1. What are the major conclusions you would draw about student perception and faculty perception about the extent the College experience contributed to:

| Students’ knowledge, skills, and personal development in thinking critically and analytically | Faculty reported a higher percent for providing exposure of this skill to students than students perceived the college experience contributed to this skill. This indicates a discrepancy in perception.  
Even though faculty think their courses contributed to students’ thinking critically and analytically more than students’ perception, there is an increase from 2011 to 2014.  
Students’ results may be lower than faculty’s results since they may not understand the terminology of critical thinking and what it is as much as faculty members do. |
|---|---|
| Students’ solving numerical problems | Faculty perception about their course(s) contributing to a student’s ability to solve numerical problems has decreased since 2011.  
The percent of students who believe the college experience contributed to this skill increased 5% since 2011; whereas, faculty perception decreased 6%.  
Was there an increase in STEM and business-related faculty who participated in the CCFSSE in 2014 versus 2011? If so, this could account for the decline in faculty members who indicated their courses contributed to a student’s ability to solve numerical problems.  
Teaching a student to solve numerical problems does not appear to be a priority for the majority of faculty who completed the CCFSSE.  
Reporting: In the future, the Executive Briefing Sheet should not use the phrase “problem solving” interchangeably with ability to solve numerical problems interchangeably because these skills are not the same. |

2. Do the results indicate any strengths; if so, what are the strengths?

- We have already met the QEP 2017 target, which is 65% of students will perceive that the BC experience contributed to their ability to solve numerical problems. Don’t we want to aim higher? Given that the QEP will become more widespread as more faculty are jumping on the wagon, we should aim for higher scores.  
- May account more for misconceptions between faculty and students — this is more of a weakness than a strength.  
- More faculty appear to be using language and concepts/skills of critical and analytical thinking versus exposing students to numerical problems.  
- Student respondents are more positive than faculty respondents about the college experience contributing to their ability to solve numerical problems.
### 3. What concerns, if any, are raised by the results?

- What do students think “solving numerical problems” means? Is it just passing the math course(s) they need?
- Are faculty expectations unreasonable or too high?
- Was the faculty answering the survey math faculty? What percentage randomly stratified?
- Both findings for thinking critically and analytically and solving numerical problems indicate big discrepancies between faculty and students. It may be that students and faculty have different definitions for these terms.
- We are not sure how solving numerical problems was assessed and how this is related to critical thinking to a wide range of faculty or disciplines. The improvement of 11% gain by 2017 may be difficult.
- Faculty perception of students’ exposure to solving numerical problems is so low.
- There is a difference between numerical problem solving and problem solving in general, so the executive briefing sheet needs to be corrected.

### 4. What are some recommendations for using these results, in conjunction with the results from the student artifacts, to improve learning?

- It is important to make sure that students and faculty have a common language of critical thinking.
- Continue to provide professional development for faculty to better understand what the College means by critical and analytical thinking.
- Define terms for students and faculty.
- Use real-life (world) numerical problems in non-STEM and business related courses, so students have more opportunities to solve numerical problems. For example, Pell Grant and/or GPA calculation and its impact on life and future; what happens to GPA or Pell Grant if you drop a class? What are the consequences? What are students’ perceptions of those consequences?
- Continue to increase awareness of critical thinking terminology and skills among students through inclusion in courses and in key services to students (workshops, labs, orientations, etc.).
- Reduce faculty’s perception of students’ incoming level of numerical skills and work to improve them from where they currently are. IRPEA could share more data re: students’ incoming level of numerical skills.
- Suggest professional development training on terms and processes in critical thinking
- Train professors to be as specific as possible in terms of expectations for assessments and describing/explaining what critical thinking is.
- Incorporate the Degree Qualification Profile (DQP) Assignment Library as a resource for faculty

[http://www.assignmentlibrary.org/]