

**“WORKING WITH DIVERSITY:  
DESIGNING COURSES BASED  
ON LEARNING STYLES.”**

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# AGENDA

1. Comparative Context - rankings & Obama
2. Economic impact of global recession on U.S. higher education - iron triangle
3. Public Affairs Education - NASPAA standards
4. Research - UB, MPA student assessment
5. Conclusion

# COMPARATIVE CONTEXT

## US lost competitive edge

- ◉ US ranks 17 out of 40 among developed countries for its education system
- ◉ U.S. lags behind other developed countries in both 4 year and 2 year degree attainment among young adults.

Table 1: Percent of population aged 25-64 with a 4-year degree in 2010\*

Rank**	Country	Percent of population
1	Norway	35
2	<b>United States</b>	<b>32</b>
3	Israel	31
4	Netherlands	30
5	Iceland	29
6	United Kingdom	28
7	South Korea	28
8	Denmark	27
9	Australia	27
10	Canada	26
11	Sweden	25
12	Japan	25
13	Switzerland	24
14	New Zealand	24
15	Finland	23
16	Poland	23
17	Estonia	22
18	Ireland	22
19	Spain	21
20	Russian Federation <sup>3</sup>	21
21	Luxembourg	21
22	Hungary	20
23	France	18
24	Greece	17
25	Belgium	17
26	Germany	17
27	Czech Republic	17
28	Slovak Republic	17
29	Chile	17
30	Mexico	16
31	Portugal	15
32	Italy	14
33	Turkey	13
34	Slovenia	13

Table 3: Percent of population aged 25-64 with a college degree in 2010\*

Rank**	Country	Percent of population	Rank**	Country	Percent of population
1	Russian Federation <sup>5</sup>	54	22	France	29
2	Canada	51	23	Chile	27
3	Israel	46	24	Germany	27
4	Japan	45	25	Greece	25
5	<b>United States</b>	<b>42</b>	26	Slovenia	24
6	New Zealand	41	27	Poland	23
7	South Korea	40	28	Hungary	20
8	United Kingdom	38	29	Austria	19
9	Finland	38	30	Mexico	17
10	Australia	38	31	Slovak Republic	17
11	Ireland	37	32	Czech Republic	17
12	Norway	37	33	Portugal	15
13	Luxembourg	35	34	Saudi Arabia <sup>6</sup>	15
14	Estonia	35	35	Italy	15
15	Switzerland	35	36	Argentina <sup>1</sup>	14
16	Belgium	35	37	Turkey	13
17	Sweden	34	38	Brazil <sup>2</sup>	11
18	Denmark	33	39	China <sup>3</sup>	5
19	Iceland	33	40	Indonesia <sup>4</sup>	4
20	Netherlands	32	41	South Africa <sup>4</sup>	4
21	Spain	31			

\* College degree is defined as those students who received either a tertiary-type A and advanced research degree or a tertiary-type B degree.

\*\* Countries are ranked in order of highest to lowest rates. However, rates shown in table have been rounded to the nearest whole number.

1. Year of reference 2003. Source: UNESCO/UIS, educational attainment of the population aged 25 and older.

2. Year of reference 2009.

3. Year of reference 2000. Source: 2000 census, Chinese National Bureau of Statistics, education level (College, University and Master and above) of 25-64 year-olds.

4. Year of reference 2007. Source: UNESCO/UIS, educational attainment of the population aged 25 and older.

5. Year of reference 2002.

6. Year of reference 2004. Source: UNESCO/UIS, educational attainment of the population aged 25 and older.

Source: OECD. See Annex 3 for notes ([www.oecd.org/edu/eag2012](http://www.oecd.org/edu/eag2012)).

Table 4: Percent of population aged 25-34 with a 4-year degree in 2010\*

Rank**	Country	Percent of population	Rank**	Country	Percent of population
1	Norway	46	20	France	26
2	South Korea	39	21	Chile	25
3	Netherlands	38	22	Portugal	25
4	United Kingdom	38	23	Hungary	25
5	Poland	37	24	Estonia	24
6	Finland	37	25	Slovak Republic	23
7	Australia	34	26	Belgium	23
8	Iceland	34	27	Czech Republic	23
9	Sweden	34	28	Russian Federation <sup>3</sup>	21
10	Japan	33	29	Mexico	21
11	<b>United States</b>	<b>33</b>	30	Italy	20
12	Israel	32	31	Greece	20
13	New Zealand	31	32	Slovenia	19
14	Denmark	31	33	Germany	19
15	Canada	31	34	Turkey	17
16	Switzerland	31	35	Austria	15
17	Ireland	30	36	Brazil <sup>1</sup>	12
18	Spain	27	37	China <sup>2</sup>	2
19	Luxembourg	26	.		

\* College degree is defined as at least a tertiary-type A degree or higher.

\*\* Countries are ranked in order of highest to lowest rates. However, rates shown in table have been rounded to the nearest whole number.

1. Year of Reference 2002.

2. Year of Reference 2000.

3. Year of Reference 2009.

Source: OECD. See Annex 3 for notes ([www.oecd.org/edu/eag2012](http://www.oecd.org/edu/eag2012)).

Table 5: Percent of population aged 25-34 with a 2-year degree in 2010\*

Rank**	Country	Percent of population	Rank**	Country	Percent of population
1	Russian Federation <sup>2</sup>	34	17	Switzerland	10
2	South Korea	26	18	<b>United States</b>	<b>10</b>
3	Canada	26	19	Sweden	8
4	Japan	24	20	United Kingdom	8
5	Belgium	20	21	Germany	7
6	Ireland	18	22	Denmark	6
7	Luxembourg	18	23	Austria	5
8	France	17	24	China <sup>1</sup>	4
9	New Zealand	15	25	Finland	3
10	Estonia	14	26	Netherlands	2
11	Chile	13	27	Iceland	2
12	Israel	12	28	Hungary	1
13	Spain	12	29	Mexico	1
14	Slovenia	12	30	Norway	1
15	Greece	11	31	Slovak Republic	1
16	Australia	10			

\* 2-year degree is defined as those students who received a tertiary-type B.

\*\* Countries are ranked in order of highest to lowest rates. However, rates shown in table have been rounded to the nearest whole number.

1. Year of Reference 2000.

2. Year of Reference 2009.

Source: OECD. See Annex 3 for notes ([www.oecd.org/edu/eag2012](http://www.oecd.org/edu/eag2012)).

# COLLEGE DEGREE ATTAINMENT IS LINKED TO ECONOMIC MOBILITY

President Obama set 2 goals:

1. U.S. have highest proportion of college graduates in the world by 2020; and
2. U.S. have 5 million community college graduates by 2020.



# ECONOMIC MOBILITY

A child in the bottom quintile (20%) of the income distribution, who does not earn a college degree has 5% chance making it into the top quintile.

With a college degree, that child's chance of making it into the top quintile nearly quadruples.



# HOW DOES THE US

make college “accessible, affordable, and attainable for all American families” (President Obama)

Source:

<http://www.whitehouse.gov/issues/education/higher-education>

# OBAMA'S PLAN

- 1) help for middle class families to afford college,
- 2) cost containment in U.S. Higher Education,
- 3) stronger community colleges, and
- 4) improved transparency and accountability throughout the system.

Source: <http://www.whitehouse.gov/issues/education/higher-education>

# MAKING COLLEGE AFFORDABLE

1. Increased Pell Grants by \$905 to \$5635 and increased participation with 50% more recipients than in 2008. (Health Care & Education Reconciliation Act)
2. Expanded Education Tax Credit under the American Opportunity Tax Credit of 2009, families who earn up to \$180,000 can receive up to \$10,000 tax credit for 4 years of college tuition. (American Recovery & Reinvestment Act of 2009)

# CONTINUED

3. Pay as you Earn” program cap student loan repayments at % of monthly income -15% since 2009 for some students & beginning in 2014 - 10% for some students.
4. Keep interest rates low on student loans. Subsidized Stafford loans will continue to pay low rate of 3.9 percent (Bipartisan Student Loan Certainty Act of 2013).

# GLOBAL ECONOMIC CONTEXT

## 2008-2009 Global Financial Crisis

- ⊙ Resulted in global recession (2008-2012)
- ⊙ U.S. govt implemented fiscal stimulus & institutional bailouts (Baily & Elliott, 2009)
- ⊙ U.S., State level govt:
  - Budget cuts
  - Service reduction
  - Performance Measurements

# NEGATIVE IMPACT ON US HIGHER ED

- ◉ Credit ratings for both private & public institutions were down graded (Martin, 2013)
- ◉ State govt funding for higher ed decreased over past 30 years (TCHE, 2012)
- ◉ Greater public scrutiny, parents want to know value of college education



# US HIGHER EDUCATION

## Under Attack

- ⦿ Increasing/soaring tuition costs
- ⦿ High student loan debt (exceeds \$1 trillion)
- ⦿ Only 60% of undergraduates complete in 6 years (Ripley, 2012)
- ⦿ Fewer jobs for graduates
- ⦿ Quality concerns: does college matter?

# IRON TRIANGLE

## ⦿ Affordability

- Rising tuition costs
- Increasing student loan debt

## ⦿ Access

- Fewer students can afford to pay for college.
- Of low-income students who attend college only 25 % graduate in 6 years.

## ⦿ Quality

- Student core competencies don't increase

# ACCESS

- ◉ 1/2 of all high school graduates enroll in college today compared to 1/3 in 1980
- ◉ In fall 2010, 18 million undergrad & 3 million grad students enrolled in college (Lipka, 2012)  
61% white, 36% minority (14% black, 13% Hispanic, 6% Asian, 6% other)
- ◉ “Only 3% of students at top 146 colleges come from bottom 4<sup>th</sup> of household income” (Stengel, 2012, p. 31)

# GRADUATION RATES

- Of 60% who graduate with bachelors degree in 6 years:
  - Only 43% of Black students graduate compared to 66% of White students
  - Limits employment opportunities, careers, and financial earnings (over \$1 million during lifetime).

# COLLEGE TUITION COSTS

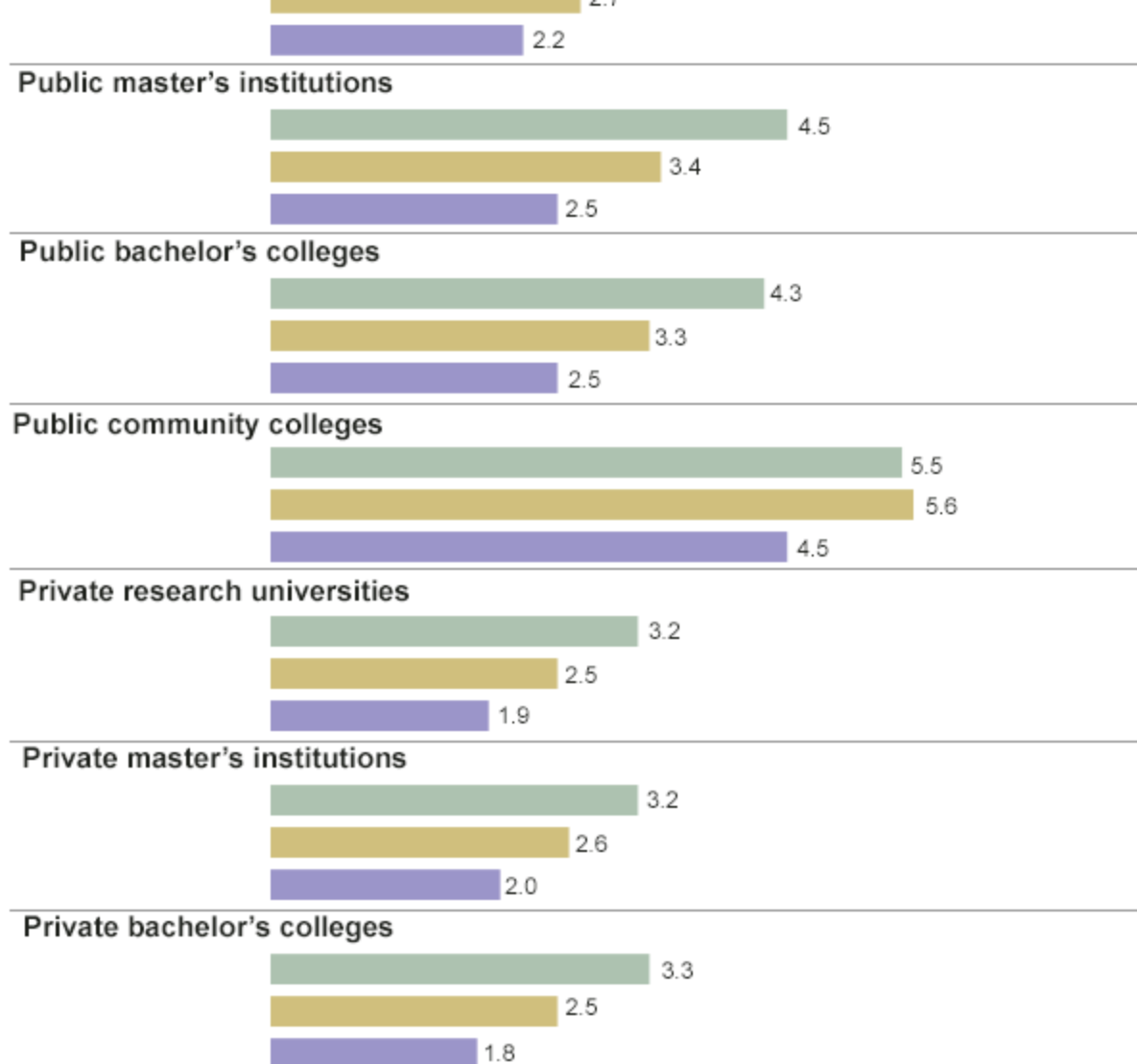
- ◉ From 2000 to 2012, annual tuition at 4 year private increased from \$21,010 to \$28,500
- ◉ Public institutions increased tuition from \$4,590 to \$8,240 (Lipka, 2012)
- ◉ 123 U.S. colleges charge over \$50,000 in tuition, fees, room and board

# ACADEMIC TO ADMINISTRATION

From 2000-2012:

- 28% increase in administrative positions
- Full-time faculty positions declined, while part-time faculty (adjuncts) increased
- Faculty salaries remained flat
- Tuition costs result of administrative bloat & reduction in state allocation

(Delta Cost Project. <https://chronicle.com/article/Administrator-Hiring-Drove-28-/144519/>)



Note: Full-time-equivalent faculty members include research assistants.

Source: Delta Cost Project

# QUALITY

Americans questioning the value of a college education. Is it worth it?

*Academically Adrift* (Arum & Roska, 2010) argue that college is not worth the money.

- Based on pre & post tests learning assessments, college transcripts of 2,300 undergraduates at 24 institutions and found that student core competencies (writing, complex reasoning, critical thinking) minimally increased after 2 years.
- 45 percent of students had no improvement in 3 areas



# U.S. INSTITUTIONS OF HIGHER ED

- ◉ Must be competitive
- ◉ Operationally efficient
- ◉ Demonstrate value - student competencies

# PUBLIC AFFAIRS EDUCATION

- ◉ Increase its value
- ◉ Focus on quality
- ◉ Ensure graduates develop core competencies, marketable skill sets

# NASPAA STANDARDS

Accrediting body for graduate level public affairs & public administration education

The 2009 standards (“new”) require learning outcomes, universal core competencies

National Network & Association of Public Affairs & Administration (NASPAA)

# NASPAA, COMPETENCIES, DOMAINS

- 1) “lead and manage in public governance,
- 2) participate in and contribute to the public policy process,
- 3) analyze, synthesize, think critically, solve problems, and make decisions;
- 4) articulate and apply a public service perspective; and
- 5) communicate and interact productively with a diverse and changing workforce and citizenry”

(NASPAA Accreditation Standards, Adopted October 16, 2009).

# LEARNING STYLES

## Definition:

*cognitive, affective & physiological* behaviors that serve as stable indicators of how learners perceive, interact & respond to learning environment (Keefe, 1979).

# 3 DIMENSIONS OF LEARNING STYLES

1. Cognitive: information processing habits representing the learner's typical mode of perceiving, thinking, problem solving, and remembering
2. Affective: motivational processes viewed as the learner's typical mode of arousing, directing, and sustaining behavior.
3. Physiological: biologically-based modes of response founded on sex-related differences, personal nutrition and health & accustomed reactions to the physical environment. (Keefe, 1979. pp. 4,8,11 & 15)

# LEARNING STYLES

- ⦿ “most important concept to demand attention in education...is the core of what it means to be a person” (Guild and Garger, 1985, p. viii).
- ⦿ Studies have shown that identifying a student's learning style & providing appropriate instruction in response to that style can contribute to more effective learning (Claxton & Murrell, 1987).

# RESEARCH

- ◉ focuses on Field Independence v Dependence
- ◉ measures Cognitive learning style
- ◉ assessing "analytical as opposed to a global way of experiencing the environment" (Keefe, 1979, p. 9).



# COGNITIVE STYLES

## Field Dependent/Global

- ◉ perception dominated by the overall organization of field
- ◉ rely upon environment for structure, sensitive to social cues
- ◉ interpersonally oriented, rely on external stimuli,
- ◉ seeks reinforcement from others
- ◉ short attention span
- ◉ view teacher as another individual
- ◉ respond best to learning that evokes feelings & experiences
- ◉ learning is social experience

## Field

### Independent/Analytical

- ◉ Perception dominated by parts of field & experienced as discrete.
- ◉ use internal structure (not environment) analyze information, solve problems independently
- ◉ achievement oriented, active, self-motivated, competitive, impersonal, task oriented
- ◉ prefer formal learning, view the instructor as source of information
- ◉ greater reflectivity

(Witkin, et al, 1971; Witkin et al, 1977; Witkin and Goodenough, 1981).

# MEASURING COGNITIVE STYLES

Field independence/dependence measured:

- 1) Body Adjustment Test (BAT),
- 2) Rod and Frame Test (RFT)
- 3) various embedded figured tests

(Witkin and Goodenough, 1981).

## GROUP EMBEDDED FIGURES TEST (GEFT)

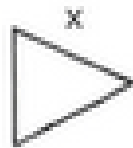
- ◉ test booklet, 25 complex test figures plus 2 sample figures.
- ◉ 8 simple forms identified w/ capital letter are printed on the back cover of booklet
- ◉ task presented is to find a simple figure located in a more complex design
- ◉ simple figure is to be outlined in pencil.
- ◉ Part 1: practice set consisting of 7 which are not scored (tests task comprehension)
- ◉ Part 2 & 3 consists of 18 figures.

# GEFT SCORING

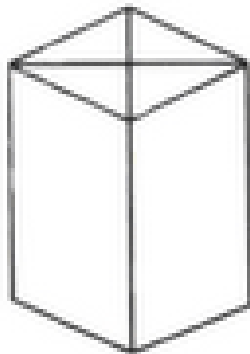
- ◉ visually comparing traced simple figures with those provided in a special scoring key.
- ◉ Scores range from 0 to 18.
- ◉ Lower scores indicate a field dependent (FD global learner), higher scores reflect tendency towards field independence/analytical learner (FI).
- ◉ cut-off point between FI's and FD is somewhere between 12 and 13 on the GEFT. (MacNeil, 1980)


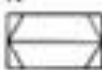



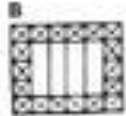








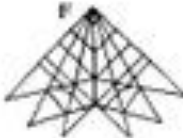



# GROUP EMBEDDED FIGURES TEST

Here is a simple form which we have labeled "X":



This simple form, named "X", is hidden within the more complex figure below:



Target	Simple background	Complex background
<b>A</b> 	<b>A</b> 	<b>A</b> 
<b>B</b> 	<b>B</b> 	<b>B</b> 
<b>C</b> 	<b>C</b> 	<b>C</b> 
<b>D</b> 	<b>D</b> 	<b>D</b> 
<b>E</b> 	<b>E</b> 	<b>E</b> 
<b>G</b> 	<b>G</b> 	<b>G</b> 

# RESEARCH QUESTIONS

- 1) Who are UB, MPA students? (demographics)
- 2) Do cognitive styles of UB, MPA students differ? (based on GEFT scores)
- 3) What is the relationship of cognitive styles to preferred instructional technologies? (syllabus review, faculty interviews)

## Application

Become more responsive to different cognitive styles of UB students (pedagogy)

# UB, STRATEGIC PLAN

1.4: Close the achievement gap among UB student populations.

1.7 maintain a data-based understanding of the factors that contribute to UB students' success

Source: UB Strategic Plan, Preliminary Draft May 2013

Identify proven strategies to improve the academic performance of students whose FI/FD styles are incongruent w/ academic work.

# DATA COLLECTION

- ◉ University of Baltimore (UB), MPA students at Baltimore campus (only)
- ◉ Traditional MPA classes only
- ◉ 1 faculty administered GEFT in all 14 MPA courses, Spring 2013
- ◉ Over a 2.5 week time period April 6- 23, 2013



# RESPONSE RATE

100% Faculty Participation - 14/14 MPA classes

- ◉ Short notification - exceptional colleagues

99% Student Response Rate

- ◉ 207 students attending class
- ◉ - 7 excluded/not eligible (non MPA degree)
- ◉ - 59 already completed GEFT (students take 2-3 classes)

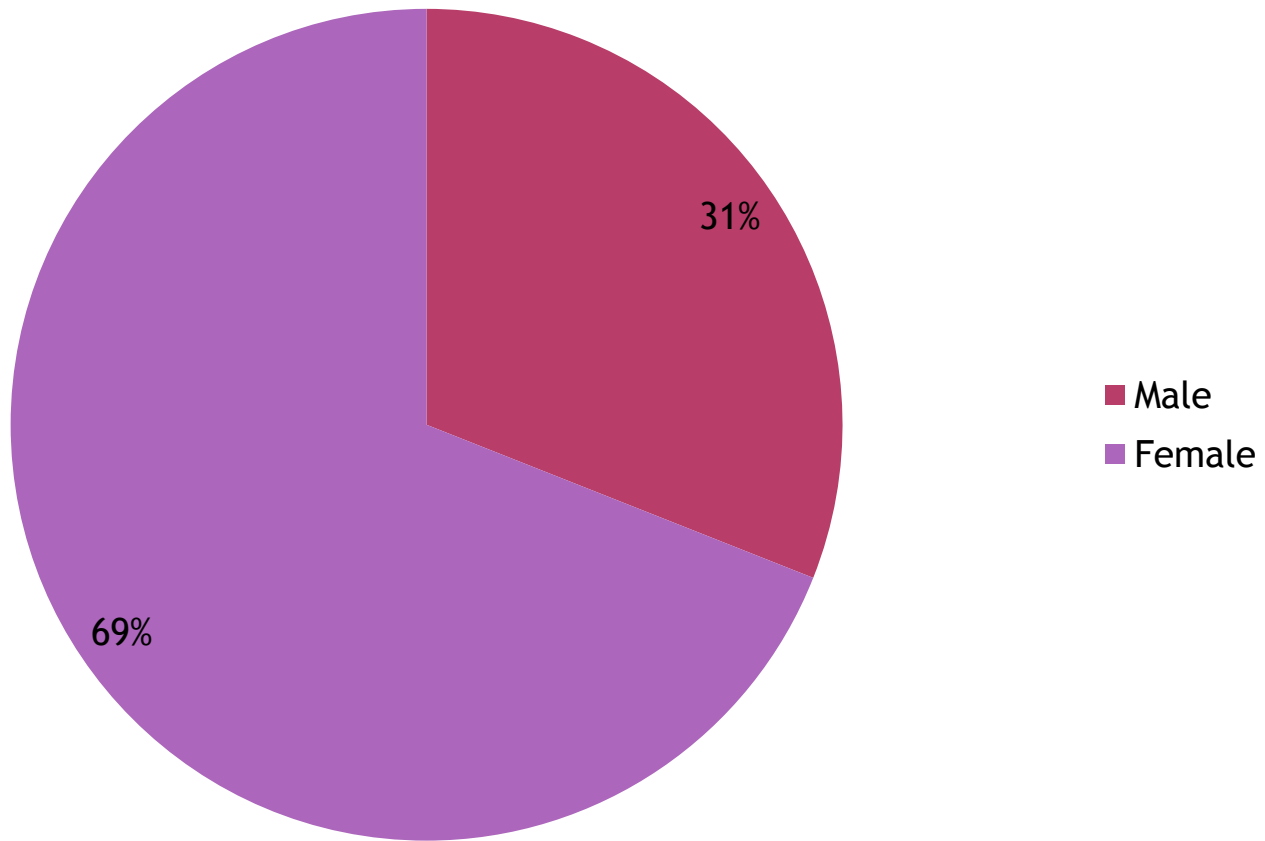
141 - 1 refusal = 140 - 7 incomplete demo sheet

N = 133 (usable responses)

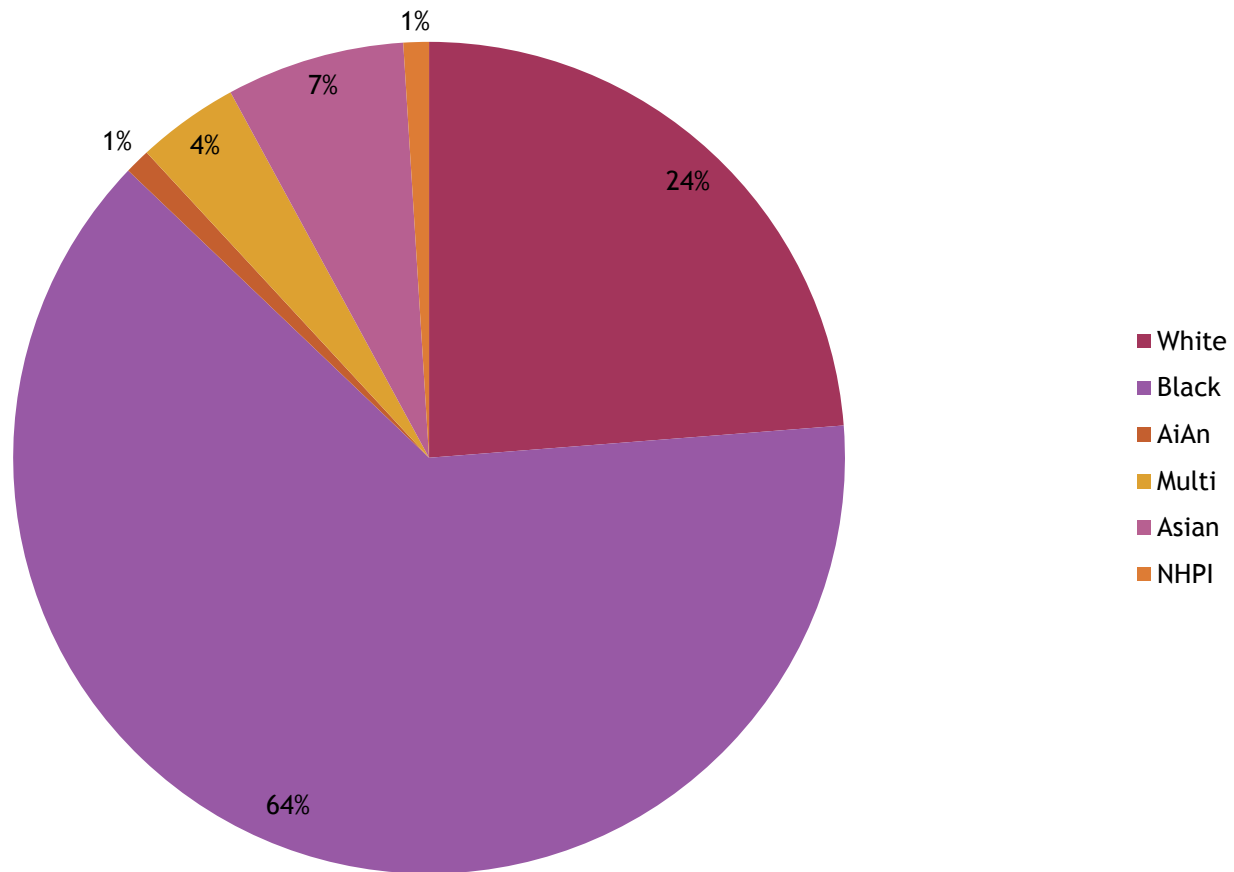
# DESCRIPTIVE STATISTICS

- ◉ 64% Single
- ◉ 69% Female
- ◉ 64% African American
- ◉ 95% non-Hispanic
- ◉ 68% between the age 22-34
- ◉ 57% earn <\$70,000, 19% live in poverty
- ◉ 56% undergrad degree social sciences
- ◉ 78% Field Dependent - Global Learners

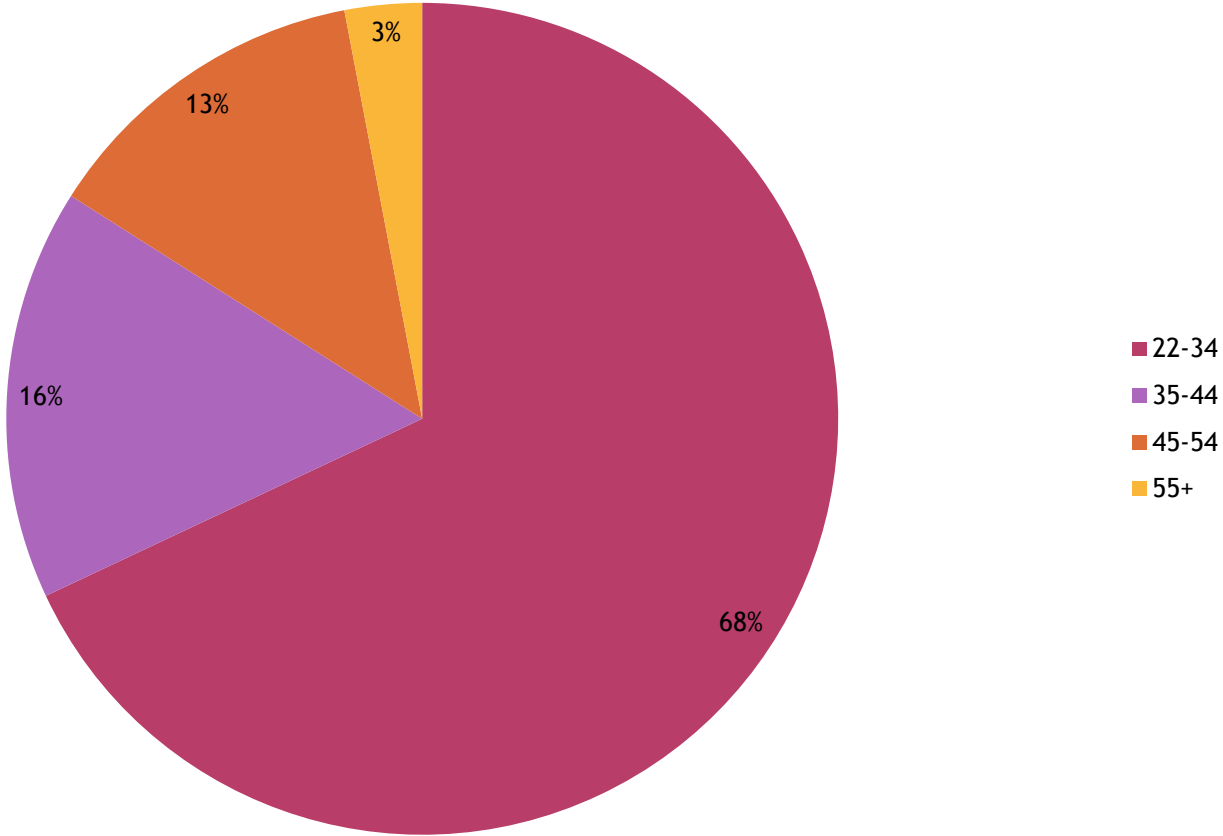
# SEX



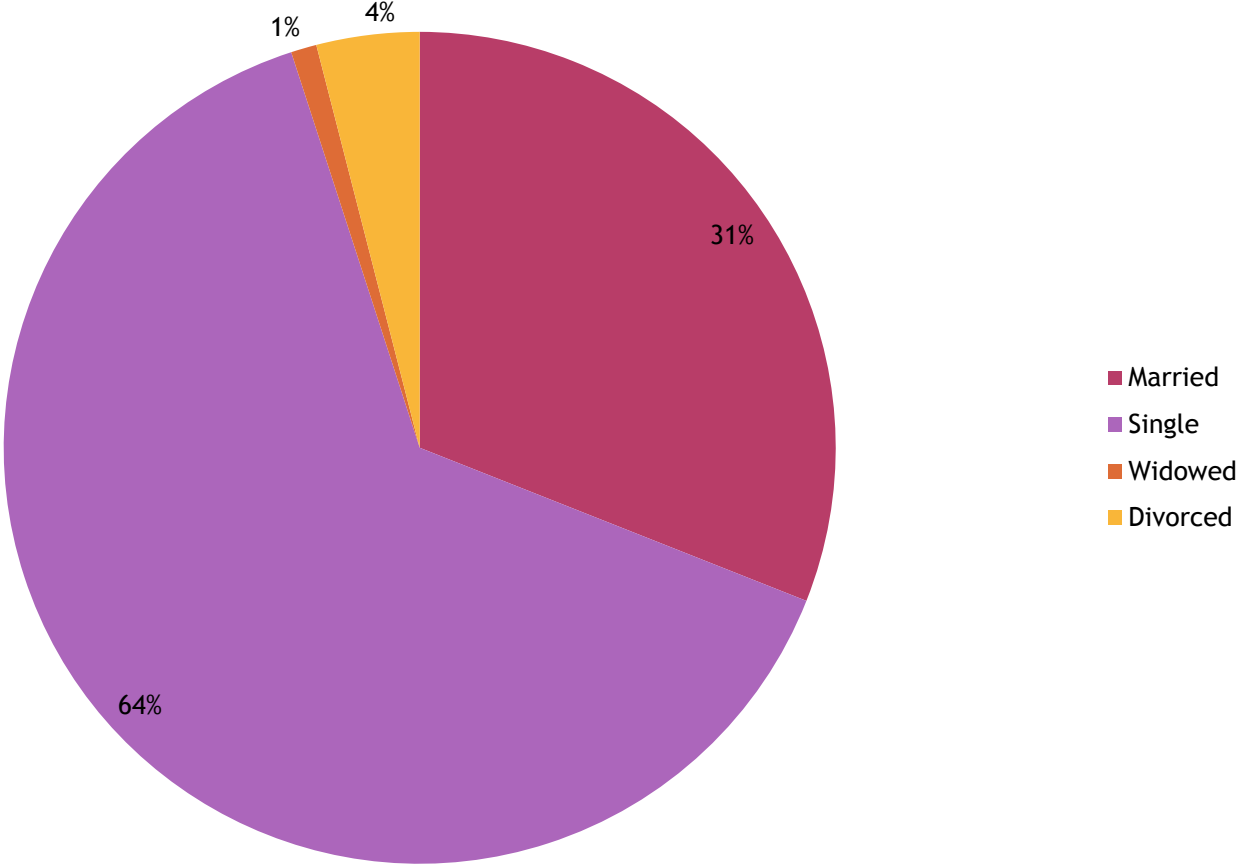
# RACE



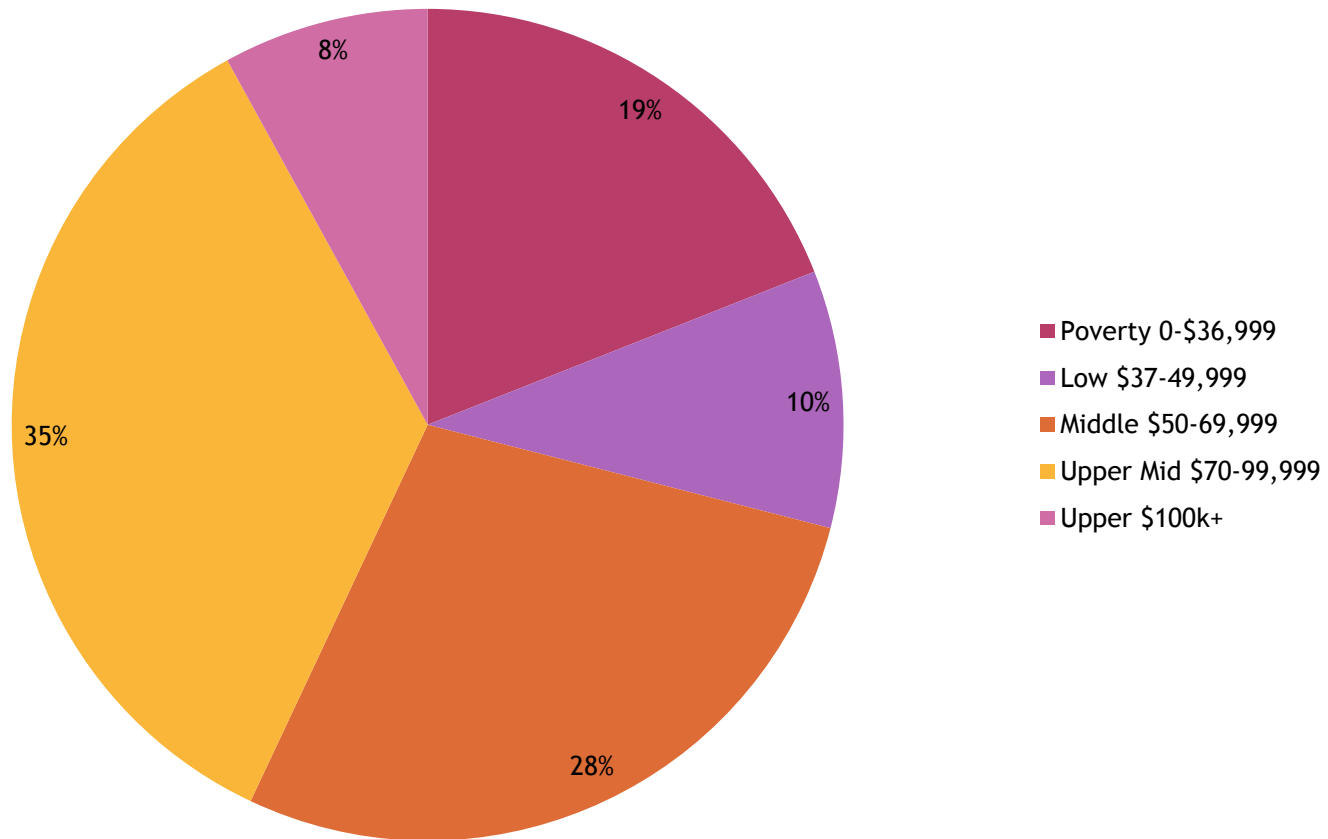
# AGE



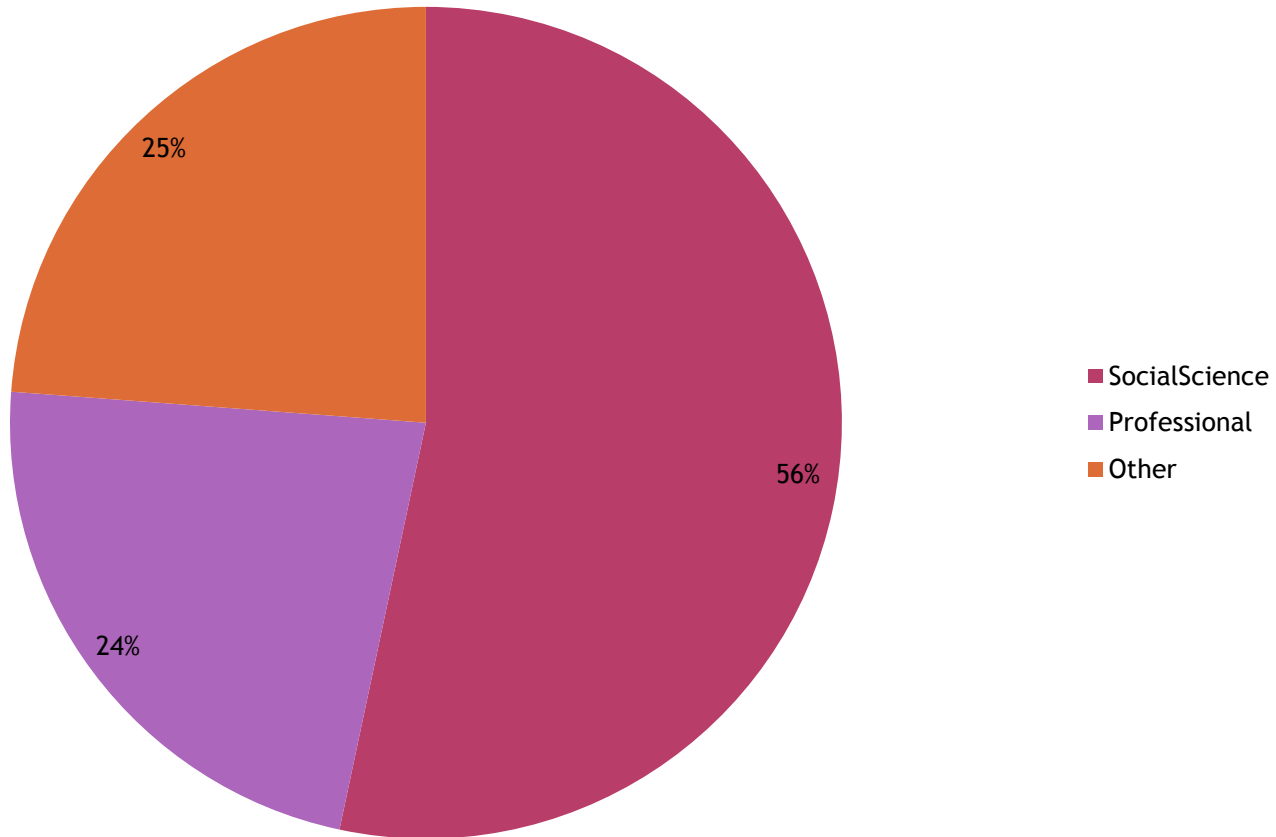
# MARITAL STATUS



# MEDIAN INCOME



# UNDERGRADUATE DEGREE





# OF THOSE LIVING IN POVERTY

- ⦿ 80% are female (n = 20)
- ⦿ 64% are black (n = 16)

# STATISTICAL ANALYSIS

Analysis of Variance (ANOVA) used to test statistical difference in means - determine correlation between GEFT scores and student demographics

# KEY FINDINGS

- ◉ 78% of UB, MPA students classified as FD/Global learners, 22% FI (analytical)
- ◉ No difference in GEFT scores by gender, type of undergrad degree
- ◉ GEFT scores varied by age & race when subset for White and Black. African Americans were 85% more likely to have a GEFT score of 11 or below compared to whites (59%) (chi p.0002)

# GEFT SCORES BY RACE & AGE

Race	n	Mean	Standard Deviation	p value
Black	83	5.59	4.38	<.001
White	32	10.19	4.95	
Other	12	10.25	5.31	<.004
Total	133			
<b>AGE</b>				
22-34	93	8.0	5.1	<.014
35-44	22	5.3	3.8	
≥ 44	18	4.4	4.7	<.014
Total	133			

# AGE DISCUSSION

- 22-34 year old group differed from the over 44 year olds group ( $p < .014$ ), although neither of these 2 age groups differed from the middle group (35-44)
- Both young & old students were more likely to generate GEFT score of Field Dependent
- Perhaps younger students do not yet have the work experience or skill set while older students may need to refresh analytical skills

# RACE DISCUSSION

- GEFT scores differed by race (t test 2), correlation between Black students and lower GEFT scores
- Black students more likely to score lower on GEFT than White students

Literature supports this finding that Blacks have lower academic scores than white, but differences attributed to SES and threat of stereotyping (Steele, 1999)

# CONTINUED

Black students who attend highly selective schools attain equal academic achievement to White students at same selective schools (Bowen & Bok, 2000).

Stereotypes are greatest threat to black achievement, not ability or preparation (Steele, 1999)

# GEFT SCORES BY GENDER & DEGREE

Gender	n	Mean	Standard Deviaton	p value
Female	91	8.0	5.1	(n.s.) <.285
Male	42	5.3	3.8	
Total	133	4.4	4.7	
DEGREE				
Social Science	70	6.91	5.18	(n.s.) <.859
Professional	28	7.25	4.96	
Dual	33	7.48	4.93	
Total	133			





# DISCUSSION GPA

- MPA Curriculum designed to teach both qualitative & quantitative skills.
- Students who perform poorly in quantitative course can off-set GPA by performing well in qualitative course

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# MPA CORE COURSES BY TYPE

## Global/FD

PUAD 621 PP HRM

PUAD 623 Bureaucracy

PUAD 624 Org Theory

PUAD 625 Innovat PM

PUAD 627 Legal, Ethical

PUAD 798 Capstone -  
both

## Analytical/FI

PUAD 622 Budgeting

PUAD 626 IR Mgmt

PUAD 628 Statistics

PUAD 629 P Evaluation

PUAD 630 Analytic Tech

PUAD 798 Capstone -  
both

9 credits specialization

# NEXT STEPS

## MPA Faculty Discussion -

- assess student assignments (classify as FD, FI, or both)
- increase analytical skills of students
- reach global learner - include experiential learning
- Expand pedagogy

# CONCLUSION

## Findings:

1. provide insight into the low % of Black students in STEM programs
2. responding to FID Cognitive styles should be the essence of a "learner-centered teacher."
3. Community based, experiential learning model may serve as better teaching models for global learners.

# EVIDENCE-BASED STRATEGIES FOR IMPROVING THE ACADEMIC PERFORMANCE OF UNDERGRADUATES

- ◉ Preliminary analyses of our data revealed significant differences in levels of FI and FD between white and black students
- ◉ Black students more likely to be FD
- ◉ Research has shown its possible to assist "FD" students to become "bi-cognitive" which can enhance student success

# CONCLUSION CONTINUED

## Pedagogical Research

- Tailored educational strategies, ...educators can better support field-dependent learners in didactic as well as clinical learning environments.
- Selection & effectiveness of educational strategies, the use of technology to deliver optional instructional environments, and the use of meta-cognitive training for field-dependent



# REFERENCES

Please email me at [lnaylor@ubalt.edu](mailto:lnaylor@ubalt.edu) for list of references.

Naylor, Lorenda A., Blue Wooldridge, and Charles Lyles. "U.S. Public Administration Programs: Increasing Academic Achievement by Identifying and Utilizing Student Learning Styles" *Teaching Public Administration Journal* (Volume 32 Issue 1, March 2014).