PREDICTORS OF EDUCATIONAL OUTCOMES AMONG UNDERGRADUATE STUDENTS WITH DISABILITIES USING DATA ANALYSIS TO MEASURE THE ACADEMIC PROGRESS OF A SPECIFIC POPULATION OF STUDENTS

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Steps Towards Effective Research

1. Determine the problem
2. Literature review
3. Research questions
4. Conceptual framework
5. IRB application
6. Collection of data
7. Analysis and interpretation of data
8. Determine implications
**Steps Towards Effective Research**

1. **Determine the problem and define the question to answer**
   - What are the knowledge gaps?
   - What information would help our office better assist students?
BACKGROUND
Students with Disabilities in Higher Education

- Large increase of students with disabilities in higher education
- Attend 50% less than individuals without disabilities (Stodden, 2001)
- 13.5% of students with disabilities graduate from college with a B.A. or higher, 31.4% of students without a disability graduate (U.S. Census, 2010)
- 65.3% rate of unemployment for individuals with disabilities, 28.1% of individuals without a disability (U.S. Census, 2009)
- 62% more likely to be employed if obtain bachelors degree (Dutta & Kunda, 2009)
Barriers to Success

- Lack of knowledge of available supports
- Inconsistencies of these supports
- Require more participation
- Reluctance to seek help
- Deficits in executive functioning
Predictors of Retention

- Living on campus
- Full-time enrollment
- Higher degree expectations
- Higher grade point average after first year
- Report belonging, involvement, purpose, and self-determination

(Mamiseishvili & Koch, 2010)
LIKELIHOOD OF ATTRITION

- Race and ethnicity
- Older age
- Low socioeconomic status
- First generation college student
- Low participation in extracurricular activities
- Low initial grades

(Mamiseishvili & Koch, 2010 and Dutta & Kunda, 2009)
Steps Towards Effective Research

2. Find general background about the problem by conducting a literature review
   - Use article indexes to find current and past research
   - Systematic Reviews (Campbell Collaboration or Cochrane Database)
   - Evaluate credibility
Demographic Characteristics

- 11% of undergraduate students in 2008, 57% female, majority between age 15-23 (National Center for Education Statistics, 2011)

- Typically older than non-disabled (NCES, 2012)

- Male students faired poorly compared to female students and minority students had greater chance of persistence (Mamiseishvili & Koch, 2010)
Disability Status

- Most common diagnosis: Learning Disability (NCES, 2011)
  - ADHD, Mobility, and Psychiatric respectively

- 1 in 5 with a secondary diagnosis (NCES, 2012)

- Mull et al. (2001) review of literature versus Lee et al. (2010) and Mamiseishvili & Koch (2010) research
Students with disabilities tend to attend college later and stay for longer (Murray et al., 2000)

Students took twice as long to graduate

Vogel & Adelman (1992): students who transferred had better outcomes

Attend part-time more frequently (NCES, 2000)
ODS Experience and Support

- Most frequently provided: extended time and a distraction reduced space (Tagayuna et al., 2005)
- Interaction Hypothesis
- Sireci et al. (2005) review of literature
- Studies measuring benefits of extended time are inconsistent (Lee et al., 2005)
- Accommodations provided may not mediate limitations enough (Trammel, 2003)
ACADEMIC OUTCOMES

- Cornell Study (2010): 12.2% obtain a B.A. while 30.1% attend some college or receive an associates degree
- First Decade Project
- Disability status puts student at risk for failure or drop-out
- Lower grade point averages (Murray & Wren, 2003)
- Vogel & Adelman (1992) and Heinman & Precel (2003): no difference in achievement or GPA between students with disabilities and without
- Interaction between background characteristics and persistence
METHODS
Steps Towards Effective Research

3. What are your main research questions?
STUDY QUESTIONS

- What are the client characteristics?
- Which client characteristics predict graduating?
- Which client characteristics predict graduating within 6 years?
- Which client characteristics predict grade point average?
**Steps Towards Effective Research**

4. **Determine the areas you wish to focus on**
   - What data is easily accessible?
   - Is my idea feasible?
   - Create a conceptual framework
CONCEPTUAL FRAMEWORK

INPUTS

Demographic Characteristic
Disability Status
OSU Academic Experience
ODS Experience and Support

OUTPUTS

Graduation
Graduating Within 6 Years
Grade Point Average
5. **Determine the need for an IRB application**
   - The Institutional Review Board (IRB) – committee whose primary responsibility is to protect the rights of human research subjects
   - Questions to consider: research objectives and summary, proposed methods, participants, confidentiality of data, anticipated benefits or risks
   - [http://orrp.osu.edu/irb/initialreview/index.cfm](http://orrp.osu.edu/irb/initialreview/index.cfm)
Steps Towards Effective Research

6. Construction of research design and collection of data
   - What kind of data will answer my questions?
   - What time length do I need?
**Study Methods**

- Undergraduate students registered with ODS between 2003 to 2005.
- Retrospective cohort study following 233 students for an 8 year period
- Measures:
  - Demographic Characteristics: gender, ethnicity, age
  - Disability Status: primary and secondary
  - OSU Academic Experience: enrollment, year in school, major, type of admission into OSU
  - ODS Experience and Support: GPA at intake, accommodations
  - Outcomes: graduation, graduating within 6 years, GPA at graduation
RESULTS
WHAT ARE THE CHARACTERISTICS OF THE SAMPLE?
**DEMOGRAPHIC CHARACTERISTICS**

- Gender: 45.9% Female
- Ethnicity: 22.3% Minority
- Age at intake: Average of 23 years old with a range of 18 to 68
Primary Disability

- ADHD: 38%
- Learning: 23%
- Psychiatric: 15%
- Other: 24%

Secondary Disability: 33%
OSU ACADEMIC EXPERIENCE

Year in School at Enrollment

- Freshmen: 42%
- Sophomore: 23%
- Junior: 15%
- Senior: 20%
OSU Academic Experience

Number of Quarters Enrolled Prior to ODS

- 0 quarters: 38%
- 1 to 3 quarters: 27%
- 4+ quarters: 35%

Range: 0 – 29 quarters
OSU Academic Experience

Type of Admission into OSU

- Directly: 46%
- Transfer: 48%
- Multiple Institutions: 6%
OSU Academic Experience

Major

- Arts and Sciences: 53%
- Other: 33%
- Education: 14%
OSU Academic Experience

Categories of Enrollment

- Mostly full-time: 42%
- Mostly part-time: 27%
- Mixed FT/PT: 31%
OSU Academic Experience

- Overall Length of Enrollment at OSU: average of 4.86 years with a range of 0 to 38.12 years
ODS EXPERIENCE AND SUPPORT

Approved Accommodations

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ODS Experience and Support

- Length of Participation in ODS: average of 12.18 quarters with a range of 1 to 24 quarters
- OSU GPA at intake: mean of 2.77
OUTCOMES

Disposition

- 74% Graduated
- 22% Withdrew/Dismissed
- 4% Deceased/Still Enrolled
OUTCOMES

- GPA at graduation: average of 2.77
- Graduated within 6 years: 91.3%
- Number of years to graduation: average of 4.71 years with a range of 1.42 to 24.25 years.
7. Analysis and interpretation of data
   - Which statistical methods would best display your type of data?
ANALYSIS

- Bivariate: chi-square, t-test, correlations

- Logistic regression utilized to compare characteristics and outcomes for graduation and for graduation within 6 years (n=173)

- Linear regression revealed correlations between characteristics and final GPA (n=173)
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<th>Grad w/in 6-8 yrs</th>
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WHAT CLIENT CHARACTERISTICS PREDICT GRADUATION?
- Minority students were 2.2 times more likely to graduate than Caucasian students.

- For every year increase in age, students were 0.96 times less likely to graduate.

- Part-time students were 0.38 times less likely to graduate than full-time students.

- Each whole number increase in GPA at intake was associated with 1.7 times increased likelihood of graduating.
WHAT CLIENT CHARACTERISTICS PREDICT GRADUATING WITHIN 6 YEARS?
For every year increase in age, students were 0.87 times less likely to graduate within 6 years.

Students who registered during their senior year were 0.42 times less likely to graduate within 6 years than students registering services during their freshmen year.

Part-time students were 0.16 times less likely to graduate within 6 years than students attending full-time.
What Client Characteristics Predict Final Grade Point Average?
- Majoring in Arts and Sciences is a predictor of a lower final GPA

- A higher grade point average at intake is a predictor of a higher GPA at graduation
8. **Determine the implications**
   - What is the big picture?
   - What strengths does this study have?
   - What are the limitations?
Majority of sample graduated and graduated within 6 years – significant difference from past research

Similarity to Mamiseishvili & Koch (2011) research on first to second year persistence

Background characteristics as predictors – historically represented in retention literature
  - Older at intake: less likely to graduate and graduate within 6 years
  - Attending part-time

Students with psychiatric diagnosis – more attention?
IMPLICATIONS

- Increased attention to non-traditional students (support groups, greater follow-up)
  - Age at intake
  - Part-time students

- Increased attention towards students with low GPA at intake (greater follow-up, recommendations of other supports)

- Focus on students majoring in Arts and Sciences (are there issues with study habits or lack of academic motivation?)

- Importance of early identification (year in school at intake as predictor of timely graduation)
**Strengths**

- Representative sample of ODS clients
- Long follow-up period
- Large sample of disabled students at one of the largest institutions in the country
- 37.5% of all college students attend 4-year public institutions
LIMITATIONS

- Only students who self-identified
- No comparison group of students without disabilities
- Unknown if students continued education elsewhere
- Cannot tell if students actually utilized accommodations
- Time of diagnosis
- Unknown generalizability
- Potential confounding factors not measured
Unanswered Questions/Next Steps

- Outcomes with particular accommodations
- Focus on students with psychiatric diagnoses
- Employment outcomes
- Compare to similar and different institutions, 2-year, private, less and more competitive
- Use of accommodations in high school or transition planning
- Qualitative measures: self-determination, belonging, involvement, perception of acceptance
HOW CAN YOUR OFFICE IMPLEMENT DATA COLLECTION PROCEDURES?

- Importance of reviewing literature to find norms
- Confidentiality and participants
- Which variables are important predictors?
- Do the services we provide help our students succeed?