

Does Game-Based Learning Work?

Three Studies Exploring The Relationship Between Game-Based Learning and Academic Achievement

Rick Blunt, Ph.D.
November 27, 2007

- ▶ What do we know
- ▶ Business course
- ▶ Economics course
- ▶ Management course
- ▶ Discussions

Teaching with video games...

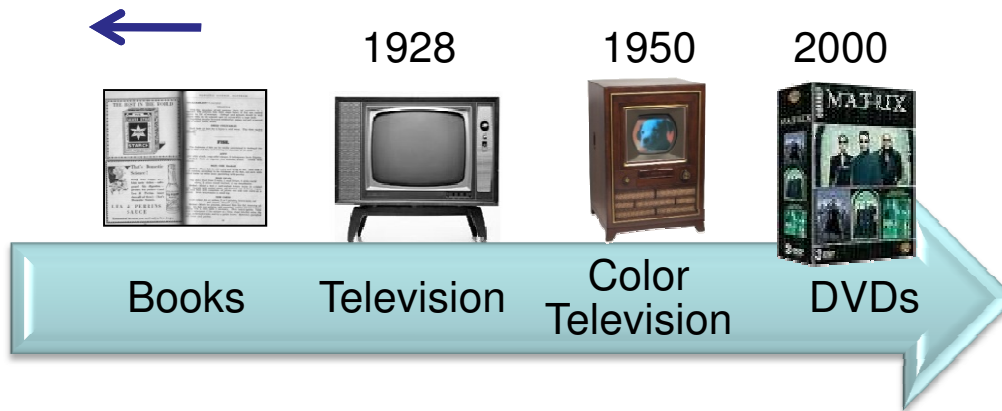
So what?

Who we are dealing with?

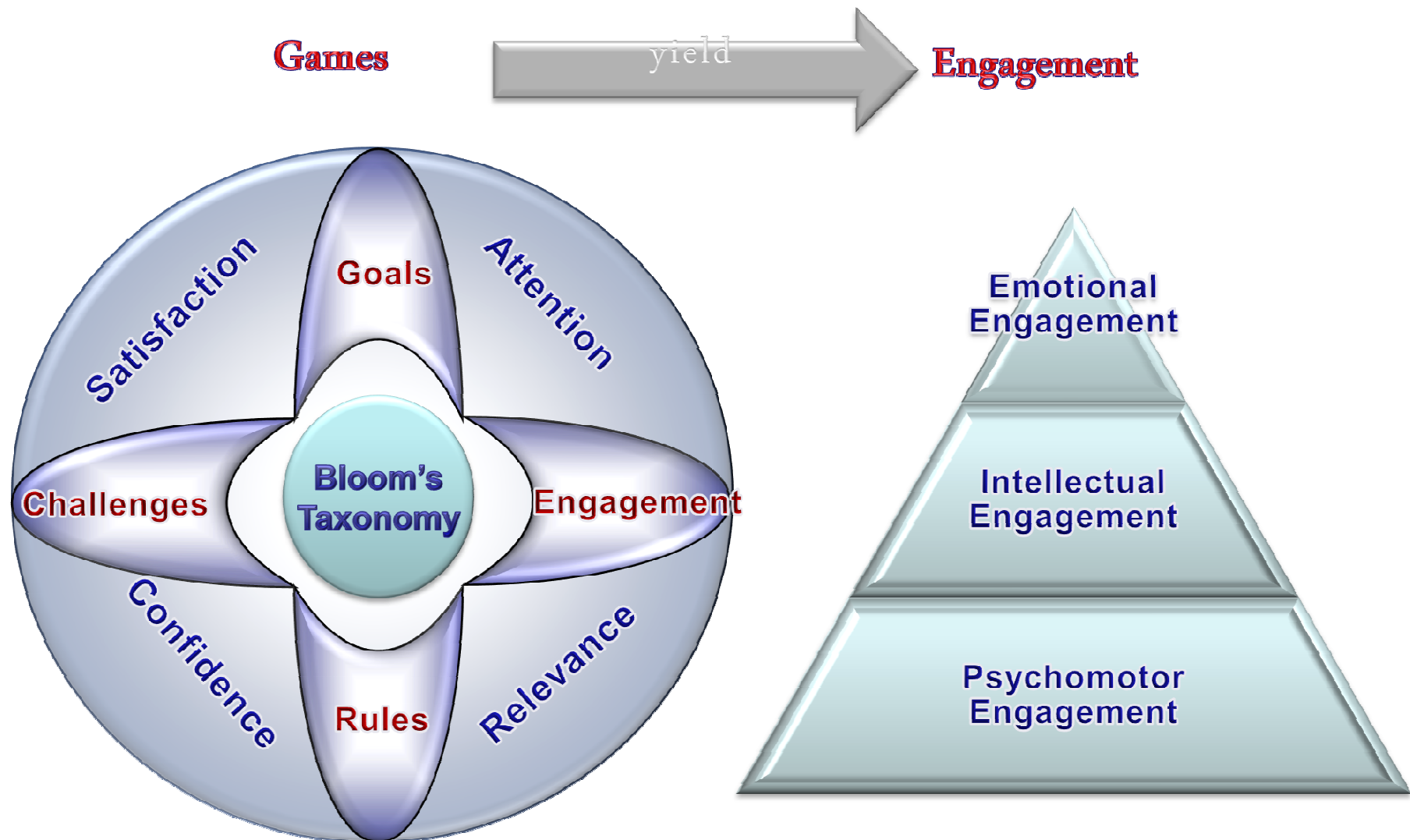


An arsenal of consumer electronics

Do we understand who we are dealing with?



Game-based learning model



The generational button gap

PS-3



40 inputs



F-16

14 inputs

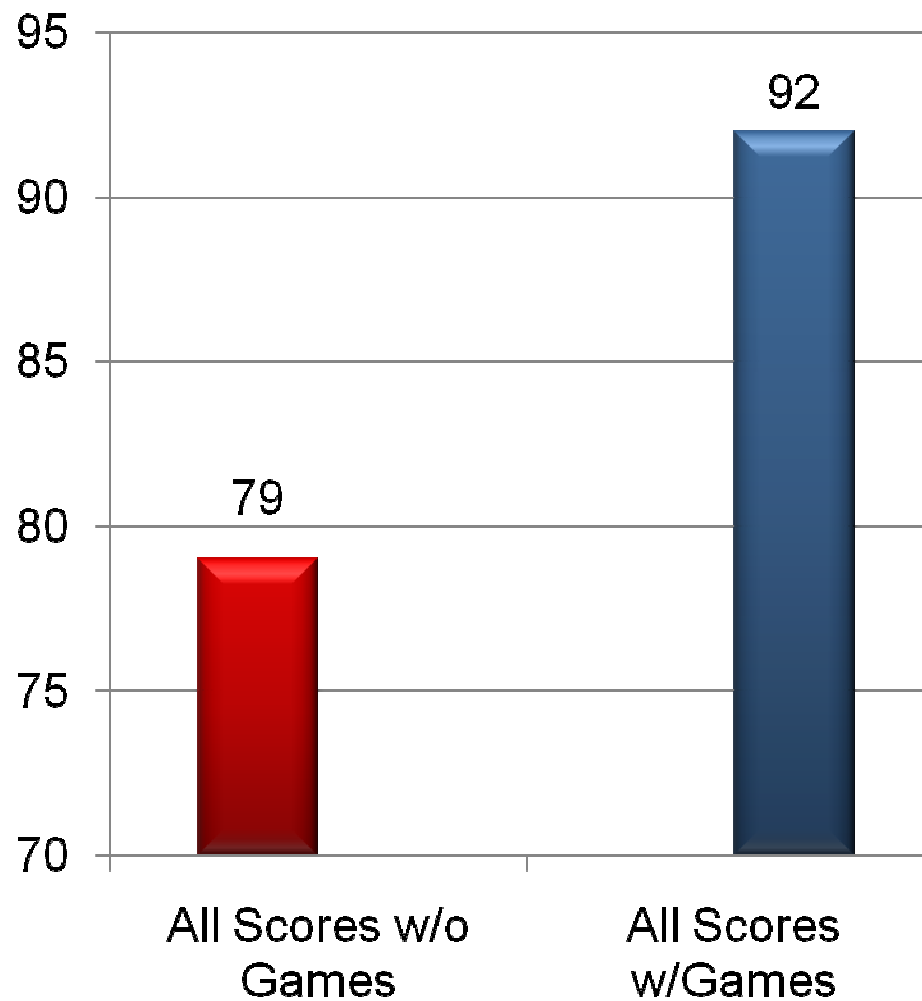
The first study used Industry Giant II in a college freshman business class



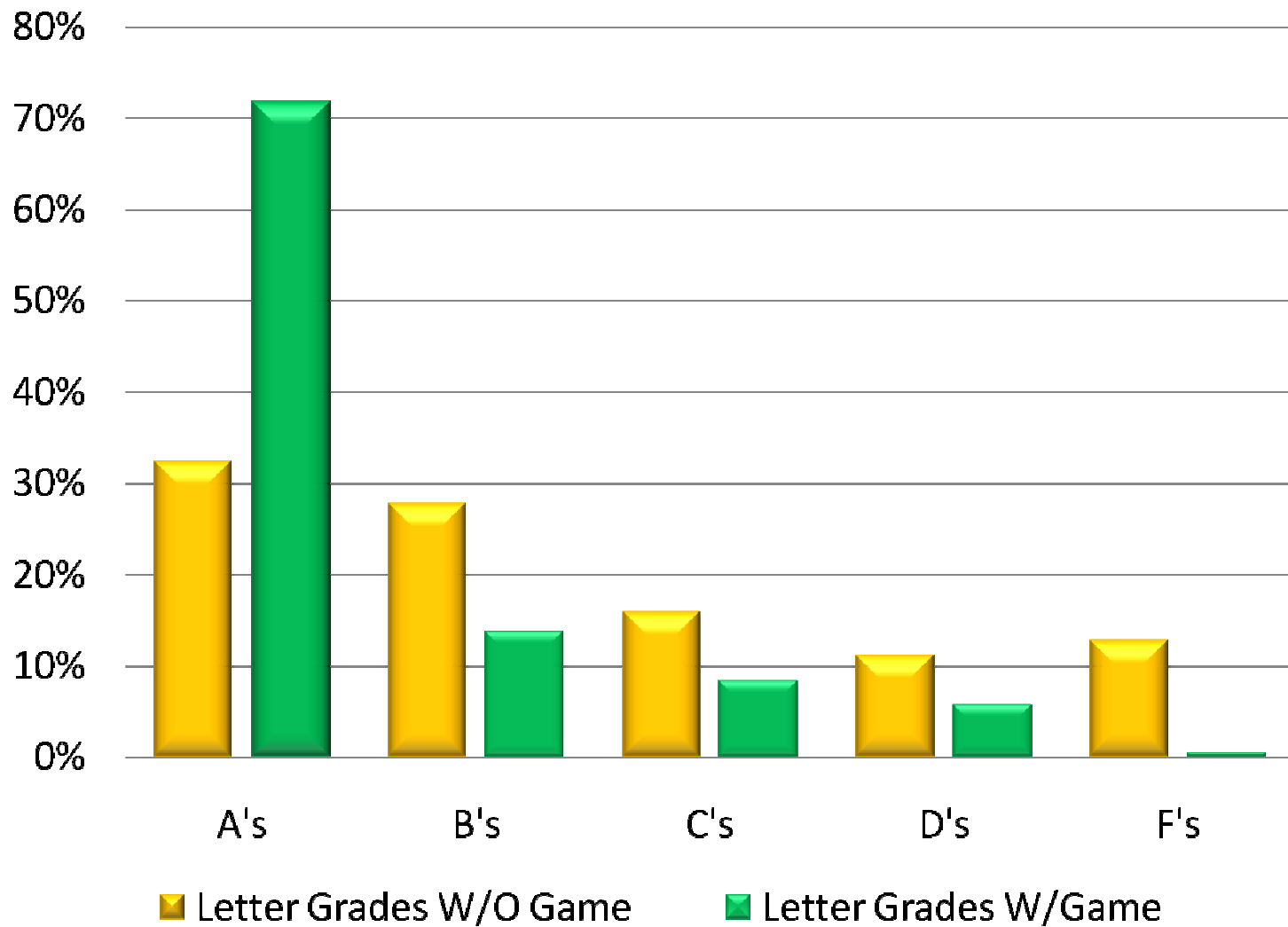
- ▶ Freshman Introduction to Business and Technology (BUSN 115)
- ▶ The first study looked at overall scores and gameplay
- ▶ Data taken over ~ 12 months /1028 data points



The first study looked at overall scores and gameplay



Grade distribution for study one with and without game play



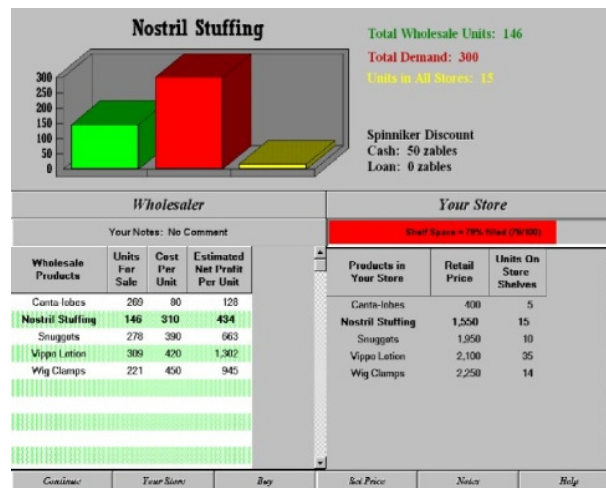
Result:



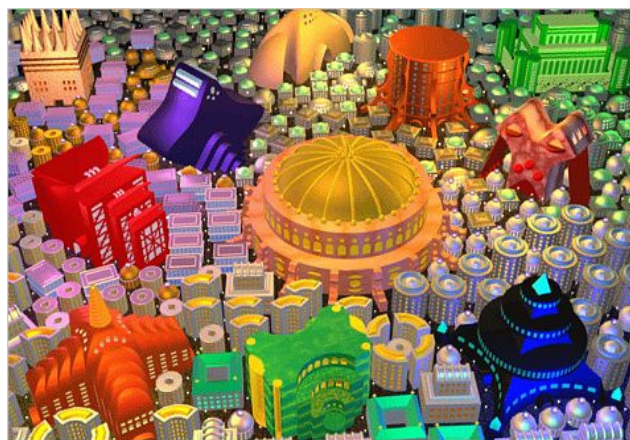
Scores of students who played the game were significantly (statistically) higher than those who did not play

Statistical data analysis may be found at www.rickblunt.com/phd

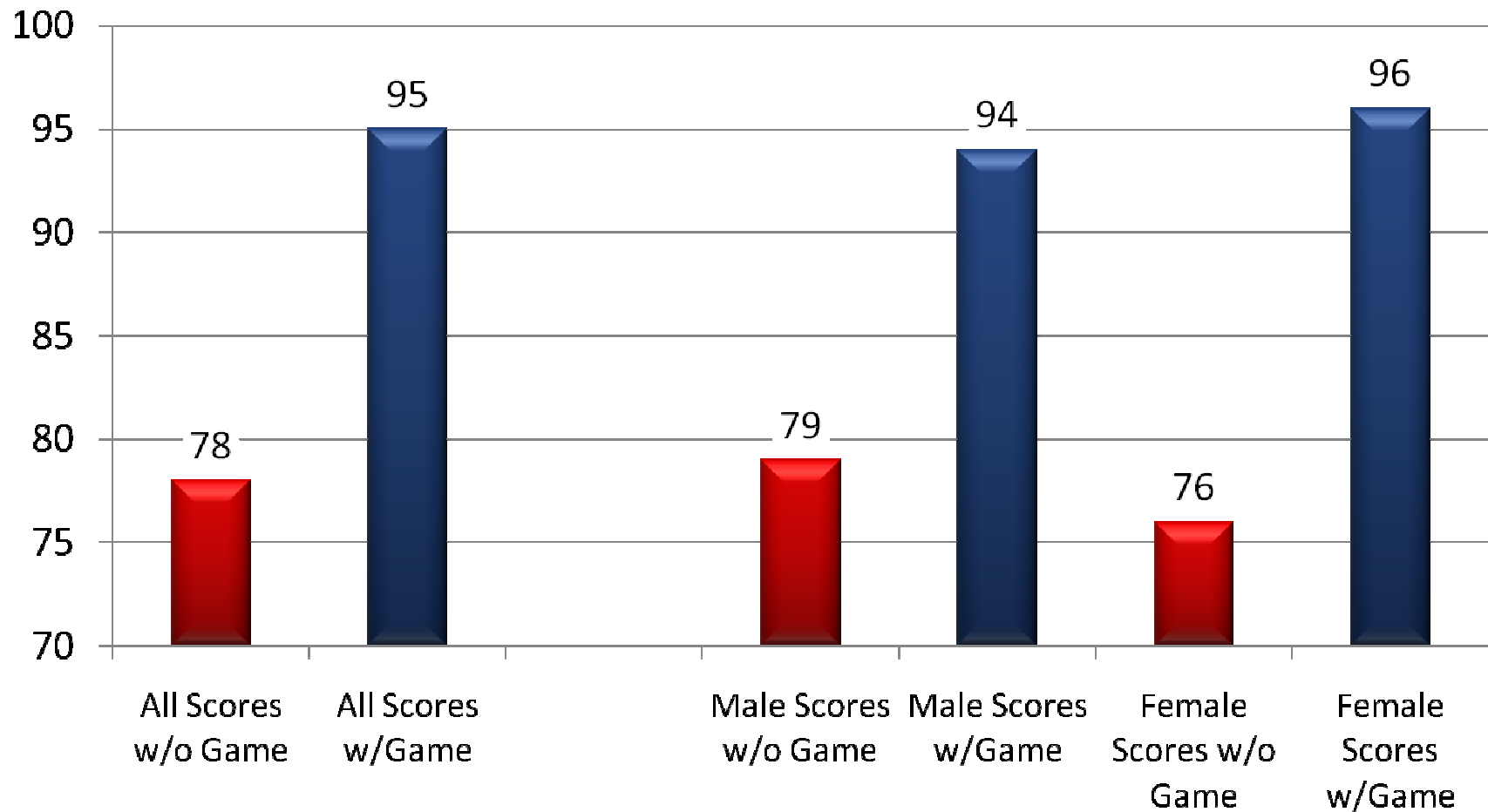
The second study used Zapitalism in a college 3rd year economics class



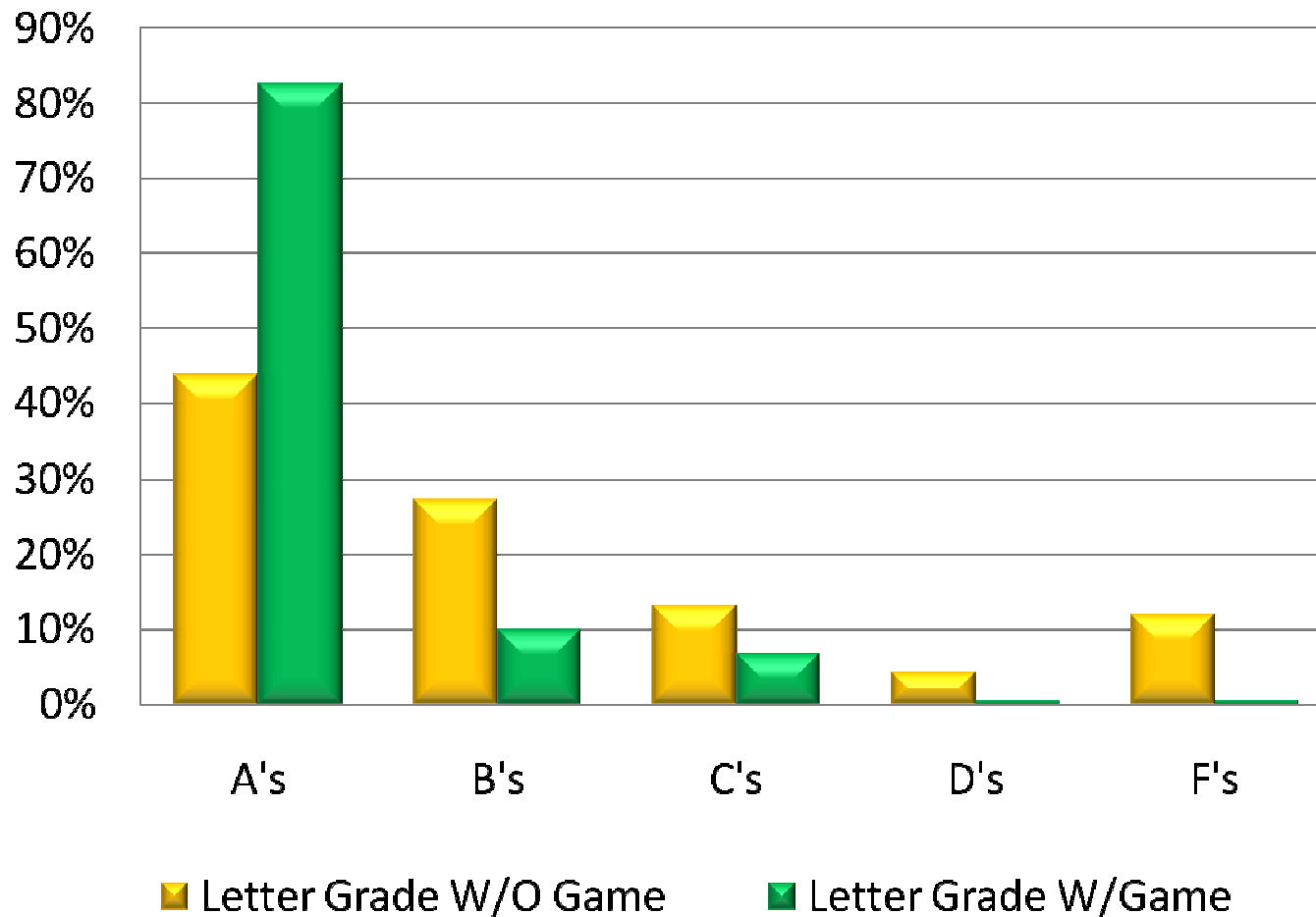
- ▶ Upper level 3rd year Principle of Economics (ECON 312)
- ▶ The second study looked at overall scores and how game play was effected by gender
- ▶ Data taken over ~ 12 months / 556 data points



The second study looked at overall scores and how game play was effected by gender



Grade distribution for study 2 with and without game play



Result:



***No significant differences
between male or female scores
regardless of game play***

***Both genders scored significantly
higher with game play than
without game play***

Statistical data analysis may be found at www.rickblunt.com/phd

The third study used Virtual U in a college 3rd year management class

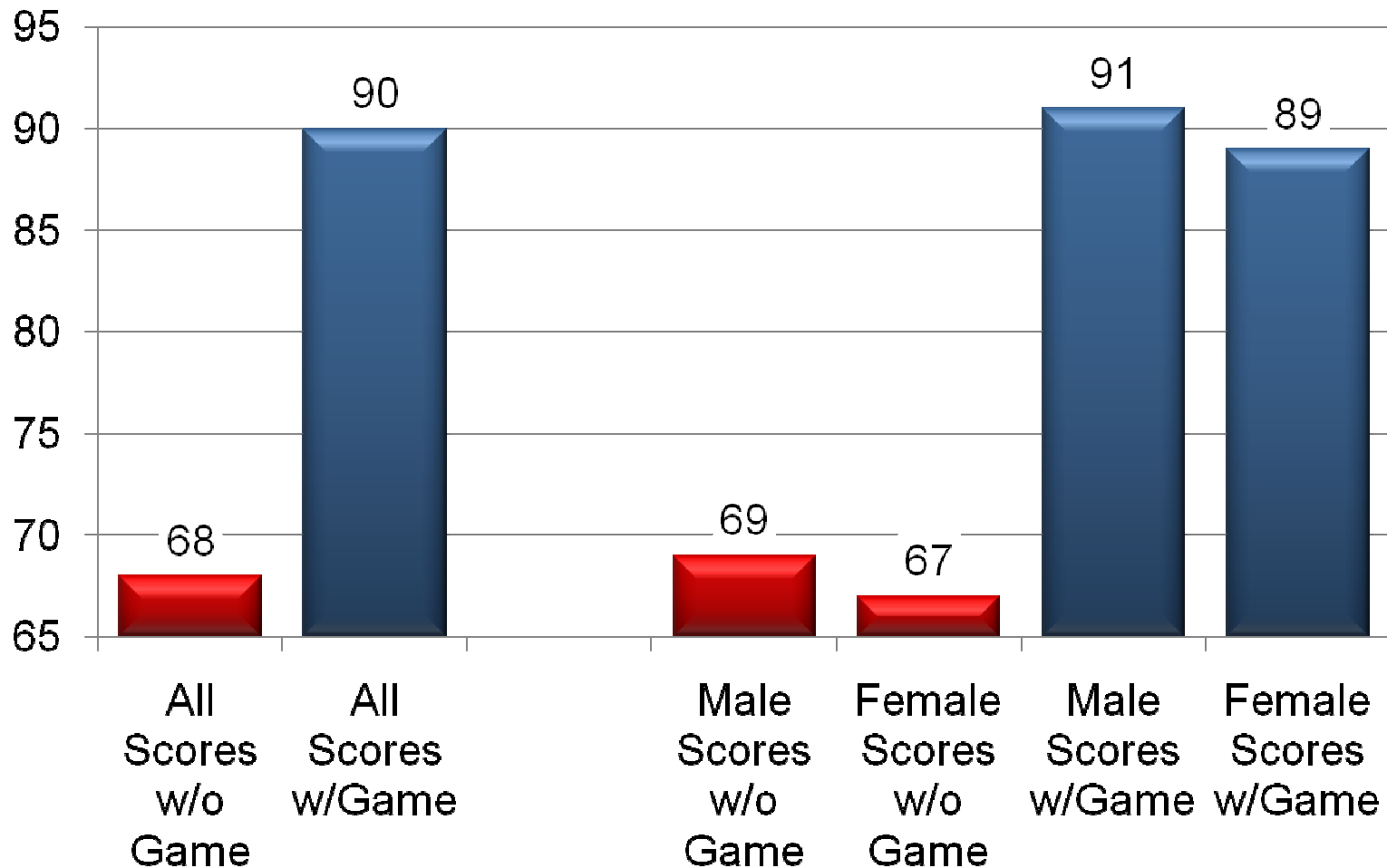


- ▶ Upper level 3rd year Principles of Management (MGMT 303)
- ▶ The third study looked at overall scores, gender, ethnicity, and age are effected by game play
- ▶ Data taken over ~ 12 months / 578 data points

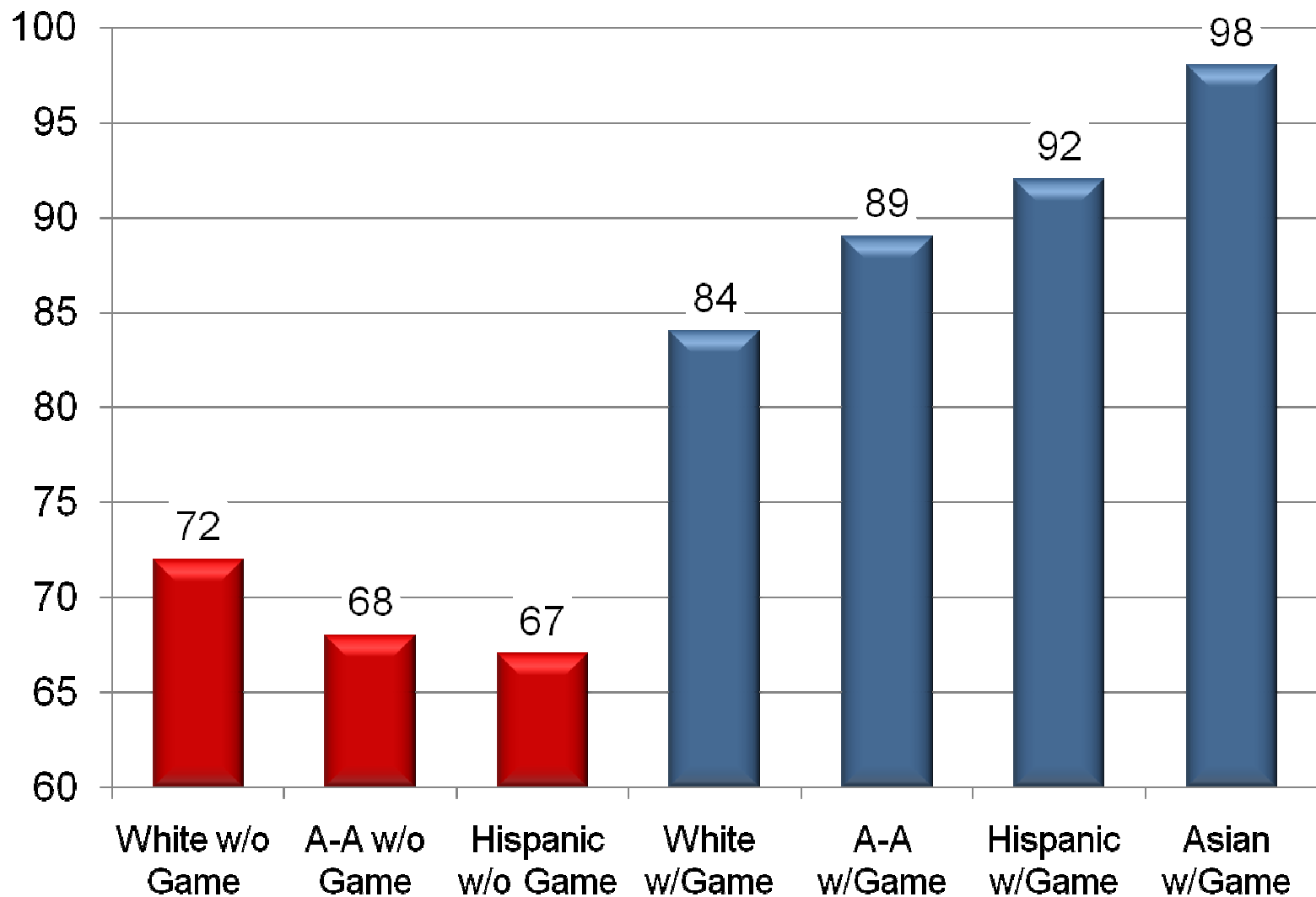



Description	Target	Preference	Result(%)
Real growth of tuition rate	(5.0%)	1.5%	5.0%
Real financial aid growth	(5.0%)	1.5%	5.0%
Endowment spending rate	4.0%	3.0%	3.0%
Indirect cost rate	20.0%	20.0%	20.0%
Real faculty salary growth	0.0%	1.0%	5.0%
Real staff salary growth	0.0%	1.0%	5.0%
Real operating budget growth	(5.0%)	0.0%	5.0%
Transfer to plant	(5.0%)	0.0%	5.0%
Surplus or deficit	(3.0%)	0.0%	3.0%

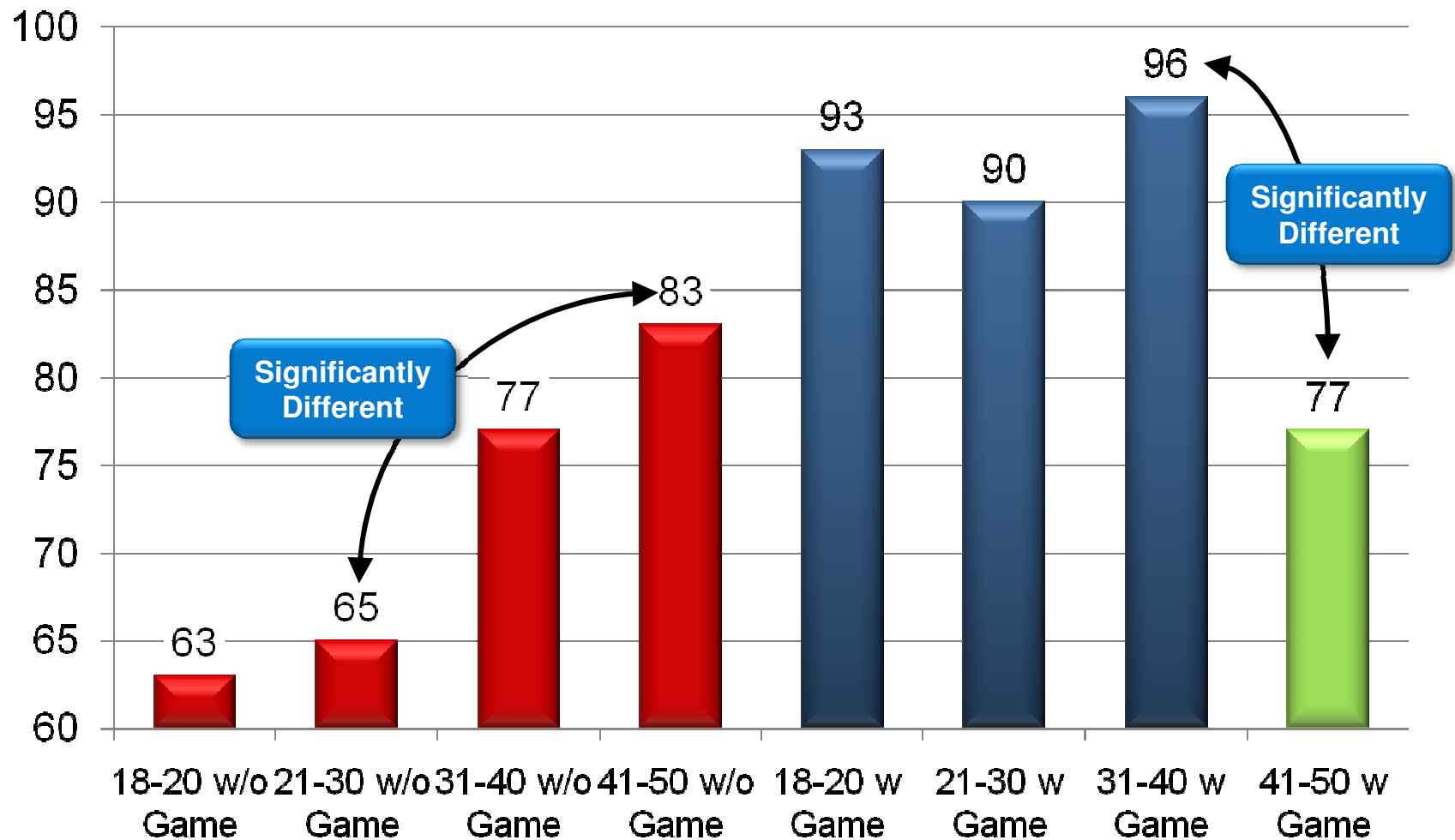
The 3rd study looked at the relationship between overall scores and gender and game play



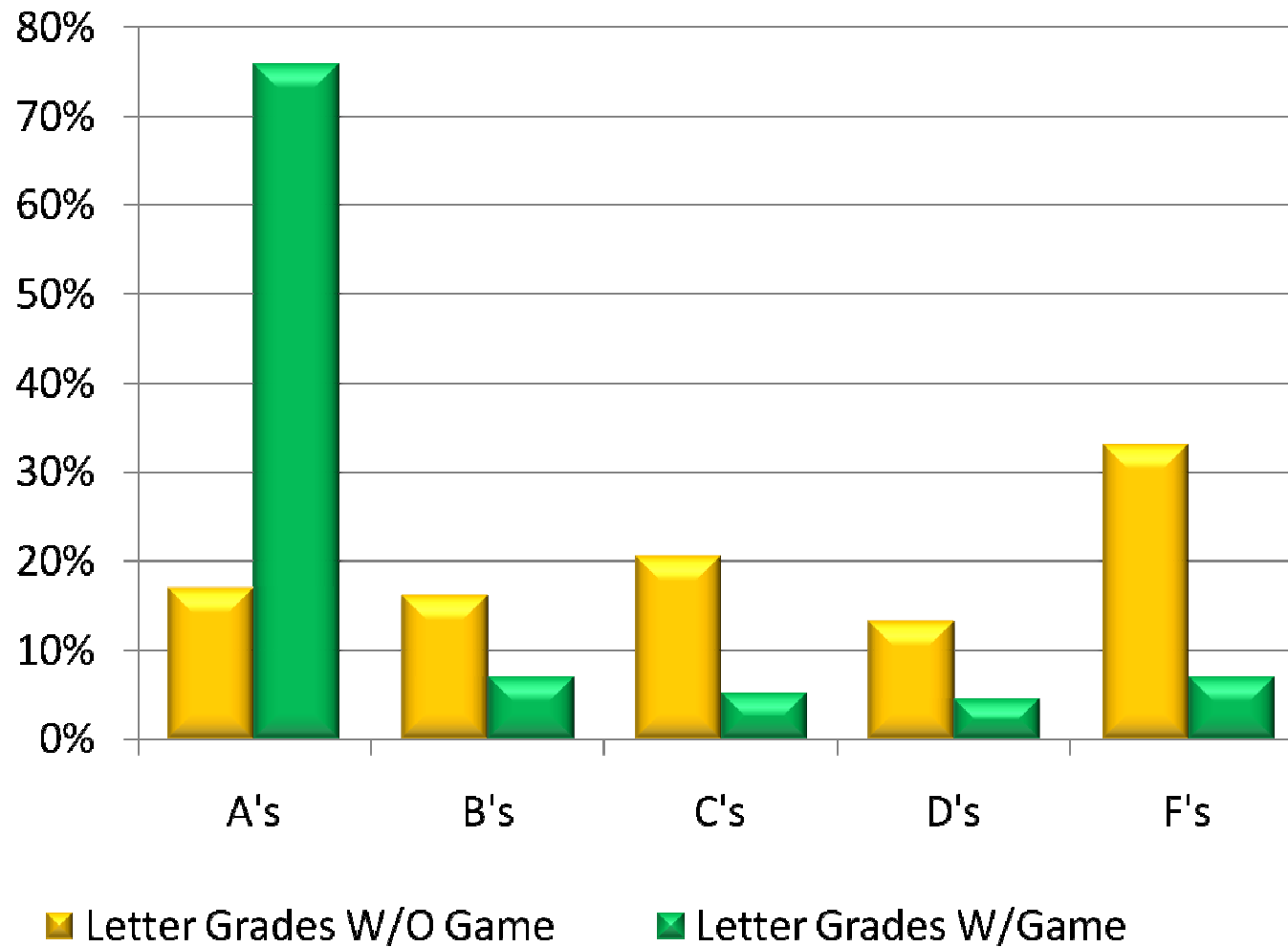
The third study looked at the relationship between ethnicity and game play



The third study looked at the relationship between age and game play



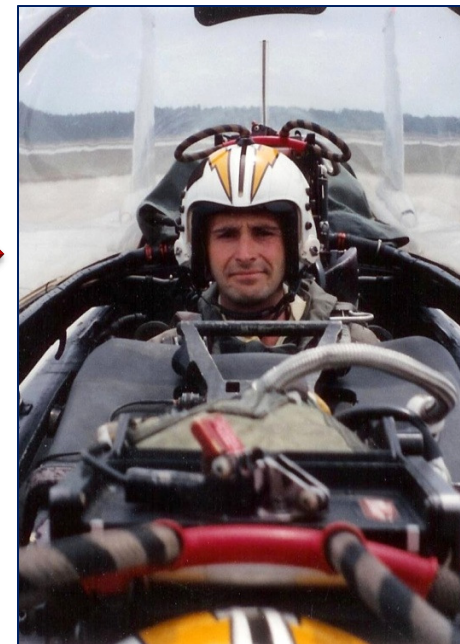
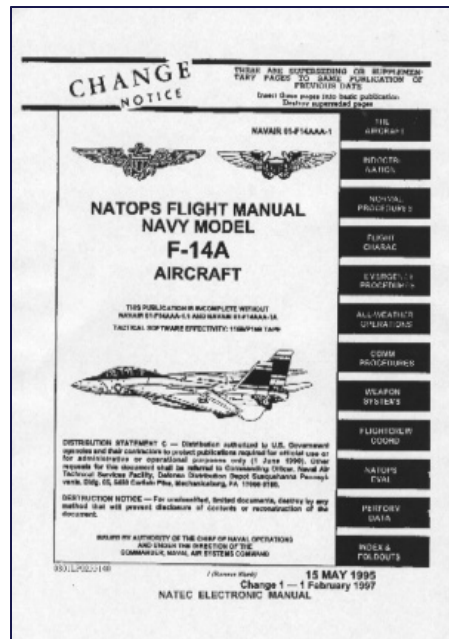
Grade distribution for study 3 with and without game play



We are transitioning from knowing something new, to doing something new...

From Knowing

To Doing



Statistical data analysis may be found at www.rickblunt.com/phd

Discussions!



Rick Blunt
703-575-4396

rick.blunt.ctr@adlnet.gov