UMBC50
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Got Data—Now What?: Synthesizing Outcomes, Measures, And Success To Inform Institution-Wide Decision Making

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Got Data—Now What?: Synthesizing Outcomes, Measures, And Success To Inform Institution-Wide Decision Making

This session defines student success through a gamified exercise, delving into technologies that collect and manage data, and preparing participants to lead data discussions. Our dashboarding activity challenges attendees to classify student success indicators, practice bridging direct and indirect evidence, and collaborate to synthesize meaning from real-world institutional problems.

A
B
C
D

1. What is your role?

A. Administrator

B. Instructional Technologist/Designer

C. Faculty

D. Other

2. What technologies do you use?

A. Learning Management System (LMS)

B. Assessment Management System (AMS)

C. Student Information Systems (SIS)

D. Other

3. What assessment challenge are you trying to solve with technology?

A. Collecting

B. Connecting

C. Analyzing

D. Closing the Loop

4. Who can help you?

A. Instructional Technology Expert

B. Assessment Expert

C. Institutional Research Expert

D. Other

5. Which student success indicator is most important for your work?

A. Direct Evidence of Student Learning

B. Grades

C. Retention & Graduation Rates

D. Other

Our Learning Outcomes

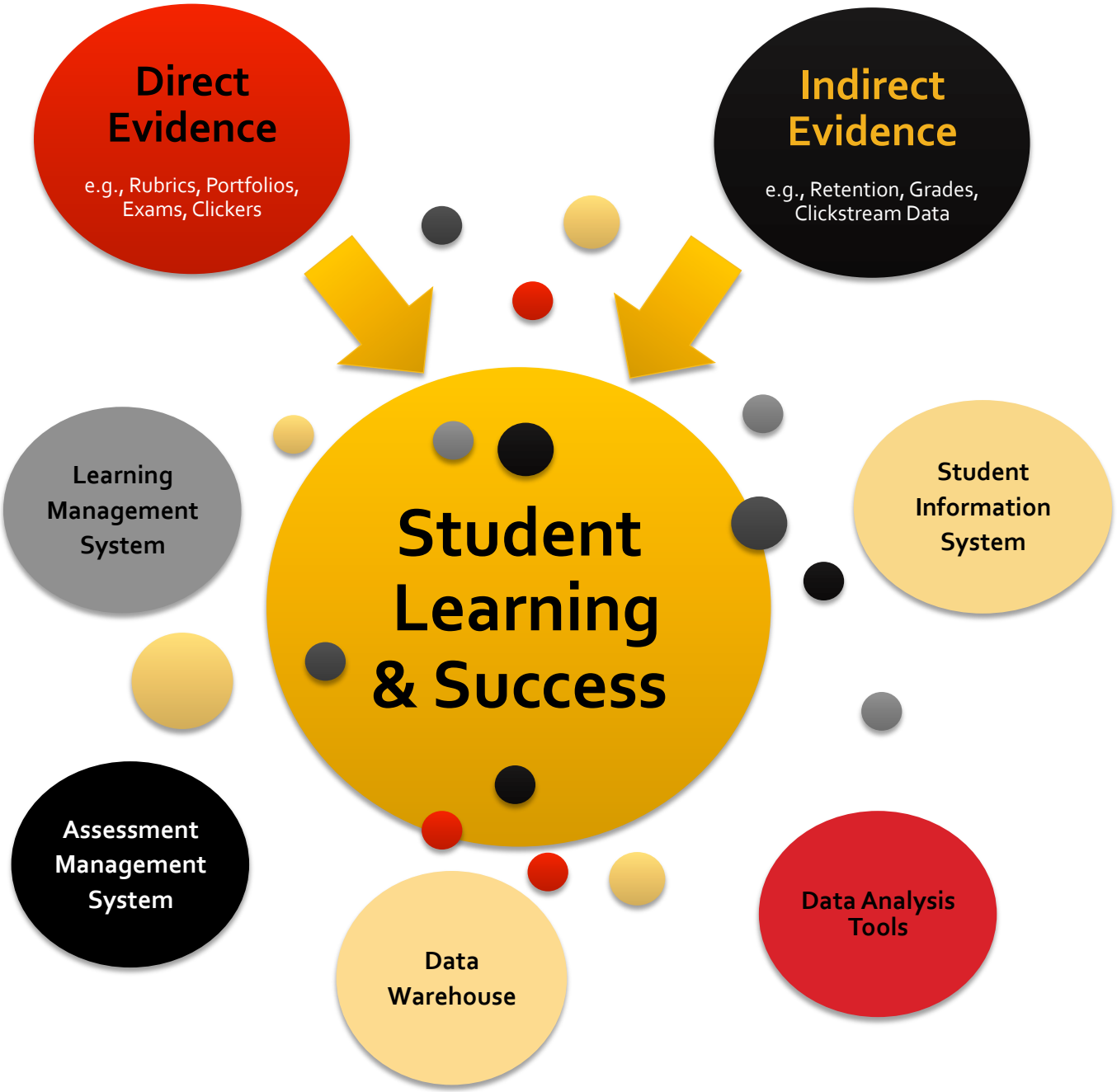
When we complete this session, we will be able to …

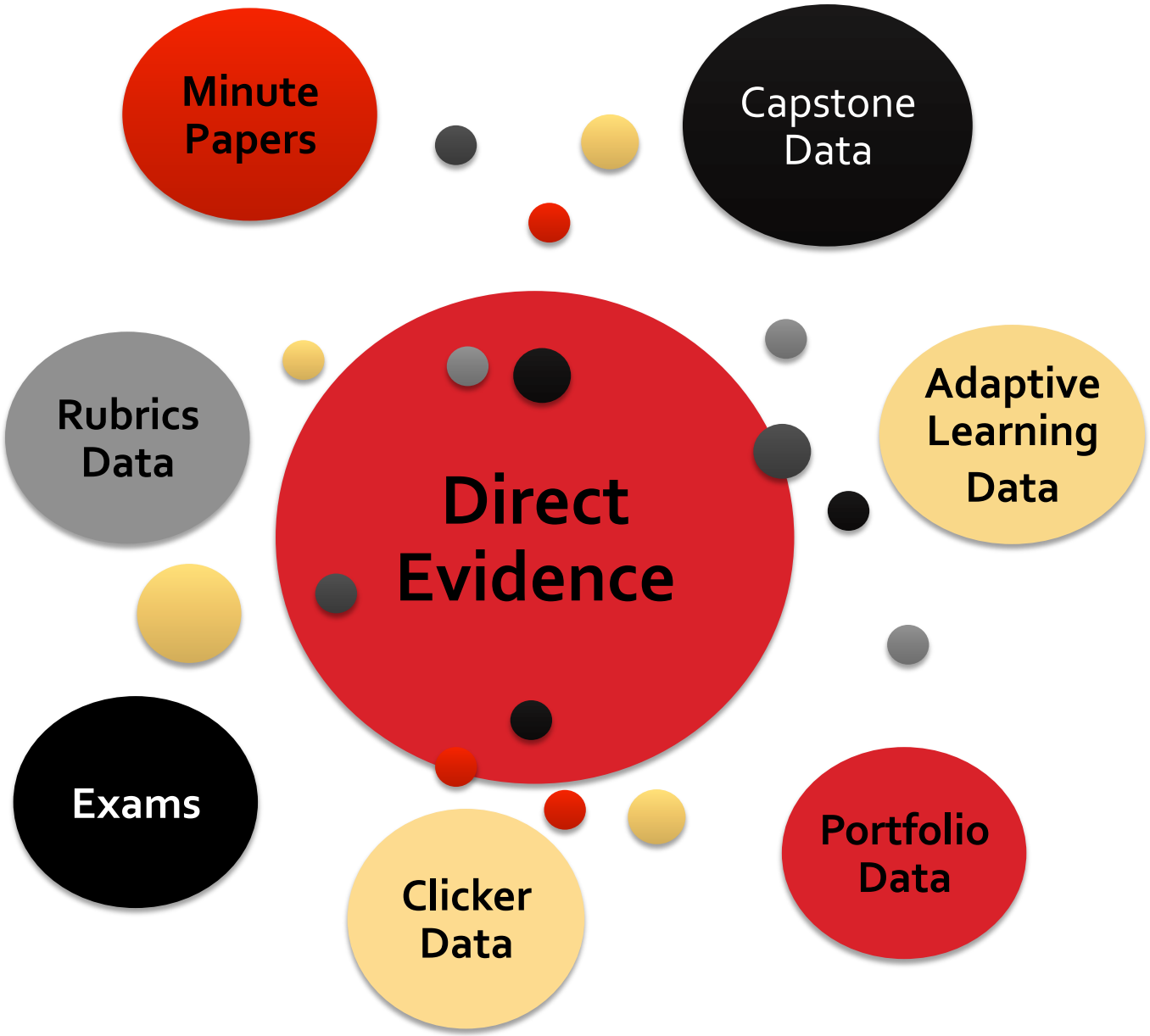
- Create a dashboard of student success indicators as a visual guide to model effective data integration
- Collaborate to analyze those indicators and practice facilitating closing-the-loop discussions that yield effective interventions through scenarios that include multiple direct and indirect data points
- Identify gaps in your institution's assessment processes and technologies that hinder the data collection, analysis, and aggregation required to take outcome data to scale

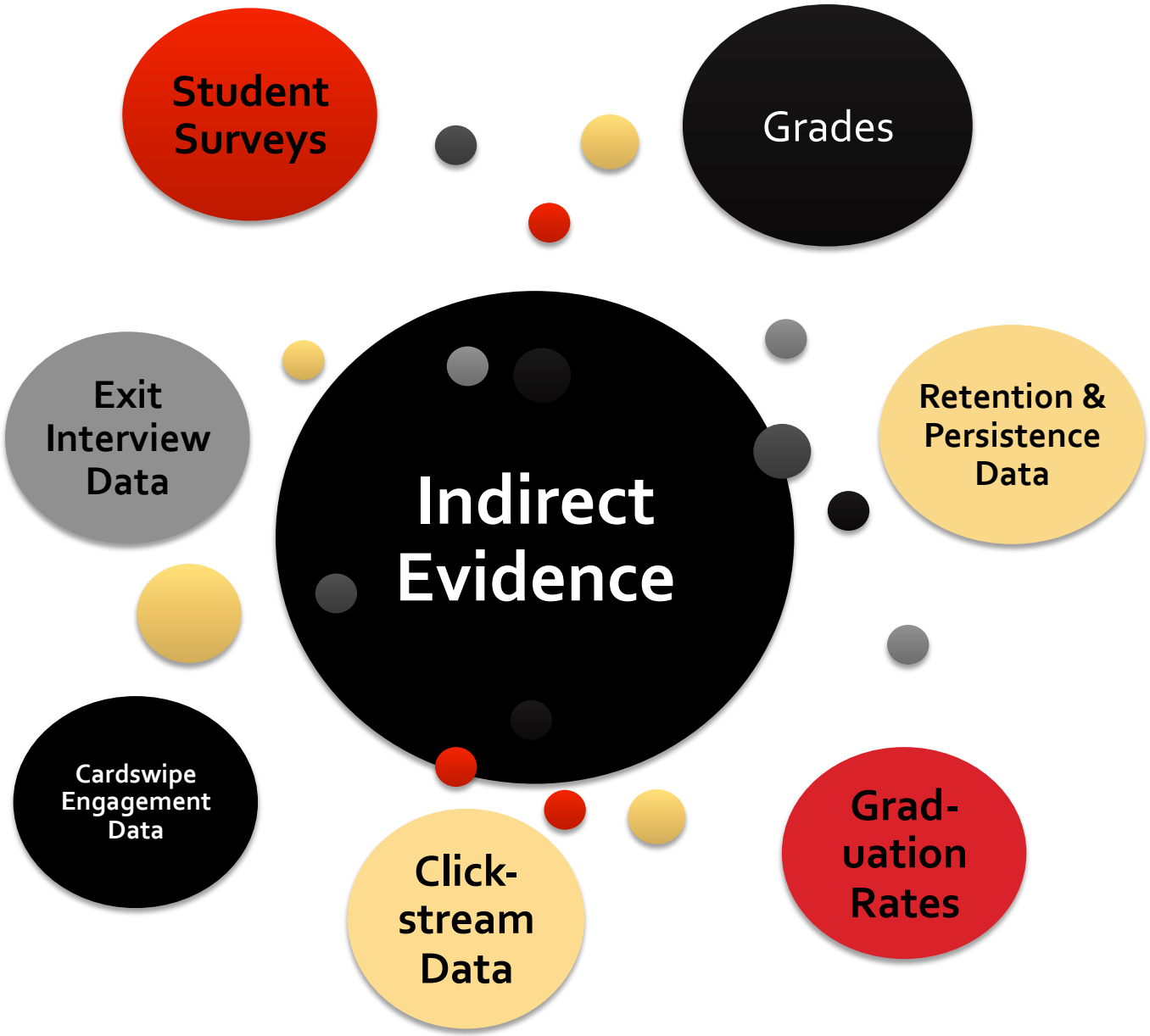
Key Terms

Outcomes	Analytics	Indicators
Direct Learning Data	Indirect Learning Data	Taxonomy
Intervention	Dashboard	Data-Driven Decision Making

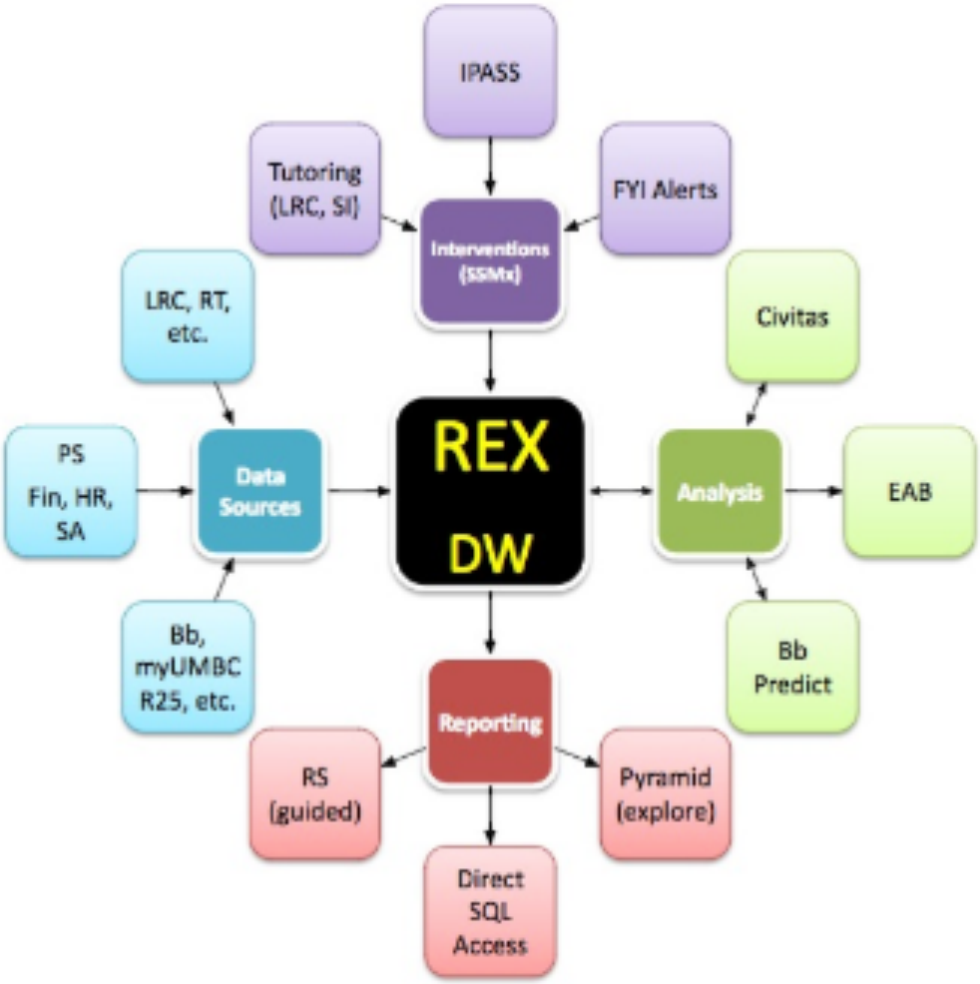
Why should we collect, analyze, and apply assessment data?


Direct Evidence
e.g., Rubrics, Portfolios, Exams, Clickers
Indirect Evidence
e.g., Retention, Grades, Clickstream Data
Learning Management System
Student Learning & Success
Student Information System
Assessment Management System
Data Warehouse
Data Analysis Tools

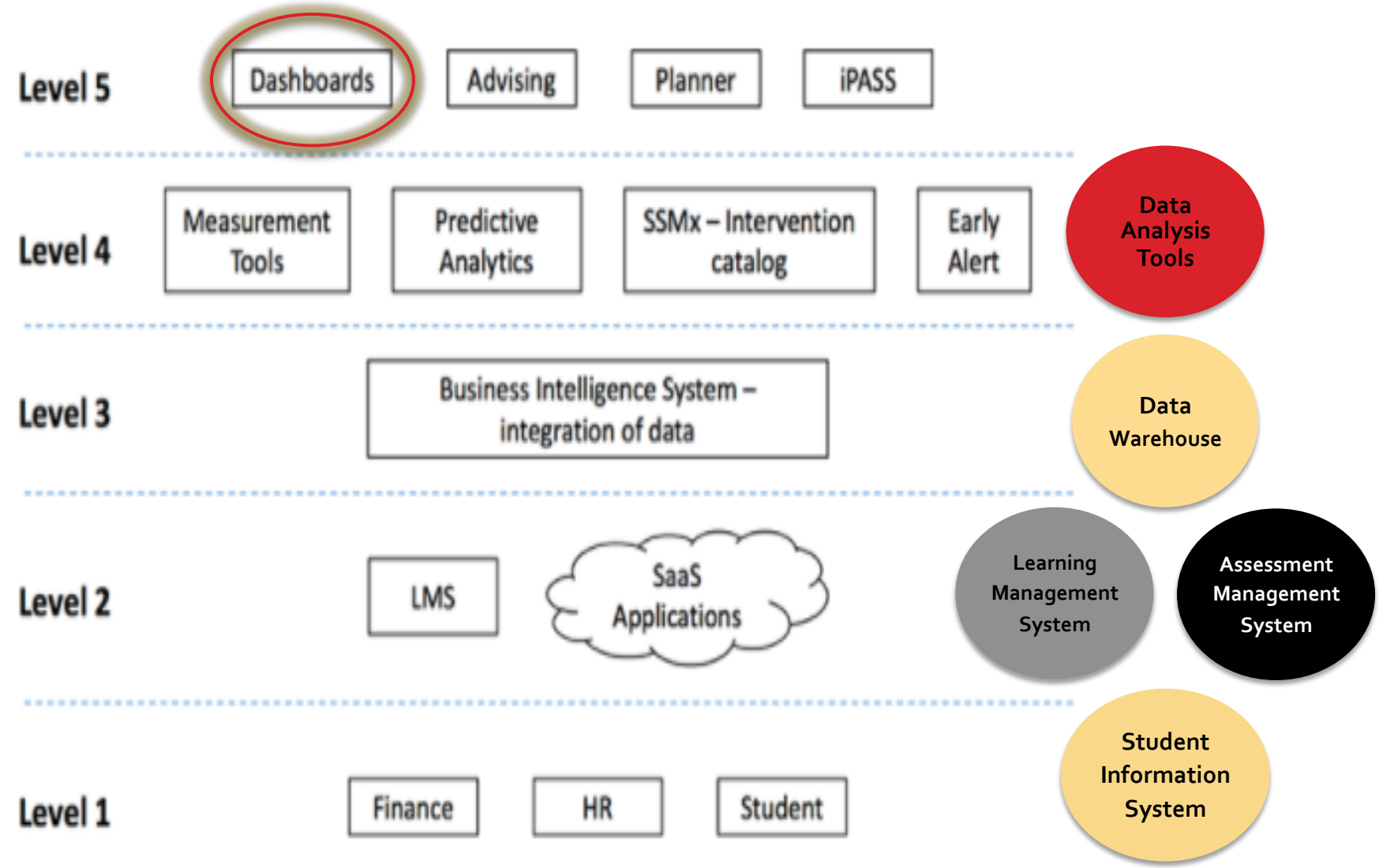

Minute Papers
Capstone Data
Rubrics Data
Direct Evidence
Adaptive Learning Data
Exams
Clicker Data
Portfolio Data


Student Surveys
Grades
Exit Interview Data
Indirect Evidence
Retention & Persistence Data
Cardswipe Engagement Data
Click-stream Data
Grad-uation Rates

At UMBC …


IPASS
Tutoring (LRC, SI)
FYI Alerts
Interventions (SSMx)
LRC, RT, etc.
Civitas
PS Fin, HR, SA
Data Sources
REX DW
Analysis
EAB
Bb, myUMBC R25, etc.
Bb Predict
Reporting
RS (guided)
Pyramid (explore)
Direct SQL Access

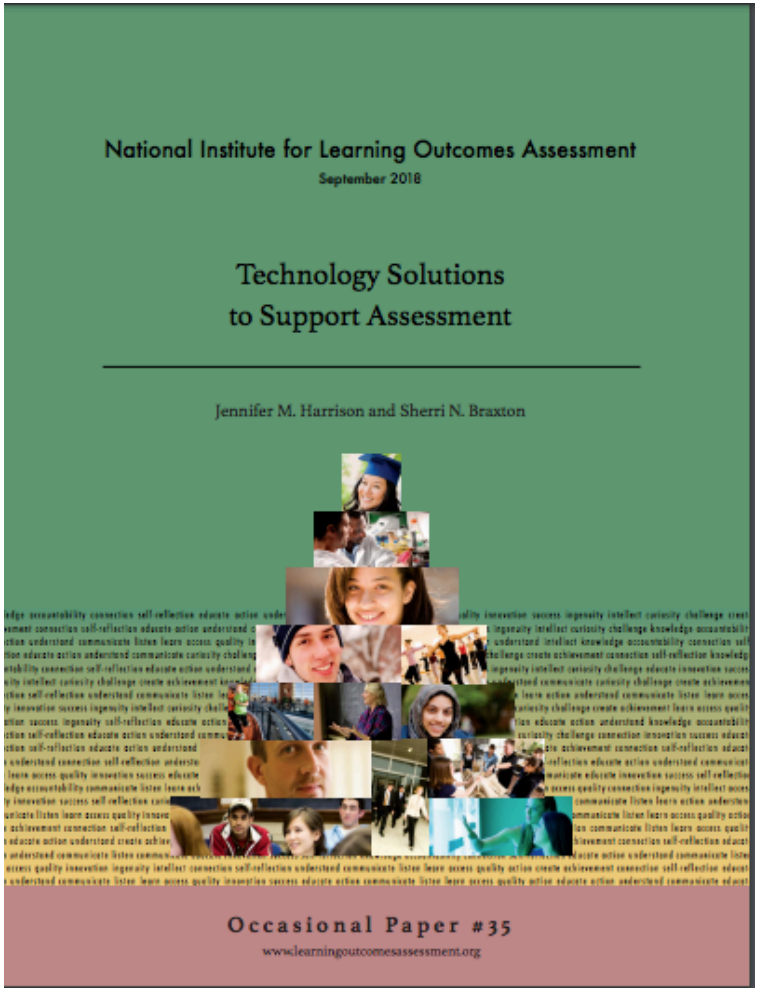
At UMBC …


Level 5
Dashboards
Advising
Planner
iPASS
Level 4
Measurement Tools
Predictive Analytics
SSMx – Intervention catalog
Early Alert
Data Analysis Tools
Level 3
Business Intelligence System – integration of data
Data Warehouse
Level 2
LMS
SaaS Applications
Learning Management System
Assessment Management System
Level 1
Finance
HR
Student
Student Information System

Overview

Technology Solutions for Assessment

Technology Solutions for Assessment



Taxonomy

Process

Rubric

Assessment Technology Taxonomy

What tools, systems, and/or technologies do you use?

What function(s) do they perform?

What functions do your tools offer?

Collecting

Connecting

Organizing

Archiving

Analyzing

Communicating

Closing the Loop

Taxonomy/Tool	*Collecting*	*Connecting*	*Organizing*	*Archiving*	*Analyzing*	*Communicating*	*Closing the Loop*
Acrobatiq	*	*	*	*	*	*	
AEFIS	*	x	*	*	x	x	x
Blackboard Learn	x			x	*		
Civitas Learning		*	*		x	*	*
ExamSoft	*		*		*		
Explorance	*	*	*		*	*	*
Learning Objects	*	*	x	x	*	*	*
PASS-PORT	*	*	*	*	*	x	x
PeopleSoft Campus		*			*	*	*
Portfolium	x	*	*	x	*	*	*
WaterMark TaskStream Tk20	x	*	x	x	*	x	x

*X = provides all capabilities of category; * = provides at least one of the capabilities of the category*

At UMBC …

Taxonomy/Tool	*Collecting*	*Connecting*	*Organizing*	*Archiving*	*Analyzing*	*Communicating*	*Closing the Loop*
Acrobatiq	*	*	*	*	*	*	
Blackboard Learn/ EAC	X			X	*		
Civitas Learning		*	*		X	*	*
EAB	*	*	*		*	*	*
Bb Predict					*	*	
Pyramid					*	*	
PeopleSoft Campus		*			*	*	*
Portfolium	X	*	*	X	*	*	*
WaterMark TaskStream Tk20	X	*	X	X	*	X	X

*X = provides all capabilities of category; * = provides at least one of the capabilities of the category*

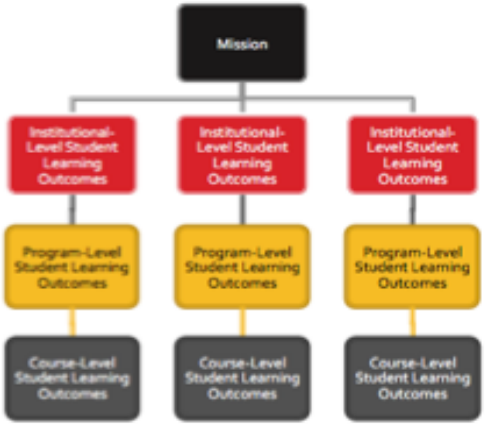
At UMBC …

Taxonomy/Tool	*Collecting*	*Connecting*	*Organizing*	*Archiving*	*Analyzing*	*Communicating*	*Closing the Loop*
myUMBC	*						
Clickers	*						
Card Swipe	*						
Qualtrics	*			*	*		
Scantron	*			*	*	*	
Excel	*	*	*	*	*	*	*
PowerPoint						*	*
Word	*					*	*

*X = provides all capabilities of category; * = provides at least one of the capabilities of the category*

Planning for Assessment Technologies

Clarify Common Ground



How do outcomes at each level align to the mission?

Use Backward Design

What direct evidence do you need to demonstrate learning?

Take Inventory

What processes and technologies are already in place?

Planning for Assessment Technologies

Identify Audiences

Who needs to know about student learning? What are their questions?

Seek Expert Advice

Who has expertise in assessment, instructional technology, and analytics?

Form a Team

Who can evaluate and test potential technology solutions?

Usability

Criteria	*Questions to Consider*
Usability	✦ Is the software intuitive and easy to use? (Will users need extensive training?) ✦ Does it work well with software we already have (and are using)? ✦ Does it require additional steps/staff to enter and extract data? ✦ Does it make assessment feel like an add-on? Or does it make assessment work part of the teaching and learning process? ✦ Does data export in a useable format? Is it IMS Global Learning Tools Interoperable (LTI)? ✦ **What about accessibility?**

Functionality

Criteria	*Questions to Consider*
Functionality	✦ Does the software reflect best practices in assessment? ✦ Can it manage multiple levels of assessment? ✦ Does it help users create and align outcomes? ✦ Does it walk users through curriculum mapping and rubric development? ✦ Does it offer easy-to-use reports and dashboards customizable to audience needs?

Costs

Criteria	*Questions to Consider*
Costs	✦ How much is the annual software license? ✦ Are updates included? If not, how much will they cost? ✦ How much will it cost for support and training? ✦ What hardware/cloud costs are needed to support it? ✦ What hidden costs might emerge?

Audiences

Criteria	*Questions to Consider*
Audiences	✦ Who will need to use this software? ✦ How will they learn to use it? ✦ What questions can they answer with this tool?

Flexibility

Criteria	*Questions to Consider*
Flexibility	✦ Is the software flexible enough to meet your needs? ✦ How will the system grow with your institution? ✦ How will the system adapt to anticipated (and unforeseen) changes in assessment demands?

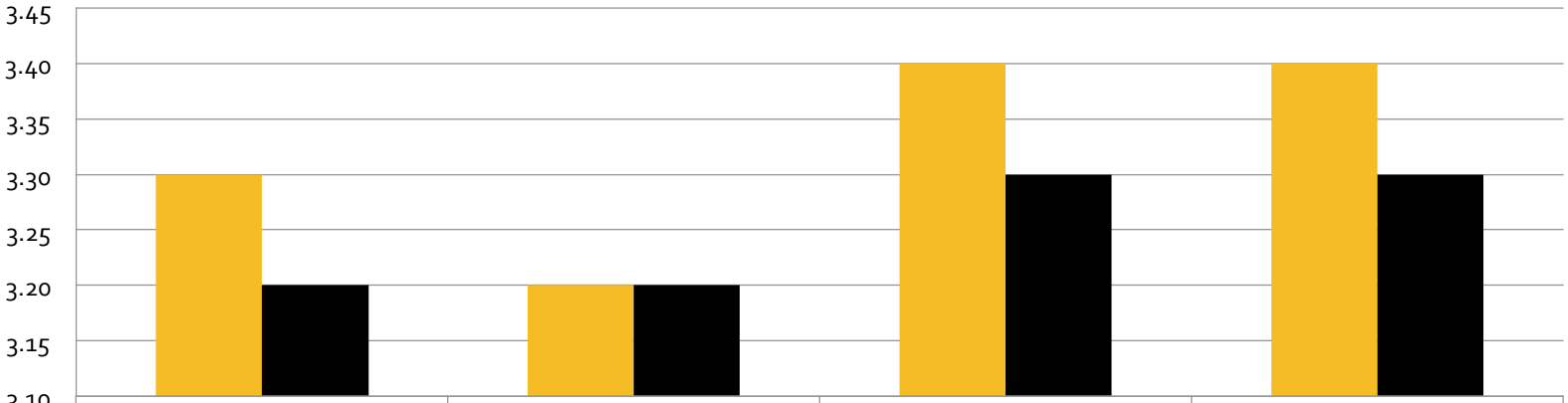
Bridging Education Data

Taxonomy/Tool	*Collecting*	*Connecting*	*Organizing*	*Archiving*	*Analyzing*	*Communicating*	*Closing the Loop*

Bridging Education Data

Taxonomy/Tool	*Collecting*	*Connecting*	*Organizing*	*Archiving*	*Analyzing*	*Communicating*	*Closing the Loop*
Blackboard Rubric Data	●		●	●	●	●	●
TK20 Portfolio Data	●		●	●	●	●	●
RedCard Swipe Data (CSJ, etc.)	●				●		●
Clickstream Data	●				●		●

Program Results Show Gap



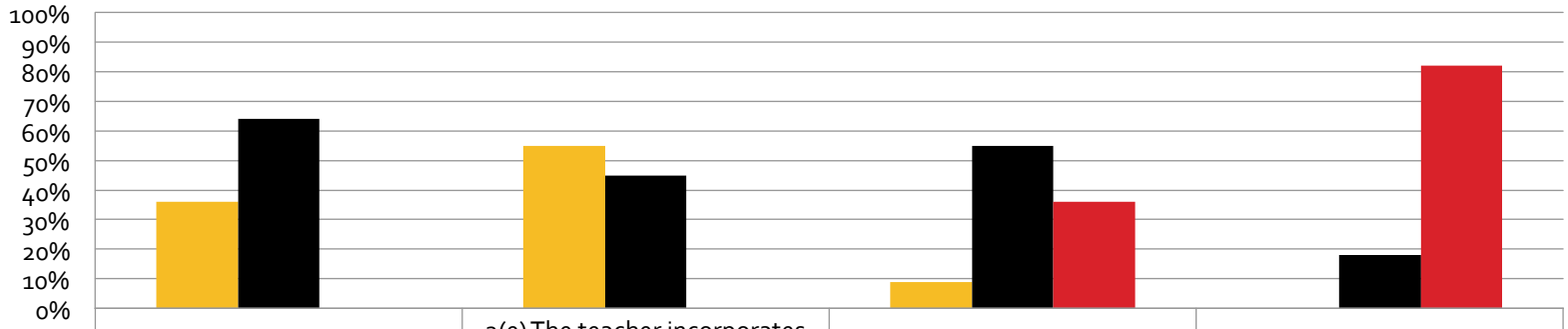
	2(a) The teacher designs, adapts, and delivers instruction to address each student's diverse learning strengths and needs and creates opportunities for students to demonstrate their learning in different ways.	2(e) The teacher incorporates tools of language development into planning and instruction, including strategies for making content accessible to English language learners and for evaluating and supporting their development of English proficiency.	2(f) The teacher accesses resources, supports, and specialized assistance and services to meet particular learning differences or needs.	4(b) The teacher engages students in learning experiences in the discipline(s) that encourage learners to understand, question, and analyze ideas from diverse perspectives so that they master the content.
Mentor-Teacher Rating	3.30	3.20	3.40	3.40
Supervisor's Rating	3.20	3.20	3.30	3.30

Course Results Confirm Gap

Education 602

Summer 2015 Multicultural Classroom Rubric Results

n = 11



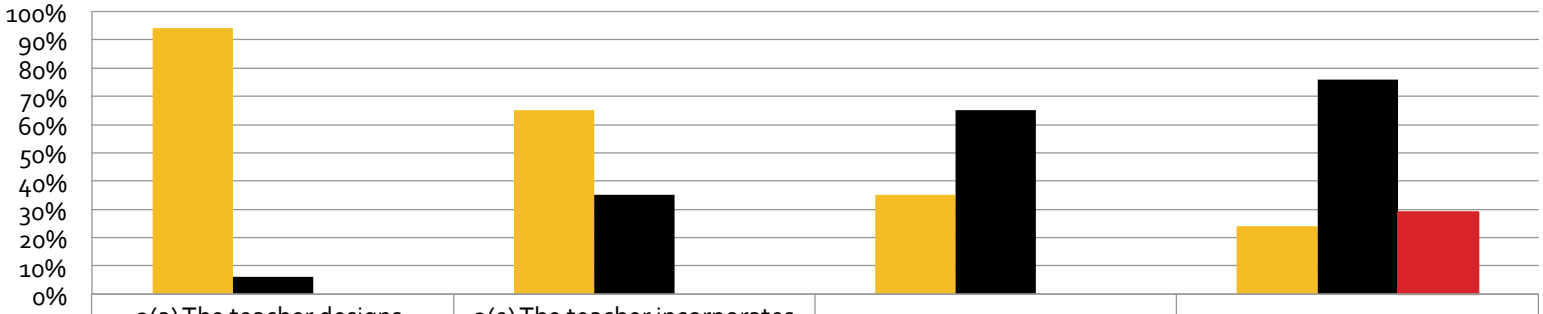
	2(a) The teacher designs, adapts, and delivers instruction to address each student's diverse learning strengths and needs and creates opportunities for students to demonstrate their learning in different ways. Row 1	2(e) The teacher incorporates tools of language development into planning and instruction, including strategies for making content accessible to English language learners and for evaluating and supporting their development of English proficiency. Row 2	2(f) The teacher accesses resources, supports, and specialized assistance and services to meet particular learning differences or needs. Row 4	4(b) The teacher engages students in learning experiences in the discipline(s) that encourage learners to understand, question, and analyze ideas from diverse perspectives so that they master the content. Row 3
Proficient	36%	55%	9%	0%
Competent	64%	45%	55%	18%
Novice	0%	0%	36%	82%

Double-Loop Results Measure Improvement

Education 602

Summer 2016 Multicultural Classroom Rubric Results

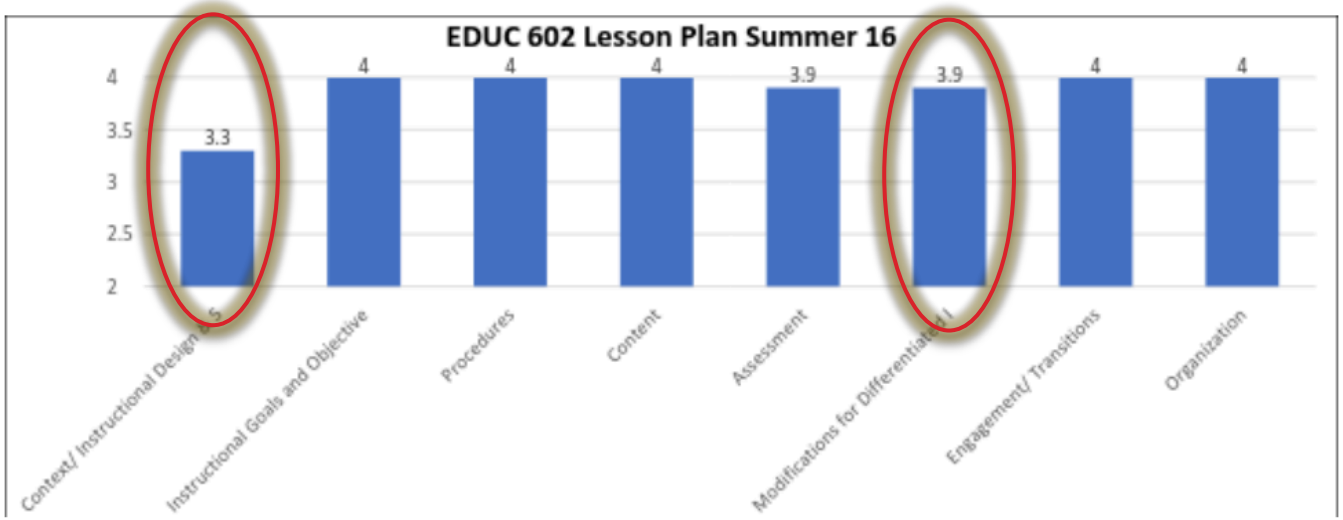
n = 17



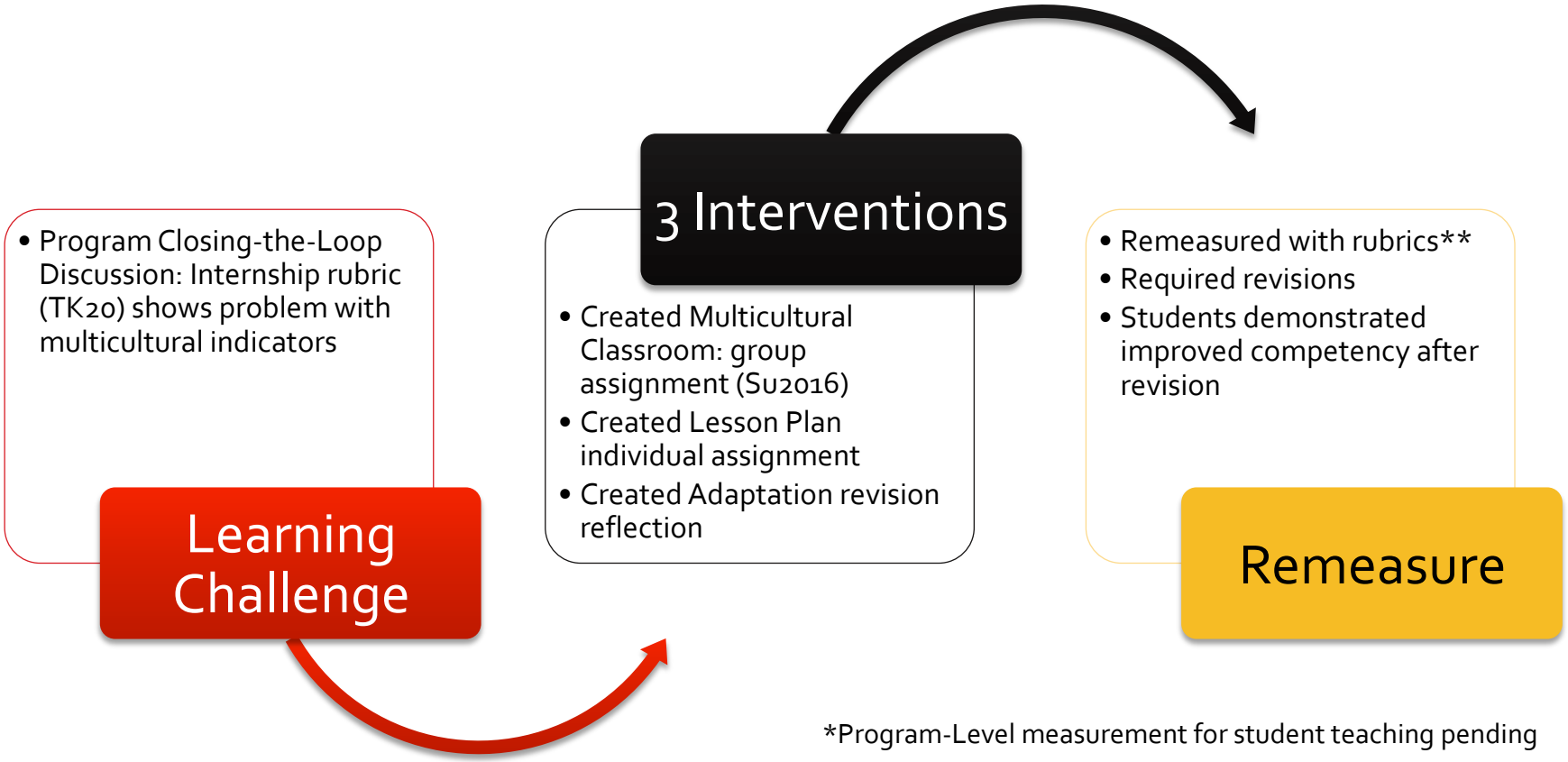
	2(a) The teacher designs, adapts, and delivers instruction to address each student's diverse learning strengths and needs and creates opportunities for students to demonstrate their learning in different ways. Row 1	2(e) The teacher incorporates tools of language development into planning and instruction, including strategies for making content accessible to English language learners and for evaluating and supporting their development of English proficiency. Row 2	2(f) The teacher accesses resources, supports, and specialized assistance and services to meet particular learning differences or needs. Row 4	4(b) The teacher engages students in learning experiences in the discipline(s) that encourage learners to understand, question, and analyze ideas from diverse perspectives so that they master the content. Row 3
Proficient	94%	65%	35%	24%
Competent	6%	35%	65%	76%
Novice	0%	0%	0%	29%

Lesson Plans

EDUC 602 Lesson Plan Summer 16	Mean Score (N=10)
Context/ Instructional Design & Strategies	3.30
Instructional Goals and Objectives	4.00
Procedures	4.00
Content	4.00
Assessment	3.90
Modifications for Differentiated Instruction	3.90
Engagement/ Transitions	4.00
Organization	4.00



Closing-the-Loop Analysis*



*Program-Level measurement for student teaching pending

**aka double-loop analysis

How can you connect the dots?

What are the data systems readily available to you?

What kinds of data do they store? (direct, indirect, or both)

What systems are available on campus that you need other experts to help you access?

What kinds of data do they store? (direct, indirect, or both)

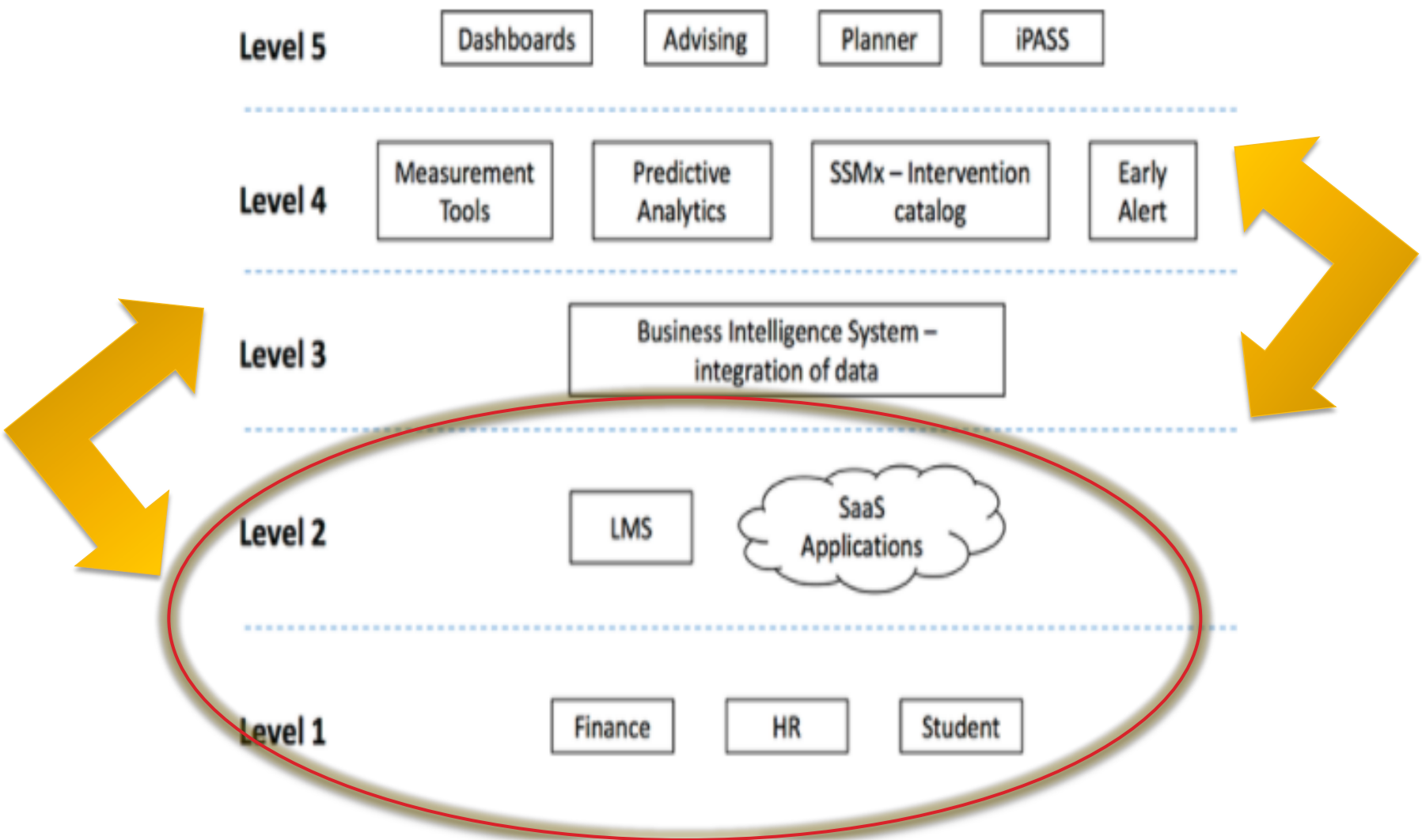
Dashboard Your Indicators

Taxonomy/Tool	*Collecting*	*Connecting*	*Organizing*	*Archiving*	*Analyzing*	*Communicating*	*Closing the Loop*

Bridging Education Data

Taxonomy/Tool	*Collecting*	*Connecting*	*Organizing*	*Archiving*	*Analyzing*	*Communicating*	*Closing the Loop*
Blackboard Rubric Data	●		●	●	●	●	●
TK20 Portfolio Data	●		●	●	●	●	●
RedCard Swipe Data (CSJ, etc.)	●				●		●
Clickstream Data	●				●		●

Student Success Infrastructure Think-Pair-Share



At Your Institution…

Level 5

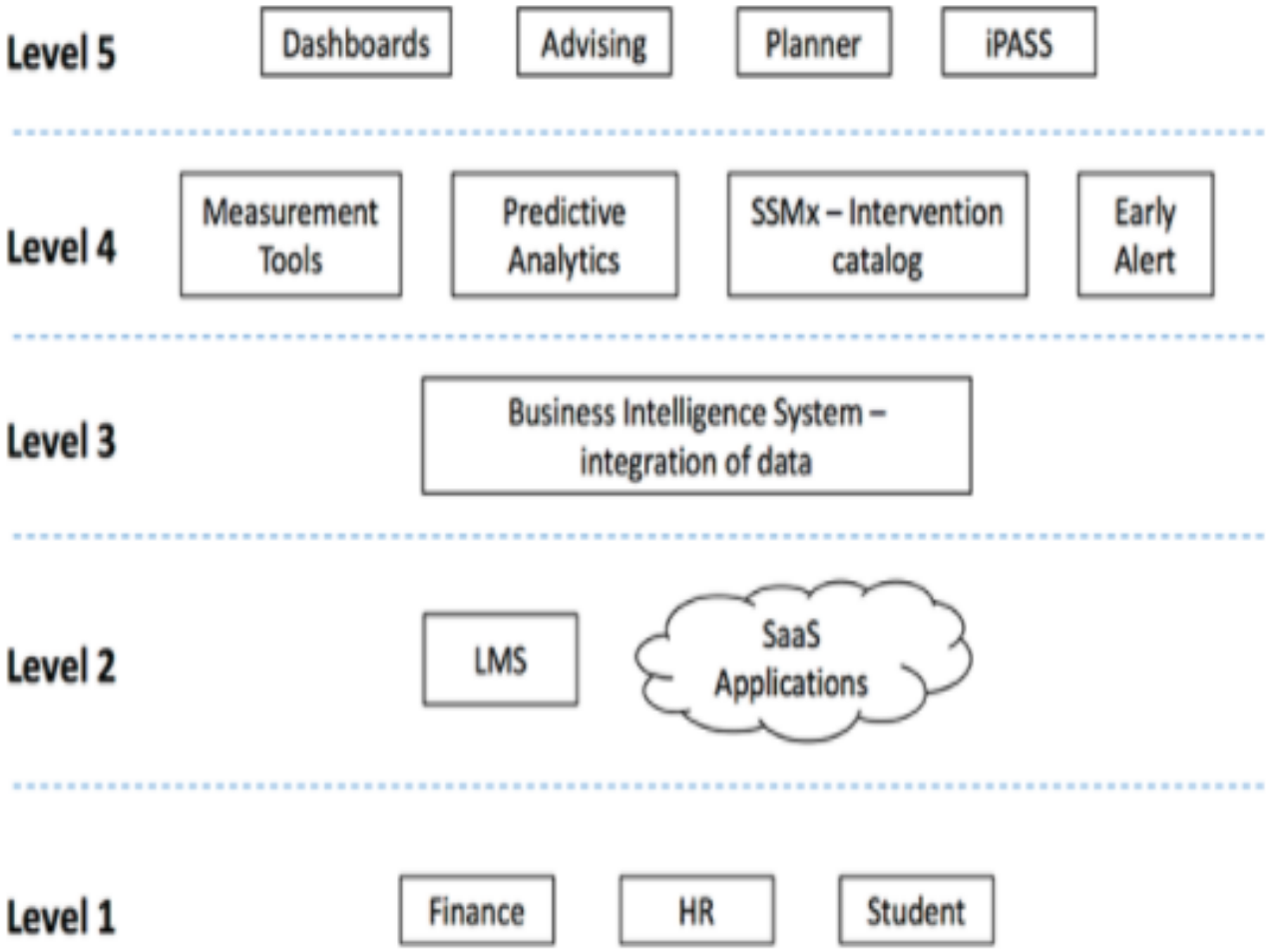
Level 4

Level 3

Level 2

Level 1

Student Success Infrastructure

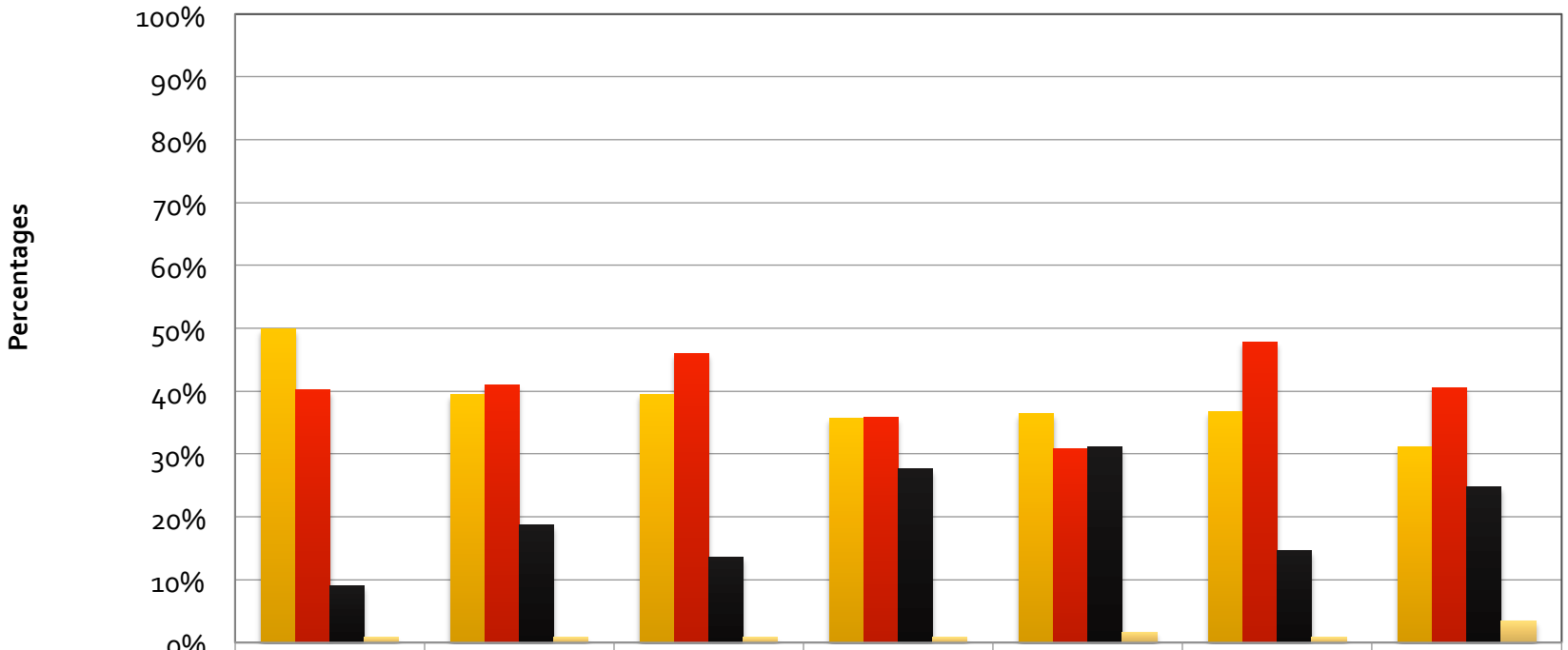


Scenario 1

Scenario 1: Intervention via Tutoring

- **Intervention Strategy:** Institutional Student Success Course/Tutorial- Academic Success for Lifelong Learning Course
- **Data Source(s):** Direct data from multiple semesters and multiple sections of the intervention
- **Problem Description:** You are a learning resources center leader or teacher who wants to explore student learning in multiple sections of a course where faculty use a common rubric and assignment. You set up your rubric in your LMS; all faculty are using it to give feedback and assess learning and grades, and each teacher can access a report to view the aggregated data from the individual course-level assignment. But you can't figure out how to aggregate the data across courses. What technology tools would make this possible? How could you compare data across semesters and years? (Harrison & Braxton, 2018).
- **Student Success Indicators:**
- Student Learning Outcomes Evidence (direct measure test data)
- Student Success data (indirect measures: grade point average, retention, persistence, and academic progression via First Year Intervention alert)

Rubric Data



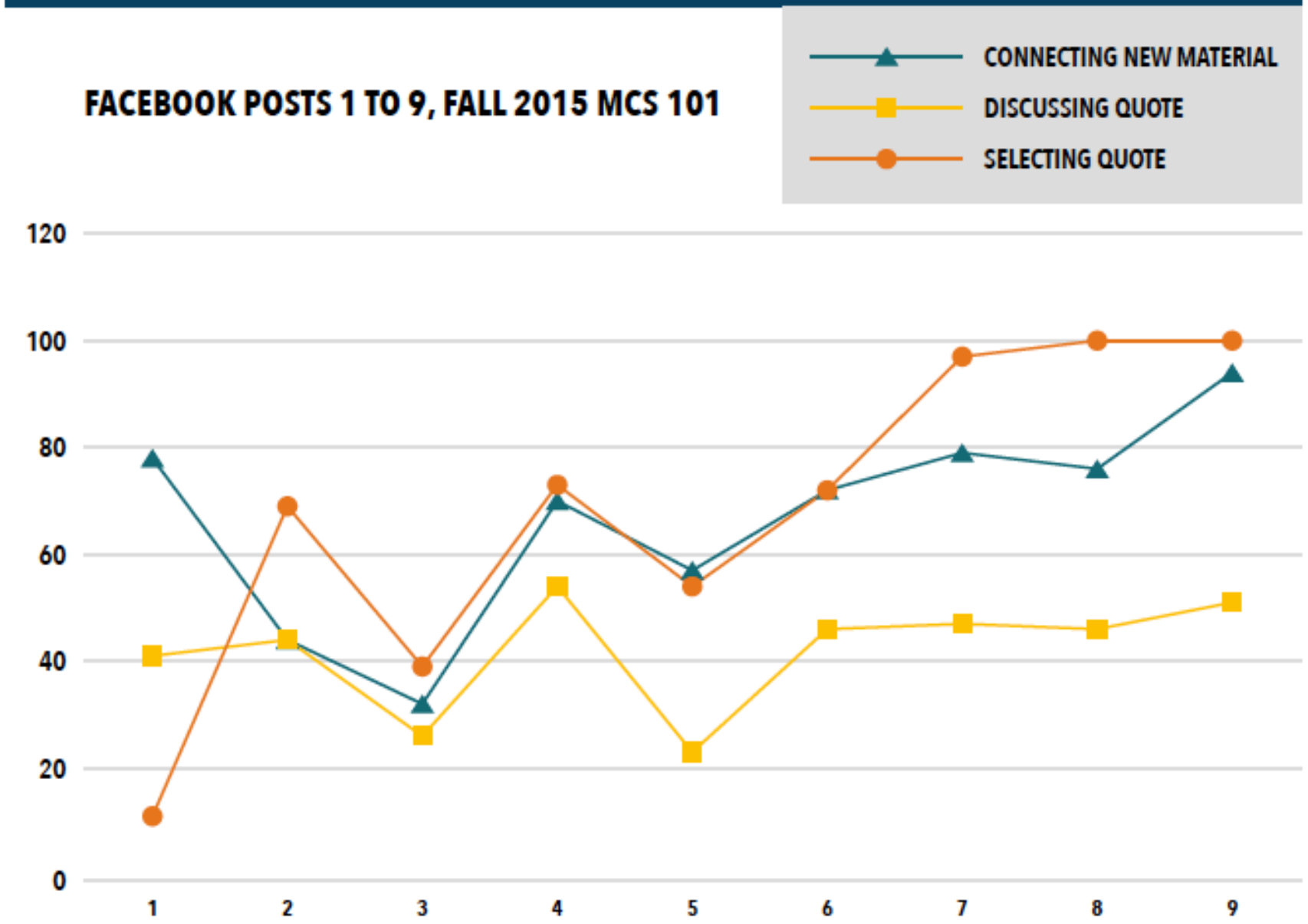
	Organization (FC3)	Clarity (FC1)	Concepts/ Principles (FC4+5)	Critical Thinking/ Creativity (FC3,4,+5)	Writing skills (FC1)	Terminology (FC3)	APA format (FC4+5)
Proficient 4	50%	39%	40%	36%	36%	37%	31%
Competent 3	40%	41%	46%	36%	31%	48%	41%
Minimal Competence 2	9%	19%	14%	28%	31%	15%	25%
Not Competent 1	1%	1%	1%	1%	2%	1%	3%

Scenario 2

Scenario 2: Course Sequencing—Progress Across Program

- **Intervention Strategy:** Redesign of gateway course
- **Data Source(s):** Direct and indirect data from multiple semesters and multiple sections of the intervention and the next course in the sequence
- **Problem Description:** You are a program or department leader who wants to explore the impact an intervention has had on student learning in a gateway course across time and in the next course in the sequence. You need data on both direct and indirect measures. How can you extract the relevant rubrics and institutional data and triangulate them? (Harrison & Braxton, 2018).
- **Student Success Indicators:**
- Student Learning Outcomes Evidence (direct measure rubric data)
- Student Success data (indirect measures: grade point average, retention, persistence, and academic progression in the program)
- Student Satisfaction Data: student survey (Likert scale plus qualitative reflection questions)

FIGURE 20: FILLING GAPS REVEALED BY CURRICULUM MAPPING THROUGH A SERIES OF ASSIGNMENTS



Scenario 3

Scenario 3: Provost's Report on Achieving Institutional Learning Outcomes

- **Intervention Strategy:** Institution-wide curriculum mapping and vertical alignment
- **Data Source(s):** Both direct measures of student learning and indirect measures of student success
- **Problem Description:** You are the Provost and you want to know how well students are learning in relation to the institutional learning outcomes across the campus for the current term. For example, how many programs in each college have created direct measures of student learning in your LMS that align to program and institutional outcomes? What data do you need on your Learning Outcomes Dashboard so you can easily determine if students are achieving the institutional-level outcomes? What are the data sources? What tools can help you analyze the data, so you can identify institutional-level learning challenges? (Harrison & Braxton, 2018).
- **Student Success Indicators:**
- Student Learning Outcomes Evidence (direct measure data)
- Student Success data (indirect measures: grade point average, retention, persistence, and academic progression in the program)
- Student Satisfaction Data: NSSE and HERI data

Questions?

Thanks for joining us today!

Please share your scenarios

Contact with questions, ideas, or suggestions

See our NILOA Occasional Paper!

Session Evaluations & Drawing

- Download and open OLC Conferences mobile app
- Navigate to specific session to evaluate
- Select “Evaluate Session” on session details screen (located under session type and track)
- Complete session evaluation*

Evaluate Session

*Each session evaluation completed (limited to one per session) = one contest entry
Five (5) $25 gift cards will be awarded to five (5) individuals
Must submit evals using the OLC Conferences mobile app or website

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