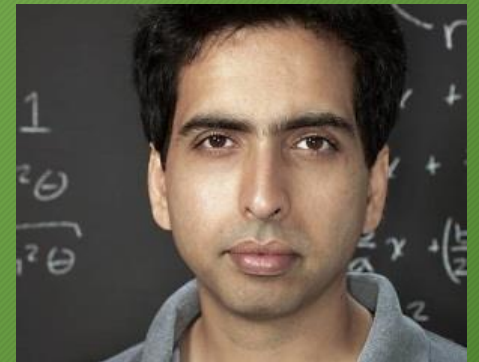


Erik Mazur
Harvard University

Humanizing the classroom



- Teachers spend 100% of time with the students
- Proficient students helping others
- Easier to accept feedback from a peer
- Both benefit!

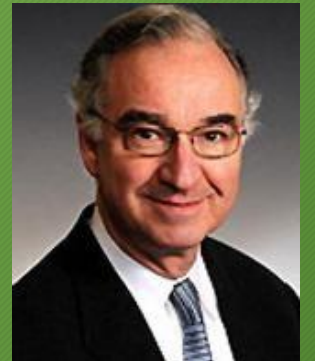


Salman Khan
Khan Academy

One to One tutoring



- 2 Sigma Problem:
 - Mastery learning - proceeding after mastering task
 - One to One tutoring
- Average student was above 98% of the students in the control class!
- Self/Peer Learning emulates One to One tutoring!



Benjamin Bloom

Gamification

Worldwide video game marketplace reached \$93 billion in 2013
and it is forecasted to reach \$111 billion by 2015

Gartner



Definiton



- Use of game elements (badges, points, levels, leader-boards,...) and game design techniques (fun and appealing, progression...) in non-game contexts (e.g. business, education, health...)
- Attempts to harness the motivational power of games and apply it to the real-world problems

What can we learn?



- Most games are fairly non-judgmental and you feel good when you progress
- Feeling in control
- Positive attitude towards failure:
 - Fast feedback cycles (breaking larger tasks into smaller ones)
 - Keeping the stakes low
- School:
 - Feedback cycles are usually long
 - Only few opportunities to try
- Results in anxiety and not anticipation (like in games)

What is the cost of motivation?



- Most powerful is intrinsic motivation:
 - Competence (to control outcome and experience mastery)
 - Autonomy (to control own life)
 - Relatedness (to interact, be connected to and experience caring for others)
- Gamification seems to replace it with extrinsic awards like:
 - Points and
 - Badges



Richard Ryan & Edward Deci
University of Rochester

Meaningful gamification - Stack Exchange



- A group of question-and-answer web sites
- 5 million users
- Gaming elements are there in service of a higher purpose:
 - Encourage people to do things that are normally considered boring
 - Give structure to groups to do what's best for the world
- Without gamified elements - forum which is broken by design
- Group structure exists to keep a group:
 - On target
 - Focused on its own goals



Jeff Atwood
Stack Exchange

Encouragement/Motivation

“Educator’s most important task, one might say his holy duty, is to see to it that no child is discouraged at school”

Alfred Adler 1964



“Hole in the Wall” with a mediator



- Mediator had no knowledge of the subject
- “Grandparent” model of encouragement:
 - “I wish I could do that”
 - “How on earth did you figure that out?”
- Results:
 - Surpassed government school (unsupervised 75 days)
 - Reached standard in the urban elite private school (mediated 75 days)

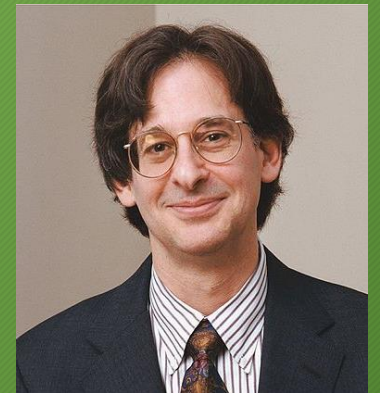


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Winner Ted Prize 2013

Problems of grading



- Grades tend to reduce:
 - Students' interest in the learning itself (“grade orientation” and a “learning orientation” are inversely related)
 - Students' preference for challenging tasks
 - Quality of students' thinking
- When the curriculum is engaging students who aren't graded perform just as well as those who are
- Make grades as invisible as possible
- Helping students forget about grades is the single best piece of advice for creating a learning-oriented classroom



Alfie Kohn

Research

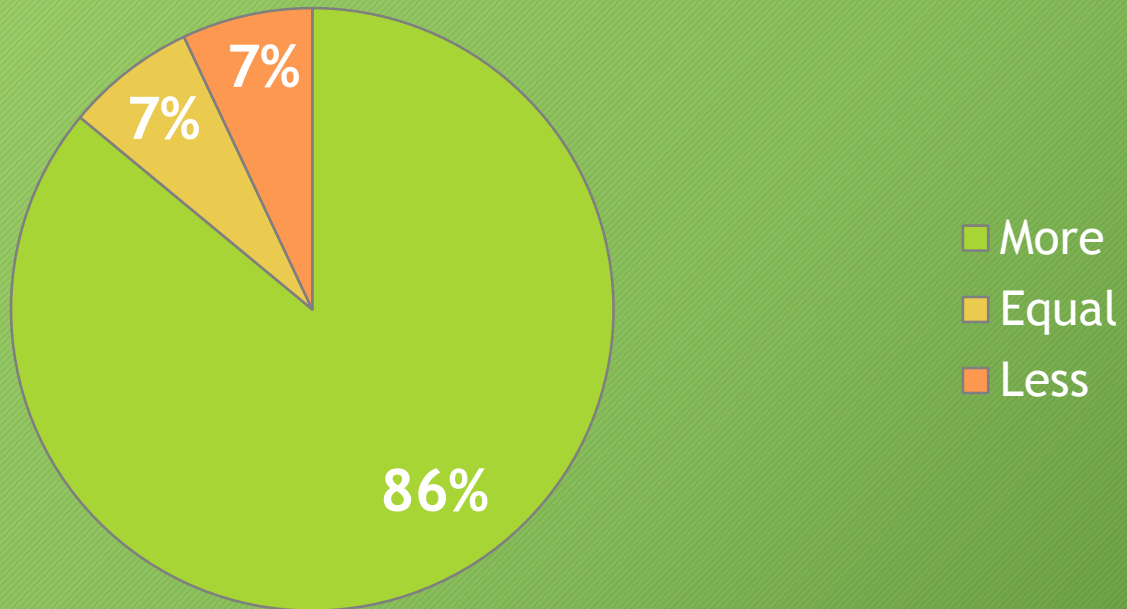


New method

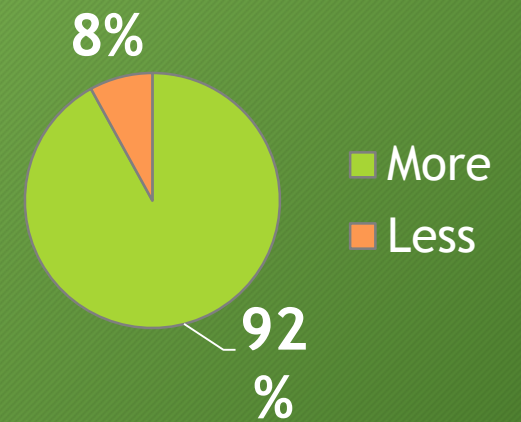


- Teaching based on multimedia videos (form of Flipped Classroom)
- Tests were replaced with smaller assignments that could be repeated infinite times
- Passing rate put high (Mastery Learning)
- Checkmarking completed assignments
- Most notable conclusion: greater engagement (especially among more problematic students)

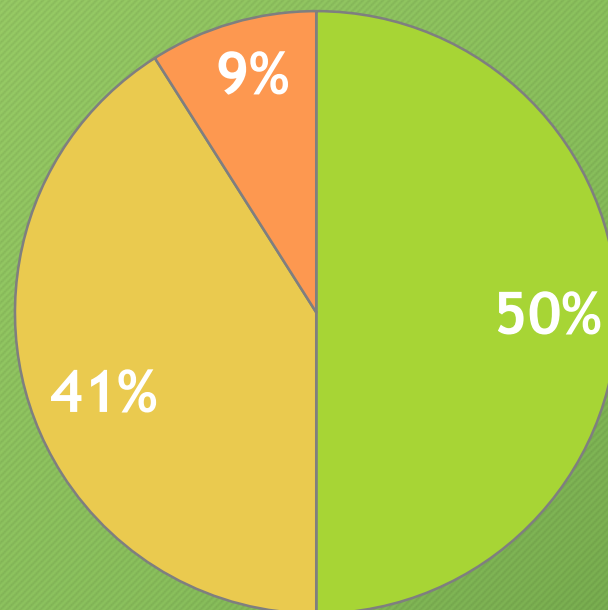
Preference



Students repeating class

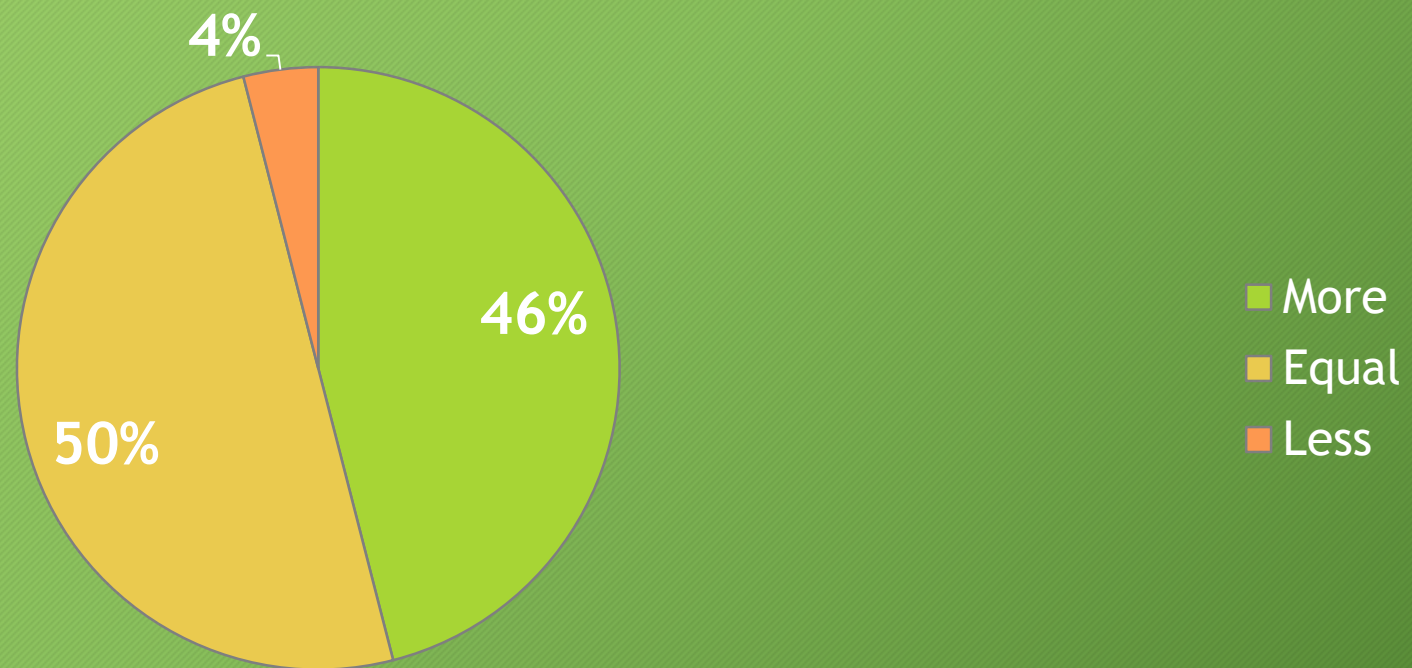


Comprehension

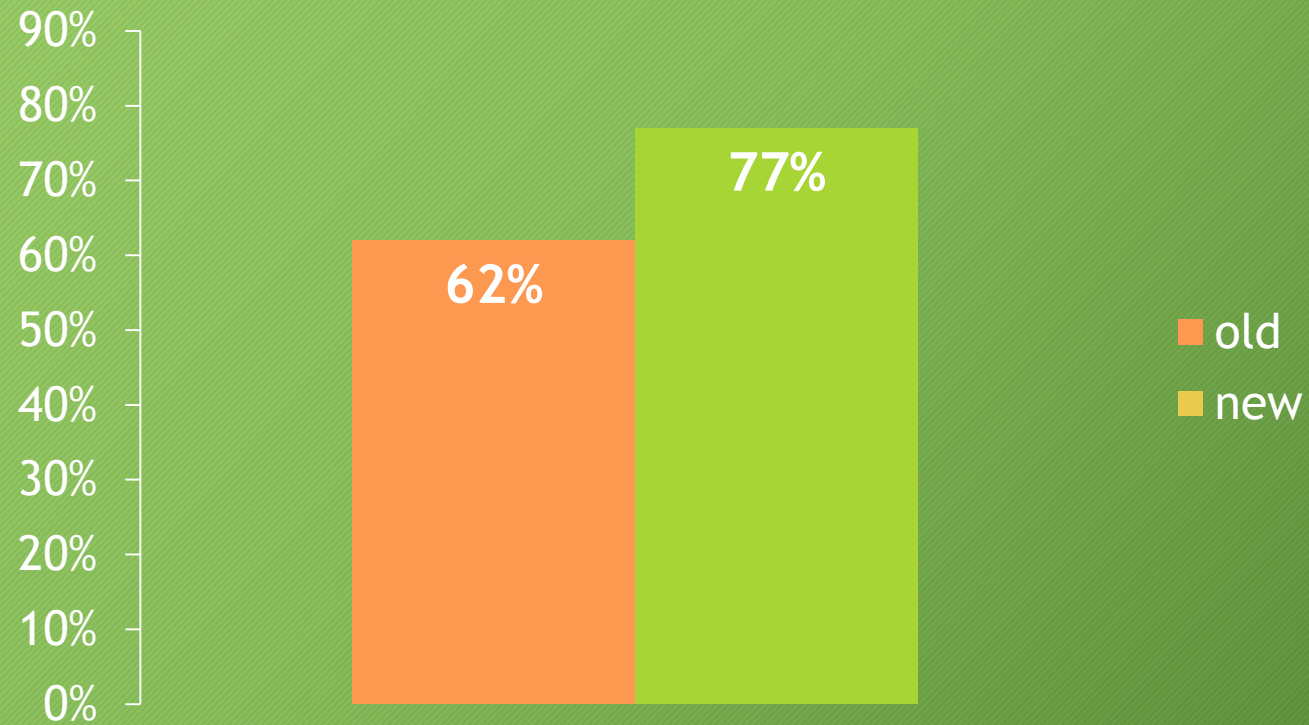


■ More
■ Equal
■ Less

Engagement



Understanding and applying 2 concepts



Conclusion



Schools of the future



- Focus on :
 - Student's autonomy of interests and needs
 - Enquiry/problem based learning and real-world projects
 - Connections with community (e.g. internships)
 - Extended learning relationship (mentors, parents, tutors, experts, peers)
 - Helping students towards mastery
- Big Picture Learning Schools / Learning Futures programme

Future research



- “Gamified Peer Learning”:
 - Based on flipped classroom
 - Group learning and peer tutoring
 - Enquiry based learning and personalized projects
 - Smaller assignments that are check-marked
 - “Reputation points” for helping others
 - Encouraging environment (work and engagement as the basis for the necessary grades)

Final thought



With the success of this and similar methods, other “foundation-shaking” practices could gain more open access to the “under-structure” of our school system.

At that point even the traditionalists and policymakers will have to consider the...**restart**.



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