



Cleveland University  
KANSAS CITY  
Chiropractic and Health Sciences

# Academic Indicators as Predictors of Student Success

Fiorella Penaloza, D.M.

Assessment Matters Conference

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# Agenda

- History
- Assessment Structure
- Research Question, Process, and Communication
  - Identification of Significant Factors Influencing Student Success
- Conclusions and Next Steps



# Cleveland University-Kansas City

- 97 year-old Health Sciences institution, previously called Cleveland Chiropractic College;
- Over the last decade, the institution has expanded its offerings at the undergraduate level (prompting our name change);
- Doctor of Chiropractic is the largest degree program; and
- More than one in every 10 chiropractors practicing in North America is a Cleveland graduate.



# National Leader in Chiropractic Education

## Cleveland University-Kansas City Leads Nation in Board Completion Rates

Communications Staff  
Posted Dec 13 2018

After another strong showing in 2018, students in the Doctor of Chiropractic degree program at Cleveland University-Kansas City (CUKC), continue to set the pace among all chiropractic schools for board exam completion rates. During the most recent, four-year assessment period, CUKC students had an average completion rate of 95 percent, making it the best chiropractic institution in the nation in preparing chiropractic students for board examinations. The next closest school achieved a completion rate of 90.6 percent, and the national average for all schools over that same four-year period was 85.5 percent.

## Strong showing for Cleveland University-Kansas City on board exams

Communications Staff  
Posted Jun 22 2016

Cleveland University-Kansas City (CUKC) once again received a favorable report from the National Board of Chiropractic Examiners (NBCE) regarding board scores, this time for the Spring 2016 term. Test results for Cleveland students on Parts I, II, III, IV and the Physiotherapy portion showed that CU-KC is outpacing the national average for chiropractic institutions. The NBCE is the international testing agency for the chiropractic profession.

The first-time pass rate for CUKC students on Part I was 92.8 percent, while the average pass rate for all chiropractic institutions was only 74.1 percent. Similarly, the CUKC pass rate for Part II was 86.8 percent, with an average pass rate of 73.6 percent for all institutions. On Part III, the pass percentage for CUKC was 94.7 percent with the average at 81.7 percent for all chiropractic institutions. On Part IV, the CUKC pass percentage was 94.7, with the average at 90.3 for all institutions. CUKC students tallied a 93.1 percent pass rate on the Physiotherapy portion, compared to 87.9 percent average for all chiropractic institutions.



# Assessment at CUKC

- Faculty-led (i.e. Undergraduate and Graduate Curriculum Committees), under the direction of the Deans;
  - The curriculum committees are responsible for:
    - Reviewing the influence of curricular changes on program outcomes (i.e. admission policy, influence in course-level changes, influence of faculty turn over, etc.)
    - The Graduate Curriculum Committee is currently engaged in reviewing the program and has identified key questions to examine further;
- Office of institutional effectiveness & assessment assists with data collection and analysis to support the inquiry process (i.e. program review) for all programs.

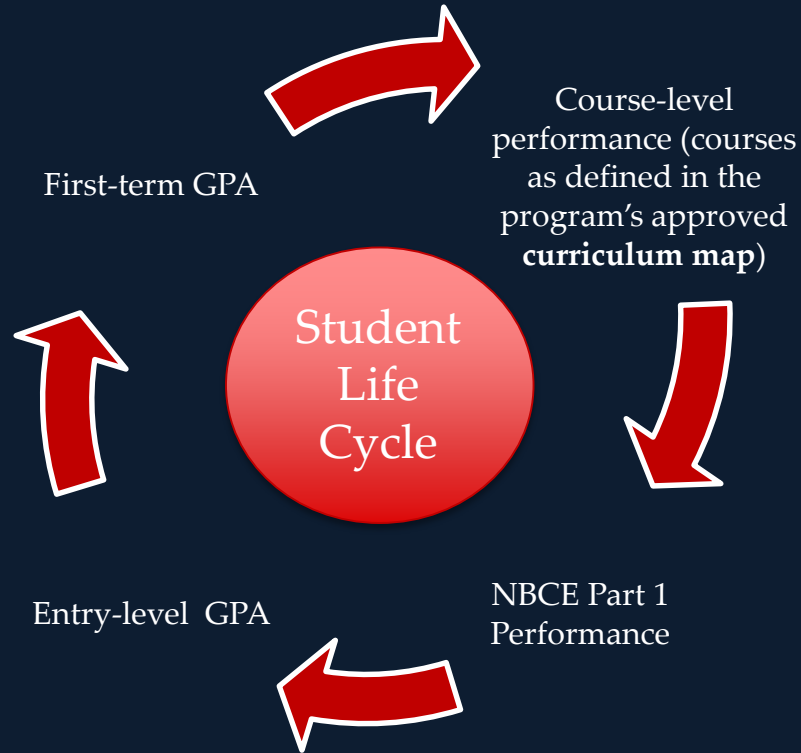


# What is the relationship between academic measures and student success?

- The curriculum committee identified the need to gain deeper understanding of the relationship between academic measures (i.e. course-performance and others) and student success.
- The program has defined student success as the pass rate of the NBCE Part 1 licensure exam.
  - This measure is also directly linked with the program's completion rate.



# Academic Indicators Identified by the Faculty



# Understanding the Influence of Academic Indicators Using Multivariate Analysis (MANOVA)

## NBCE Part 1 Passing Students

ANA 500  
ANA 502  
ANA 504  
ANA 514  
ANA 530  
ANA 540  
ANA 566  
ANA 600

CCE CUM GPA (Best of 90 GPA)  
CCE Humanities SS GPA  
CCE prerequisite GPA  
CCE Science GPA  
CHE 508  
CHE 534  
CHE 568

First Trimester CumGPA  
MPH 562  
MPH 570  
MPH 604  
MPH 616  
PAT 548  
PAT 572  
PAT 606  
PAT 632  
PHY 506  
PHY 532  
PHY 546  
PHY 560  
PHY 602  
PHY 630

Identify  
the  
factors  
driving  
the  
difference  
between  
these  
groups

## NBCE Part 1 Failing Students

ANA 500  
ANA 502  
ANA 504  
ANA 514  
ANA 530  
ANA 540  
ANA 566  
ANA 600

CCE CUM GPA (Best of 90 GPA)  
CCE Humanities SS GPA  
CCE prerequisite GPA  
CCE Science GPA  
CHE 508  
CHE 534  
CHE 568

First Trimester CumGPA  
MPH 562  
MPH 570  
MPH 604  
MPH 616  
PAT 548  
PAT 572  
PAT 606  
PAT 632  
PHY 506  
PHY 532  
PHY 546  
PHY 560  
PHY 602  
PHY 630





# Identified Factors Significantly Influencing Student Success

Factors	Trimester	Student Success	At-risk Marker
First Trimester CumGPA	1 <sup>st</sup>	B	<B
ANA 500	1 <sup>st</sup>	B	<B
ANA 504	1 <sup>st</sup>	B	<B
CHE 508	1 <sup>st</sup>	B	<B
PHY 506	1 <sup>st</sup>	B	<B
ANA 530	2 <sup>nd</sup>	B	<B
CHE 534	2 <sup>nd</sup>	C	<C
PAT 548	2 <sup>nd</sup>	B	<B
CHE 568	3 <sup>rd</sup>	B	<B
PHY 560	3 <sup>rd</sup>	B	<B
ANA 600	4 <sup>th</sup>	C	<C
PHY 602	4 <sup>th</sup>	B	<B



# Conclusions

- Identified significant academic factors influencing student success
  - Of the 30 factors examined, 37% had an observable influence on student outcomes.
- Identified the thresholds of student success



# Importance of Communicating Outcomes Effectively

- While 63% of the indicators tested did not have an observable influence on student success, it was important to communicate to faculty the importance of these courses to cultivate competencies, skills, or attributes that contribute to student success indirectly.



# Identification of Relative Influence of all Required Coursework on Student Success (Independent T-Test)

THEORETICAL CURRICULUM MAP	
CODE	# of Sections NBCE Part 1 Exam
ANA 500	1
ANA 502	1
ANA 504	1
ANA 514	1
ANA 530	1
ANA 540	1
ANA 566	2
ANA 600	1
CHE 508	1
CHE 534	1
CHE 568	1
MPH 562	1
MPH 570	1
MPH 604	1
MPH 616	1
PAT 548	1
PAT 572	1
PAT 606	1
PAT 632	1
PHY 506	1
PHY 532	1
PHY 546	1
PHY 560	1
PHY 602	1
PHY 630	1
Total	26

TESTED CURRICULUM MAP	
TESTED MAP	# of Sections NBCE Part 1 Exam
ANA 500	5
ANA 502	5
ANA 504	4
ANA 514	5
ANA 530	5
ANA 540	1
ANA 566	6
ANA 600	6
CHE 508	5
CHE 534	6
CHE 568	6
First Trimester CumGPA	5
MPH 562	3
MPH 570	6
MPH 604	6
MPH 616	2
PAT 548	5
PAT 572	5
PAT 606	5
PHY 506	5
PHY 532	5
PHY 546	4
PHY 560	6
PHY 602	6
Total	117



# Conclusions

- While the current study identifies influential indicators of student success, earlier at-risk identification can assist the program in planning interventions.
  - The Graduate Curriculum Committee asked about how information used for program admission can be utilized as an indicator.



# Evaluation of Academic Criteria for Program Admission

- There are four GPA's (Science, Pre-requisite, Humanities, and combined cumulative GPA- following CCE standards) calculated for program admission and were evaluated for their potential in informing student success. No conclusive data was determined.
- Data was collected from student transcripts of all prior undergraduate institutions to determine a true undergraduate GPA (i.e. weighted average).
- ANOVA analysis identified a **highly statistically significant** influence of undergraduate weighted GPA in program-level student success.
  - This information can inform the Admissions Committee during the selection process.



# Next Steps

- Future iterations of this study will utilize assessment data (i.e. ExamSoft) to understand the underlying competencies influencing student success;
- The Graduate Curriculum Committee has requested that additional analysis of undergraduate transcripts be performed to identify influential courses; and
- Implementation of significantly influential factors as part of the at-risk students identification and outreach process (i.e. Student Services) is underway.



# Acknowledgements

- Graduate Curriculum Committee
  - Dr. Jon Wilson, Dean of the College of Chiropractic
- Zarina Hussain, IR Analyst
- David Foose, Dean of Students





# Questions?



Please complete a feedback form 😊

