

# Understanding Implementation of Developmental Education Delivery Models in the Community College Setting

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NATIONAL ALLIANCE OF COMMUNITY AND TECHNICAL COLLEGES

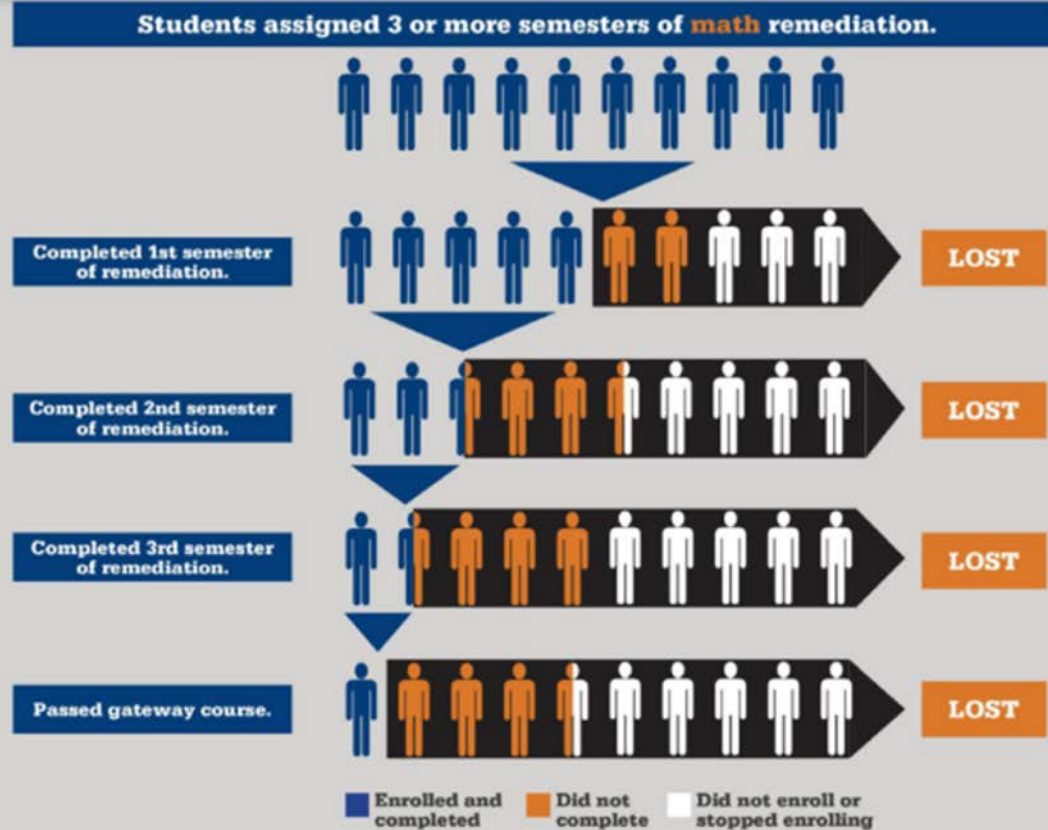
SUMMER CONFERENCE- JULY 27, 2017

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# Overview

- Introduction
- Redesign Methods
- Tennessee Policy Revisions
- Study Overview
- Results for Research Questions
- Relevant Findings, Practical Implications, and Conclusions

## Remediation: The effect of attrition.



**KNOW THIS** The remediation system is broken. More students quit than fail.

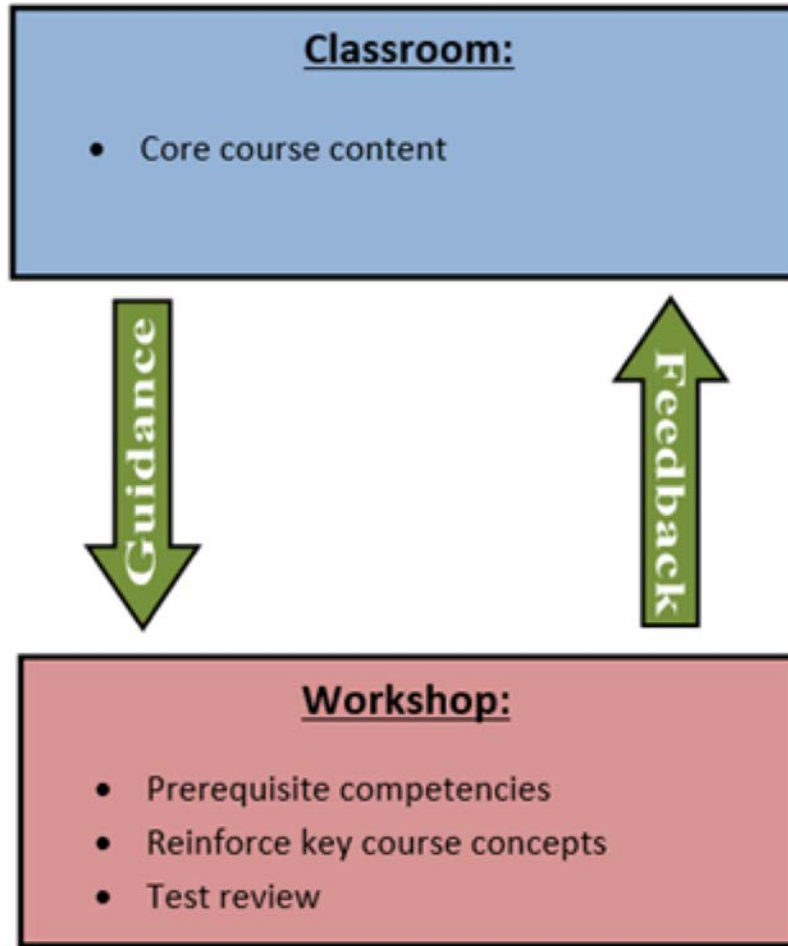
Source: Hughes, K., Edgecombe, N., & Snell, M. (2011). "Developmental Education: Why and How We Must Reform It." New York: Columbia University, Teachers College, Community College Research Center. Presentation given at the 2011 League for Innovation in the Community College Annual Conference.

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# Introduction

- National and local need for developmental education
- 60% students nationwide academically underprepared; 73% in Tennessee (NCPPE, 2010).
- Students get lost in the traditional model of developmental education

## Linked Workshop Model Diagram



# Redesign Models

## ➤ Common NCAT redesign models:

- Supplemental
  - Replacement
  - Emporium
  - Fully online
  - Buffet
  - Linked Workshop (parent category of Accelerated, Co-requisite, or Paired Skills)
- Co-requisite model of delivery preferred in Tennessee Board of Regents (TBR) System

*Linked Worked Model Diagram (adapted from Austin Peay Structured Learning Assistance Program Brochure)*

# Policy Methods to Improve Outcomes

States have the opportunity to improve outcomes in developmental education by focusing in four key policy areas: preventative strategies; assessment and placement; implementation and evaluation of program innovation; and performance measurement and incentives (Collins, 2009).

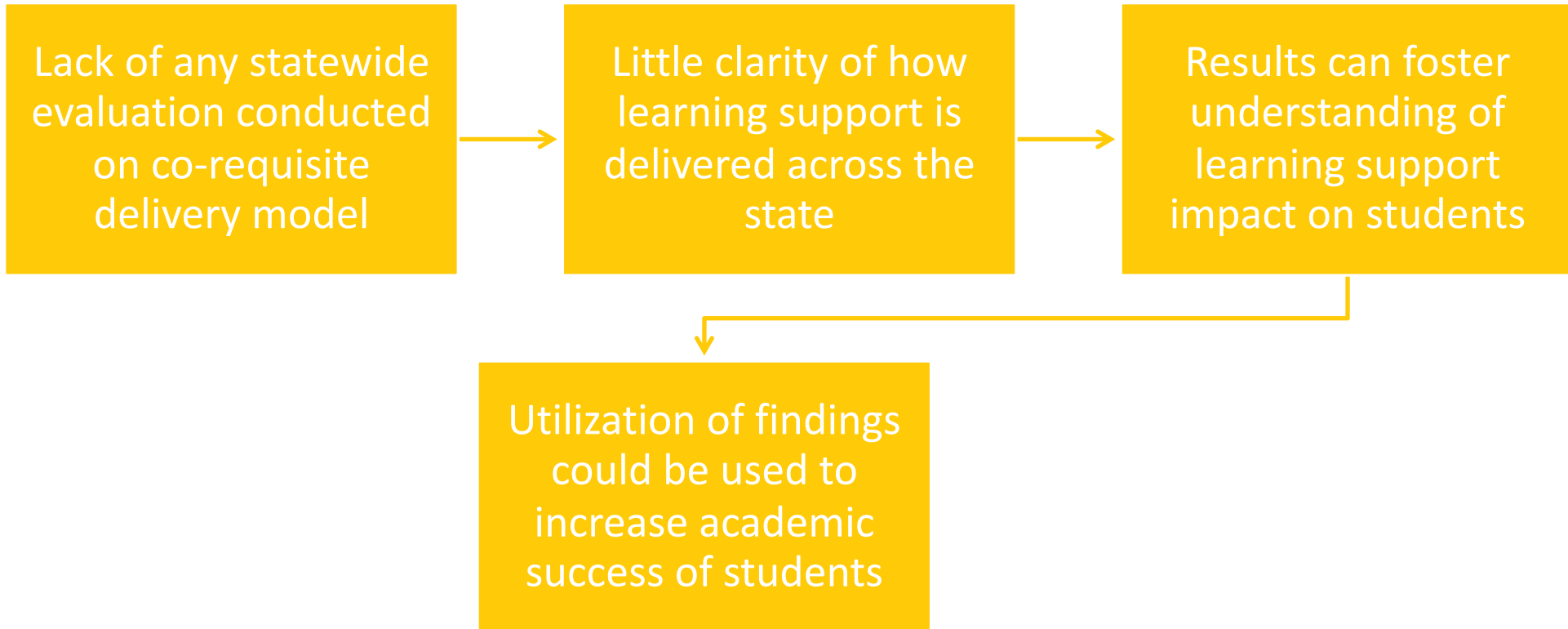
1. Preventative Strategies
2. Assessment and Placement
3. Implementation and Evaluation of Program Innovation
4. Performance Measurement and Incentives

# Tennessee Policy Revisions

1. Learning Support term adopted to remove stigma association with developmental education.
2. Statewide placement system to assign students to remedial courses; combination of ACT and secondary diagnostic assessment.
3. Co-Requisite Model adoption statewide
4. Accountability via TBR system and Tennessee State Performance-Based Funding

# Importance of Study

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# Research Questions

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Purpose: Conduct state-wide evaluation of learning support programs in the 13 community colleges in Tennessee utilizing mixed methods approach.

1. How do community colleges in Tennessee implement learning support courses and what are the current delivery models?
2. How do key stakeholders perceive learning support courses?
3. How do community college students who receive learning support compare to non-remedial students in regards to success in college?
  - a. How does participation in learning support course affect student progression into college-level courses?
  - b. How do success rates of community college students compare in various delivery models?



# Instruments

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- Surveys developed intentionally for this study.
  - Coordinator- developed to facilitate understanding of how learning support courses are implemented on each community college campus.
  - Faculty- developed to gain information about faculty knowledge regarding the implementation of their college's learning support program.
- Surveys reviewed by content experts for validity.
- Data cleaned prior to analysis using best practices in field.

# Sampling

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Purposive and  
convenience  
sampling

Coordinators  
identified by TBR

Faculty members  
identified through  
course catalog and  
campus directory

# Analyses

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- **RQ1: How do community colleges in Tennessee implement learning support courses?**
- **RQ2: What are key stakeholders perceptions of the learning support courses?**
- **RQ3: How do community college students who receive learning support compare to non-remedial students in regard to success in college?**
  - How does participation in learning support course affect student progression into college-level courses?
  - How do success rates of community college students compare in various delivery models?

# Survey Participants and Demographics

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## 1. Learning Support Coordinators

- 11 coordinators from 5 institutions= 40.7% response rate
- Majority spent 80% of time on administrative duties
- Majority spent 20 or more years in community college
- Most had at least a Master Degree

## 2. Learning Support Faculty

- 152 from 12 colleges= 17.5% response rate
- 86.2% faculty, 6.5% staff, 2.4% coordinators, 1.6% administrator, 3.3% other (46.8% adjunct faculty)
- Math 35.5%. English 28.3%, 11.6% Reading, Other 7.2%
- Majority have more than 5 years but less than 10 years experience
- 66% had a Master Degree and 21.5% held Doctorate Degrees

# Archival Data Demographics

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- Fall 2015 cohort- included all students enrolled in Fall 2015 in TBR System
- 87,780 students, 17% (14,934) learning support
- 68% continuing students, 25% First Time Freshmen, 5% incoming transfers, and 1% transient
- Majority of cohort female (58.8%), between ages of 16-20 (25%), not considered low income (60%), attended part time (50.1%)
- Racial groups represented: 74.8% White, 16% Black, 4.3% Hispanic students; the remaining 4.9% consisted of Bi-racial, Asian, American Indian, Hawaiian, Alaskan, and undisclosed students
- ACT scores between 1-36, majority between 8-24 (56.8%)

# Learning Support Demographics

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- Of all First Time Freshmen in cohort, 51.7% required to take learning support
- By institution ranged from 11.3% to 74.6%
- Deficiency in one subject (58%), two subjects (39%), and three subjects (3%)
- Math had largest number of flags (7,437), followed by English (7,159), and then Reading (6,995)
- 64% low income
- 84% attended full time

# RQ1: Delivery Models

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- Recoded delivery models based on validation of multiple survey questions.
- Features of delivery
  - Location: 47.8% via computer lab, 43.4% used a combination of locations, 6.9% classroom, and 1.3% on-line.
  - Subject integration: 59% paired with same subject, 40% are not, 1% stated they didn't use the co-requisite model
  - Same instructor- most paired courses not taught by same instructor

<b>Model Name</b>	<b>Number of Learning Support Students</b>
Co-Requisite	4681
Co-Requisite and Accelerated	2699
Co-Requisite and Emporium	2736
Unknown Combination of Two or More	2210

<b>Academic Support Services Offered</b>	<b>N</b>	<b>%</b>
Academic or Completion Coaching	61	40.1
Library Assistance	91	59.9
Math Lab	93	61.2
Success Skills Workshop	47	30.9
Tutoring	131	86.6
Other	11	7.2
<b>Student Support Services Offered</b>	<b>N</b>	<b>%</b>
Counseling	102	67.1
Disability	119	78.3
Mentoring	61	40.1
Social Services	43	28.3
Other	8	5.3

## RQ1: Delivery Models

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- Student notification: prior to course registration (42.9%), during orientation (28.6%), official email or letter (14.3%), or during course registration (14.3%).
- Factors impacting enrollment: testing out (45.5%), course availability (27.3%), personal (18.2%), and financial reasons (18.2%).
- Variety of support structures available.
- 56.6% complete required competencies in one semester.
- Decision making: less than half reported a central department for oversight, decisions made by committee on as needed basis.



## RQ2: Stakeholder Perceptions

Differences between perceptions regarding how learning support is delivered on respondents campus and the purpose of learning support in general.

<b>Learning support courses</b>	<b>Agree % (N)</b>	<b>The way learning support is delivered on my campus</b>	<b>Agree % (N)</b>
bridge the gap between high school and college readiness.	78.4 (98)	bridges the gap between high school and college readiness.	75 (93)
provide students with a strong foundation to be successful in college-level courses.	75.2 (94)	provides students with a strong foundation to be successful in college-level courses.	68.8 (85)
are necessary for students to progress from term to term.	76 (95)	is necessary for students to progress from term to term.	67 (83)
increase a student's chance of graduating from a community college.	79.2 (99)	increase a student's chance of graduating from a community college.	70.2 (87)
increases a student's chance of transferring to a four-year institution.	68.8 (86)	increases a student's chance of transferring to a four-year institution.	61.8 (76)
remove the stigma associated with taking remedial education courses.	41 (54)	removes the stigma associated with taking remedial education courses.	46 (57)

# RQ2: Stakeholder Perceptions

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## Strengths

- Small class size
- Individualized attention
- Same instructor
- Contextualizing of content
- Available tutors

## Challenges

- Attendance
- Communication
- Ineffective
- Faculty buy-in
- Faculty quality
- Lack of connection
- Lack of structure
- Policy changes
- Resources
- Student Productivity

## Recommendations

- Accountability
- Alignment/ placement
- Alternate model
- Content
- Governance
- Structure
- Training

# RQ3: Student Success

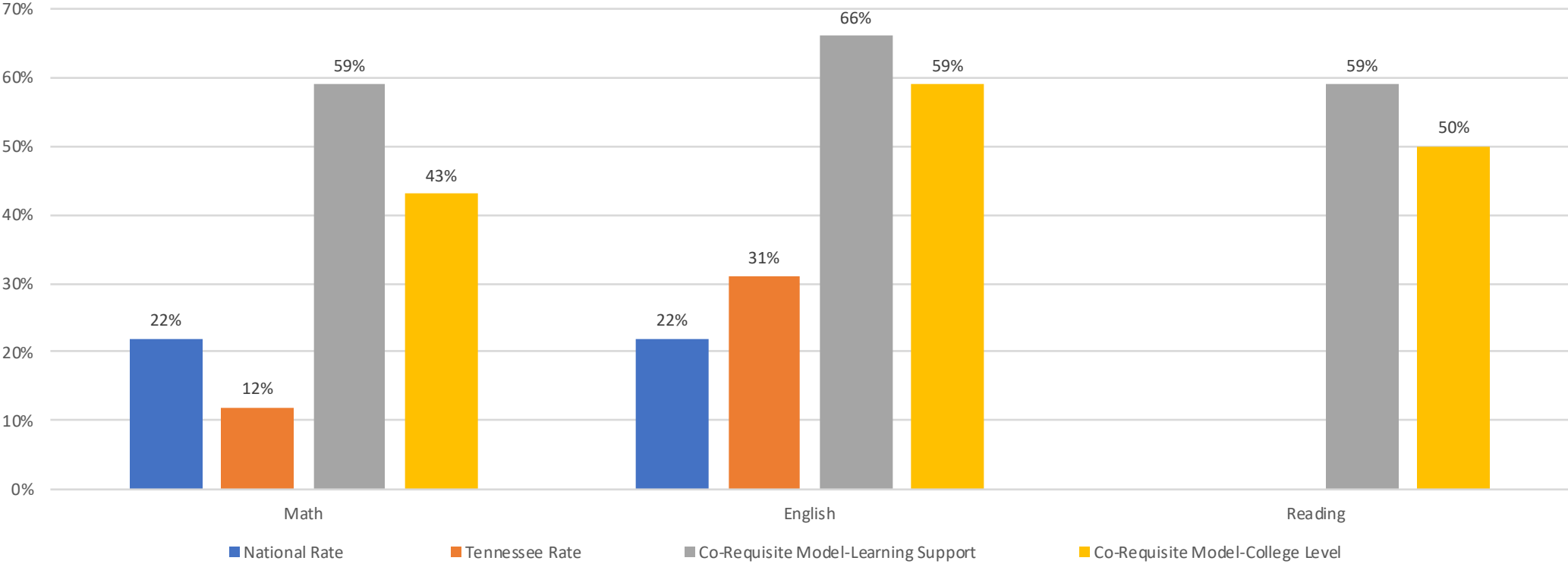
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To fully address research question, it was important to look at comparisons of students prior to intervention, during intervention, and after intervention.

- Students who are between the age of 18-24 and Black are more likely to have to take learning support courses.
- Statistically significant association between learning support student and student type  $\chi^2(3) = 25,744.750, p = .000$ .
- The mean Composite ACT scores were 4.409 ( $r^2 = .428$ ) significantly higher for non-learning support students ( $M = 20.98, SD = 3.93$ ) than learning support students ( $M = 16.57, SD = 2.59$ ),  $t(26217.268) = 140.191, p = .000$ .

# RQ3: Student Success

Co-Requisite Success Rates Compared to National and State Gateway Data



# RQ3: Student Success

- Subsequent courses grouped into 7 disciplines
- All subsequent courses from Spring 2016, Summer 2016, and Fall 2016 for both populations included
- Compared learning support students by subject to non-learning support students in each discipline
- Non-learning support students more successful in all disciplines compared to learning support students

	<b>Math LS Students</b>	<b>Writing LS Students</b>	<b>Reading LS Students</b>	<b>Non-LS Students</b>
<b>Business and Computer Science</b>	64.6% (n=2070)	57.7% (n=1469)	53.4% (n=1193)	75.3% (n=16287)
<b>Communication</b>	71.5% (n=1879)	51.9% (n=1605)	66.0% (n=1351)	82.2% (n=8826)
<b>Humanities and Fine Arts</b>	66.5% (n=4252)	57.7% (n=3260)	56.7% (2999)	80.8% (n=6612)
<b>English</b>	67.8% (n=3915)	46.1% (n=2212)	49.3% (n=2638)	77.7% (n=22120)
<b>Mathematics</b>	42.0% (n=1447)	39.0% (n=1981)	37.4% (n=1857)	67.8% (n=16381)
<b>Physical and Life Science</b>	56.5% (n=2201)	44.3% (n=1066)	42.5% (n=958)	72.8% (n=21963)
<b>Social Science</b>	67.2% (n=2730)	57.9% (n=2254)	57.4% (n=2137)	78.7% (n=35917)

# RQ3: Student Success

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- The mean AY attempted credits were significantly higher for than learning support students ( $M=24.95$ ,  $SD= 4.78$ ) than non- learning support students ( $M=19.32$ ,  $SD=8.42$ )  $t(24500.44)=-92.46$ ,  $p=.000$ ,  $r^2= .26$ . The negative relationship from the t-test shows that learning support students are more likely to attempt a higher number of credits
- AY earned credits mean scores were significantly higher for learning support students ( $M=20.92$ ,  $SD=6.37$ ) than non-learning support students ( $M=17.74$ ,  $SD=8.15$ ),  $t(12811.06)=-38.93$ ,  $p=.000$ ,  $r^2= .11$ .
- Non-learning support students completed 93% of credits while learning support students ( $M=.93$ ,  $SD=.14$ ) completed 83% ( $M=.83$ ,  $SD=.19$ ),  $t(9410.99)=43.04$ ,  $p=.000$ ,  $r^2= .17$ .
- Mean AY GPAs were significantly higher for non-learning support students ( $M=2.91$ ,  $SD=1.06$ ) than learning support students ( $M=2.11$ ,  $SD=8.42$ ),  $t(12968.98)=68.47$ ,  $p=.000$ ,  $r^2= .27$ . Non-learning support students had a mean GPA of almost a B average while learning support students were closer to a C average.
- Fall to Fall retention rate for learning support- 42.2% (n=6,288)

# RQ3: Student Success

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The multiple regression models statistically significantly predicted attempted credit hours by semester, earned credit hours by semester, GPA by semester, and earned credential by semester for student types.

- Being a continuing student has the strongest relationship with attempted number of credits, earned credits, GPA, and earned credential.

The same variables investigated by delivery model were statistically significant, but in practice lacked value.

- Learning support students most likely would not be able to earn a credential within one year.

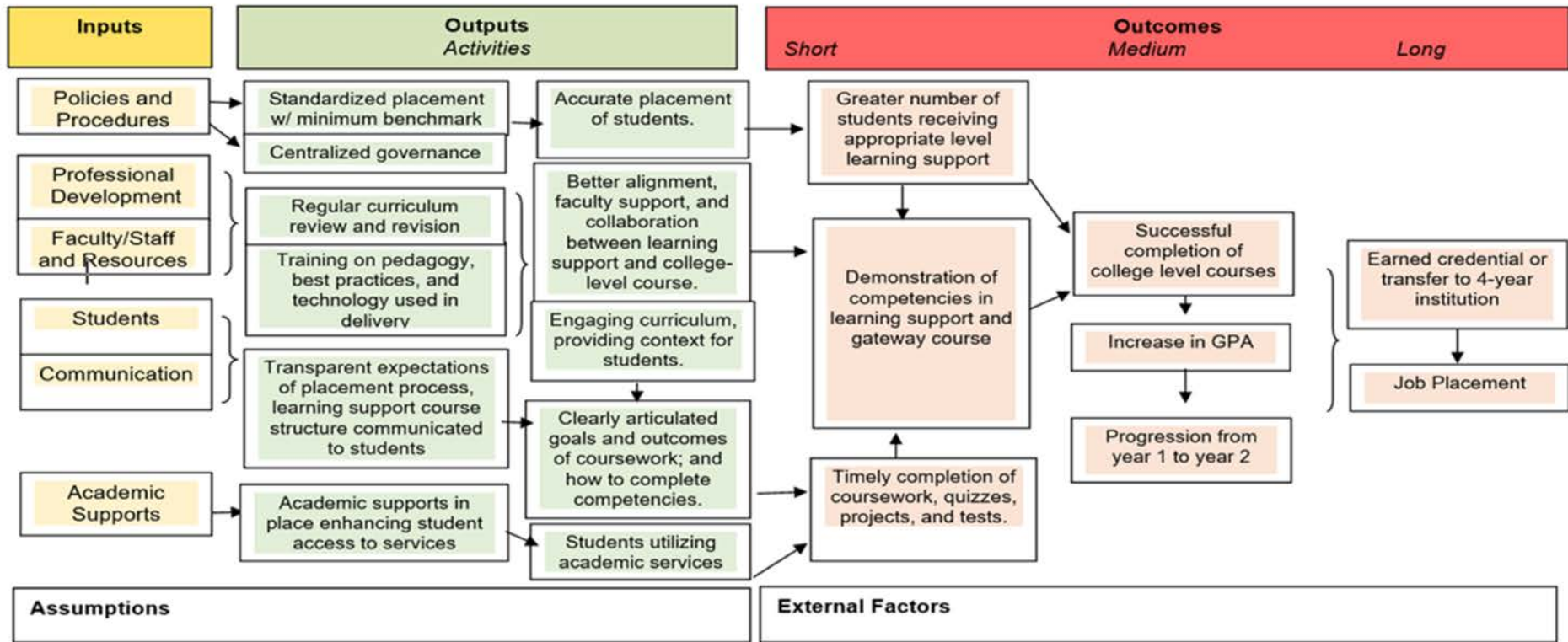
# Limitations

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- Clarity of survey questions
  - Delivery in subjects can differ and difficult to capture
  - Misinterpreting question
- Classification of learning support delivery models
  - Allow open-ended question for further explanation or checklist of features to truly capture characteristics of delivery
- Lack of participation from all institutions
- IRB barriers



## Learning Support Evaluation Logic Model



### Performance Measures

# students, faculty, revised policies/ procedures, professional development opportunities; # and type of academic supports

# accurate placements, # of students receiving communication of placement, # of training sessions offered, # revisions to course curriculum, # of LS and Gateway courses aligned with goals and outcomes, % faculty satisfied with training, # students using academic services, % satisfied with services

# of students completing coursework and attending class, # of students passing LS course, Gateway Course, and subsequent courses, GPA

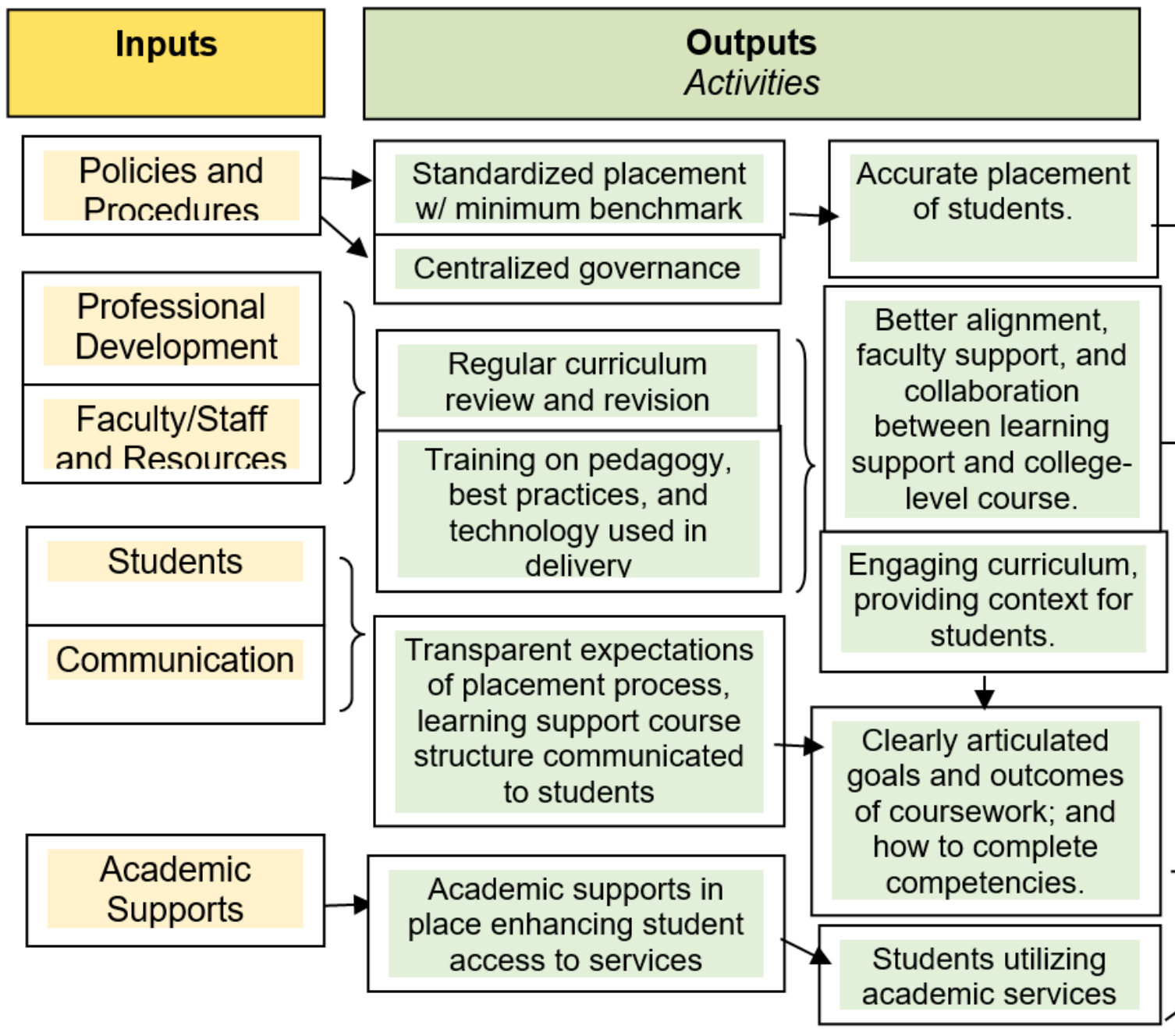
# students retained from Fall semester to Spring Semester, # students retained from Fall semester to Fall Semester, # students transferred or earned credential, #students placed in job within field

### EVALUATION QUESTIONS

What resources, funding, and time invested?

How many training sessions were held? What was the quality of the sessions? How is information disseminated to students about placement, expectations in learning support, and how to pass competencies? How and when are academic services being utilized? Who is most likely to utilize academic services? What is satisfaction level with academic services?

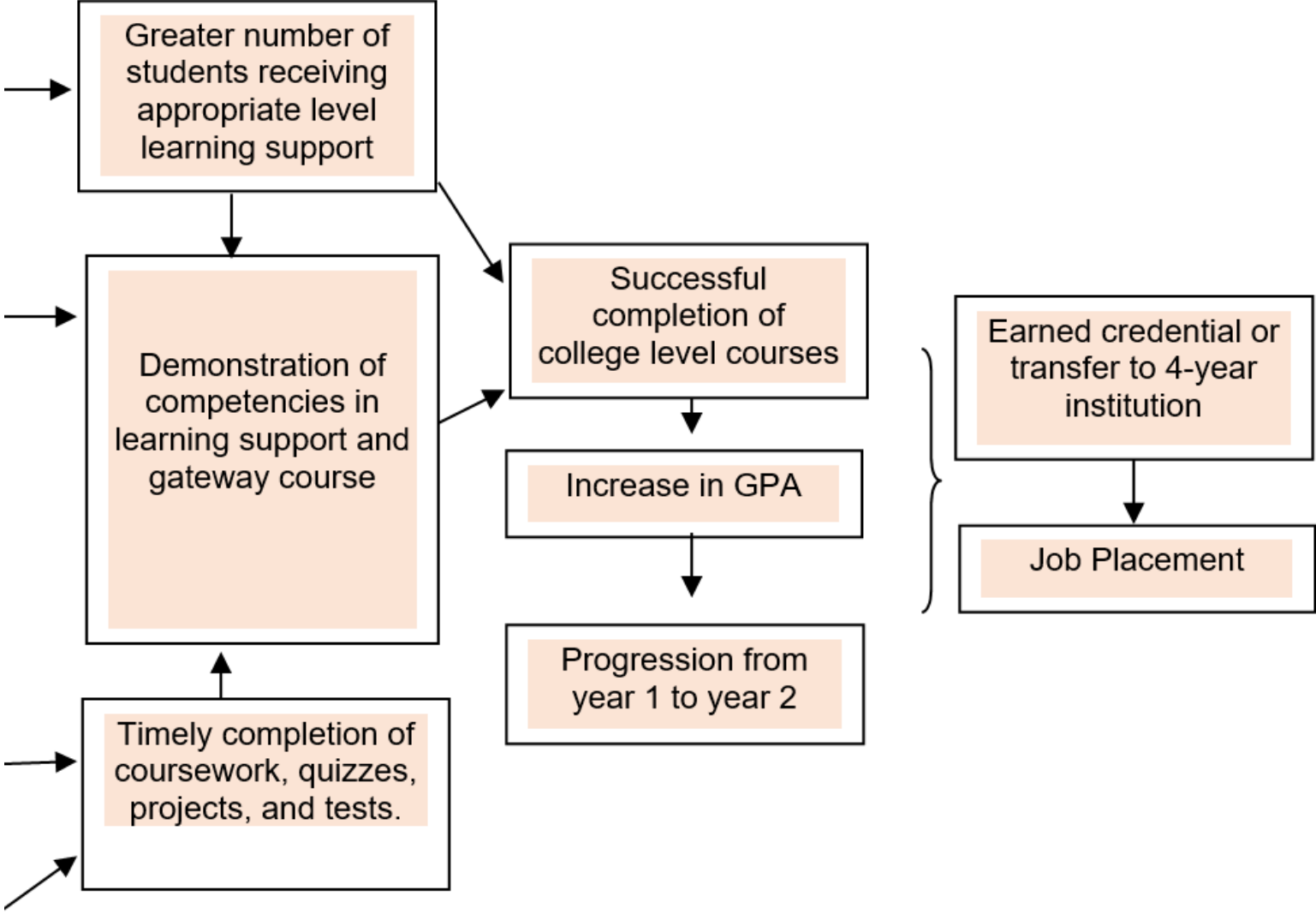
How does the number of students placed in LS compare to prior years? How are students at the lower end of ACT score spectrum performing? To what extent are students demonstrating competencies and moving into college-level coursework? How do LS students compare to non-LS students in regards to success (progression, GPA, transferring to 4-year, graduating, and obtaining employment)?



# Inputs and Outputs

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**Outcomes**  
*Short Medium Long*



# Outcomes

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# Performance Measures and Evaluation Questions

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## Performance Measures

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# Practical Implications

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- Placement of students needs to be revisited; minimum benchmark considered.
- Greater communication and transparent expectations needed: with students, between faculty members teaching co-requisite model components, and between the learning support program coordinators and college administration.
- Connection between learning support and college-level course should be enhanced and apparent, central governance in place.
- Professional development opportunities should be provided, especially for new team members, and include program goals/ objectives, curriculum redesign, pedagogy, and best practices for learning support.
- Determine utilization of available student service by learning support students.

# Future Research

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1

Longitudinal study with 2-3 years of courses, grades, retention, and earned credential data

2

Utilization of student services evaluation

3

Systematic ongoing evaluation

# Conclusions

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Although varied, delivery seems to meet A-100 Guideline mandates.

Institutions do not necessarily use same model for all subjects.

Students are more successful under co-requisite and hybrid co-requisite model than prior sequential model.

Continued, systematic evaluation imperative to continued understanding.