



**BRITISH COLUMBIA  
INSTITUTE OF TECHNOLOGY**

1

# Who are our successful students?

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# AGENDA

2

- **Before-presentation questions**
- **My study:**
  - **Background**
  - **Research Questions**
  - **Data**
  - **Measurement**
  - **Results**
  - **Discussion**

# BEFORE-PRESENTATION QUESTIONS

3

- Have you conducted any research related to student success?
- What questions did you ask in relation to student success?
- What data did you use in your research?
- What method did you use for your analysis?
- What were your major findings?

# BACKGROUND: About BCIT

4

- **History:**
  - 1960: opened as BC Vocational School
  - 1996: BCIT offered its first Bachelor of Technology degree in Environmental Engineering Technology
  - 2004: Polytechnic status was established in legislation
  - 2009: New mission, mandate, strategic plan
- **Student Enrolment:** 16,326 part-time students and 31,428 full-time students (2007/08)
- **Programs provided:** technology, trades, and apprenticeship in full-time and part-time studies leading to certificates, diplomas and applied bachelor's degrees, and applied master's degrees
- **Operating Philosophy:**
  - “BCIT builds pathways for career success”
  - “train job-ready graduates”

# BACKGROUND: Student Success at BCIT

5

- **Mission**

*The mission of BCIT is to serve the success of learners and employers:  
by providing high quality technical and professional education and training  
that supports our graduates as practitioners and as citizens; and  
by advancing the state-of-practice.*

- **BCIT is committed to:**

*providing a learner experience that supports learners as individuals, provides  
superior returns on their investment, and actively supports lifetime career  
success;*

- **Strategic Initiative 2: Our Learners**

*BCIT provides our diverse community with a premium learner experience  
during each stage of their relationship with the Institute – as prospect,  
student, graduate, and practitioner. Exemplary services support the  
connection between instructors, learners and the educational process to  
facilitate student engagement and success.*

# RESEARCH QUESTIONS

6

- Who are our successful students?
- What has contributed to the success of our students?

# DATA

7

- **Survey Instrument:** the 2009 BCIT Survey on Student Engagement (*Student Engagement, Academic Challenge, Institutional Support, Learning Outcomes*)
- **Student Population:** BCIT full-time Technology program students in Term 200910 (Jan.-April)
- **Sample size:** 970
- **Response rate:** 23.3%
- **Representativeness of the Respondents:**  
well-representative by campus, school, program and credential type;  
over-representative of female students and those from the School of Health Sciences.

# MEASUREMENT: Student Success Indicators

8

- **Traditional indicators: retention and graduation rates**
- **Braxton (2006): eight domains of student success**
- **Kuh et al. (2007):**
  - **Academic achievement;**
  - **Engagement in educationally purposeful activities;**
  - **Satisfaction;**
  - **Acquisition of desired knowledge, skills and competencies**
  - **Persistence**
  - **Attainment of educational objectives**

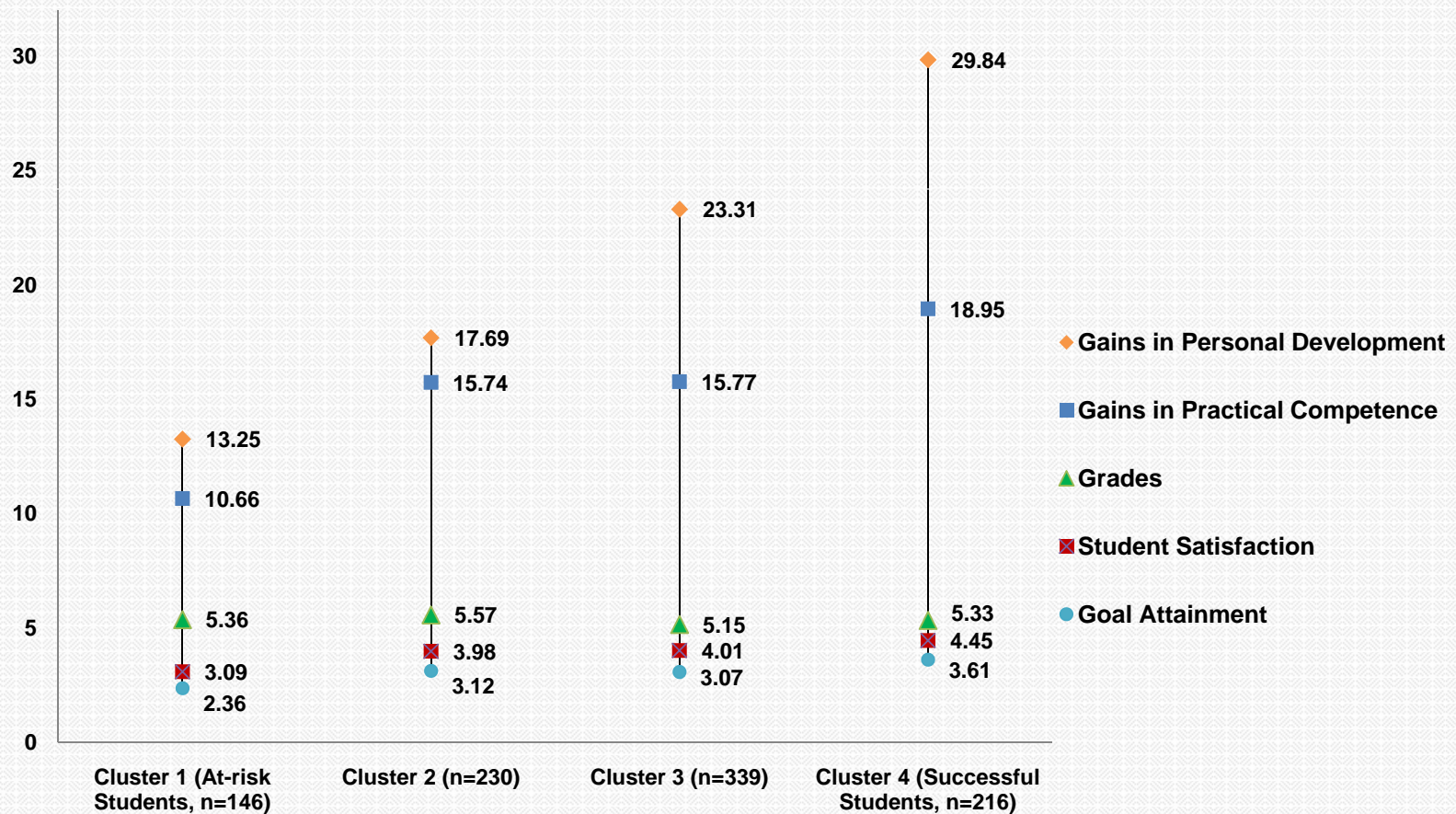
# MEASUREMENT: Student Success Indicators

Indicators	Questions	Measurement/ Scale
Student satisfaction	Q13: Overall, how satisfied are you with your learning experience at BCIT?	1=Very dissatisfied; 5=Very satisfied
Goal Attainment	Q14: To what extent are your educational goals being met while studying at BCIT?	1=Very little; 4=Very much
Gains in Practical Competence	<p>Q15: How much has your experience at BCIT contributed to your knowledge, skills and personal development in the following areas?</p> <ul style="list-style-type: none"> <li>Acquiring knowledge for further education in my field or profession</li> <li>Acquiring job-related knowledge and skills</li> <li>Thinking critically and analytically</li> <li>Solving practical problems effectively and efficiently</li> <li>Developing clearer career goals</li> </ul>	<p>Sum of the five question items</p> <p>1=Very little; 4=Very much</p>
Gains in Personal Development	<p>Q15: How much has your experience at BCIT contributed to your knowledge, skills and personal development in the following areas?</p> <ul style="list-style-type: none"> <li>Learning to adapt to change</li> <li>Speaking clearly and effectively</li> <li>Learning on my own, pursuing ideas, and finding information I need</li> <li>Writing clearly and effectively</li> <li>Developing a better understanding of myself</li> <li>Working effectively with people from a different cultural or ethnic background from my own</li> <li>Developing a personal code of values and ethics</li> <li>Developing a deeper understanding of people from other cultural or ethnic backgrounds</li> </ul>	<p>Sum of the eight question items</p> <p>1=Very little; 4=Very much</p>
Academic Achievement	Up to now, what is your average percentage grade for your current program?	1=below60; 9=95 or higher

# RESULTS: k-means Cluster Analysis

10

Student Success Indicators by Cluster



# Comparing “successful” vs. “at-risk” students

11

- Demographic characteristics
- Engagement with student life
- Engagement in certain mental activities
- Perceived academic challenge
- Obstacles to their engagement
- Use of student services
- Satisfaction with student services
- Problem-solving behaviour
- Perceived institutional support

# RESULTS: Effects of Demographic Indicators

12

- Significant effect: gender, school, program, credential type

Gender	At-risk Students (n=146)	Successful Students (n=216)
Female	43.8%	64.4%
Male	56.2%	35.6%

School	At-risk Students (n=146)	Successful Students (n=216)	Total (n=362)
Business	32.9%	44.4%	39.8%
Health Sciences	18.5%	31.5%	26.2%
Computing and Academic Studies	14.4%	8.8%	11.0%
Construction and the Environment	17.1%	8.3%	11.9%
Manufacturing, Electronics & Industrial Processes	17.1%	6.9%	11.0%

- Insignificant effect: age, campus, city, and previous educational level

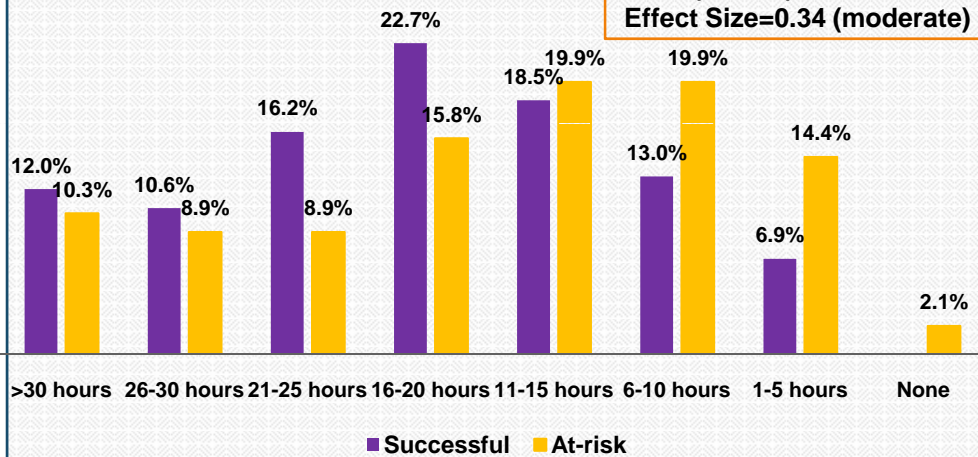
# RESULTS: Student Engagement (1)

13

**In your current term, about how many hours do you spend in a typical 7-day week doing each of the following activities?**

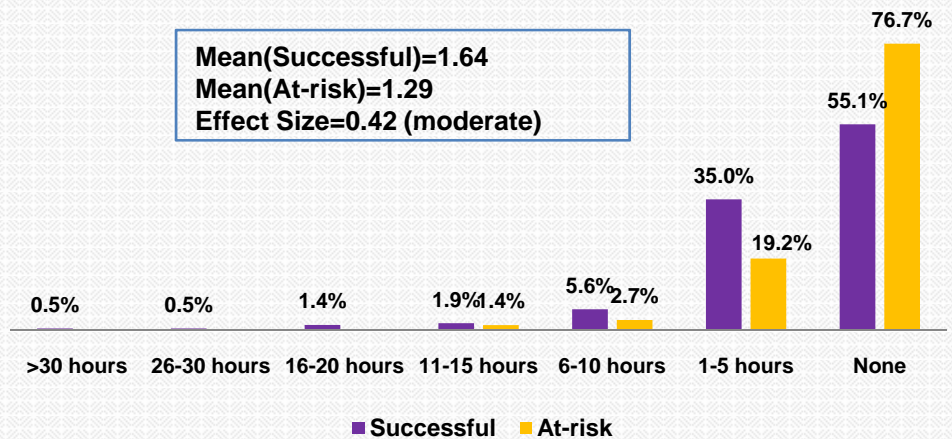
Preparing for class OUTSIDE class

Mean(Successful)=5.08  
Mean(At-risk)=4.47  
Effect Size=0.34 (moderate)

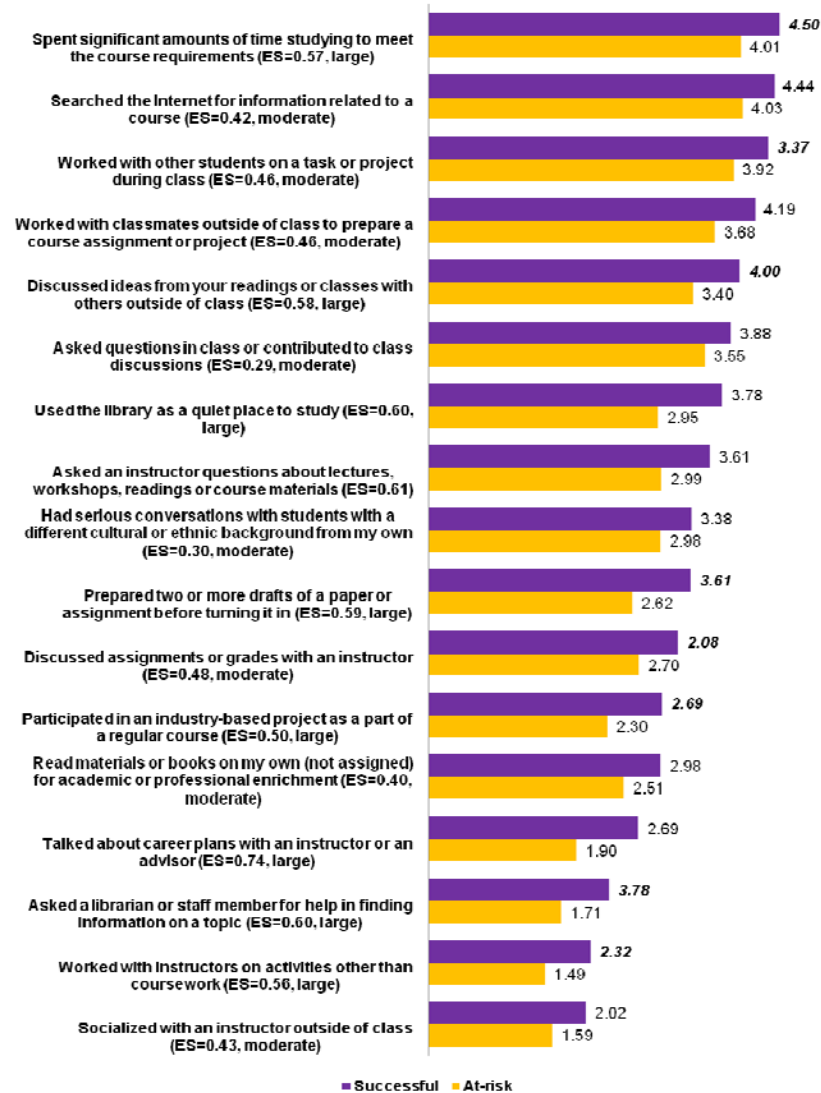


Participating in BCIT-sponsored activities

Mean(Successful)=1.64  
Mean(At-risk)=1.29  
Effect Size=0.42 (moderate)



# RESULTS: Student Engagement (2)

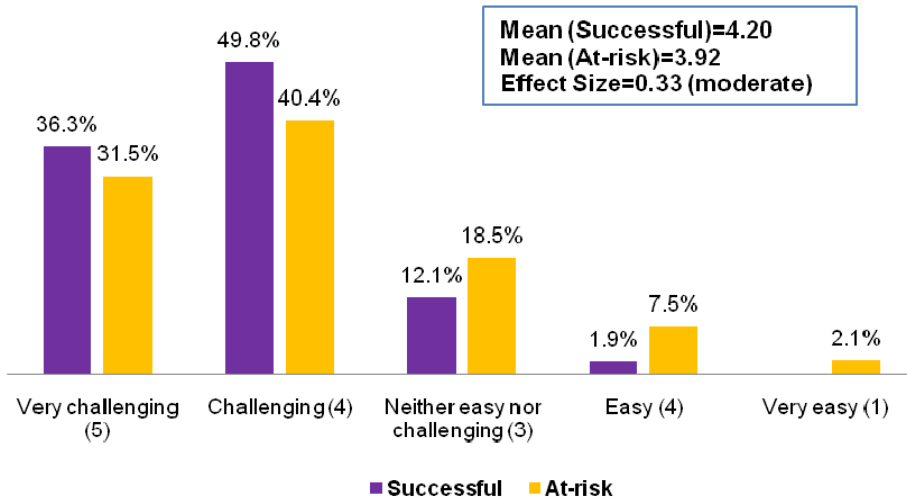


Notes:  
 1. The scale: 1=Never, 2=Seldom, 3=Sometimes, 4=Often, 5=Very often  
 2. The italicized ones have a large effect size (>0.5).

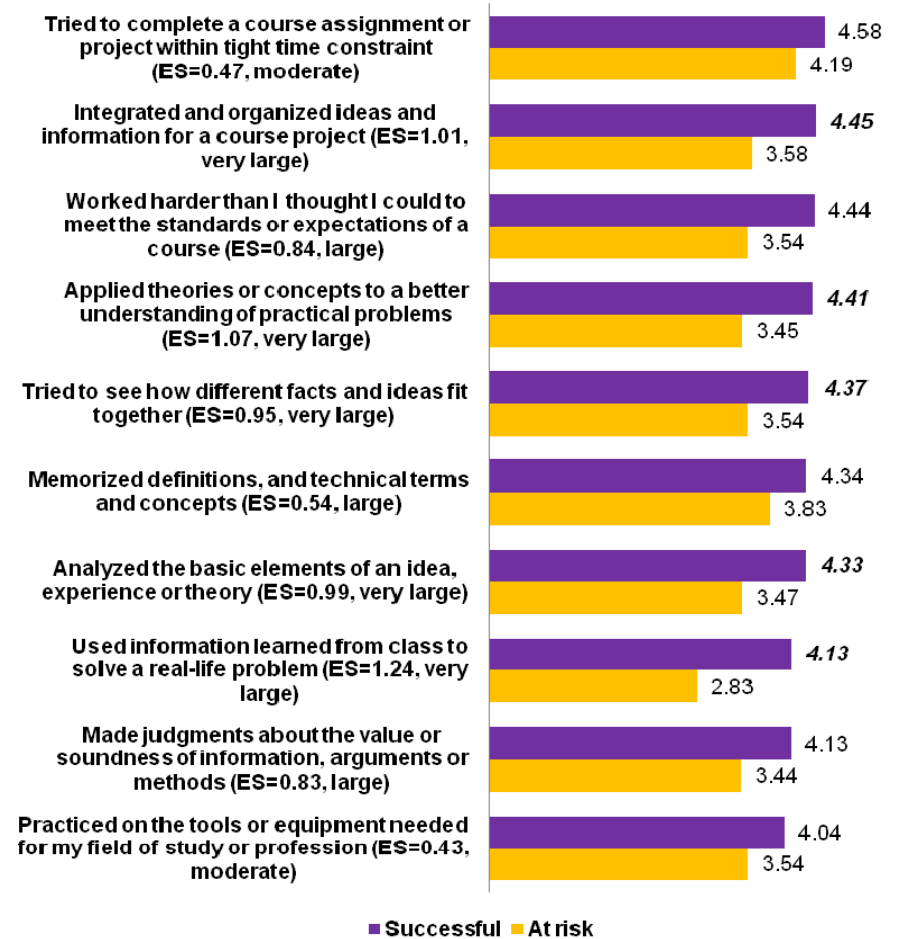
# RESULTS: Academic Challenge

15

How easy or challenging do you find your coursework at BCIT?



Since the start of your program or most current term, how often have you done the following course-related activities?



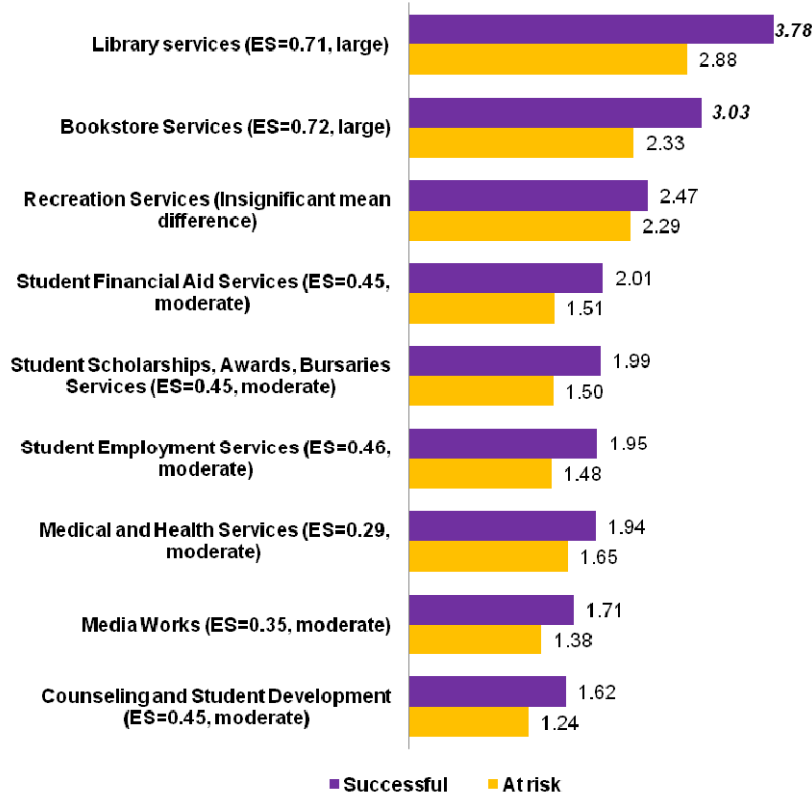
Notes:

- The scale: 1=Never, 2=Seldom, 3=Sometimes, 4=Often, 5=Very often
- The italicized ones are those with an effect size above 0.90.

# RESULTS: Student Support (1)

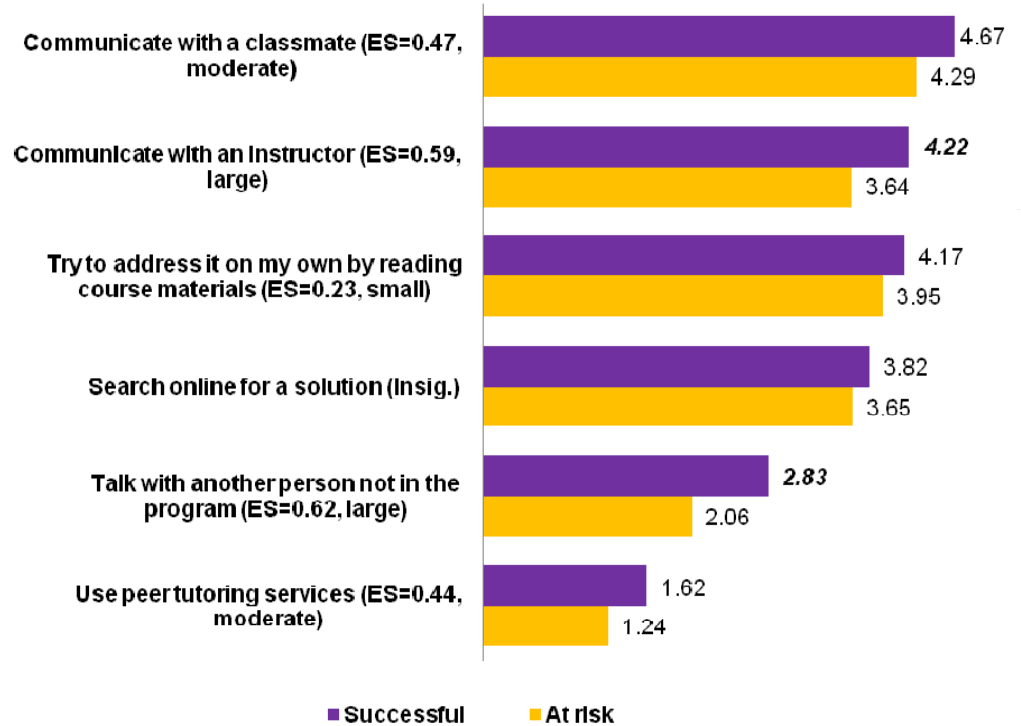
16

How often have you used the following BCIT services since the start of your program or most current term?



Notes:  
 1. The scale: 1=Never, 2=Seldom, 3=Sometimes, 4=Often, 5=Very often  
 2. The italicized ones are those with a large effect size (>0.50).

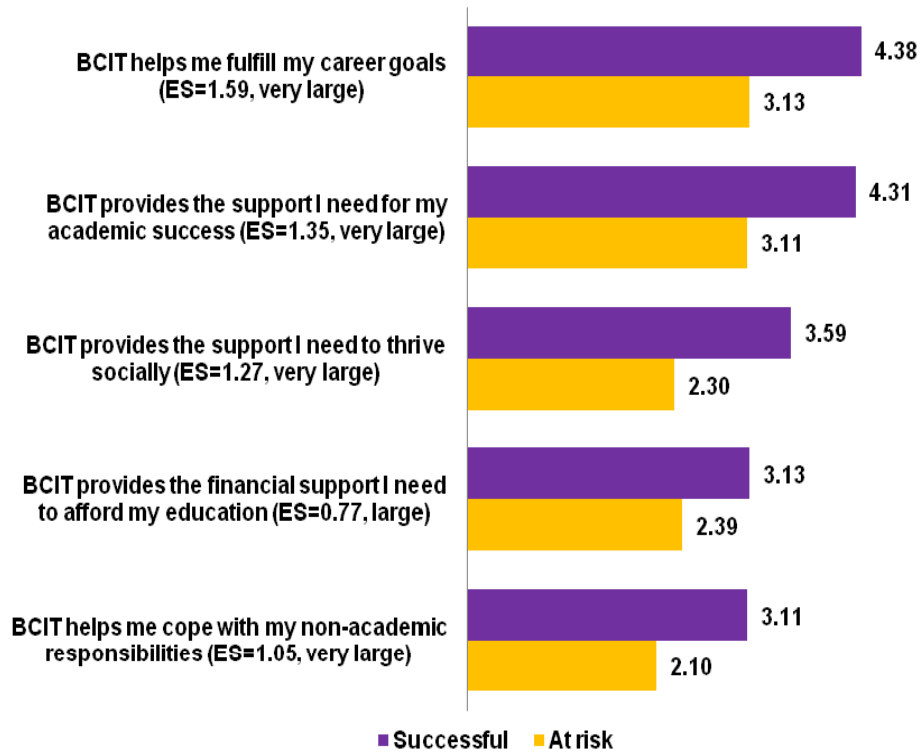
When you have course-related questions, how do you get questions resolved?



Notes:  
 1. The scale: 1=Never, 2=Seldom, 3=Sometimes, 4=Often, 5=Very often  
 2. The italicized ones are those with a large effect size (>0.50).

# RESULTS: Student Support (2)

## Perceived Institutional Support



1=Strongly disagree, 2=Disagree, 3=Neither agree nor disagree, 4=Agree, 5=Strongly agree

## Which of the following obstacles might prevent you from continuing your program or might delay your completion of your program at BCIT?

Obstacles	Successful	At-risk	Diff.
Financial pressures	55.3%	50.8%	4.5%
Work obligations	21.3%	14.8%	6.5%
Family obligations	25.5%	21.3%	4.2%
Commuting	14.9%	6.6%	8.3%
Course workload	48.9%	45.9%	3.0%
Challenges in foundation courses	19.1%	19.7%	-0.5%
English language skills	10.6%	9.8%	0.8%
Class schedule	8.5%	21.3%	-12.8%
Lack of support from BCIT	2.1%	39.3%	-37.2%
Not sure of employment prospects after graduation	12.8%	21.3%	-8.5%
Other	14.9%	29.5%	-14.6%
<b>% of those with obstacles</b>	<b>21.8% (47/216)</b>	<b>41.8% (61/146)</b>	<b>-20.0%</b>

# RESULTS: Predictors for Student Success

18

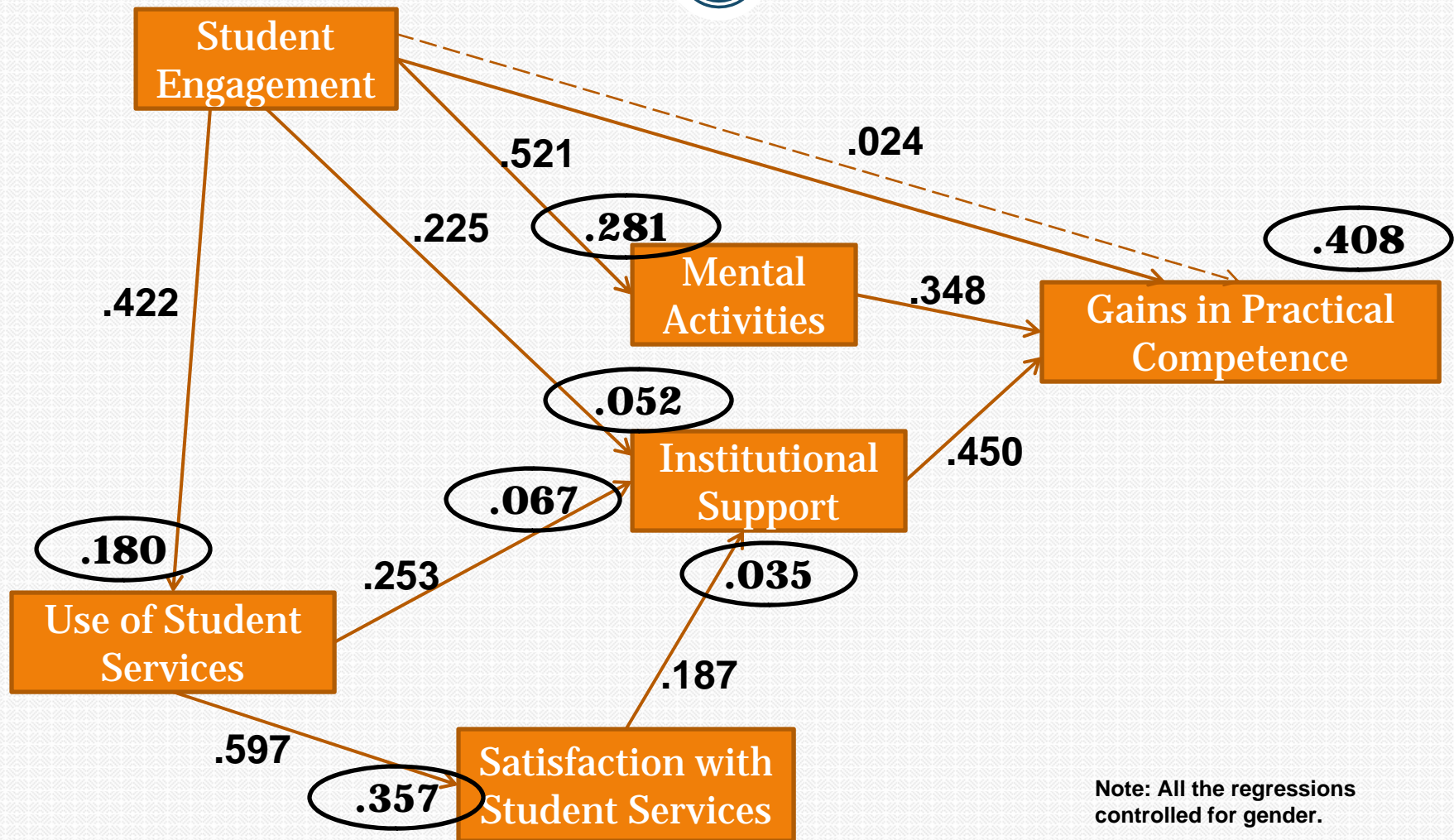
## Linear Regression on Student Success Indicators

Dependent Variable	Standardized Coefficient (Beta)				Adjusted R Square
	Student Engagement	Mental Activities	Perceived Support	Gender (F=1; M=0)	
Gains in Personal Development	.093*	.206**	.437**	.046	.319**
Gains in Practical Competence	.024	.348**	.450**	.065	.408**
Self-reported Grades	-.098	.162**	.049	.135	.039**
Student Satisfaction	.026	.122**	.566**	-.020	.368**
Goal Attainment	-.001	.216**	.472**	.109**	.329**

Notes: 1. \*\*  $p < .01$ ; \*  $p < .05$ ; 2. When Beta  $> .3$ , the variable has practical significance.

# RESULTS: Path Modeling

19



# DISCUSSION (1)

20

- **Student Success indicators:**

Grades vs. development of practical competence, personal development, satisfaction, goal attainment

- **Who are our successful students? They**

- Work harder
- Are more involved in campus communities
- Have more interactions with instructors and fellow students
- Participate more in active and collaborative learning, and community-based learning
- Used the library more often
- Do higher-order mental activities more often
- Use student services more often
- Have a bigger support network
- Perceive more support from BCIT

# DISCUSSION (2)

21

- Significant direct predictors:  
Engagement in mental activities  
& perceived support
- Student success:  
perspectives of student involvement & socialization
- Limitations of the study

*Thank you!*

22

- Any questions, comments or feedback?
- I am interested to know your insight and research ...

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