



U.S. Higher Education:

# Fiscal Constraints, Increased Demand and Online Education

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2014 Annual PAC (UK) Conference in Collaboration with TPAC (USA)  
Public Leadership in an Age of Austerity

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# Overview – Contestability and Conflict

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- Societal Leaders are encouraging increased access to higher education in the U.S.
  - **President Obama**
  - **Governor O'Malley**
- The Recession of 2008 has meant austerity across most of higher education in the U.S.
- Provision costs passed on to students in the form of higher tuition and fees.
  - **Ballooning – hopefully not bubbling/bursting of student debt**
- Still, enrollments at institutions of higher education in the U.S. continue to rise, or, not fall.
- With these ideas, so far, the facts point to a largely fiscal problem, maybe with the promised economic recovery it will all go away.

# Overview — Contestability and Conflict

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- There are some significant issues in the production and use of the higher education “product”
- Many institutions appropriately engage the access component of their missions
- Students are changing
  - **requiring more and more leveling or foundational courses to help ensure their success**
  - **Student retention and success has become a rallying cry at most institutions**
- Graduates are not getting the “jobs” they used to
  - **The economy has been suffering.**
  - **The “promise of higher education” not adequately explained.**
  - **A very real threat to social mobility and the dream.**
- Institutions are spending more funds outside of the domain of their “core mission.”

# Overview — Contestability and Conflict

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- Many of us conclude that we don't have the pieces needed to complete the puzzle
- Our purpose today is to look at each of these broad forces impacting higher ed. in the U.S.
- Each is interesting in its own light, there are nuances and demands.
- If we are to be successful as educators we will need to either complete or change the puzzle.
- What we can't do is declare victory and "go home."



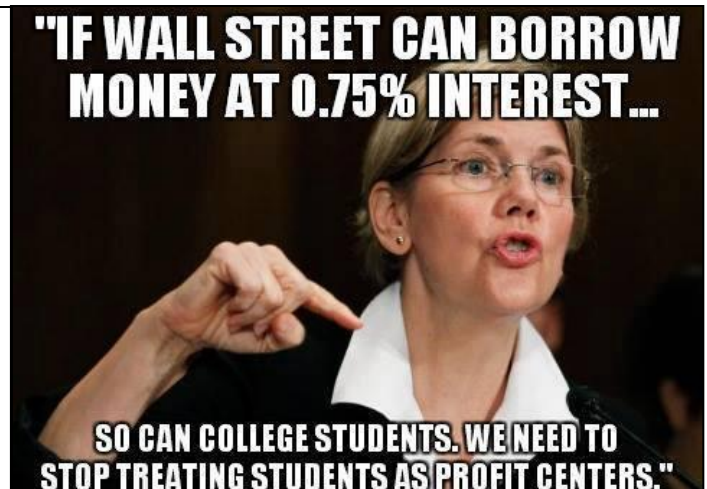
Image Source:  
<http://www.creativerealities.com/innovationist-blog/bid/58189/Missing-Pieces-in-the-Healthcare-Puzzle-An-Innovationist-s-View>

# Realization of Temperament

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- We need to understand what we are trying to do as educators
  - involves a synthesis and management of these trends.
  - There are successful models of universities out there today
  - We need to make students part of the solution instead of part of the problem
  - Overall funding is not likely to increase in the next five years, however the disposition (use) of those funds can be altered.

Elizabeth Warren, our senior senator from Massachusetts, has worked tirelessly on behalf of students and their families. This type of rhetoric generates several particular types of “teachable moments” for our students.



# President Obama's Call to Universities

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- Outline major provisions in terms of goals and strategies to achieve those goals.
- Working with leaders from Universities some stark facts were recognized
  - The US has lost its edge as a world leader in university education
  - The US has lost its edge as a well educated country in terms of percent of adults with a college degree
- Two broad goals set:
  - Make the U.S. a world leader in college attainment
  - An additional 5 million community college graduates
- Four initiatives to achieve these goals
  - Help for middle class families to afford college
  - Contain costs in U.S. Higher Education
  - Strengthen community colleges
  - Improve transparency and accountability throughout the system.

Source: Naylor, Lorenda, 2014, "The College Crisis: Fiscal Constraints, Increased Demand and President Obama's Call to Action," PA Times, American Society for Public Administration. <http://patimes.org/college-crisis-fiscal-constraints-increased-demand-president-obamas-call-action/>



# Maryland's Call to Universities

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- Governor Martin O'Malley has called for universities in Maryland to
  - Make college more affordable.
  - To increase retention and success rates.
  - Make a university education more accessible.
- An earlier version of the goals included working to get 50% of the adult population in Maryland to be college graduates by 2020.
- In response we see universities beginning to
  - admit more non-traditional students
  - Increase institutional aid to support lower income students.
  - Begin to think seriously about student success.

# A Period of Austerity at Universities

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- Outline major signs of austerity in higher ed.
- The economic recession has impacted both federal and state level funding at U.S. colleges and universities.
- It appears that in most recent year some funding is restored across the U.S. (on year-to-year) basis.
- A good measure – Percentage Change in State Spending per Student Enrolled adjusted for inflation FY08 – FY 14
- Across the states this measure declined by 25.3% (not enrollment weighted)
- Three biggest cuts came in Arizona (-48.3%), Louisiana (-43.2%), and South Carolina (-41.6%)
- Two states increased Alaska (3.5%), North Dakota (36.8%)

Source: Center on Budget and Policy Priorities, <http://www.cbpp.org/files/5-1-14sfp.pdf>

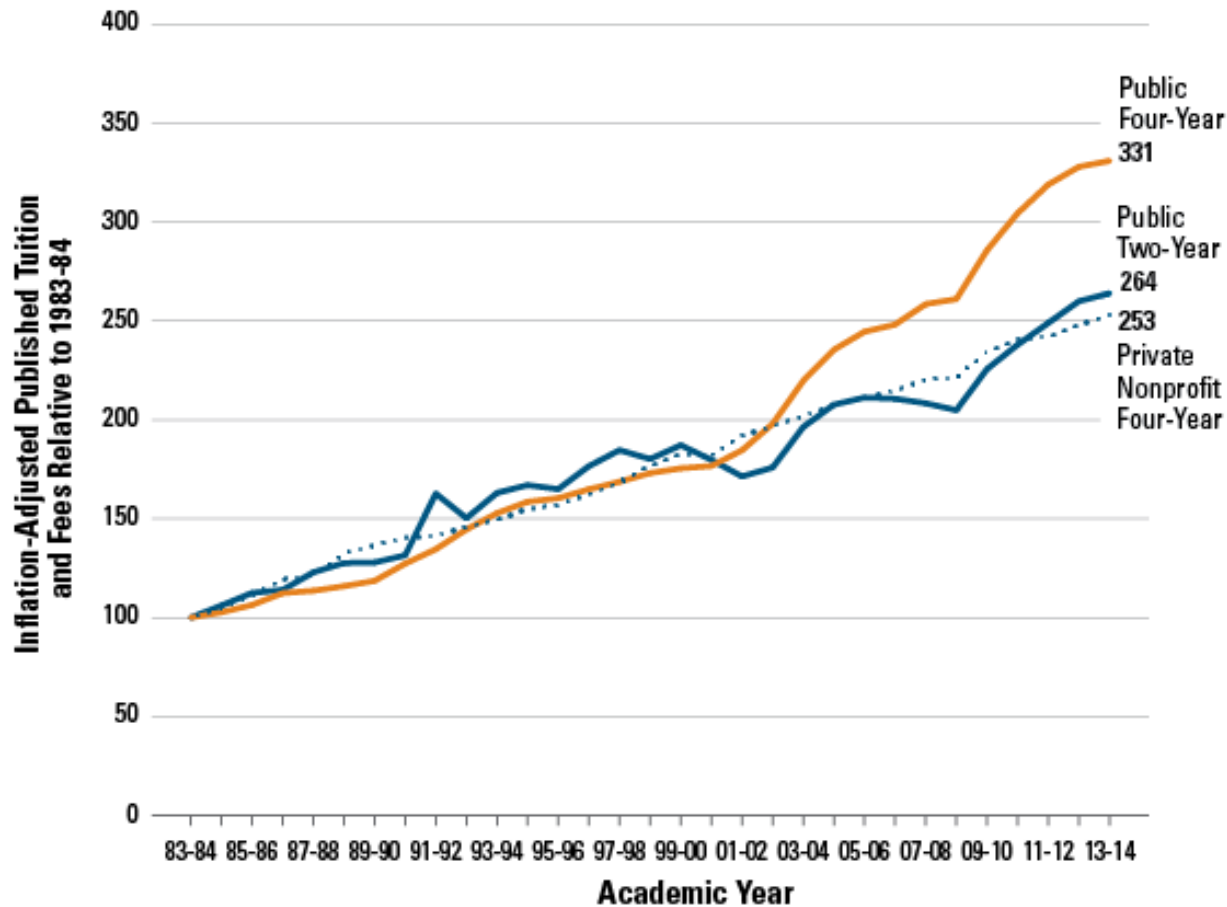


# Rising Tuitions - 1

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- As public support has diminished in relative importance, tuitions and fees have risen.
- Some measurement issues to consider
  - Institutions engage in discounting, particularly as of late
  - Inflation, both good and bad uses in comparisons.
- Use inflation adjusted published tuition charges based on 1983.
- Over the 30 years from 1983-84 at public 4 year institutions the value is 331. This means that adjusting for general inflation, the tuition charges increased by 3.31. Note over 30 years the increase in prices due to general inflation was 177% or by a multiplicative factor of 1.77

# Rising Tuitions -2



Source: College Board, <https://trends.collegeboard.org/college-pricing/figures-tables/published-tuition-and-fees-relative-1983-84-sector>

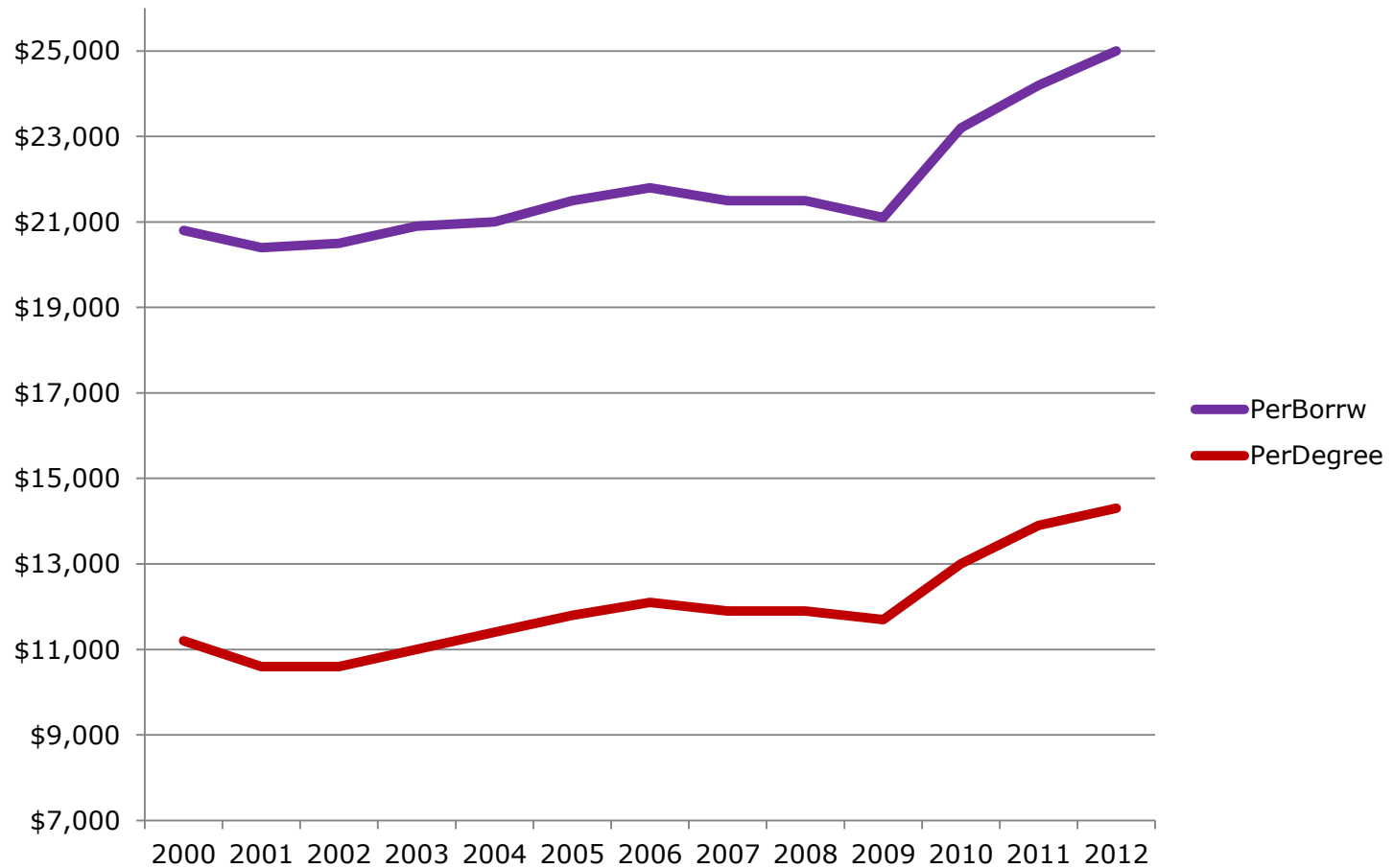
# The role of student debt

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- Provide some findings .
- 57% of public college bachelor's degree recipients (2012) borrowed an average of \$25,000. This was \$4,500 more than 2002 graduates.
- Average Debt per borrower and average debt per degree recipient have been increasing since 2001.
- Graphic Next Page.

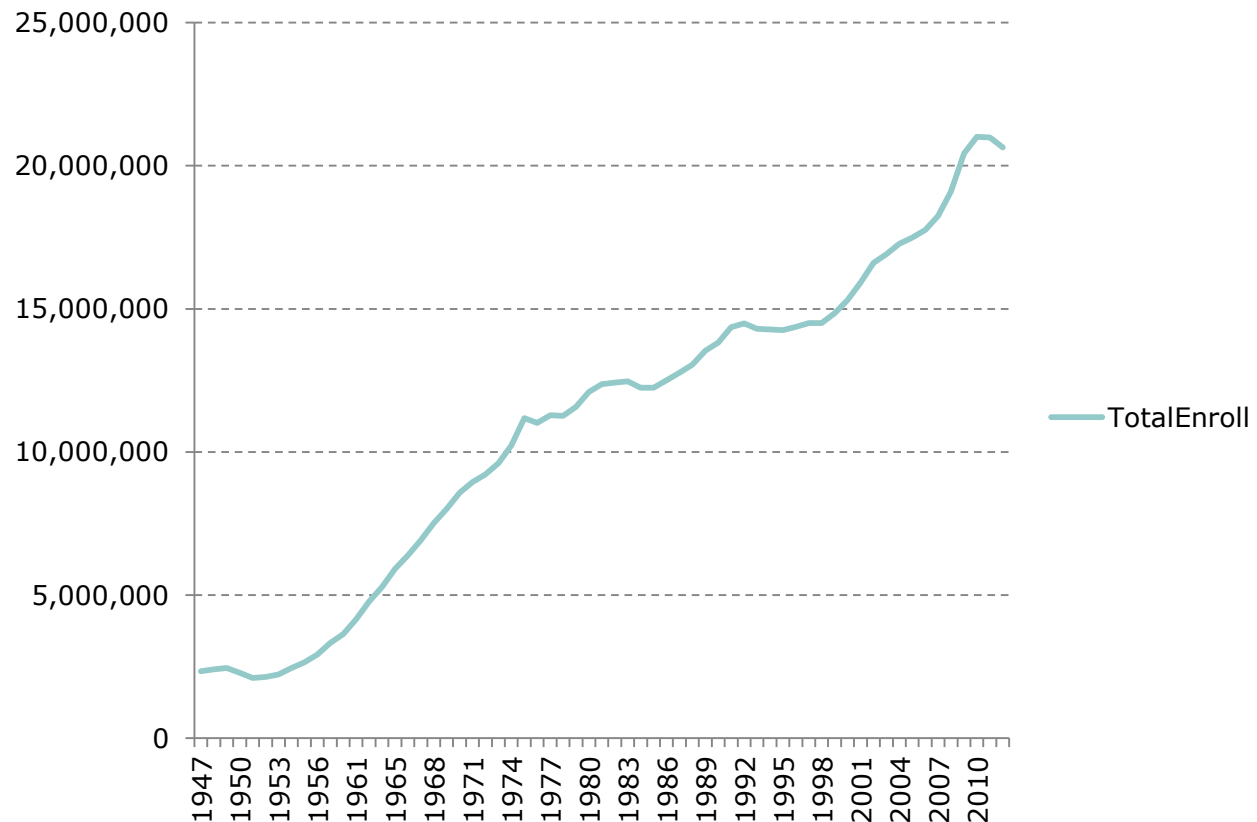
<http://trends.collegeboard.org/student-aid/figures-tables/average-debt-levels-public-sector-bachelors-degree-recipients-over-time>

# The role of student debt



# Enrollment Trends – More Students

- **Fall Enrollment Totals, all U.S. Degree Granting Institutions, 1947 through 2012.**



Source: Digest of Education Statistics. Table 303.10. Total fall enrollment in degree-granting postsecondary institutions



## Enrollment Trends – More Diverse Students

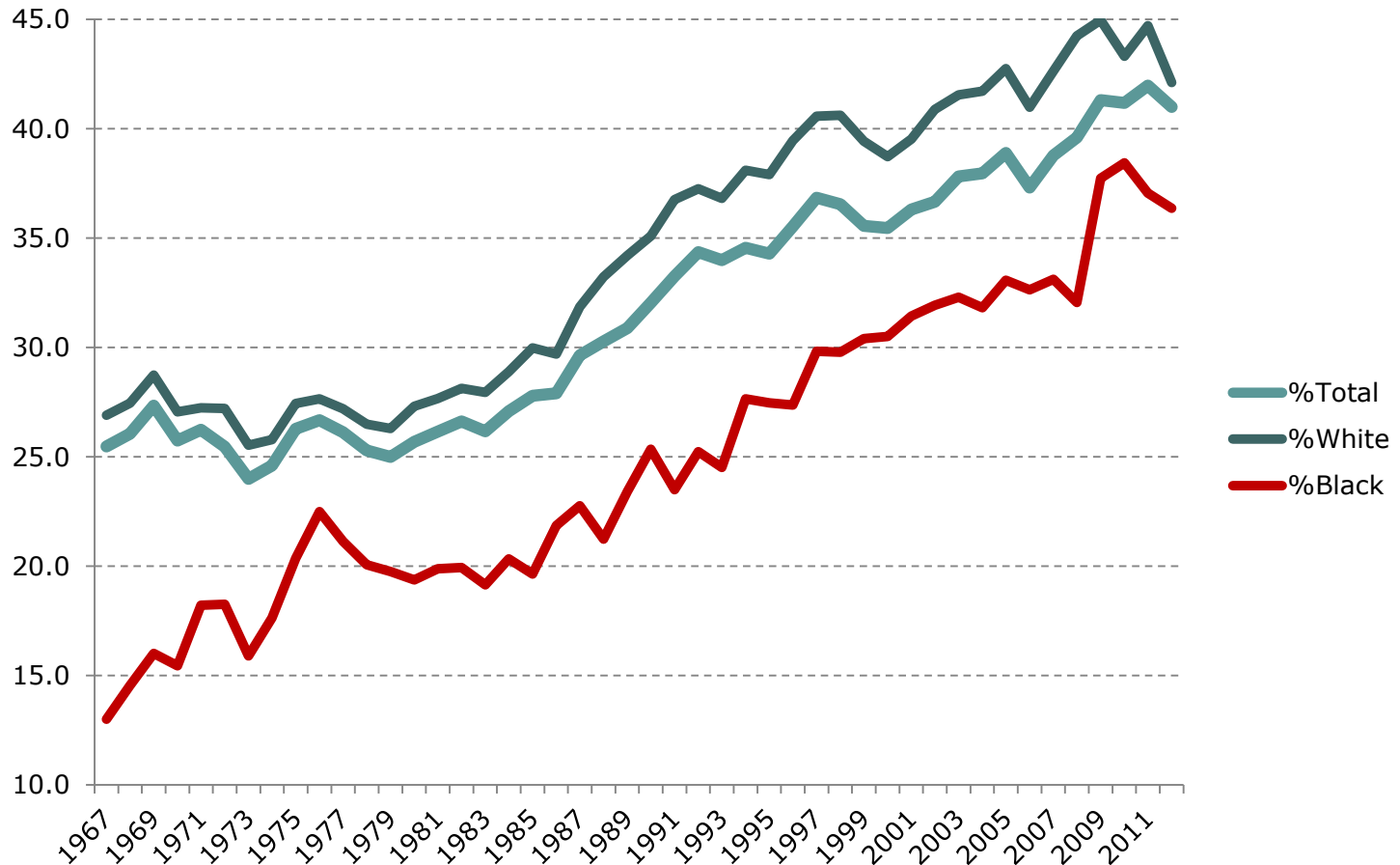
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- Every indication is that of the total students going to degree granting institutions, there is greater diversity by ethnic, gender, and socio-economic status.
- The following chart provides the simplest measure possible showing annual rates of enrollment by broad ethnic group. Rates are defined for the 18-24 year old segment of the appropriate population.
- In 1967 25.5% of all individuals between 18 and 24 were enrolled. Rate for whites 26.9%, blacks 13.0%
- In 2012 41.0% of all individuals between 18 and 24 were enrolled. Rate for whites 42.1%, blacks 36.0%

Source: Digest of Education Statistics. Table 303.10. Total fall enrollment in degree-granting postsecondary institutions

# Enrollment Trends – More Diverse Students

- By all measures diversity increasing.



Source: Digest of Education Statistics. Table 303.10. Total fall enrollment in degree-granting postsecondary institutions

# Graduates/careers/fiscal perspective

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- Graduates are not getting the “jobs” they used to
  - The economy has been suffering.
  - The “promise of higher education” not adequately explained.
    - **A return based model.**
    - The returns vary significantly.
  - The Economist recently noted
    - A computer science graduate from Stanford University earn \$1.7m premium
    - A humanities/English degree from Florida International University is a negative premium \$132,00

Sources: The Economist, April 5, 2014 “Making College Cost Less,” pp. 11-12.  
Data available for free public review at <http://www.payscale.com/college-roi/>





# Graduates/careers/fiscal perspective

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- A very real threat to social mobility and the dream.
  - David Autor, *Science*, May 23, 2014 “Skills, Education, and the Rise of Earnings Inequality Among the ‘Other 99 percent’”
  - In empirical terms the income redistribution caused by differing levels of educational attainment is very large; while it is a faulty comparison, he finds it bigger than imposing equality on the 1%.

# Graduates/careers/fiscal perspective

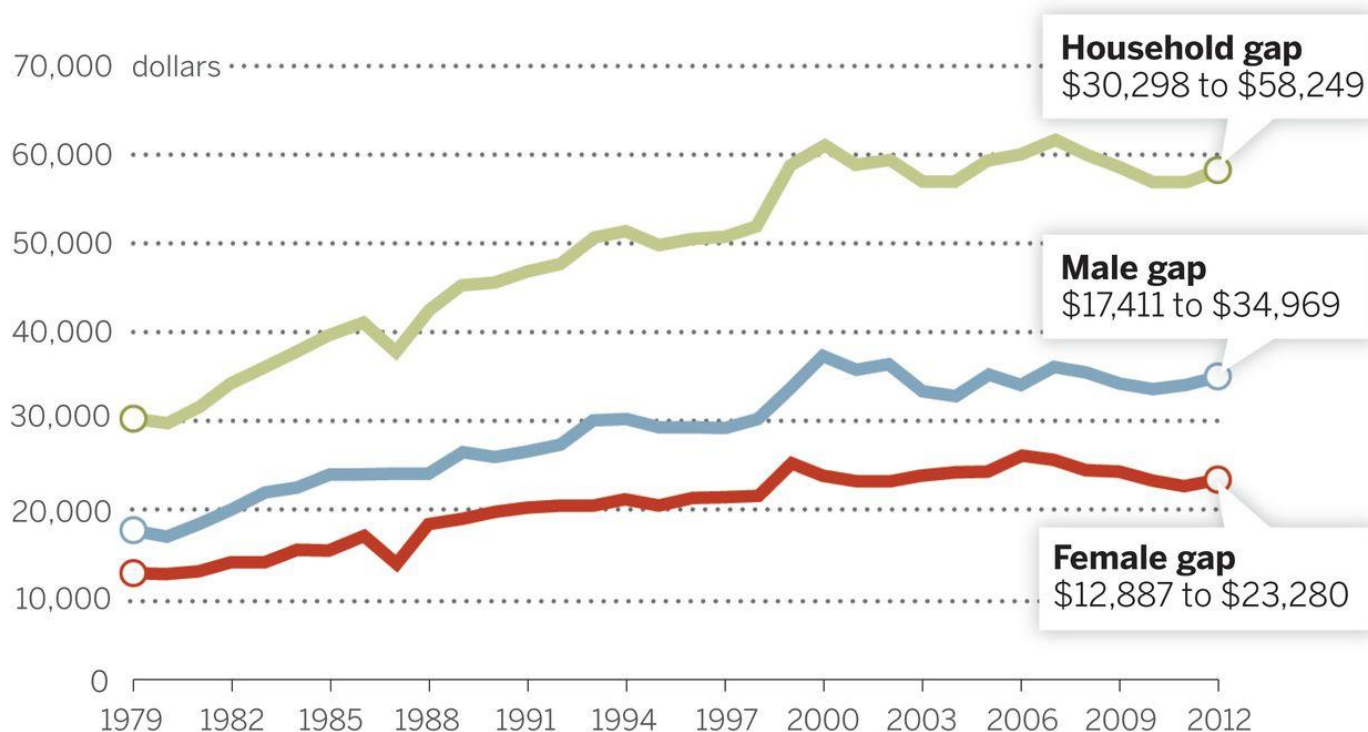
- This graphic depicts the average earnings, as of 2011, in the U.S. by degree level.
- Produced by The College Board – it appears probably in every high school guidance office in the U.S.



**Fig. 1 College/high school median annual earnings gap, 1979–2012.** Figure is constructed using Census Bureau P-60 (1979–1991) and P-25 (1992–2012) tabulations of median earnings of full-time, full-year workers by educational level and converted to constant 2012 dollars (to account for inflation) using the CPI-U-RS price series.

## College/high school median annual earnings gap, 1979–2012

In constant 2012 dollars

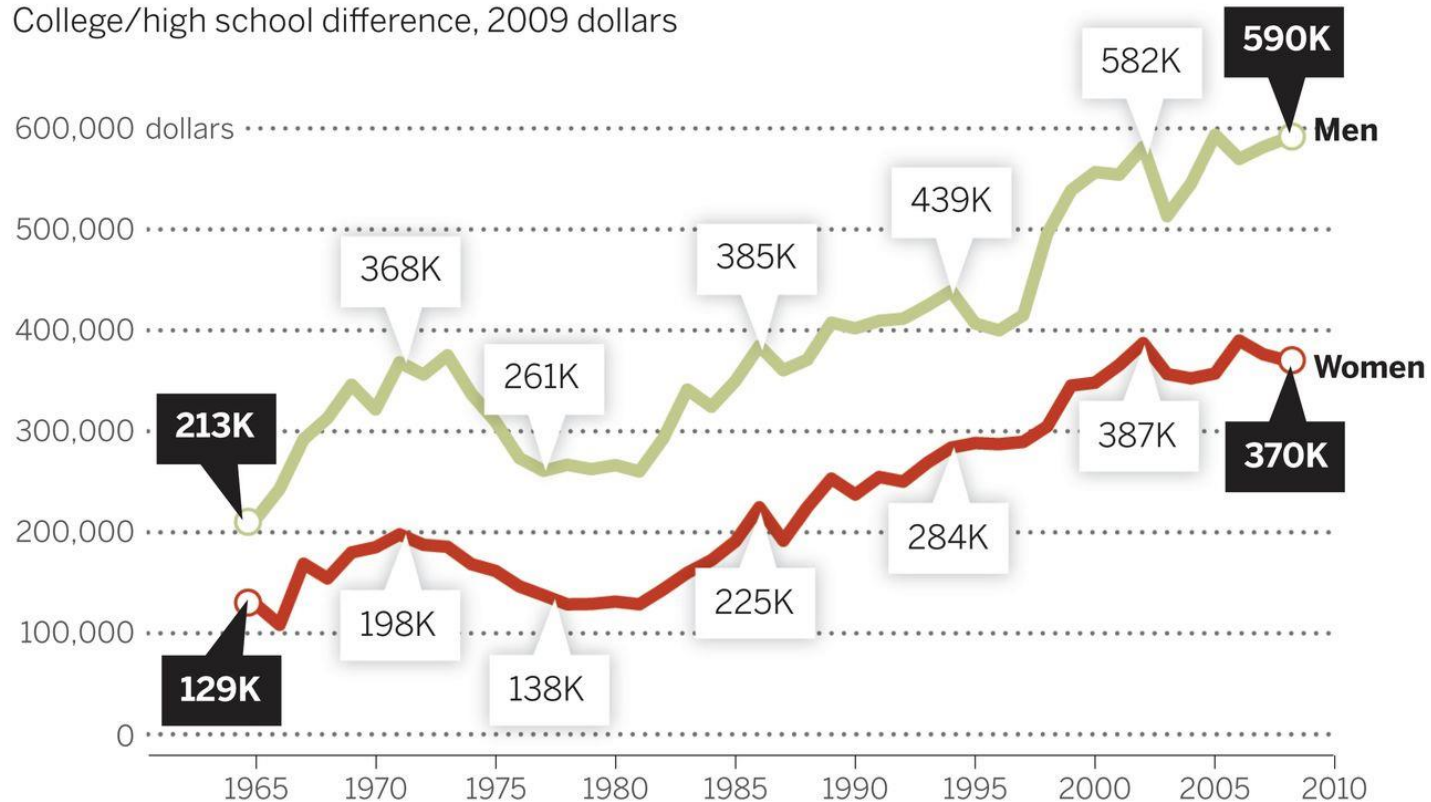


D H Autor Science 2014;344:843-851

**Fig. 4 Present discounted value of college relative to high school degree net of tuition, 1965–2008.** Reproduced from Avery and Turner with permission of the American Economic Association (39)

## Present discounted value of college relative to high school degree net of tuition, 1965–2008

College/high school difference, 2009 dollars

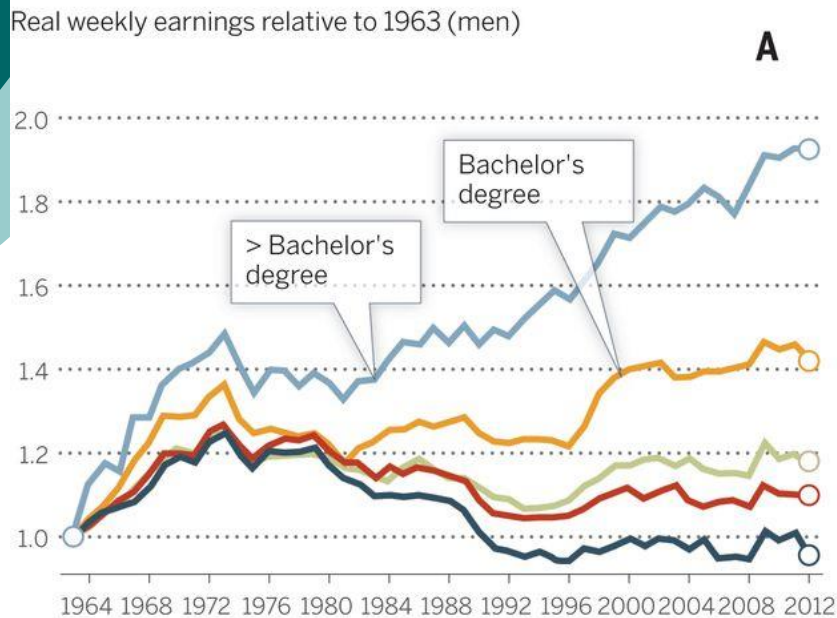


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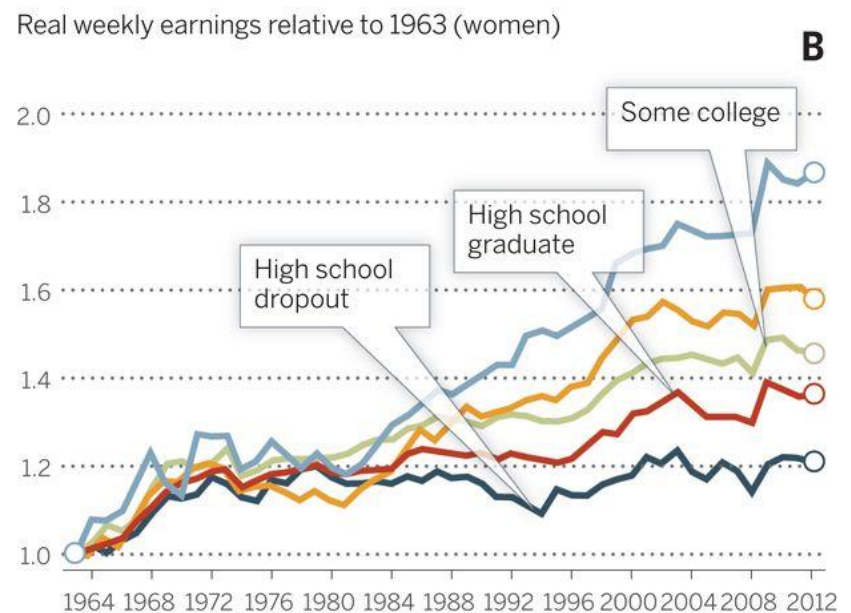


**Fig. 6 Change in real wage levels of full-time workers by education, 1963–2012.(A) Male workers, (B) female workers.**

**Changes in real wage levels of full-time U.S. workers by sex and education, 1963–2012**



For Men



For Women



# Uses Of Funds at U.S. Universities

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- Overall fiscal picture – universities basically forced to have a balanced budget – use “reserves” as a safety valve.
- Major Sources of Funds
  - Tuition/fee
  - State/Federal Support – not tuition assistance.
  - Auxiliary/Related enterprises
  - Research “Sales”
  - Endowment Income
- Major Uses of Funds
- Success and Use of Funds.
- Do a “little case study” top ranked – mid ranked – low ranked schools say groups of 10 compare %’s and compare success rates.



# Revenue Categories - Sources

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- Changing Landscape, Increased Reliance on Tuition
  - Facing a more retail environment with discounts offered within institutions. Not well understood.
- Data Revenue per FTES at Public Institutions By Highest Degree Awarded
- Examine % of revenues accounted for by tuition and state grants (excluding financial aid).
- Tuition percentage is net of all forms of institutional financial aid (discounts) but counts state and federal student aid.
- Across the board we see decreased state support made up for by, surprise, tuition income.

Source: College Board <https://trends.collegeboard.org/college-pricing/figures-tables/revenue-sources-public-institutions-over-time>

# Revenue Categories - Sources

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- Changing Landscape, Increased Reliance on Tuition
- Data Revenue per FTES at Public Institutions

<b>Doctoral Institutions</b>		
Year	% Tuition	% State
2000	25%	48%
2005	29%	36%
2010	36%	29%

<b>Masters Institutions</b>		
Year	% Tuition	% State
2000	32%	55%
2005	40%	46%
2010	48%	38%

<b>Bachelor Institutions</b>		
Year	% Tuition	% State
2000	30%	62%
2005	39%	59%
2010	46%	51%





# Expenditure Categories - Sources

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- Within the U.S. there are at least 3 separate sets of standards regarding the specification of expenditure categories.
  - There are similarities, of course, and the differences are justified in light of institutional missions, reason for reporting, consumer of final information.
- National Association of College and University Business Officers (NACUBO)
- Integrated Postsecondary Education Data System (IPEDS)
- The Delta Cost Project – relies on IPEDS makes modifications.

# Expenditure Categories Generally Agreed

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- Instruction
  - Research – Separately Funded
  - Public Service
  - Student Services
  - Academic Support
  - Institutional Support
  - Scholarships and Fellowships
  - Plant Operations
  - Auxiliaries
- Comparisons prior to 2008
  - Merger of
    - Institutional Support
    - Scholarships and Fellowships
  - Merger of
    - Plant Operations
    - Auxiliaries



# Some Numbers Based in IPEDS data

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- Looked at three of the major categories of US colleges and universities
  - Public Research
  - Public Masters
  - Public Masters
  - Excluded Private Institutions, and Community Colleges
- Expenditure Categories
  - Instruction
  - Research
  - Student Services
  - Public Service
  - Academic Support
  - Institutional Support
  - Operations and Maintenance



# Some Numbers Based in IPEDS data

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- Inflation Adjusted Expenditures by Full Time Equivalent Students (FTES).
- Percentage Change 2000-2010 and 2000-2005
- Did growth in instruction and academic support categories exceed they overall growth in spending within that class of universities?

# Some Numbers Based in IPEDS data

- Generally spending on instruction and academic support was less than over all spending increases

Type of Institution	Expense Category	% Change 2000-2010	% Change 2005-2010
<b>Public Research</b>	<b>Instruction</b>	<b>below</b>	<b>below</b>
	<b>Academic Support</b>	<b>above</b>	<b>below</b>
	<b>Overall</b>	<b>11.60%</b>	<b>3.60%</b>
<b>Public Masters</b>	<b>Instruction</b>	<b>above</b>	<b>below</b>
	<b>Academic Support</b>	<b>below</b>	<b>below</b>
	<b>Overall</b>	<b>4.1%</b>	<b>0.07%</b>
<b>Public Bachelors</b>	<b>Instruction</b>	<b>above</b>	<b>below</b>
	<b>Academic Support</b>	<b>below</b>	<b>below</b>
	<b>Overall</b>	<b>3.80%</b>	<b>2.10%</b>



# IPEDS data – US News and World Report

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- Took 3 groups of 6 schools from Top, Middle, and Bottom of US News rankings.
- Basic Idea – see relationship between spending on instruction and academic support and 4 and 6 year graduation rates.
- Essential finding – grouping by US News and World Report reveals no discernable patterns – however exercise is interesting.
- There are differences in graduation rates and spending patterns.

# IPEDS data – US News and World Report

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- Top Tier
  - Princeton, Harvard, Yale, Stanford, University of Chicago, and Massachusetts Institute of Technology
  - Average 4 Year Grad. Rate 86% - 6 Year Rate 95%
  - Average % of Budget 47%
- Middle Tier
  - Buffalo (SUNY), California-Riverside, Colorado State, Temple, California-Los Angeles.
  - Average 4 Year Grad. Rate 46% - 6 Year Rate 71%
  - Average % of Budget 55%
- Low Tier
  - Texas-San Antonio Georgia State, Indiana State, Toledo Portland State, Kent State.
  - Average 4 Year Grad. Rate 18% - 6 Year Rate 42%
  - Average % of Budget 59%



## Part 2: Online Education in Higher Ed

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### Context:

- Decreased state funding for public institutions
- Focus on increasing enrollment
- No space or \$ for new buildings
- Online education generate tuition



# OE has increased exponentially

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- 2002-2006, OE enrollment for U.S. degree granting institutions doubled from 1.6 to **3.5 million** students taking at least 1 online course
- Compounded annual growth rate of **21.6 %** for OE compared to 1.5% for total student population  
(Sloan, 2007)

## continued

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- In 2006, two-thirds (66%) of all US colleges and universities reported offering fully online programs.
- The largest institutions (15,000+), have the highest # of students enrolled online
- All institutions have online growth rates in double digits (Fall 02-06)

(Sloan, 2007)



# Online Growth by Type of Institution, Fall '02-'06

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Doctoral/Research	21.7%
Masters	19.6%
Baccalaureate	6.9%
Associates	24.0%
Specialized	22.3%

(Sloan, 2007, p. 6)



# US Trends

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- Over 6.5 million students taking at least 1 online course (Fall 2011)
- 2002-2011, OE as % of total enrollment increased from 11% to 32% for US degree granting institut.
- Overall enrollment growth in higher ed is down, but up for OE

## continued




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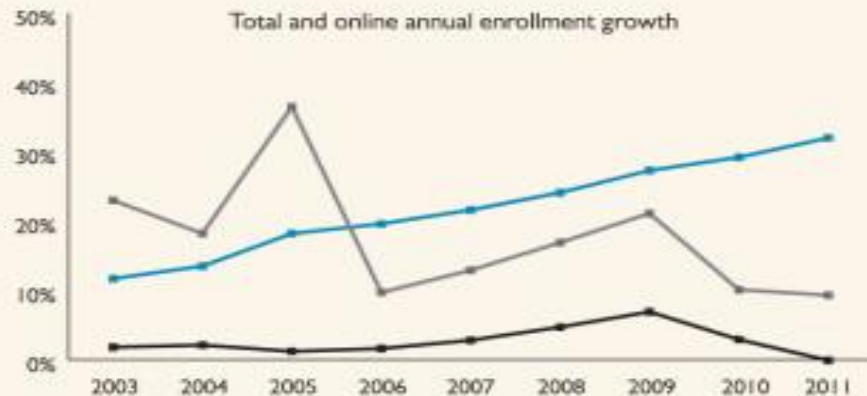
- 77% of academic leaders rate OE learning outcomes as the same or superior to face to face
- Retention rates main barrier for OE success

## How many students are learning online?



Year after year the number of online enrollments steadily increases its proportion of total enrollments starting at 11.7% in 2003 and increasing to 32% in 2011.

-  Online enrollment as a percent of total enrollment
-  Annual growth rate of online enrollment
-  Annual growth rate of total enrollment



### CHANGING COURSE: TEN YEARS OF TRACKING ONLINE EDUCATION IN THE UNITED STATES

Survey by I. Elaine Allen and Jeff Seaman, Babson Survey Research Group; based on responses from over 2,800 Chief Academic Officers (CAOs) and academic leaders; Infographic by Pearson Learning Solutions

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# Source

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- Survey of 2,800 Chief Academic Officers
- Babson Survey Research Group & College Board. "Changing Course: 10 Years of Documenting OE in the US."
- [http://sloanconsortium.org/publications/survey/changing\\_course\\_2012](http://sloanconsortium.org/publications/survey/changing_course_2012)



# Is OE Mainstream?

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- 59 % of all institutions & **79%** of public institutions surveyed identify OE as long term growth strategy – (Sloan 2007)
- OE considered part of **mainstream higher education** for most academic institutions (Sloan 2005, 2006, Babson Research Group, 2012)





# Literature

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## Initial Debate

Compared the 2 mediums (Face to Face & Online)

Research Question: “Can a computer mediated course offer the same education as traditional classroom?”

# Initial Debate

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## Proponents

- No significant difference (review 355 studies) in student outcomes, perception, attitudes technology (Russell, 1999)
- Student more comfortable expressing themselves (Oravec 1996; Ryan 1994; Mingus, 1999)
- Increases access

## Opponents

- There is a difference
- Studies are flawed
- High drop out rates
- Missing human factor (Phipps & Merisotis, 1999)
- Transactional distance – psychological (Moore, 1997)

# Current Debate: Quality of Connection

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## Transactional Distance (TD)

“the universe of teacher learner relationships that exist when learners and instructors are separated by space and/or by time”  
(Moore, 1997 p. 22).

- Relationship
- Relatedness, Psychological Separation
- Not simply geographical (exists in face to face classes)

## 3 Variables Influence TD

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1. **Dialogue** between Learners & Teachers – interaction, communication (frequency, quality)
2. **Course Structure** – flexibility vs. rigidity
3. **Student Autonomy** – independence, self motivated, organized, control



# Transactional Distance (TD)

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Moore (1997) argues that TD increases as dialogue decreases & structure increases. Student autonomy can decrease TD

# Transactional Presence (TP)

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Building on Moore's work, Shin (2002, 2003) coins the term TP to capture the feeling of **connectedness** & **availability** in online education.

*"Social Richness"*

"degree to which media are capable of making users perceive other users' **sociability, warmth, sensitivity, personality, or closeness** (Shin 2002, p. 124)



# Transactional Presence

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The feeling of students connectedness with:

1. **Teachers** TP: influences achievement
2. **Peer** TP – satisfaction & intent to persist
3. **Institution** TP (predicts overall student satisfaction (Shin 2003)).



# Background on UB

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- In 1999, UB School of Public Affairs began offering individual online MPA courses
- In 2003 began offering the entire MPA degree online
- Approximately 200+ students enrolled as MPA majors
- Estimate roughly 8-10% students will complete degree entirely online





# Research Questions

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## Transactional Presence

- Are students satisfied with Faculty contact? Peer contact?
- Does level of student satisfaction vary by gender or race?
- Does frequency and quality of contact matter?



# Methodology

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- Cross-sectional survey - online
- Students who took online MPA classes Spring 2013
- N = 71



# Respondent Profile

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## Gender

- 72% Female
- 28% Male

## Age

<34 years (57%)

## Race

52% minority (below average MPA)

# Compare Amount of Course Work

- Online course to Traditional Face to Face

	Reading	Writing	Assignments
<b>More</b>	<b>36.62% (26)</b>	<b>39.4%(28)</b>	<b>45%(32)</b>
<b>Less</b>	<b>1.4% (1)</b>	<b>2.82% (2)</b>	<b>0% (0)</b>
<b>Same</b>	<b>23.94% (17)</b>	<b>18.3% (13)</b>	<b>15.5% (11)</b>
<b>Didn't take any F2F</b>	<b>38% (27)</b>	<b>39.4%(28)</b>	<b>39.4% (28)</b>



# Course Retention

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Have you ever dropped an online course?

- 75% reported no
- 25% reported yes



# Incomplete Grade

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Have you ever taken an incomplete in an online MPA class?

- 89% reported no
- 11% reported yes



# Recommend Online Course

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Would you recommend online format to someone else?

- 86% reported yes
- 14% reported no



# Student Satisfaction with Peer Contact

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Not Very or Not at All Satisfied	16.2%
Neutral	30.9%
Satisfied	52.9%



# Quality of Faculty Contact Online

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Not Satisfied	22.1%
Neutral	22.1%
Satisfied	55.9%

# Key Findings

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Satisfaction with Peer Contact by Gender – no statistical significance ( $p = .683$ )

Satisfaction with Peer Contact by Race - no statistical significance ( $p = .794$ )

Satisfaction of Contact with Classmates by Amount of Contact with Classmates ( $p = .144$ ) (marginally sig.)

Satisfaction of Contact w/ Faculty by Amount of Contact w / Faculty ( $p = .131$ ) (marginally sig.)

## Key Findings continued

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Recommend online format by Satisfaction of contact with classmates ( $p=.009$ )

Recommend online format by Satisfaction of Contact w/Faculty ( $p=.000$ )



continued

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Overall satisfaction w/ contact with both professors & classmates is influenced by the amount of contact that students have w/ each group.

# Conclusion

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## Transactional Presence

1. Student interaction w/ faculty & peers is important
2. Frequency & Quality count!
3. Neither race or gender influence student satisfaction of contact w/ peers or w/faculty