

IDEAs
that Work

Office of Special Education Programs
U.S. Department of Education

EVIDENCE-BASED EDUCATIONAL DEVELOPMENT

**TRANSFORMING THE THEORY
AND PRACTICE OF FACULTY
DEVELOPMENT**

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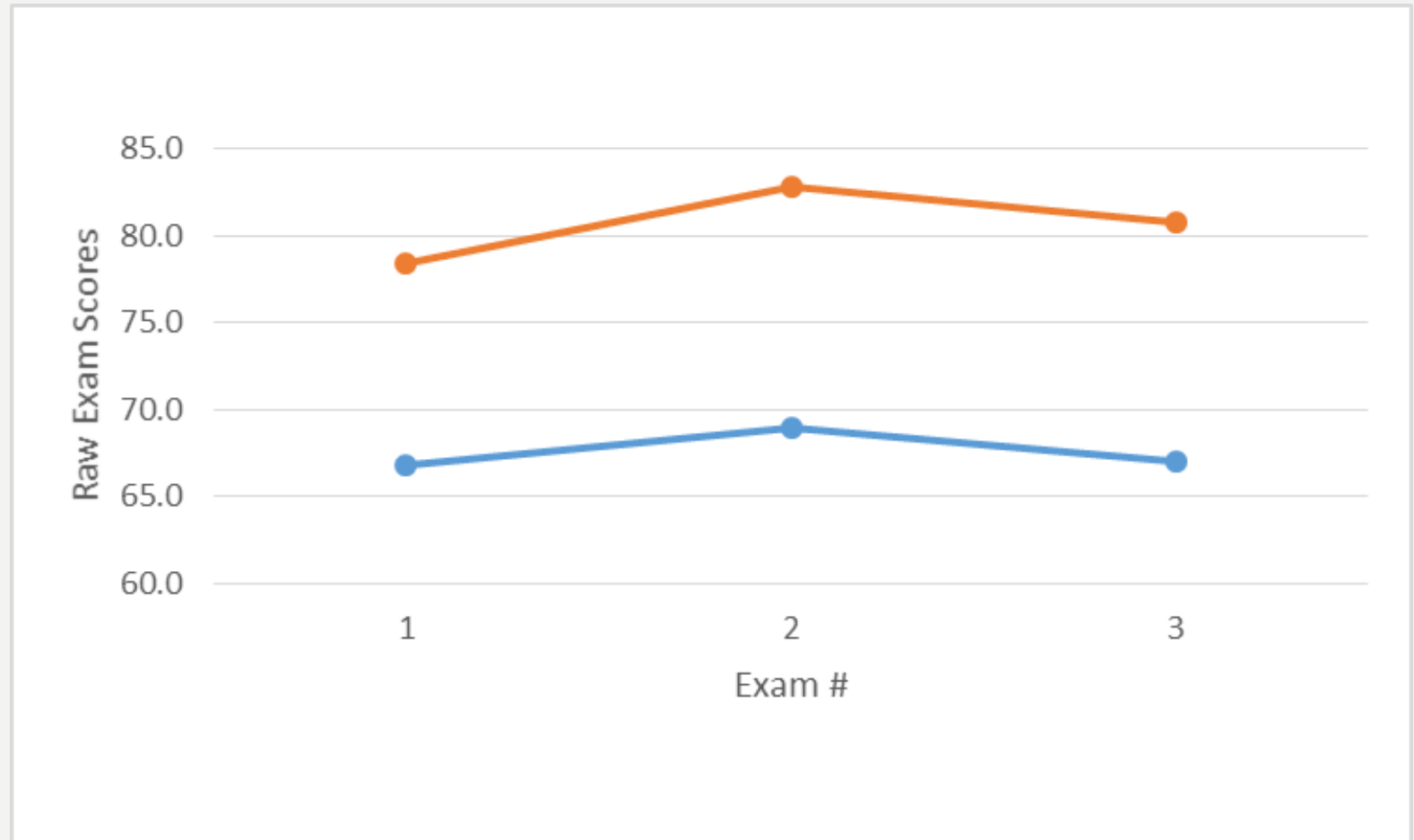
Nebraska Methodist College
April 2018

OUTCOMES OF PRESENTATION

By the end of this session, participants will be able to ...

- *Articulate how a set of **evidence-based guidelines might be used** to guide educational development strategic planning at one's institution.*
- ***List the six major areas** of the evidence-based Educational System Guidelines shared in this presentation.*
- *State **how assessment data** that is generated using evidence-based guidelines **may be used** to guide educational development at one's institution.*
- ***Describe some of the challenges** of using course development rubrics, checklists, et cetera to guide faculty development.*

IMAGINE STUDENTS ARE STRUGGLING IN A COURSE...



THE DILEMMA

- There are **numerous** rubrics, checklists, guidelines, sets of criteria, etc. to help guide excellence in teaching and learning
 - Quality Matters
 - InTASC
 - CLASS
 - OCICU
 - OCEP
 - AECT
 - ISTE
 - CCRC
 - ACUE
 - Blackboard
 - Mayer & Clark
 - Chickering & Gamson
 - L. Dee Fink
 - Etc.
 - Etc.
 - Etc.
- Which set to use? Which criteria will have the **most significant impact** on student achievement?
- We started with more than 100 criteria...

E

- ### Evidence-Based Support for These Criteria

- Literature
 - SummEB:
 - [Ambrose et al.](#) (2010, p. 15, 19-20); [Woolfolk](#) (2011, p. 24, 35, 121, 160-61, 282); [Sawyer](#) (1985-905, 1176-1203, 5164-89, 10224-48, 20030 144-45, 350, 353-62); [Bradshaw & Lowenstein, & Kumar](#), BMCME, 2015, 15:211; [Diamond](#), 2001, p. 86;
 - ArtEB:
 - [Sandars et al.](#), MT, 2015, 37:11; [Haji et al.](#), AHSE AHSE, 2016, 21:2; [Balmer et al.](#), AHSE, 2015, 20: 20:5; [Wijma et al.](#), BMCME, 2016, 16:75; [Elande Jacobs et al.](#), MT, 2015, 37:8; [Chen et al.](#), MT, 2015, 54:95; [Joseph et al.](#), JNE, 2016, 55:2;

EVIDENCE-BASED SOURCES

TRIGULATING DATA

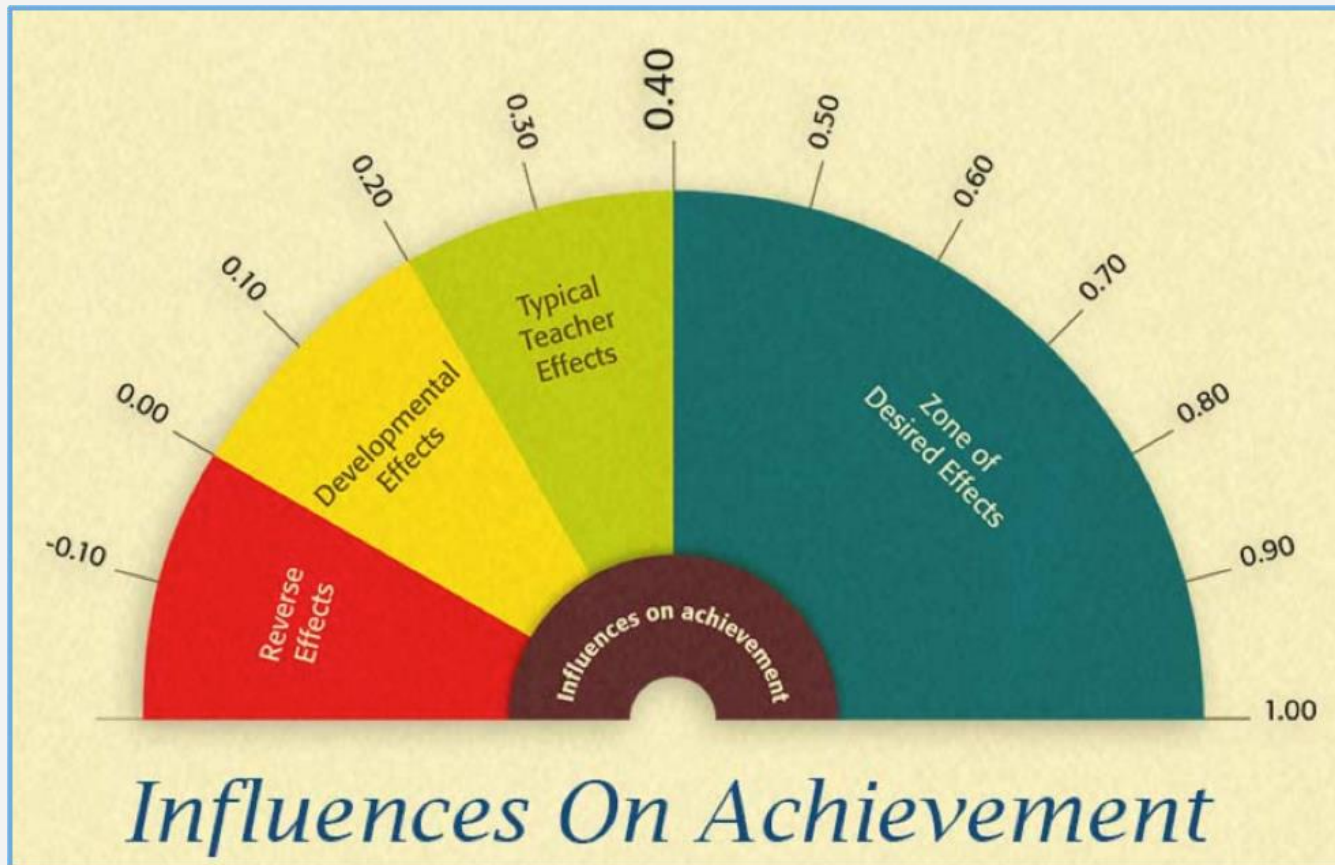
Guideline	Hattie (2009)			InTASC, CLASS, & Quality Matters	Brief Lit. Review
	Avg. Effect Size	# studies	Min. # people	# of Criteria	# Citations
Activities and resources intentionally foster learner-learner interactions	0.51	3,246	85,263	15	61
Activities and resources help learners to progress in higher order thinking and more complex skill development	0.50	5,665	456,819	15	31
Course intentionally integrates technologies that are commonly used in society and/or one's discipline	0.33	7,724	8,069,961	16	30
As much as possible, course environment and activities match the diverse and real-world conditions in which students will need to utilize the course content/skills	0.34	1,072	60,762	10	67
Learners are guided from one activity to the next in ways that consistently scaffolds their increasing competencies with the key concepts/skills identified by the objectives	0.40	2,535	152,748	23	86
<i>Mission-Centered Focus: The class environment is one</i>					

HATTIE, 2009 – EFFECT SIZE

The Formula

$$\text{Effect size } (d) = \frac{\text{Average (post)} - \text{Average (Pre)}}{\text{Average Standard Deviation}}$$

<http://slideplayer.com/slide/5895655/>



<http://www.c3teachers.org/c3-pbl-taking-informed-action-crosswalk/>

CREATE's Evidence-Based Areas of Educational Excellence

Objectives

1. Objectives are SMART (Specific, Measurable, Achievable, Relevant, & Timely)

Assessments

1. Draws on multiple & varied assessments
2. Uses effective feedback
3. Follows evidence-based assessment practices
4. Integrates self- and peer-assessments

Activities, Organization, & Resources

1. Supports learner-learner interactions
2. Fosters higher-order thinking
3. Integrates relevant & interactive technologies
4. Addresses real-world problems
5. Scaffolds learner progress
6. Nurtures safe, inclusive, and caring environments

Teaching/ Learning Theories

1. Employs holistic learning theories
2. Utilizes active teaching/learning strategies
3. Follows course development methods

Learner- Background

1. Adapted to learner knowledge, skills, & interests
2. Follows culturally responsive teaching and learning methods
3. Engages with marginalized & under-resourced communities

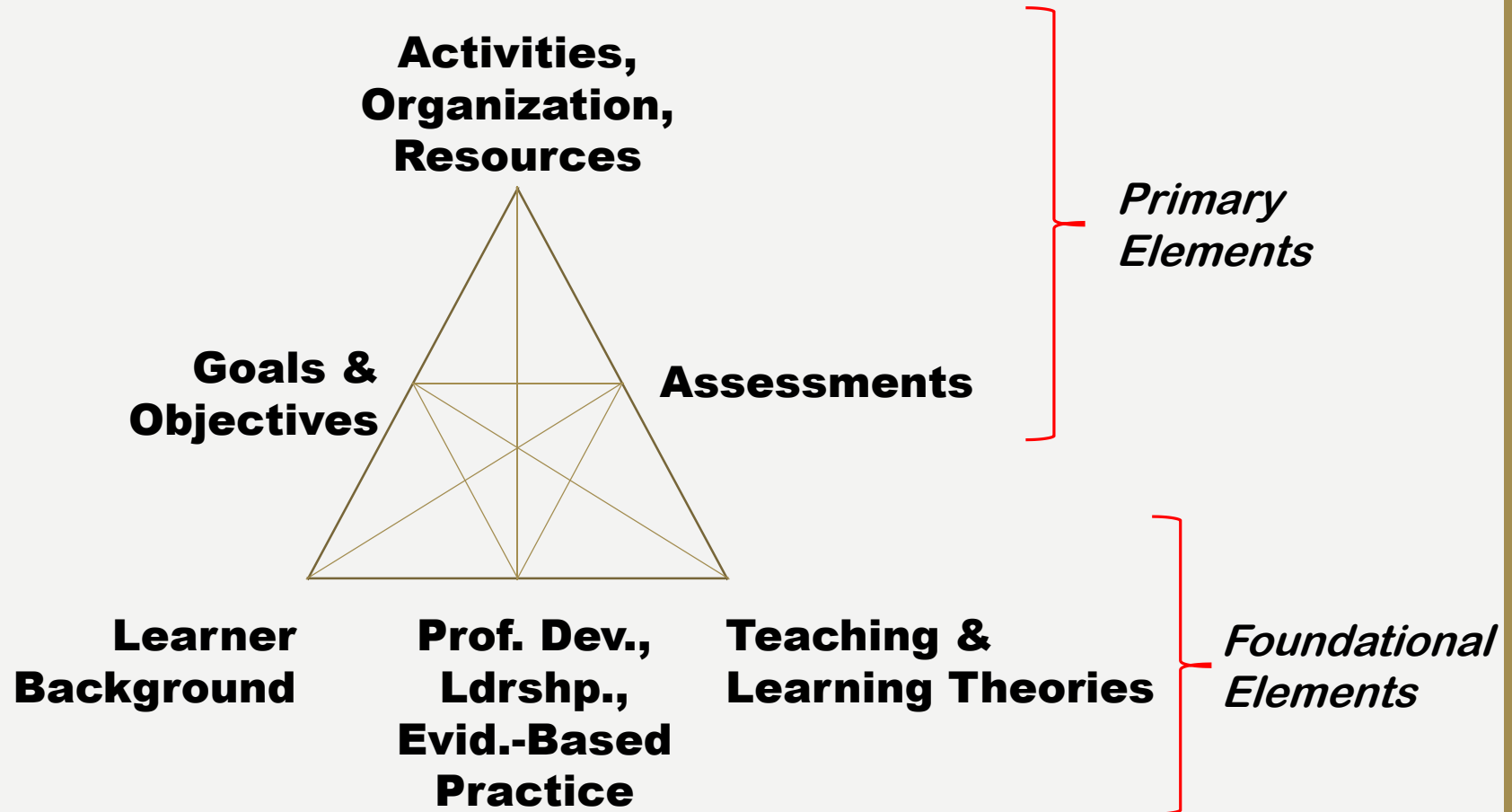
Prof. Dev., Leadership,& Scholarship

1. Engages in ongoing professional development
2. Active in leadership roles
3. Conducts evidence-based & scholarly projects

There are 20 Guidelines in all



EVIDENCE-BASED ELEMENTS TO CONSIDER



THREE TIERS OF EDUCATIONAL SYSTEM DEVELOPMENT

<http://www.norccollege.edu/services/admissions/Pages/index.aspx>



Students

<http://www.learningandtraining.com/online-classes/>



Classes/Instructors

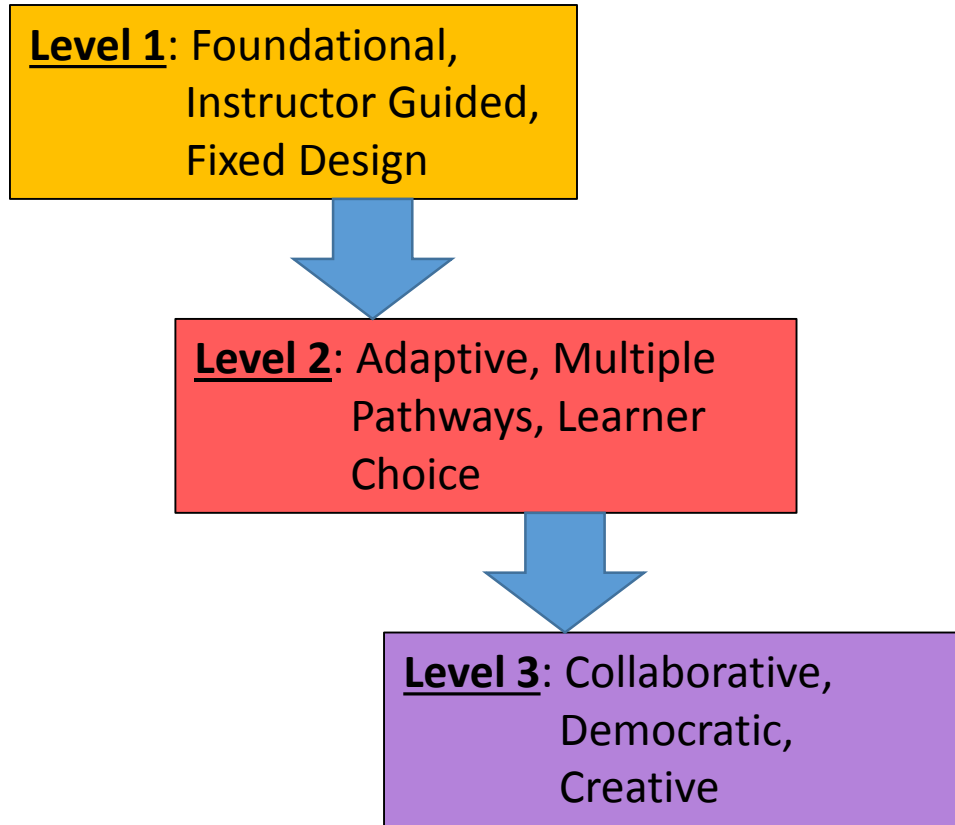
<http://psms-app.com/benefits/44>



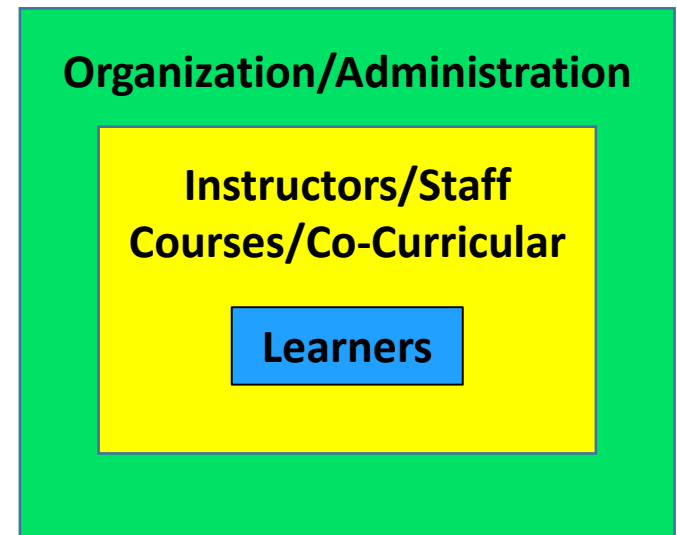
Administration

CREATE's Evidence-Based Areas of Educational Excellence

3 Levels for Each Guideline



Guidelines Apply To 3 Tiers



OBJECTIVES (0.47)

- 1)*Objectives describe observable and measurable levels of proficiency (0.47)

ASSESSMENTS (0.53)

- 1)*Utilizes varied assessments (0.62)
- 2)*Detailed and constructive feedback is used (0.54)
- 3)Follow evidence-based recommendations;
Reliability and validity is established (0.34)
- 4)Self- and peer-assessments (0.56)



<https://blog.commlabindia.com/learning-design/learning-objectives-training-content-assessments>

ACTIVITIES, COURSE ORGANIZATION, & RESOURCES (0.41)

- 1)*Learner-learner interactions (0.51)
- 2)*Utilize higher order thinking and more complex skill development (0.5)
- 3)*Integrates technology (0.33)
- 4)Match the diverse and real-world conditions (0.34)
- 5)*Learners progress step-by-step (0.4)
- 6)Learning environment is safe, inclusive, and caring (*Mission-Centered Focus*) (0.36)



TEACHING & LEARNING THEORIES (0.53)



- 1)*Able to articulate: (0.61)
- a)specific holistic learning theories
 - b)how these might apply to learning
- 2)*Utilize active teaching and learning strategies
(0.47)
- 3)*Follow recommended instructional design
methods (0.69) – Think aligning!

TEACHING & LEARNING THEORIES



<https://www.flickr.com/photos/lumaxart/2137737248>

- Some High Impact Active Learning Strategies:
 - Peer teaching/tutoring (0.74-0.55)
 - Metacognitive and study strategies (0.69-0.59)
 - Creative thinking strategies (0.65)
 - Elaboration and self-reflections (0.64)
 - Problem solving learning (0.61)
 - Cooperative Learning (0.59-0.41)
 - Modeling followed by learner practice (0.57)
 - Concept mapping (0.57)
 - Question-based pedagogies (0.46)

LEARNER BACKGROUND CONSIDERATIONS (0.48)



- 1)*Strategies are adapted to learners' prior knowledge; ADA needs are addressed (0.54)
- 2)Strategies are adapted to learners' cultural background (e.g., beliefs, customs, practices, etc.) (0.37)
- 3)Strategies ensure the success of vulnerable students and prepares students to work with diverse populations (*Mission-Centered Focus*) (0.44)

PD, LEADERSHIP, EVIDENCE-BASED PRACTICE (0.56)

- 1)*Engages professional development opportunities (0.65)
- 2)Participates in institutional leadership roles and responsibilities (0.36)
- 3)*Conducts evidence-based practice and/or scholarly projects (0.56)



IMPLEMENTATION – *HOW THE GUIDELINES MIGHT BE USED*

- *Individual Consultations* – Assessing priority needs to focus on; Generally focused on 1-3 guidelines
- *Group Training Events* – Interest surveys, self-reported needs, etc.; Generally focused on 1-2 guidelines
- *Assessments* – Courses, focus groups, educational research projects, etc.
- *Committees* – provide focused contributions
- *Strategic Planning* – LEAN Project Prioritizing Matrix; Setting CREATE objectives (Org. Tier); Etc.
- *Instructor Competencies* – standards for novice, intermediate, and advanced levels



Students

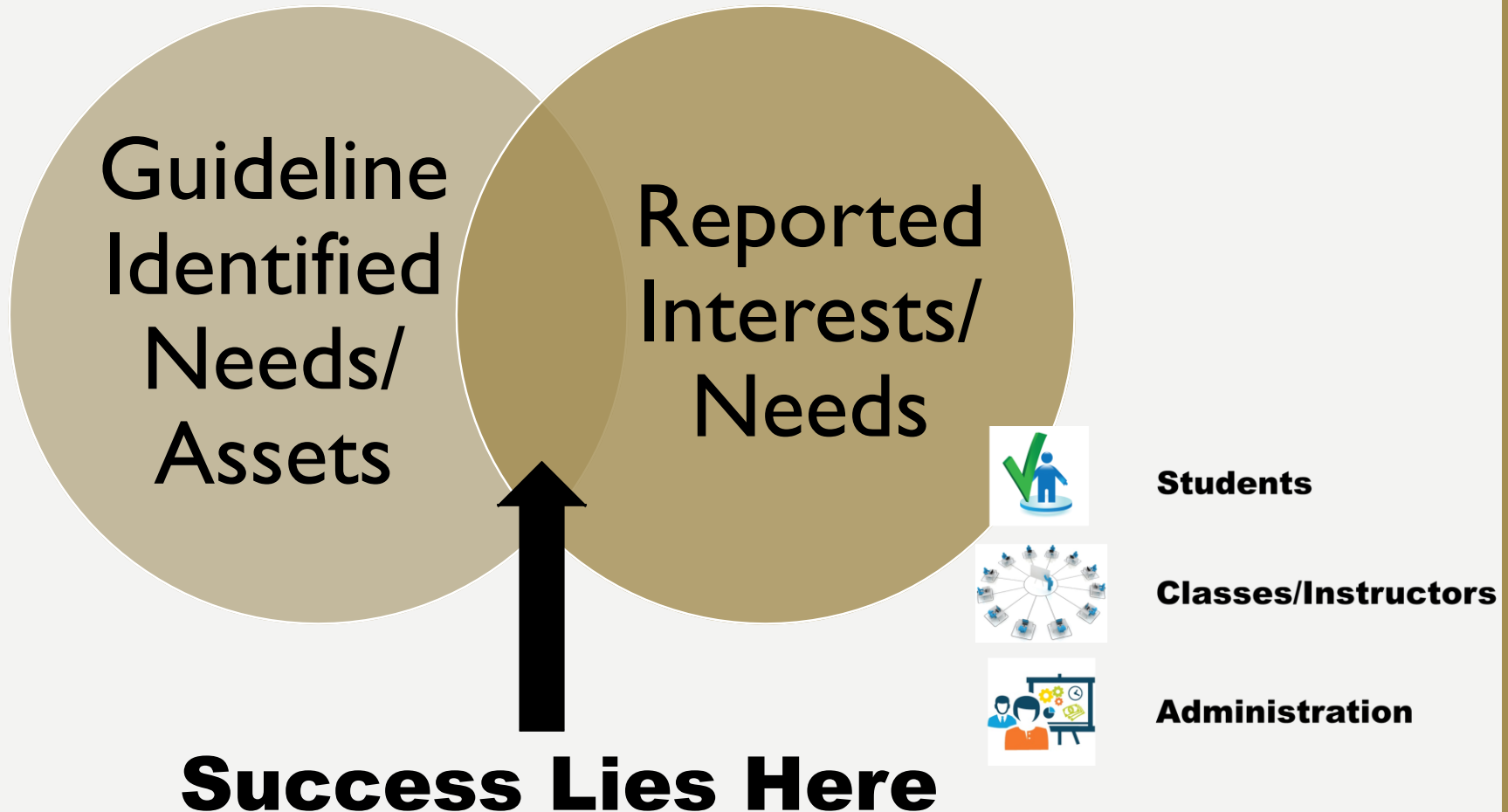


Classes/Instructors



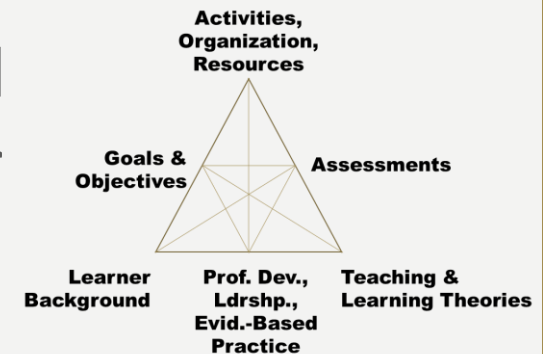
Administration

IMPLEMENTATION – *ONE STRATEGY TO CONSIDER*



ASSESSMENT – *TRIANGULATING DATA SOURCES*

- *Observations* – Completed by a third party using the Guidelines (online or face-to-face)
- *Artefacts* – Course site, syllabi, handouts, correspondence with students, etc.
- *Self-Assessments* – Individuals use the Guidelines to rate themselves



Students



Classes/Instructors

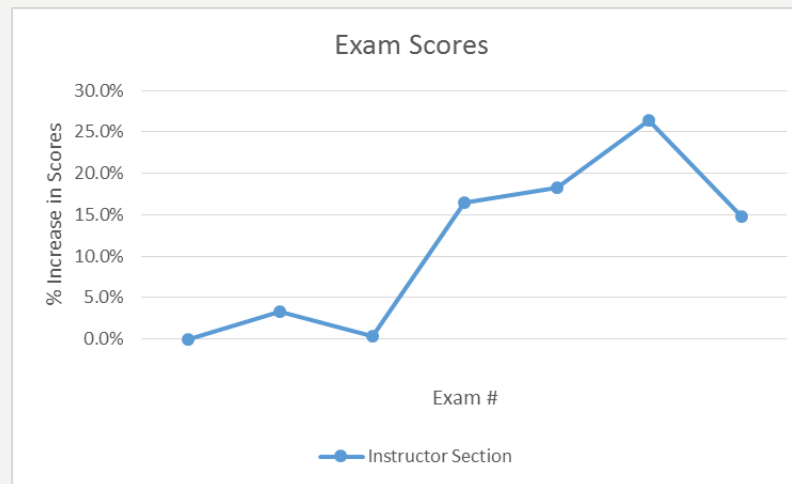


Administration

RESULTS TO DATE...

- *Individual*: One instructor's successes – 4 Guidelines

Location:	[building & room #]		* - (1-3 or 0 for not observed/present)		
			** - e.g., observations, course materials, surveys, etc.		
Area	Guideline #	Guideline Description	Observation #1 Level Rating* 9/25/2017 - Eric Kyle	Observation #2 Level Rating* 10/25/2017 - Eric Kyle	Date
Objectives	1	Objectives describe observable and measurable levels of proficiency that are aligned with accreditation, institutional, and/or discipline-specific standards	0	1	
Assessments	1	The course utilizes varied assessments (e.g., formative and summative, formal and informal) to establish learners' levels of proficiencies in relation to the stated course objectives as well as to guide the course's development	1	1	
	2	Feedback to learners is: a) positive, b) related to specific objectives and criteria, c) provides suggestions for how learners can continue to progress, and d) are conducted in a "timely" manner, providing learners with feedback that can be implemented in subsequent activities	1	0	
	3	Assessments are utilized in accordance with evidence-based recommendations and, whenever possible, their reliability and validity is established	1	0	
	4	When appropriate, self- and/or peer-assessments and reflections are utilized that are intended to lead to improved learning and development	1	0	
	1	Activities and resources intentionally foster learner-learner interactions	2	0	



RESULTS TO DATE...

- *Department: Assessing a Division - 2016 Checklist*

- The scores below are based on the Quick checklist ratings: Much Evidence = 3; Some Evidence = 2; Little Evidence = 1; Not Present = 0;				
- These scores are then averaged to provide a general picture of how courses at the college are doing in relation to these areas.				
- Courses assessed occurred in one of the following semesters: Fall, Summer, or Spring 2016				
	Overall Averages (n = 21)	Division Averages		
		Nursing (n = 10)	A&S (n = 5)	Allied & HCM (n = 6)
Activities, Organization, & Resources (AORs)	2.2	2.3	2.2	2.2
1) *Activities and resources intentionally foster learner-learner interactions	2.2	2.2	2.0	2.3
2) *Activities and resources help learners to progress in higher order thinking and more complex skill development	2.2	2.4	2.0	2.0
3) *Course intentionally integrates technologies that are commonly used in society and/or one's discipline	1.7	1.8	1.6	1.5
4) As much as possible, course environment and activities match the diverse and real-world conditions in which students will need to utilize the course content/skills	2.4	2.5	2.2	2.3
5) *Learners are guided from one activity to the next in ways that consistently scaffolds their increasing competencies with the key concepts/skills identified by the objectives	2.7	2.6	3.0	2.5
6) Mission-Centered Focus: The class environment is one that is experienced by learners to be safe, inclusive, and caring	2.2	2.1	2.2	2.3
Assessments	1.8	1.9	1.7	1.7
1) *The course utilizes varied assessments (e.g., formative and summative, formal and informal) to establish learners' levels of proficiency in relation to the stated course	2.2	2.2	2.2	2.2

RESULTS TO DATE...

- *Department: Assessing a Division - 2017 Full Guidelines, Steelcase Research*

# of Courses:	7							
# of Sections:	14							
# of Instructors:	8							
# of Data Points Collected:	27	(i.e., classroom observations)						
Divisions Represented:	Arts & Sciences							
* = Core Guideline; Strikethrough Guideline = Not enough data available to assess.								
Area	Guideline #	Guideline Description	Average	Level 3: 2.75-3	Level 2: 1.75-2.75	Level 1: 0.75-1.75	Level 0: 0-0.75	
Objectives	1*	Objectives describe observable and measurable levels of proficiency that are aligned with accreditation, institutional, and/or discipline-specific standards	1.2					
Assessments	1*	The course utilizes varied assessments (e.g., formative and summative, formal and informal) to establish learners' levels of proficiencies in relation to the stated course objectives as well as to guide the course's development	1.3					
	2*	Feedback to learners is: a) positive, b) related to specific objectives and criteria, c) provides suggestions for how learners can continue to progress, and d) are conducted in a "timely" manner, providing learners with feedback that can be implemented in subsequent activities	0.9					
	3	Assessments are utilized in accordance with evidence-based recommendations and, whenever possible, their reliability and validity is established						
	4	When appropriate, self- and/or peer-assessments and reflections are utilized that are intended to lead to improved learning and development	0.7					
Activities, Organization, & Resources	1*	Activities and resources intentionally foster learner-learner interactions	1.2					
	2*	Activities and resources help learners to progress in higher order thinking to nurture learning and development	1.1					
	3	Course intentionally integrates relevant and interactive technologies to deepen learning and development	1.0					
	4	The course helps learners to adapt knowledge/skills to address real-world issues in authentic contexts	0.9					
	5*	The course has learners engage in activities in ways that consistently scaffolds their increasing competencies for key concepts/skills	1.2					
	6	Mission-Centered Focus: The class environment is one that is experienced by learners to be safe, inclusive, and caring	1.0					

RESULTS TO DATE...

• Institution: Across 3 Tiers (NMC & HS)

CREATE! - Center for Research, Education, And Teaching Excellence

Nebraska Methodist College

Guideline	Levels of Development			N/O	Notes
	Level 3	Level 2	Level 1		
3) Course intentionally integrates relevant and interactive technologies to improve learning and development	<input type="checkbox"/> The instructor collaborates with learners in identifying relevant interactive technologies that redefine course activities in significant ways. The technologies are essential in order to engage in learning experiences and advanced technical skills may also be required.	<input type="checkbox"/> The course expands the options for learners' responsible use of relevant and more interactive technologies to improve learning. The technologies are integral to engagement with learning experiences and intermediate technical skills may also be required of the learner.	<input checked="" type="checkbox"/> The course provides opportunities for learners to use relevant technologies in simpler ways that support but do not fundamentally change the learning experiences. Only very basic technology skills are needed by learners.	<input type="checkbox"/>	-Students are not allowed to use cell phones while in school. No laptops were observed being used by students. -Students have access to computer labs. -During a class observation, students watched a video with digital simulations of the concepts just covered
	<input checked="" type="checkbox"/> The course helps learners to identify a real-world problem or issue in an authentic context/scenario that requires relevant KSA* adaptations and	<input type="checkbox"/> The course guides learners in adapting relevant KSAs* for authentic contexts/scenarios in order to address a given real-world problem or issue .			

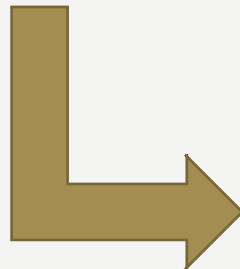
Primary Recommendations

As these strengths highlight, HCNS has a strong foundation for effective learning to occur. As with every educational system, however, there are also areas that the organization can continue to improve in as they continually pursue teaching excellence. A review of the appendices will show that there were many secondary suggestions that were made. The primary recommendations were chosen from among these suggestions and are considered to be a higher priority than the other secondary suggestions.

The following are the primary recommendations that emerged for each tier based upon the guidelines listed in the appendices. Next to each recommendation, the impact factor is noted (e.g., 0.69) and is a measure of the potential impact that making changes in the noted area could have on improved student achievement (based upon educational research studies). The higher the impact factor, the greater the likelihood of increasing student learning.

For *Administration*, the following are the primary recommendations that were noted:

- Administration could provide support to instructors on course development methods, particularly how to choose, adapt, implement, and evaluate active teaching strategies. (0.69)
- It is recommended that ongoing professional development opportunities be expanded to include on-site workshops, faculty peer support groups, reading/discussion groups (on topics directly related to education), etc. (0.65)
- Administrative staff could provide training and support to instructors in developing multiple types of formal and informal assessment methods that can be used to guide the development of their theory courses. (0.62)
- Administration could provide training to instructors and students on learning processes and how to support these processes. (0.57)
- Administration could provide training to instructors on Evidence-Based Practice (EBP) as it relates to the field of education. These practices rely on assessment data to inform and guide



USING THE EFFECT SIZE TO PRIORITIZE SUGGESTIONS...

- 1)*Learner-learner interactions (0.51)
- 2)**Utilize higher order thinking and more complex skill development (0.5)*
- 3)**Integrates technology (0.33)*
- 4)Match the diverse and real-world conditions (0.34)
- 5)*Learners progress step-by-step (0.4)
- 6)Learning environment is safe, inclusive, and caring (*Mission-Centered Focus*) (0.36)



IMPLEMENTATION – *ANOTHER STRATEGY TO CONSIDER*

Learner
Tier

Area	Guideline #	Guideline Description	Average
Objectives	1*	Objectives describe observable and measurable levels of proficiency that are aligned with accreditation, institutional, and/or discipline-specific standards	1.2
Assessments	1*	The course utilizes varied assessments (e.g., formative and summative, formal and informal) to establish learners' levels of proficiencies in relation to the stated course objectives as well as to guide the course's development	1.3
	2*	Feedback to learners is: a) positive, b) related to specific objectives and criteria, c) provides suggestions for how learners can continue to progress, and d) are conducted in a "timely" manner, providing learners with feedback that can be implemented in subsequent activities	0.9
	3	Assessments are utilized in accordance with evidence-based recommendations and, whenever possible, their reliability and validity is established	

Instructor
Tier

Area	Guideline #	Guideline Description	Average
Objectives	1*	Objectives describe observable and measurable levels of proficiency that are aligned with accreditation, institutional, and/or discipline-specific standards	1.2
Assessments	1*	The course utilizes varied assessments (e.g., formative and summative, formal and informal) to establish learners' levels of proficiencies in relation to the stated course objectives as well as to guide the course's development	1.3
	2*	Feedback to learners is: a) positive, b) related to specific objectives and criteria, c) provides suggestions for how learners can continue to progress, and d) are conducted in a "timely" manner, providing learners with feedback that can be implemented in subsequent activities	
	3	Assessments are utilized in accordance with evidence-based recommendations and, whenever possible, their reliability and validity is established	
	4	When appropriate, self- and/or peer-assessments and reflections are	

Org. Tier

Area	Guideline #	Guideline Description	Average
Objectives	1*	Objectives describe observable and measurable levels of proficiency that are aligned with accreditation, institutional, and/or discipline-specific standards	1.2
Assessments	1*	The course utilizes varied assessments (e.g., formative and summative, formal and informal) to establish learners' levels of proficiencies in relation to the stated course objectives as well as to guide the course's development	1.3
	2*	Feedback to learners is: a) positive, b) related to specific objectives and criteria, c) provides suggestions for how learners can continue to progress, and d) are conducted in a "timely" manner, providing learners with feedback that can be implemented in subsequent activities	0.9
	3	Assessments are utilized in accordance with evidence-based recommendations and, whenever possible, their reliability and validity is established	
	4	When appropriate, self- and/or peer-assessments and reflections are	0.7



**Look
For
Trends**

RESULTS TO DATE...

- *Institution: Across 3 Tiers (NMC & HS)*

The following are the primary recommendations that were either consistently found across all three tiers or they are of such significance (e.g., a high impact factor) that they need to be addressed. For more detail on each of these areas, see the full report.

Nebraska Methodist College (NMC)

1



Center for Research, Education, And Teaching Excellence (CREATE)

Recommendations

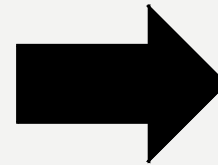
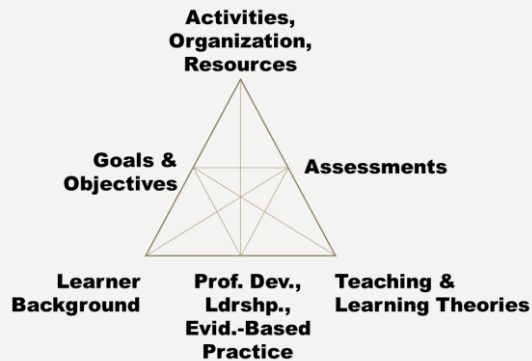
- **Training on Course Development Methods** – Instructors should be provided with additional training and support on how to develop their lesson plans and on how to develop active teaching strategies in particular.
- **Use of Regular Formative Assessments** – Faculty could be provided with training and support in their theory classes as well as in practicals on the development of formative assessments that help them and their students to identify current strengths and gaps in students' knowledge, skills, and attitudes as well as on how to adjust their lessons based upon this assessment data.
- **Training on Multiple Learning Theories** – It is recommended that instructors receive regular training on a wide array of learning theories as well as support in using these theories to guide the development of their courses.
- **Developing Regular Faculty Training & Small Support Groups** – All faculty could be offered professional development opportunities on a regular basis. Furthermore, HCNS is encouraged to expand support for faculty by creating small support groups on general topics related to teaching and learning as well as to help foster a culture of peer mentoring.
- **Integrate Theory & Practical Portions of the Curriculum** – We recommend that the theory classes be redistributed through the academic year, being intermixed with practicals, so that there is a closer integration of theory and practice.

Given these recommendations, the following are limitations that need to be taken into consideration:

- **Review of Practicals** - These recommendations are based primarily on observations and data from the theory classes. Knowing that the bulk of the curriculum is centered on practicals, some

SUMMARIZING

Evidence-Based Guidelines



Used Across 3 Tiers



Students

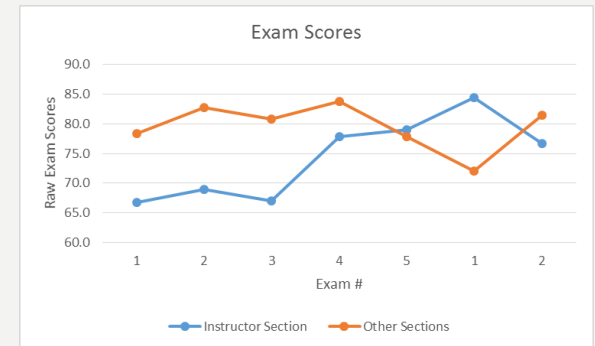


Classes/Instructors



Administration

Can Lead to
Higher Student
Achievement



QUESTIONS? COMMENTS?

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