

**Academic Senate**  
Agenda for the Meeting of  
October 4, 2016  
**UCB 202A**  
**10:00 - 11:50 am Session**

1. Call to Order and Roll Call
2. Approval of Minutes
  - A. September 6, 2016 minutes
3. Open Forum
4. Reports
  - A. Senate President – Khagendra Thapa
  - B. Senate Vice President – Charles Bacon
  - C. Senate Secretary – Melinda Isler
5. Committee Reports
  - A. University Curriculum Committee – Kemi Fadayomi
  - B. General Education – Clifton Franklund
  - C. Student Government – Dylan Tantalo
6. Conversations with the Senate
  - A. Bruce Borkovich, Director, Public Safety
7. New Business
  - A. General Education Assessment Plan – Cliff Franklund
8. Announcements
  - A. FSU President - David Eisler
  - B. Provost – Paul Blake
  - C. Senate President – Khagendra Thapa
9. Open Forum

**Minutes  
Ferris State University  
Academic Senate Meeting**

**September 6, 2016- 10:00 a.m.**

Members in Attendance: Alspach, Bacon, C., Bacon, M., Bajor, Balanda, Baran, Berghoef, Briggs, Bright, Dinardo, Drake, Epps, Foulk, Fox, Gray, Hancock, Hanna, Ing, Isler, Klatt, Lewis, Maike, Marion, Mattis, Piercey, Rumpf, Shimko, Stone, Thapa, Todd, VanLent, Wancour, Zimmer, Zyla

Members absent with cause: Cronk, Fadayomi, Jenerou

Members absent: None

Ex Officio and Guests: Blake, Durst, Eisler, Franklund, Garrison, Jackson, Haik, Nicol, Reifert, Franklund, C, Johnson Dawson, Martin, Haneline

1.	President Thapa called the meeting to order at 10:00 a.m.
2.	<b>Approval of Minutes.</b> Senator Zyla moved to approve the minutes. Senator Epps seconded. The motion passed.
3.	<b>Open Forum.</b> College of Health Professions Dean Matthew Adeyanju introduced the new Associate Dean for his college, Lincoln Gibbs. Senator Zyla announced that Zeta Tau Alpha was sponsoring a color run to raise funding for cancer research in Big Rapids. Senator Piercey reminded senators that the Faculty Center was running a series of learning communities including one on inquiry based teaching and learning. Senator Alspach said that Adam Murdock, a Youngstown University professor was a guest speaker on September 29 <sup>th</sup> , sponsored by the Sports Communication RSO.
4.	<b>Officer Reports</b> President Thapa welcomed the Senators to the first business meeting of the year and encouraged them to sign up for committee assignments.  Vice-President Bacon reported that the non-tenure track faculty elections will occur once the final list has arrived and Senator Rumpf has agreed to continue as the Senate Elections Chair. He also reminded senators of upcoming Senate committee application forms. The Senate also is continuing to work on involvement with assessment issues relating to the HLC initiatives.  Secretary Isler confirmed that the committee forms will be coming via email the next day.
5.	<b>Committee Reports</b> UCC Chair Kemi Fadayomi was absent and there was no UCC report.  General Education coordinator Cliff Franklund said he continued to receive feedback about the assessment plan and would be conducting a discussion with the Senate about concerns with it in the October meeting.  Student Government was not present to give a report.
6a	<b>Parliamentary Procedures.</b> Secretary Isler and Parliamentarian Russ Lewis passed out a sheet with basic parliamentary procedures. Senator Gray asked to clarify that all of the items were correct as one was shown to be incorrect in last years session. Secretary Isler said she would confirm which one was incorrect and let the Senate know.
6b	<b>Open Textbook discussion</b> Dean Scott Garrison, from FLITE gave a brief presentation on open textbooks. He pointed out that some studies have shown that courses with open textbooks, not only save students money but also lead to better performance. Additional funds can lead to students increasing the number of course they can afford to take.

	<p>Michigan leaders in the open textbook initiative include Northern Michigan College and Lansing Community College. He encouraged faculty to join the learning community which offered PDI (Professional development incentive) for those who attend and review and OER. Senator Piercey expressed an interest and Senator Hanna asked if the community also dealt with issues of copyright. Senator Balanda noted that open textbooks cannot always compare with system packages that include exams, homework and other associated activities. Senator Piercey said in math there have been packages developed by some faculty to create the associated materials.</p>
7	<p><b>Conversation with Jake Martin- Chief Technology Officer</b>  Chief Technology Officer Jake Martin said that he wished to let the Senate know that his door is always open and the goal is for IT not to be a barrier to the goals and the success of the university. He opened the floor for questions. Senator Hanna asked about the COET technician who was laid off because of funding and asked about the number and quality of support? Martin said the layoffs occurred prior to his arrival, but he has not at this point been given additional funding. He would review this particular issue and get back to the senator.</p>
8.	<p><b>Announcements</b>  President Eisler thanked the senators for their participating in Founders Day activities. He discussed the preliminary results of the 4<sup>th</sup> day counts. The campus enrollment was 14,187 which is a drop of approximately 13.89%. The student credit hours are down 6653 which is a 4% drop. Enrollment on the Big Rapids campus is down 200 (2.9%) and the Kendall enrollment is down 8.69%. Our online numbers are flat but FTIACS are also down. The university needs to do a better job at attracting students as there are fewer numbers of graduating seniors in Michigan. Senator Piercey asked about the drop in retention rates. President Eisler said there was a drop, but that may be in part because of the large increase in the numbers from the previous year. Senator Alspach asked if the change in TIP rules led to a change in numbers? Senator Todd agreed that the TIP programs were no longer allowed to be enrolled in a 0+4 program. Vice President Bacon asked how summer numbers played in? President Eisler said that the enrollment numbers generated less revenue which is how it was calculated. Senator Marion asked about how to control the effects of decreased graduates? Would scholarships help? President Eisler said that part of the issue was that Michigan State lowered its graduation standards which made the Ferris pool smaller. President Eisler will be making a presentation in a few weeks about the final numbers and effect on the budget. Senator Balanda asked for an update on the endowment initiative. President Eisler said the 18 million is available for matching gifts over a 6 year period. It has already gotten 1.25 million in donations.</p> <p>Provost Blake said he would be meeting in 2 weeks about the assessment initiative and would update the Senate at the October meeting.</p>
9.	<p><b>Open Forum.</b>  Senator Berghoef expressed his support for the Open Textbook initiative.</p>
10.	<p>The meeting was adjourned at 10:45 a.m.</p>

## Academic Senate Report

University Curriculum Committee  
Chair Kemi Fadayomi

October 4, 2016

<b>Proposal Number</b>	<b>Title</b>	<b>Action/Votes</b>	<b>Senate Action / Concerns/Reasons/Updates</b>
17-001 Create RSS	Creation of new course (CARE 203)	Approved 9 Support No other votes	
17-002 MCC RSS	Change name and desc. Of CARE 201, create learning outcomes	Approved 9 Support No other votes	
17-003 NC RSS	Creation of new course (CARE 202)	Approved 9 Support No other votes	
17-004 NC AS	PSYC 335 – Police Psychology	Tabled 9-0	<ul style="list-style-type: none"> <li>• Missing signed Form B from School of Criminal Justice.</li> <li>• Student learning outcomes are not measurable</li> </ul>
17-005 NC BU	Create ISYS 103 and ISYS 104	Tabled 9-0	<ul style="list-style-type: none"> <li>• Missing list of programs that are affected by the proposal</li> <li>• Consultation form B (see Form A4)</li> <li>• Missing program checksheets (see Form A7)</li> <li>• Form F effective term change to 201701</li> </ul>
17-006 Deletion TE	Closure: Quality Engineering Technology BS	Tabled 9-0	Effective closure date missing
17-007 MCC AS	Sociology Curriculum Clean-up: prerequisite modification	Tabled 9-0	<ul style="list-style-type: none"> <li>• The initiating individual /contact person is no longer employed at the institution.</li> <li>• All corrections/updates on the checksheet must be typewritten</li> <li>• Effective date should be changed to either spring or fall 2017.</li> <li>• “fuzzy” outcomes – SOCY 270</li> <li>• Remove objectives from form E – SOCY 271</li> </ul>
17-008 MCC HP	Graduating Code Change for RN to BSN Completion Program	Tabled 9-0	Incomplete proposal – missing checksheets

### 3. Action Items

- UCC approved the *General Education Checksheet update* process as follows:

**Category 1:** *Program faculty submit a curriculum revision during 2016-17. Their revision proposal includes a checksheet, or checksheets, that reflect the new general education program. In this case, the proposal runs through the approval process as it normally would.*

**Category 2:** *Program faculty submit a curriculum revision during 2016-17. Their revision proposal includes a checksheet, or checksheets, that reflect the current (or “old”) general education program.*

*In this case, the proposal runs through the process as it normally would but final approval by Academic Affairs will be contingent on submission of checksheet(s) that reflect the new general education program. Essentially, Academic Affairs will work with the proposers to update their checksheet(s).*

**Category 3:** *Program faculty do not plan to submit a curriculum revision during 2016-17.*

*In this case, the MyDegree team will update the checksheet(s), consult with program faculty, and send completed forms directly to UCC as part of a consent agenda.*

- UCC approved the inclusion of a new table in form A (see attached Form A). The new table includes the list of forms required for each proposal category.
- Committee rejects inclusion of a signature line for University Graduate and Professional Committee (UGPC) Chair in Form A pending further discussions with UGPC on specifics about their request and how having the signature line will expedite their response time to proposals.
- All updated and new UCC forms identified with “Revised Fall 2016” on the upper right hand corner are now available on UCC website. A UWN has been sent to inform and encourage the use of these forms.

**NOTE:** ALL required forms must be completed and included BEFORE submission of the proposal to the University Curriculum Committee.

**CURRICULUM PROPOSAL SUMMARY AND ROUTING FORM**

Proposal Title:

Initiating Individual:                      Initiating Department or Unit:

Contact Person's Name: Email: Phone:

PROPOSAL GROUP: See Table B-1 in the UCC Manual for description.		FORM - (checkboxes indicate typically required forms specific to the curricular action)						
	<a href="#">PCAF Link</a>	A	B-UND B-GRA	C	D	E	F-C F-M F-D	FIN
I-A: New Degree, major, concentration, minor, or redirection of a current offering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I-B: Deletion of a degree, major, concentration, or minor		<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	
II-A: New Course, modification of a course, deletion of a course $\delta$ except deletions		<input type="checkbox"/>	<input type="checkbox"/> $\delta$	<input type="checkbox"/>		<input type="checkbox"/> $\delta$	<input type="checkbox"/>	
II-B: Minor Curriculum Clean-up		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
III: Certificate ( <input type="checkbox"/> College Credit <input type="checkbox"/> Non-credit <input type="checkbox"/> New Certificate)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IV: Other site location ( <input type="checkbox"/> College Credit <input type="checkbox"/> Non-credit)		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IV: Off Campus: Other site location ( <input type="checkbox"/> College Credit <input type="checkbox"/> Non-credit)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
IV: Non-degree Offering : Other site location ( <input type="checkbox"/> College Credit <input type="checkbox"/> Non-credit)	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
	PLEASE PRINT AND SIGN YOUR NAME	DATE	VOTE/ACTION * Number Count					
Program Representative **			<input type="checkbox"/> Support <input type="checkbox"/> Support with Concerns <input type="checkbox"/> Not Support <input type="checkbox"/> Abstain					
Department/School/Faculty Representative Vote **			<input type="checkbox"/> Support <input type="checkbox"/> Support with Concerns <input type="checkbox"/> Not Support <input type="checkbox"/> Abstain					
Department/School Administrator			<input type="checkbox"/> Support <input type="checkbox"/> Support with Concerns <input type="checkbox"/> Not Support <input type="checkbox"/> Abstain					
College Curriculum Committee/Faculty			<input type="checkbox"/> Support <input type="checkbox"/> Support with Concerns <input type="checkbox"/> Not Support <input type="checkbox"/> Abstain					
UCC Representative			<input type="checkbox"/> Support <input type="checkbox"/> Hold <input type="checkbox"/> Not Support					
Dean			<input type="checkbox"/> Support <input type="checkbox"/> Support with Concerns <input type="checkbox"/> Not Support					
University Curriculum Committee **			<input type="checkbox"/> Support <input type="checkbox"/> Support with Concerns <input type="checkbox"/> Not Support					
Senate **			<input type="checkbox"/> Support <input type="checkbox"/> Support with Concerns <input type="checkbox"/> Not Support <input type="checkbox"/> Abstain					
Academic Affairs			<input type="checkbox"/> Support <input type="checkbox"/> Hold <input type="checkbox"/> Not Support					

\* Support with Concerns or Not Support must include identification of specific concern with appropriate rationale.

\*\* Number Count must be given for all members present and/or voting.

To be completed by Academic Affairs

Date of Implementation: \_\_\_\_\_

\_\_\_\_\_  
President (Date Approved)

\_\_\_\_\_  
Board of Trustees (Date Approved)

\_\_\_\_\_  
Academic Officers of MI (Date Approved)

1. Proposal Summary: (Summary is generally less than one page. Briefly state what is proposed with a summary of rationale and highlights)

2. Summary of Curricular Action (Check all that apply to this proposal)

- Degree       Major       Minor       Concentration       Certificate       Course  
 New       Modification       Deletion

Name of Degree, Major, etc.:

3. Summary of All Course Action Required:

A. Newly Created Courses to be Added to the Catalog

Prefix	Number	Title
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B. Courses to be Deleted from FSU Catalog

Prefix	Number	Title
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C. Existing Courses to be Modified

Prefix	Number	Title
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D. Addition of existing FSU courses to program

Prefix	Number	Title
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E. Removal of existing FSU courses from program

Prefix	Number	Title
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4. Summary of All Consultations

Form Sent (B/B-UGPC or C)	Date Sent	Responding Department	Date Received & By Whom
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5. Will External Accreditation be sought? (For new programs or certificates only)

- Yes       No

If yes, name the organization involved with accreditation for this program.

6. Is a PCAF required?  Yes     No    Is the PCAF approved?  Yes  No (If yes, supply link on Academic Affairs website where PCAF is posted. )

7. Program Checksheets affected by this proposal (Check all that apply to this proposal) **REQUIRED**

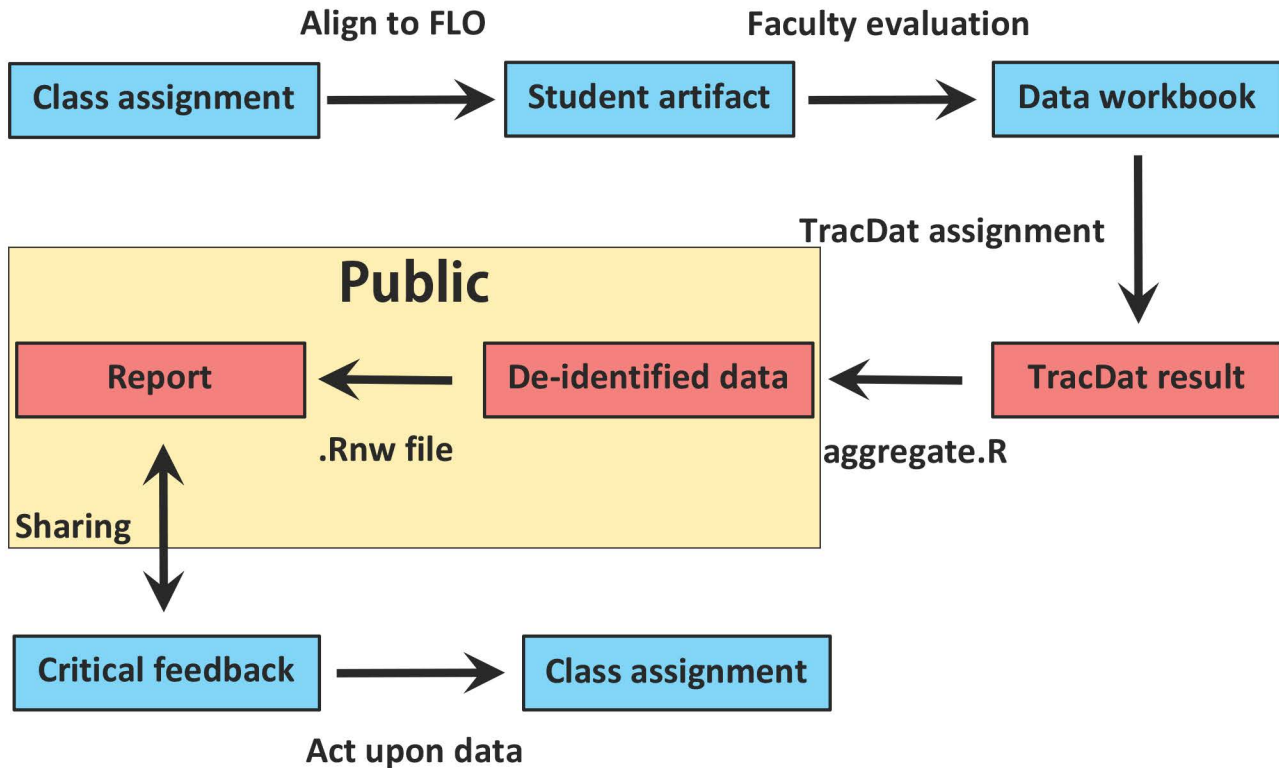
- Add Course     Delete Course     Modify Course     Change Prerequisite     Move from required to elective  
 Move from elective to required     Change Outcomes and Assessment Plan     Change Credit hours

8. List all Checksheets affected by this proposal:

College	Department	Program
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The Academic Senate moves to approve the General Education assessment plan.





**General Education Proposed Assessment Process**

Dr. Clifton Franklund,  
General Education Coordinator

10/4/2016

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SCIENCE - Grade 8 - Room 12															
DATES	13-Sep	18-Sep	20-Sep	24-Sep	27-Sep	2-Oct	4-Oct	10-Oct	11-Oct	16-Oct	18-Oct	TERM 1 PERCENT			
EVALUATION TYPE	TEST 1	QUIZ 1	TEST 2	LAB 1	TEST 3	QUIZ 2	TEST 4	LAB 2	TEST 5	QUIZ 3	TEST 6	60% TEST+ 25% QUIZ + 15% LAB			
MAX VALUE	100	20	100	25	100	20	100	25	100	20	100	100			
Abrams, Jonathan	88	18	72	25	85	16	92	23	81	17	76	80.95			
Buler, Cindy	75	16	72	21	77	17	88	17	72	72	72	77.7			
Chow, Li	94	19	91	23	100	100	94	25	89	92	92	98.43			
Dueck, Darcy	80	18	84	22	75	17	86	19	83	17	83	83.21			
Fontaine, Alphonse	65	16	72	20	68	15	78	18	73	13	73	73.19			
Hoffman, Barry	55	12	59	21	54	13	54	13	54	13	54	65.00			
Kahn, Anandita	90	17	88	23	88	17	88	24	88	13	88	88.97			
King, Laura	88	17	85	23	85	17	85	24	85	13	85	88.92			
Kowalski, Alan	80	17	72	22	75	17	85	24	85	13	85	82.95			
Lamoureux, Cecile	62	15	72	22	72	17	66	18	68	16	63	70.90			
Lawson, Dianne	68	15	72	22	75	17	66	17	66	23	83	17	78	83.85	
MacDonald, Scott	85	18	81	21	81	18	80	17	76	19	77	80.08			
Murphy, Scott	85	18	81	22	81	16	85	22	87	18	81	84.23			
Navarro, Kathleen	54	11	58	23	52	13	56	20	59	12	55	61.30			
O'Brien, Kathleen	63	15	70	20	62	16	75	18	70	17	72	72.60			
Pearce, Scott, Adam	62	15	67	21	69	17	67	17	55	15	60	68.98			
Ramirez, Carlos	95	17	92	23	99	18	95	25	97	19	93	94.83			
Woods, Bobby	65	17	83	22	81	16	85	22	85	20	83	85.48			
CLASS AVERAGE	77	16	76	22	77	17	81	21	77	17	76	80			

*Assessment is not a spreadsheet ... it's a conversation.* - Irmeli Halinen

<http://life-long-learners.com/teacher-feature-32/>

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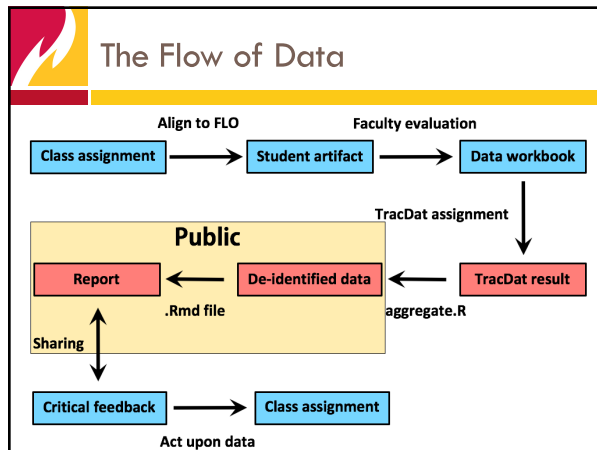
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### Six Easy Steps for Reporting

- 1 Determine which FLO is being assessed for the semester
- 2 Select an assignment within your course that addresses the FLO
- 3 Select the defined assessment method that you would like to use
- 4 Obtain a copy of the data collection workbook for the method
- 5 Complete the data workbook
- 6 Use the data workbook to complete the TracDat assignment

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### Overview of Rubric Scores

- 1 Summary of all rubric scores for the period
- 2 Are the full range of scores are used?
- 3 What is the overall distribution like?

Rubric Score	Overall Frequency
0	~70
1	~120
2	~200
3	~380
4	~200

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### Rubric Scores by Report

- 1 Used to compare the distribution between assessment reports
- 2 Are there differences?
- 3 Are there discernable patterns?

Semester	0	1	2	3	4
Fall 2009	~10	~10	~10	~10	~60
Spring 2010	~10	~10	~10	~10	~60
Fall 2010	~10	~10	~10	~10	~60
Spring 2011	~10	~10	~10	~10	~60
Fall 2011	~10	~10	~10	~10	~60
Spring 2012	~10	~10	~10	~10	~60
Fall 2012	~10	~10	~10	~10	~60
Spring 2013	~10	~10	~10	~10	~60
Fall 2013	~10	~10	~10	~10	~60
Spring 2014	~10	~10	~10	~10	~60
Fall 2014	~10	~10	~10	~10	~60
Spring 2015	~10	~10	~10	~10	~60
Fall 2015	~10	~10	~10	~10	~60

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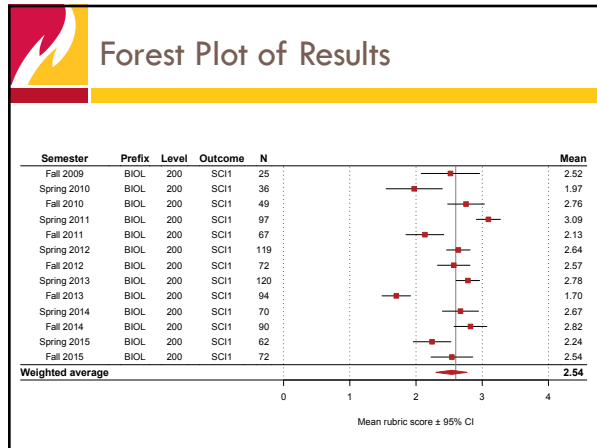
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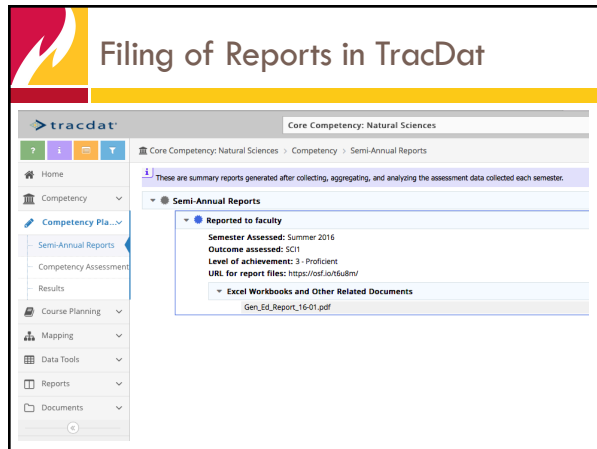
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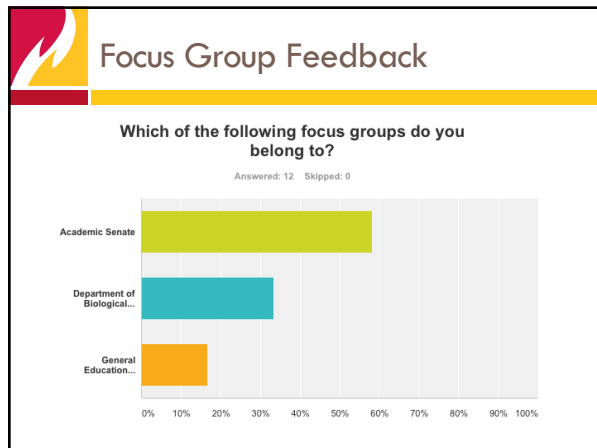
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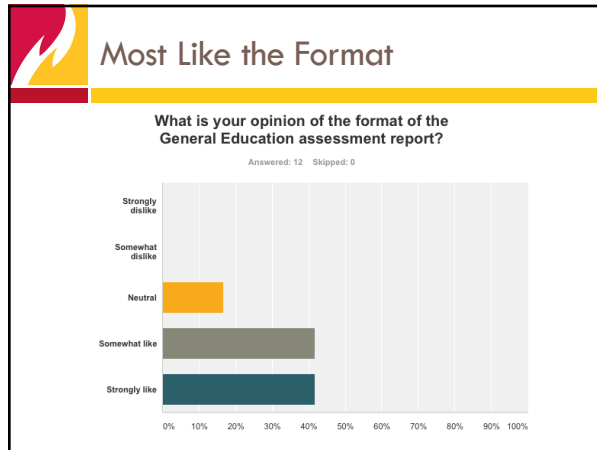
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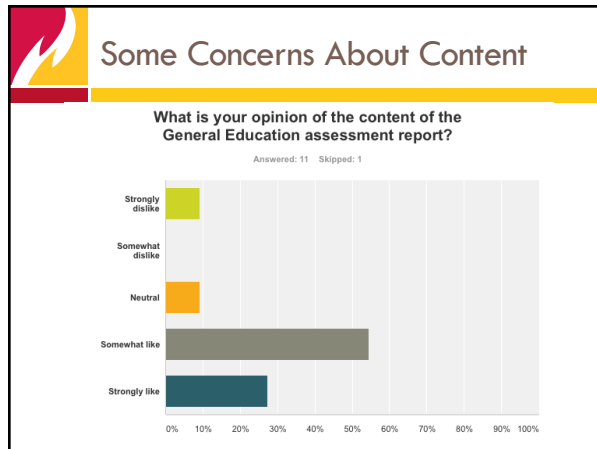
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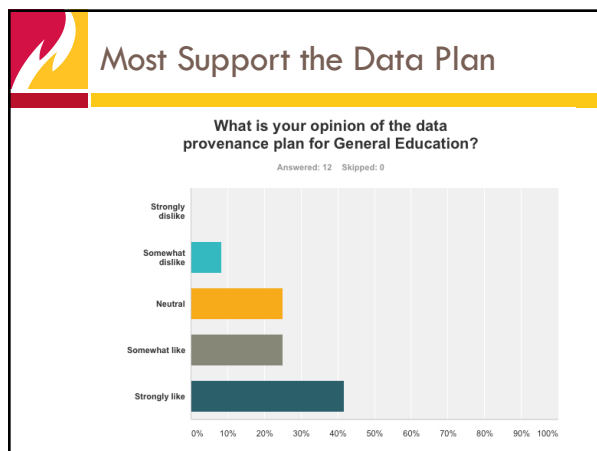
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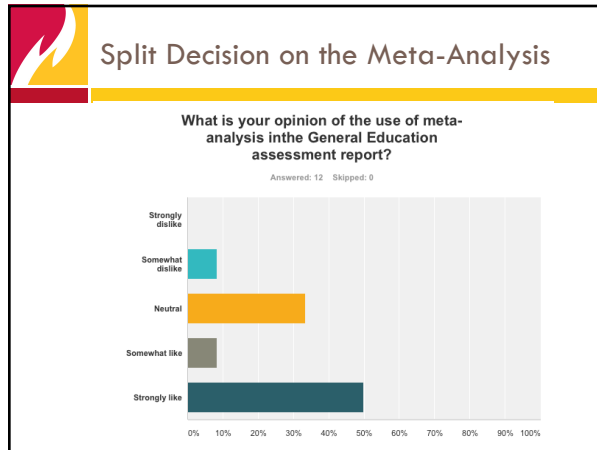
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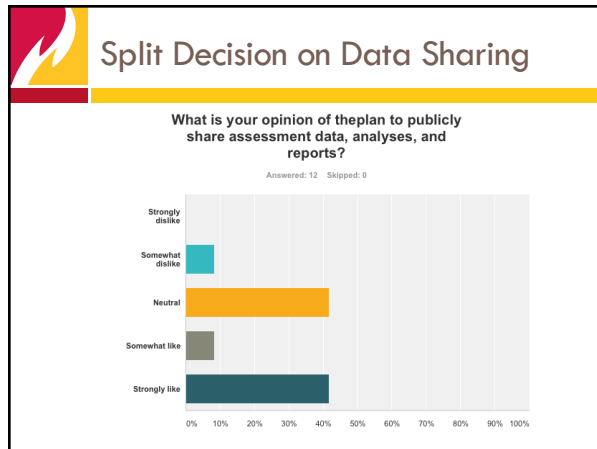
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### Free-Form Feedback

What suggestions do you have to improve the General Education Report?

Answered: 5 Skipped: 7

**PRO FEATURE**  
Use text analysis to search and categorize responses; see frequently-used words and phrases. To use Text Analysis, upgrade to a GOLD or PLATINUM plan.  
[Upgrade](#) [Learn more](#)

Showing 5 responses

None at this time.

9/29/2016 6:12 PM [View respondent's answers](#)

Start over and simplify it. Too many non-value added activities required now.  
9/23/2016 8:48 AM [View respondent's answers](#)

It might not hurt for a little more information on how you obtained the threshold score.  
9/2/2016 1:33 PM [View respondent's answers](#)

Without being able to identify instructor in multiple section courses where there is no common syllabus, it will be more challenging to fix problems we observe. Don't know how to fix that, it's the "elephant in the room" in my area.  
8/29/2016 1:50 PM [View respondent's answers](#)

I'm not sure about the one size fits all (0-4) scale that you have, but with some adjustment I think I can make it work.  
8/29/2016 8:44 AM [View respondent's answers](#)

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## ASSESSMENT MEASURES

#	Type of Measure	Data Workbook	Category
1.	A selected response exam (T/F, multiple-choice, etc.)	Score	[Exam]
2.	A constructed response exam (short answer, essay, etc.)	Score	[Exam]
3.	A pre- and post-test	Pre-Post	[Exam]
4.	A standardized test	Percentile	[Exam]
5.	A short written report (1 to 2 pages in length)	Rubric	[Product]
6.	A medium written report (3 to 9 pages in length)	Rubric	[Product]
7.	A long written report (10 or more pages in length)	Rubric	[Product]
8.	A student project	Rubric	[Product]
9.	A laboratory report	Rubric	[Product]
10.	A student portfolio	Rubric	[Product]
11.	A capstone project	Rubric	[Product]
12.	An oral presentation	Rubric	[Performance]
13.	A student performance	Rubric	[Performance]
14.	A student survey	Rubric	[Indirect]
15.	A reflective assignment	Rubric	[Indirect]

## PEDAGOGY CATEGORIES

1.	Face-to-face lecture
2.	Group work
3.	Online delivery
4.	Learn lab
5.	Computer lab
6.	Structured Learning Assistance (SLA)
7.	Laboratory
8.	Field work
9.	Mixed delivery
10.	Internship/fellowship

## Standardized Assessment Strategies

### 1) Pre-test / Post-test.....[Examination]

**Description:**

**Scoring:**

**Analysis:**

**Criterion of success:**

An assessment instrument based upon the primary course materials will be given to all students at the beginning and at end of instruction. The number of student scores meeting or exceeding a threshold score of 70% correct will be determined for each time point. The average class score at each time point will be calculated and compared using a paired t-test. Cohen's d will be used to determine the magnitude of any differences found. The student post-test scores will then be transformed into rubric scores according to the following scheme:

- 0) **Deficient**       $0\% \leq \text{post-test} < 40\%$  correct
- 1) **Beginning**     $40\% \leq \text{post-test} < 55\%$  correct
- 2) **Progressing**    $55\% \leq \text{post-test} < 70\%$  correct
- 3) **Proficient**     $70\% \leq \text{post-test} < 85\%$  correct
- 4) **Advanced**      $85\% \leq \text{post-test} \leq 100\%$  correct

The number of student scores meeting or exceeding a threshold rubric score of 3.0 will be determined for each time point. The average and 95% confidence interval of the class rubric scores will be calculated and classified according to the following scheme:

- 0) **Deficient**       $0.0 \leq \text{class average} < 1.0$
- 1) **Beginning**      $1.0 \leq \text{class average} < 1.8$
- 2) **Progressing**    $1.8 \leq \text{class average} < 2.6$
- 3) **Proficient**     $2.6 \leq \text{class average} < 3.4$
- 4) **Advanced**      $3.4 \leq \text{class average} \leq 4.0$

A one factor, two-tailed t-test will be used to evaluate the statistical significance of differences between class average and the threshold score of 2.6 points. Cohen's d will be use to determine the magnitude of any differences found. The criteria of success are defined as follows:

100-level

50% of individuals should be proficient or better (3 on the rubric)

The class as a whole should be progressing (threshold = 1.8)

200-level

60% of the individuals should be proficient or better (3 on the rubric)

The class as a whole should be proficient (threshold = 2.6)

300-level

70% of individuals should be proficient or better (3 on the rubric)

The class as a whole should be proficient (threshold = 2.6)

400-level

80% of individuals should be proficient or better (3 on the rubric)

The class as a whole should be proficient (threshold = 2.6)



## Standardized Assessment Strategies

### 2) Selected response exam questions.....[Examination]

**Description:** A specific subset of questions from a selected response quiz or exam was selected to measure student competence in the course materials. Question formats may include true/false, multiple-choice, matching, or multiple, multiple-choice.

**Scoring:** The student score was transformed into outcome rubric scores using the following scheme:

- 0) **Deficient**       $0\% \leq \text{score} < 40\%$  correct
- 1) **Beginning**     $40\% \leq \text{score} < 55\%$  correct
- 2) **Progressing**  $55\% \leq \text{score} < 70\%$  correct
- 3) **Proficient**     $70\% \leq \text{score} < 85\%$  correct
- 4) **Advanced**      $85\% \leq \text{score} \leq 100\%$  correct

**Analysis:** The number of student scores meeting or exceeding a threshold rubric score of 3.0 was determined for the assignment. The average and 95% confidence interval of the class rubric scores was calculated and classified according to the following scheme:

- 0) **Deficient**       $0.0 \leq \text{class average} < 1.0$
- 1) **Beginning**      $1.0 \leq \text{class average} < 1.8$
- 2) **Progressing**  $1.8 \leq \text{class average} < 2.6$
- 3) **Proficient**     $2.6 \leq \text{class average} < 3.4$
- 4) **Advanced**      $3.4 \leq \text{class average} \leq 4.0$

A one factor, two-tailed t-test was used to evaluate the statistical significance of differences between class average and the appropriate threshold score based upon the course's level. Cohen's d was used to determine the magnitude of the difference found.

**Criterion of success:** The criteria of success depends upon the level of the course assessed. The thresholds for each level were defined as follows:

#### 100-level

- 50% of individuals should be proficient or better (3 on the rubric)
- The class as a whole should be progressing (threshold = 1.8)

#### 200-level

- 60% of the individuals should be proficient or better (3 on the rubric)
- The class as a whole should be proficient (threshold = 2.6)

#### 300-level

- 70% of individuals should be proficient or better (3 on the rubric)
- The class as a whole should be proficient (threshold = 2.6)

#### 400-level

- 80% of individuals should be proficient or better (3 on the rubric)
- The class as a whole should be proficient (threshold = 2.6)

## Standardized Assessment Strategies

### 3) Paper ..... [Product]

Students will write a paper that responds to a specific prompt related to a course topic. These papers will be scored using a four-level rubric. The number of student scores meeting or exceeding a threshold score of 3 out of 4 points will be determined. The average and 95% confidence interval of the class rubric scores will be calculated and classified according to the following scheme:

- 0) **Deficient**      $0.0 \leq \text{class average} < 1.0$
- 1) **Beginning**     $1.0 \leq \text{class average} < 1.8$
- 2) **Progressing**    $1.8 \leq \text{class average} < 2.6$
- 3) **Proficient**     $2.6 \leq \text{class average} < 3.4$
- 4) **Advanced**      $3.4 \leq \text{class average} \leq 4.0$

The number of student scores meeting or exceeding a threshold rubric score of 3.0 will be determined for the assignment. A one factor, two-tailed t-test will be used to evaluate the statistical significance of differences between class average and the threshold score of 2.6 points. Cohen's d will be used to determine the magnitude of any differences found. The criteria of success are defined as follows:

#### 100-level

50% of individuals should be proficient or better (3 on the rubric)

The class as a whole should be progressing (threshold = 1.8)

#### 200-level

60% of the individuals should be proficient or better (3 on the rubric)

The class as a whole should be proficient (threshold = 2.6)

#### 300-level

70% of individuals should be proficient or better (3 on the rubric)

The class as a whole should be proficient (threshold = 2.6)

#### 400-level

80% of individuals should be proficient or better (3 on the rubric)

The class as a whole should be proficient (threshold = 2.6)

## Standardized Assessment Strategies

### 4) Laboratory report ..... [Product]

Students will create a report pertaining to observations and analyses that they made during in the field or laboratory. These reports will be scored using a four-level rubric. The number of student scores meeting or exceeding a threshold score of 3 out of 4 points will be determined. The average and 95% confidence interval of the class rubric scores will be calculated and classified according to the following scheme:

- 0) **Deficient**      $0.0 \leq \text{class average} < 1.0$
- 1) **Beginning**     $1.0 \leq \text{class average} < 1.8$
- 2) **Progressing**    $1.8 \leq \text{class average} < 2.6$
- 3) **Proficient**     $2.6 \leq \text{class average} < 3.4$
- 4) **Advanced**      $3.4 \leq \text{class average} \leq 4.0$

The number of student scores meeting or exceeding a threshold rubric score of 3.0 will be determined for the assignment. A one factor, two-tailed t-test will be used to evaluate the statistical significance of differences between class average and the threshold score of 2.6 points. Cohen's d will be use to determine the magnitude of any differences found. The criteria of success are defined as follows:

- 100-level
  - 50% of individuals should be proficient or better (3 on the rubric)
  - The class as a whole should be progressing (threshold = 1.8)
- 200-level
  - 60% of the individuals should be proficient or better (3 on the rubric)
  - The class as a whole should be proficient (threshold = 2.6)
- 300-level
  - 70% of individuals should be proficient or better (3 on the rubric)
  - The class as a whole should be proficient (threshold = 2.6)
- 400-level
  - 80% of individuals should be proficient or better (3 on the rubric)
  - The class as a whole should be proficient (threshold = 2.6)

## Standardized Assessment Strategies

### 5) Research project ..... [Performance]

Students will carry out a research project using critical thinking. Their performances will be scored using a four-level rubric. The number of student scores meeting or exceeding a threshold score of 3 out of 4 points will be determined. The average and 95% confidence interval of the class rubric scores will be calculated and classified according to the following scheme:

- 0) **Deficient**      $0.0 \leq \text{class average} < 1.0$
- 1) **Beginning**     $1.0 \leq \text{class average} < 1.8$
- 2) **Progressing**    $1.8 \leq \text{class average} < 2.6$
- 3) **Proficient**     $2.6 \leq \text{class average} < 3.4$
- 4) **Advanced**      $3.4 \leq \text{class average} \leq 4.0$

The number of student scores meeting or exceeding a threshold rubric score of 3.0 will be determined for the assignment. A one factor, two-tailed t-test will be used to evaluate the statistical significance of differences between class average and the threshold score of 2.6 points. Cohen's d will be used to determine the magnitude of any differences found. The criteria of success are defined as follows:

100-level

50% of individuals should be proficient or better (3 on the rubric)

The class as a whole should be progressing (threshold = 1.8)

200-level

60% of the individuals should be proficient or better (3 on the rubric)

The class as a whole should be proficient (threshold = 2.6)

300-level

70% of individuals should be proficient or better (3 on the rubric)

The class as a whole should be proficient (threshold = 2.6)

400-level

80% of individuals should be proficient or better (3 on the rubric)

The class as a whole should be proficient (threshold = 2.6)

## Standardized Assessment Strategies

### 6) Presentation ..... [Performance]

Students will make an oral presentation on a selected topic. These talks may be based upon the scientific literature, specific course work, or the results of independent research. The presentations will be scored using a four-level rubric. The number of student scores meeting or exceeding a threshold score of 3 out of 4 points will be determined. The average and 95% confidence interval of the class rubric scores will be calculated and classified according to the following scheme:

- 0) **Deficient**      $0.0 \leq \text{class average} < 1.0$
- 1) **Beginning**     $1.0 \leq \text{class average} < 1.8$
- 2) **Progressing**    $1.8 \leq \text{class average} < 2.6$
- 3) **Proficient**     $2.6 \leq \text{class average} < 3.4$
- 4) **Advanced**      $3.4 \leq \text{class average} \leq 4.0$

The number of student scores meeting or exceeding a threshold rubric score of 3.0 will be determined for the assignment. A one factor, two-tailed t-test will be used to evaluate the statistical significance of differences between class average and the threshold score of 2.6 points. Cohen's d will be used to determine the magnitude of any differences found. The criteria of success are defined as follows:

#### 100-level

50% of individuals should be proficient or better (3 on the rubric)

The class as a whole should be progressing (threshold = 1.8)

#### 200-level

60% of the individuals should be proficient or better (3 on the rubric)

The class as a whole should be proficient (threshold = 2.6)

#### 300-level

70% of individuals should be proficient or better (3 on the rubric)

The class as a whole should be proficient (threshold = 2.6)

#### 400-level

80% of individuals should be proficient or better (3 on the rubric)

The class as a whole should be proficient (threshold = 2.6)

## Standardized Assessment Strategies

### 7) Nationally normed exam .....[Examination]

Student performances on nationally normed exams will be evaluated. The average and 95% confidence interval of the class rubric scores will be calculated and classified according to the following scheme:

- 0) **Deficient**       $0^{\text{th}} \leq \text{percentile} < 16^{\text{th}}$  (worse than one SD below the mean)
- 1) **Beginning**     $16^{\text{th}} \leq \text{percentile} < 30^{\text{th}}$  (between a half to one SD below the mean)
- 2) **Progressing**    $30^{\text{th}} \leq \text{percentile} < 50^{\text{th}}$  (between zero to a half a SD below the mean)
- 3) **Proficient**     $50^{\text{th}} \leq \text{percentile} < 85^{\text{th}}$  (between zero an 1 SD above the mean)
- 4) **Advanced**       $85^{\text{th}} \leq \text{percentile} \leq 100^{\text{th}}$  (more than one SD above the mean)

The number of student scores meeting or exceeding a threshold rubric score of 3.0 will be determined for the assignment. The average and 95% confidence interval of the class rubric scores will be calculated and classified according to the following scheme:

- 0) **Deficient**       $0.0 \leq \text{class average} < 1.0$
- 1) **Beginning**      $1.0 \leq \text{class average} < 1.8$
- 2) **Progressing**    $1.8 \leq \text{class average} < 2.6$
- 3) **Proficient**     $2.6 \leq \text{class average} < 3.4$
- 4) **Advanced**       $3.4 \leq \text{class average} \leq 4.0$

A one factor, two-tailed t-test will be used to evaluate the statistical significance of differences between class average and the threshold score of 2.6 points. Cohen's d will be use to determine the magnitude of any differences found. The criteria of success are defined as follows:

100-level

- 50% of individuals should be proficient or better (3 on the rubric)
- The class as a whole should be progressing (threshold = 1.8)

200-level

- 60% of the individuals should be proficient or better (3 on the rubric)
- The class as a whole should be proficient (threshold = 2.6)

300-level

- 70% of individuals should be proficient or better (3 on the rubric)
- The class as a whole should be proficient (threshold = 2.6)

400-level

- 80% of individuals should be proficient or better (3 on the rubric)
- The class as a whole should be proficient (threshold = 2.6)