

# Understanding by design: A multi-sectoral approach to redesigning learning strategies for the Nursing Curriculum

Ms. Lauren Orlando<sup>1</sup>, Dr. Marsha Nicholson-Ramdeen<sup>1</sup>, Dr. Roxann Lewis-Roberts<sup>1</sup>, Dr. Jennifer Solomon<sup>2</sup>,  
Mrs. Cherisse Mahabir-Cletus<sup>1</sup>

<sup>1</sup>Department of Educational Services, St. George's University

<sup>2</sup>Department of Nursing & Allied Health Sciences, St. George's University

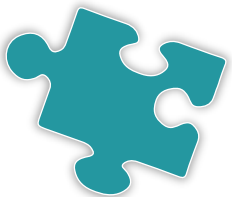
Grenada, West Indies

ISANA 30<sup>th</sup> Anniversary Conference (Melbourne) – December 2019

# Agenda



- 01** Introduction- SGU, Nursing program & LSU
- 02** Reflection of course curriculum- do we adequately meet the needs of our students?
- 03** Introducing the theory of Understanding by design
- 04** Refining course outcomes: Bloom's Taxonomy
- 05** Practical illustrations in the classroom to reinforce learning





United States

United States

Mexico

Grenada

Google

# Nursing & Allied Health Dept. Curriculum/Audit

## Year 1 (37 credits)

Intro. to University Life

Intro. to Professional Nursing

Foundation Chemistry

Intro. to Sociology

Computer Concepts & Application

Foundation English

Foundation Math

College Math

College English I

Human Biology w/Lab

General Chemistry I w/Lab

Fundamentals of Nursing w/Lab

Nursing Practicum I

Community & Population Based Health & Practicum

## Year 2 (42 credits)

Microbiology for Nursing w/Lab

Biochemistry for Life Sciences

Adult Health I w/Lab

Intro. To Psychology

Practicum II

Intro to Statistics & Practicum

Nursing Childbearing Family w/Lab

Pediatrics Nursing Care

Pathophysiology

Pharmacology

Practicum III - Pediatrics

Epidemiology & Practicum

## Year 3 (44 credits)

Adult Health II

Specialized Nursing & Informatics

Gerontological Nursing w/Practicum

Collaboration & Communications in Health Care

Practicum IV

Global Service Learning & Professional Development Practicum

Leadership & Management w/Lab

Global Nursing & Health Care Issues

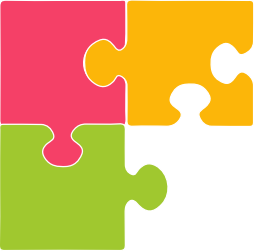
Research & Evidence Based Practice

Nutrition Health & Wellness

Practicum V – Leadership & Management

Mental Health Nursing w/Practicum

Nursing RENR Review



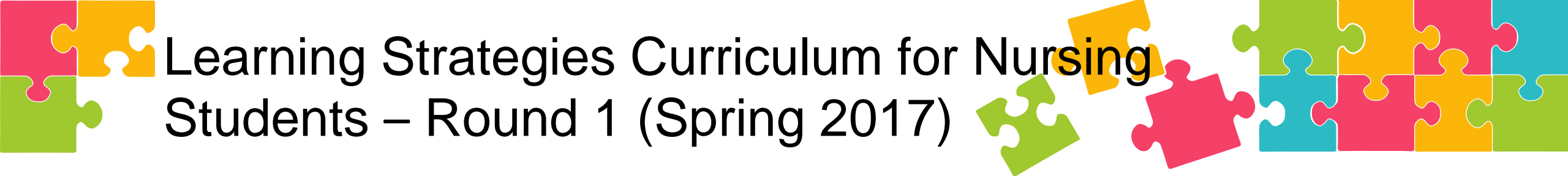
# Phase 1: LS Curriculum Introduction



Cohort 1	
Year 1	Spring /Fall 2016
Year 2	Spring/Fall 2017
Year 3	Spring/Fall 2018

Cohort 2	
Year 1	Spring /Fall 2017
Year 2	Spring/Fall 2018
Year 3	Spring/Fall 2019

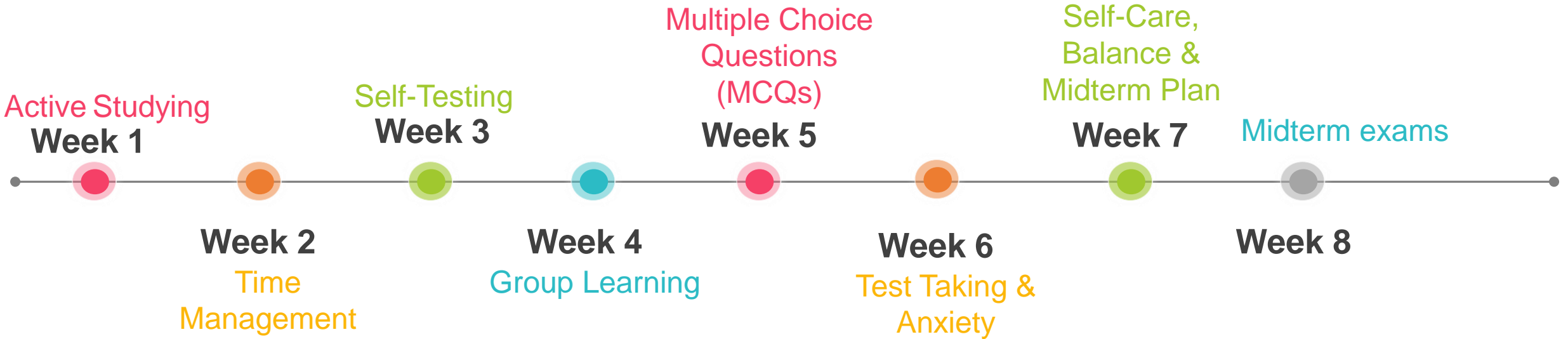
LS Curriculum introduced



# Learning Strategies Curriculum for Nursing Students – Round 1 (Spring 2017)

## Course Outcomes: In this course, students will learn:

- A variety of active study strategies designed to improve organization and retention of information for the purpose of long-term learning
- To improve success on multiple-choice, short answer, clinical analysis, and essay style examination questions
- The importance of time to task management in academic planning and execution
- The importance of effective reading and note-taking strategies in the learning process, highlighting on science courses material





# Follow Up Appointment in Real Time



## Listen (5 – 8 mins)

- General check in / strategies used
- School/Life Balance
- Family/Work Balance
- Confirmation of what you heard from student



## Teach & Practice Skills (20 mins)

- General check in / strategies used
- Teach back of last week & current material
- MCQ learning/testing assessment



## Make a Plan (2 – 5 mins)

- Plan going forward
- Scheduled student organized follow up



# Phase 1: LS Curriculum Introduction

Cohort 1	
Year 1	Spring /Fall 2016
Year 2	Spring/Fall 2017
Year 3	Spring/Fall 2018

Cohort 2	
Year 1	Spring /Fall 2017
Year 2	Spring/Fall 2018
Year 3	Spring/Fall 2019

LS Curriculum introduced

Nursing Department requested assistance from LSU team

# Regional Examination for Nurse Registration (RENRR)

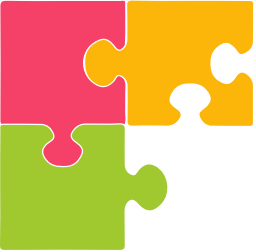
→ Knowledge/Comprehension - 20%

→ Application – 50%

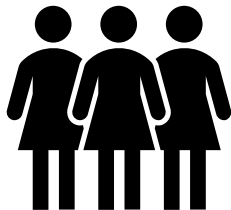
→ Analysis/Synthesis/Evaluation - 30%

Nursing Domain	Exam Weight (%)	Number of MCQ's
Nursing Practice	30	60
Professional Conduct	10	20
Health Promotion & Maintenance of Wellness	10	20
Nursing Leadership & Management	15	30
Communication	10	20
Clinical Decision Making & Intervention	20	40
Professional Development	5	10
<b>TOTAL</b>	<b>100%</b>	<b>200</b>

Pass rate for exam 70%



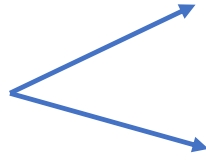
# Phase 2: Intensive



Cohort 1:  
16 female  
participants



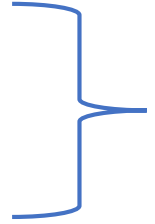
Background



High school entry  
competency

Content

Skills



No formal courses received  
on learning strategies

RENr Mock  
performance

All 16 students  
were unsuccessful  
most student had  
average score of  
**40-45%**



# Multidisciplinary Approach

## Learning Strategies:

- Prioritization of weak areas post mock exam
- Scheduling & time management

**December 2018**

## Mental Health Hospital Rotation:

- Concept Mapping
- January-March 2019**

## General Hospital Rotation: Nursing Practice Rationale

- Case scenarios
- White-boarding-relating nursing practice to basic science

**January-March 2019**

## Learning Strategies:

- Individual & Group MCQ using HESI test bank.
- Structure of MCQs
- Re-engineering questions to create content links

**January-March 2019**



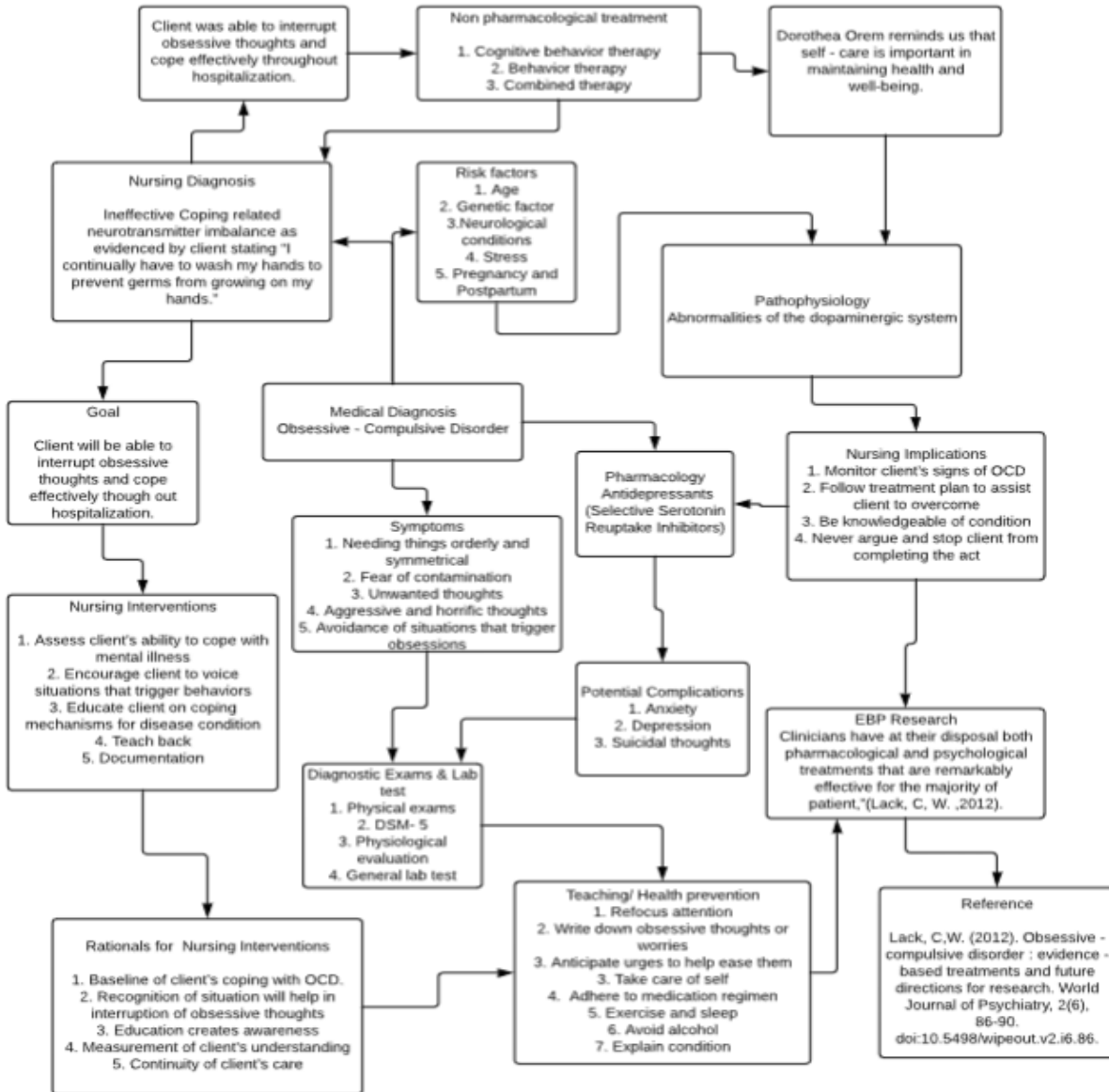
# Mental Health Concept Map

Obsessive -Compulsive Disorder

# Schedule Planning for Question Banks

JANUARY 2019

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 REST	2 Class – 9a-5p HESI MCQ Group Practice – 1hr. min.	3 Class – 9a-5p HESI MCQ Group Practice – 1hr. min.	4 Class – 9a-5p HESI MCQ Group Practice – 1hr. min.	5 REST
6 HESI MCQ Indiv. Practice – 3 hr. min.	7 Class – 9a-5p HESI MCQ Group Practice – 1hr. min.	8 Class – 9a-5p HESI MCQ Group Practice – 1hr. min.	9 Class – 9a-5p HESI MCQ Group Practice – 1hr. min.	10 REST	11 HESI MCQ Indiv. Practice – 3 hr. min.	12 HESI MCQ Indiv. Practice – 3 hr. min.
13 REST	14 Mt. Gay – 7a-1p HESI MCQ Indiv. Practice – 3 hr. min.	15 Mt. Gay – 7a-1p HESI MCQ Indiv. Practice – 3 hr. min.	16 REST Mt. Gay – 1-7p	17 Mt. Gay – 7a-1p HESI MCQ Indiv. Practice – 3 hr. min.	18 Mt. Gay – 7a-1p HESI MCQ Indiv. Practice – 3 hr. min.	19 REST
20 HESI MCQ Indiv. Practice – 3 hr. min. Review MCQ Content	21 Meeting to discuss Spring 2019 HESI Workshop Schedule	22	23	24	25	26
27	28	29	30	31	GOAL #1: Finalize Spring 2019 Workshop Schedule Goal #2: Level 2-5	





# Phase 3: Reflections

Year 1 (37 credits)

Year 2 (42 credits)

Year 3 (44 credits)

Semester 1 & 2

- Refinement of MCQ & Critical thinking skills

Semester 1 & 2

Leveling up:

Integration of concepts & critical thinking skills via MCQs



# Understanding by Design



- Notion of “backward-design”: achieving desired results to course outcomes
- Begs the question- is our final product what we intended for the student?
- Do we want students to learn for the sake of learning or to promote meaningful learning that can be applied to the related field.

A decorative graphic consisting of several interlocking puzzle pieces in various colors (teal, pink, yellow, green) arranged in the corners of the slide. The pieces are scattered, with some forming partial borders and others floating in the open space.

Living the experience – Understanding  
by design in action



## Activity 1: Student Case – Building Outcome Measures to Match Student Needs

Think – Pair - Share

Tony spends all day studying and knows his material. He organized weekly review groups and usually is helping students understand material. However, when Tony does his class exams, he only scores within the class average while his friends excel. Upon an in-office evaluation with a learning strategist, it is observed that Tony has poor MCQ techniques. How can we address this issue?

1. How can we help this student?

# LSU Course Learning Outcomes

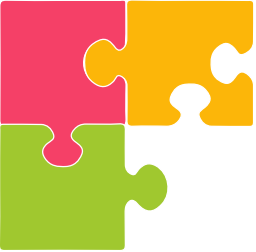
In this course students will learn:

- The importance of time to task management in academic planning and execution
- The importance of effective reading and note-taking strategies in the learning process, highlighting on science courses material
- A variety of active study strategies designed to improve organization and retention of information for the purpose of long-term learning
- To improve success on multiple-choice, short answer, clinical analysis, and essay style examination questions

**Course Learning Outcomes**

- Very general
- Hard to measure
- Lacked timelines
- Unclear for audience intended
- Lengthy

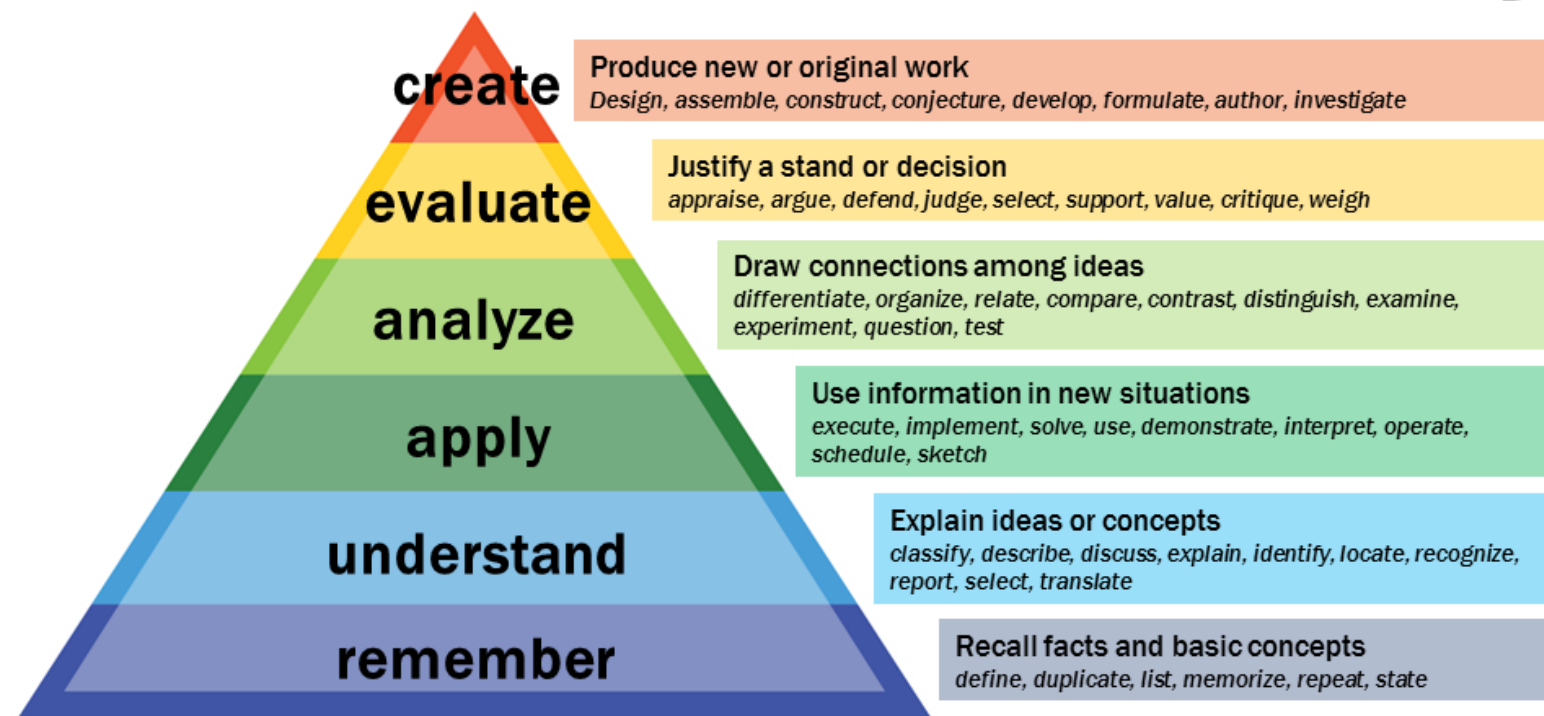
**Shortcomings of Outcomes**



# Elements of a Good Learning Outcome



## Bloom's Taxonomy



Clear



Begins with a Verb



Observable



Measurable



Language is understood by audience





# Revise Learning Objectives



Learning Outcome	Begin with a VERB	Is it OBSERVABLE	Is it MEASURABLE	WHEN is it done
The importance of time to task management in academic planning and execution.				
Implement techniques of scheduling and time to task to improve time management.	Implement	Scheduling Time to task	Building a weekly schedule Meeting assignment deadlines Preparation timelines for midterm & finals	Weekly  2-3 assignments throughout term



## Activity 2: Student Case – Building Outcome Measures to Match Student Needs



### Think – Pair - Share

Tony spends all day studying and knows his material. He organized weekly review groups and usually is helping students understand material. However, when Tony does his class exams, he only scores within the class average while his friends excel. Upon an in-office evaluation with a learning strategist, it is observed that Tony has poor MCQ techniques. How can we address this issue?

1. How can we help this student
2. Using the topic of self-testing, create a learning outcome that would address the issue presented?



# Phase 4: Revised LS Nursing Curriculum



## Course Learning Outcomes:

### Upon completion of this course, the student should be able to:

Implement techniques of scheduling and time to task to improve time management.

Demonstrate with the use of Cornell notes and concept mapping techniques to improve notes efficiency.

Highlight strategies of skimming, clarify terms and answering simple questions to improve reading.

Practice activities of repetitive review and memory enhancement taught within the course.

Illustrate the use of 5 of 8 study skills strategies recommended for student organization and retention.

Apply the different test taking strategies introduced within the course to content review.

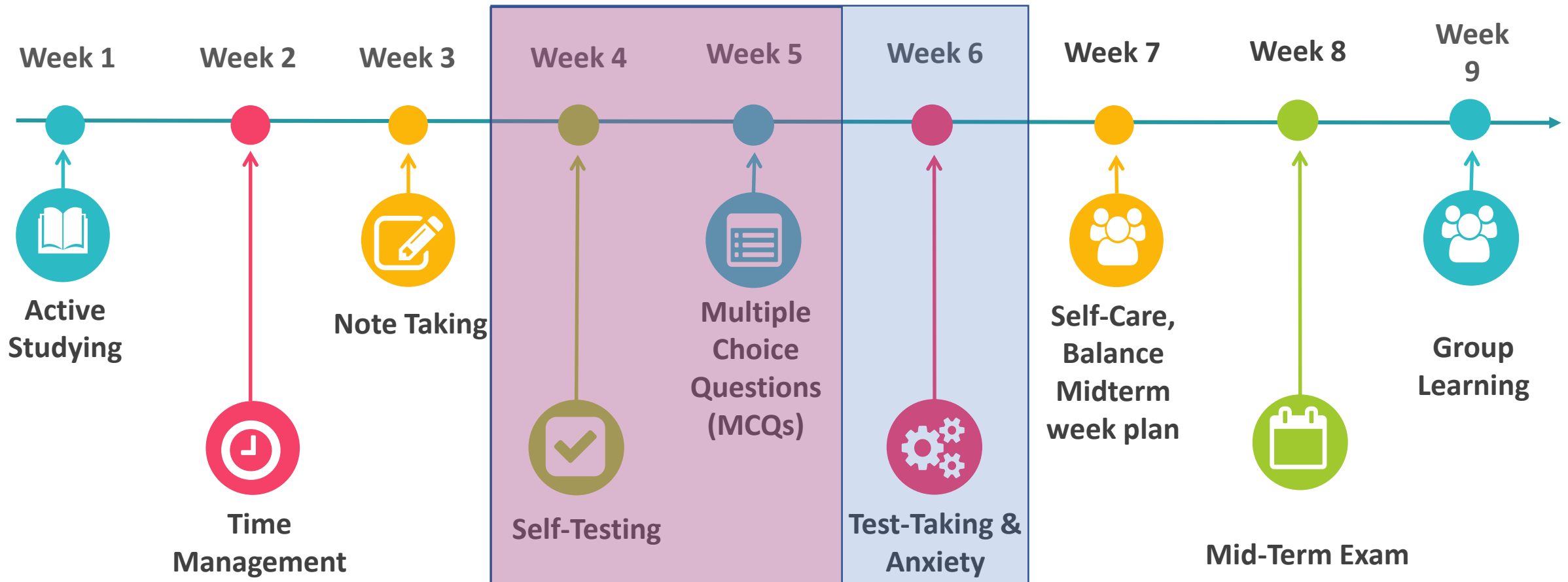
Demonstrate to students the systemic approach to MCQs

Practically apply MCQs to build of critical thinking skills.

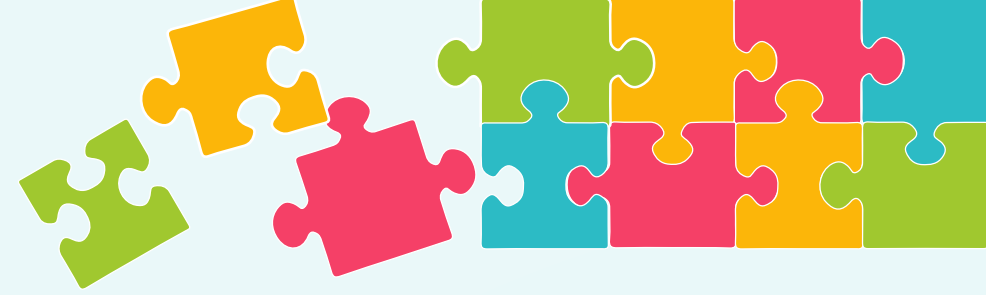
Show understanding of plagiarism and its characteristics within the writing of assignments.

Demonstrate APA referencing of sources in assignments.

# Learning Strategies for Nursing Students Spring 2020



**\*Individual Learning Strategy Appointment throughout term as needed**



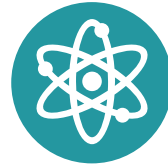
Reflect



# Why MCQ Approach?



Did not understand what was being asked



Lack of critical thinking skills



Answered the wrong question



Easily distracted by unimportant facts

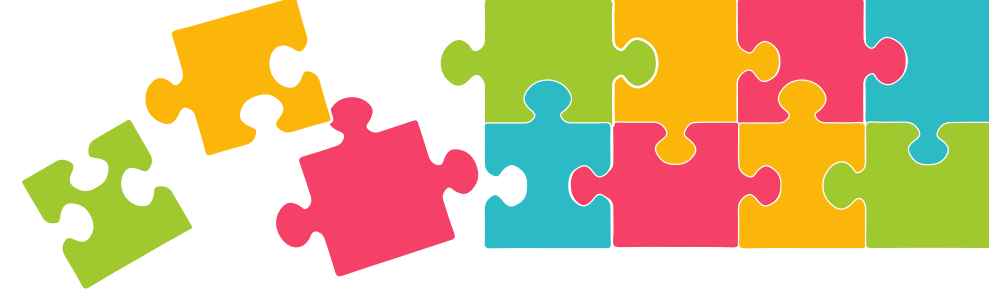


Loss time on exam because of poor test-taking strategies



# MCQ 101

An MCQ is composed of:



**Leading Questions**

**The Vignette**

**The Options**

A 65-year-old man is brought to the emergency room by his daughter. She reports him complaining of neck pain and headache for the past 24 hours. He also had blurred vision. On examination his vitals BP 220/130 (Normal 120-80), respiratory rate 20 (Normal 14-16), glucose levels are normal and pulse rate is elevated. Physical examination, showed an obese male who was notably confused. There was prominent darkening in his neck areas, fatty deposits on his eye lids. He also have old bruises around his back and hand, recent bruising on his thigh and a swollen left knee which is warm to touch.

**What is the primary cause for this patient presentation to the ER?**

- A. Hypertension
- B. Diabetes
- C. Infection
- D. Physical Abuse
- E. Stroke

## MCQ 101

An MCQ is composed of:

1

Leading Questions

3

The Vignette

5

The Options

A 65-year-old man is brought to the emergency room by his daughter. She reports him complaining of neck pain and headache for the past 24 hours. He also had blurred vision. On examination his vitals BP 220/130 (Normal 120-80), respiratory rate 20 (Normal 14-16), glucose levels are normal and pulse rate is elevated. Physical examination, showed an obese male who was notably confused. There was prominent darkening in his neck areas, fatty deposits on his eye lids. He also have old bruises around his back and hand, recent bruising on his thigh and a swollen left knee which is warm to touch.

2

**What is the primary cause for this patient presentation to the ER?**

- A. Hypertension
- B. Diabetes
- C. Infection
- D. Physical Abuse
- E. Stroke

## Mastering MCQ's

1. What kind of question is this?

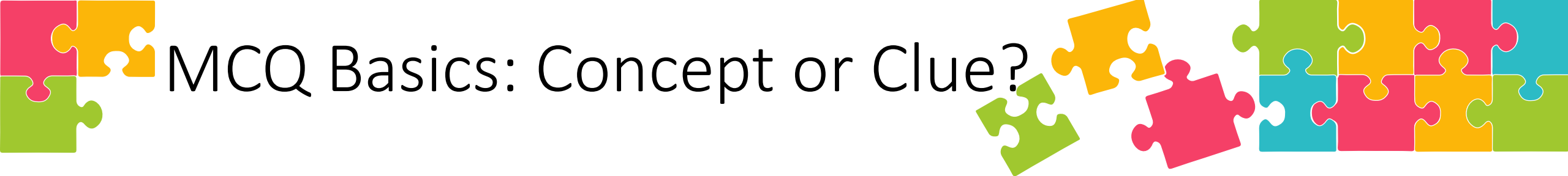
\*Concept      \*Clue

2. Rephrase the leading question in the vignette in your own words?

3. What is/are the key features in the vignette?

4. What are the possible answers?

5. Based on key features and leading question eliminate options and choose an answer.



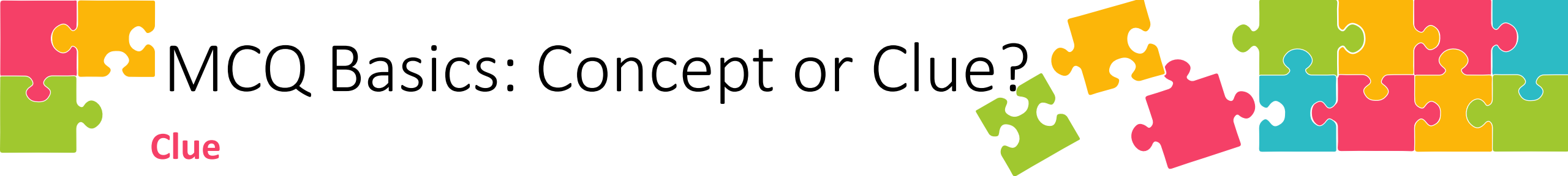
# MCQ Basics: Concept or Clue?

## Concept

Molly noticed that her daughter Jennifer was limping when she picked her up from school. Jennifer looked ill and had a slight temperature. Molly took Jennifer to the Pediatrician and on physical examination her right knee was noticeable swollen, warm to touch and very painful on movement. Her vitals were normal except for Temp 100°F. The Pediatrician removed 18 mls of cloudy fluid from the knee. The fluid was sent for culture and a gram stain showed gram positive arranged clusters. The reagent to distinguish staphylococci from streptococci is

- A) Hydrogen peroxide
- B) Fibronectin
- C) Fibrinogen
- D) Oxidase

?



# MCQ Basics: Concept or Clue?

## Clue

A 58-year-old man comes to the emergency department reporting pain in the middle of his stomach that started a few hours ago. The pain radiates to his back. He also reports nausea and vomiting that started with the onset of the pain, as well as 3 months of diarrhea that is greasy and foul smelling. He has no history of drug use, recent travel, or sick contacts. He does admit to drinking a 12-pack of beer every night when he gets home from work. His temperature is 37.0°C (98.6°F), pulse is 82/min, respirations are 14/min, and blood pressure is 132/84 mm Hg. Physical examination reveals an ill-appearing man in a moderate amount of pain with epigastric tenderness on palpation.

Which of the following is the most likely cause of this patient's symptoms?

- A. Celiac disease
- B. Cholecystitis
- C. Chronic pancreatitis
- D. Giardiasis
- E. Lactose intolerance

# MCQ 101

An MCQ is composed of:

**Leading Questions**

**The Vignette**

**The Options**

A 65-year-old man is brought to the emergency room by his daughter. She reports him complaining of neck pain and headache for the past 24 hours. He also had blurred vision. On examination his vitals blood pressure 220/130 (Normal 120-80), respiratory rate 15 (Normal 14-16), glucose levels and temperature are normal and pulse rate is elevated. Physical examination, showed an obese male who was notably confused. There was prominent darkening in his neck areas, fatty deposits on his eye lids. He also have old bruises around his back and hand, recent bruising on his thigh and a swollen left knee which is warm to touch.

**What is the primary cause for this patient presentation to the ER?**

- A. Hypertension
- B. Diabetes
- C. Infection
- D. Physical Abuse
- E. Stroke

**ACTIVITY:**

1. Concept or Clue?
2. Rephrase the leading questions
3. What are the key features?
4. Eliminate options based on point 2 and 3.
5. What's your answer?



## Activity 3: Deconstructing an MCQ

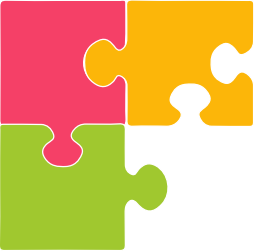
A 56-year-old female comes to the clinic complaining of swelling and pain in the right leg. She recently returned from visiting her daughter in India and says she feels very fatigue due to the 15 hours flight and extended sitting. She has a past medical history of poorly controlled diabetes and high blood pressure for over 10 years. Has a family history of skin cancer with her brother and aunt being diagnosed. On examination vitals temperature and respiratory rate normal, blood pressure 130/80, and pulse rate of 85 with normal heart sounds. Her left leg was normal. Her right leg was swollen prominently around the calf, painful when lifting her toes, skin temperature normal no rashes observed.

What is the most likely diagnosis in this patient?

- A. Deep Vein Thrombosis (blood clot in the leg)
- B. Cellulitis (Skin infections)
- C. Trauma
- D. Skin Cancer
- E. Heart Failure

### ACTIVITY:

1. Concept or Clue?
2. Rephrase the leading questions
3. What are the key features?
4. Eliminate options based on point 2 and 3.
5. What's your answer?



# Benefits of MCQ Approach



Identification of content gaps



Assess our understanding of content



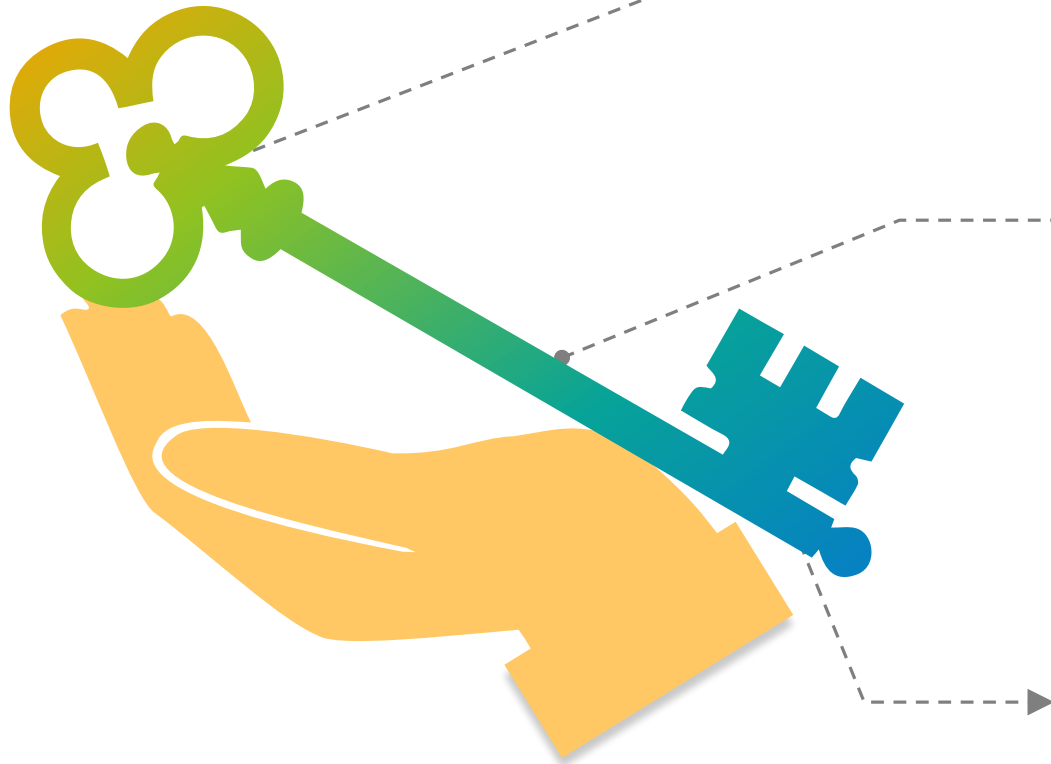
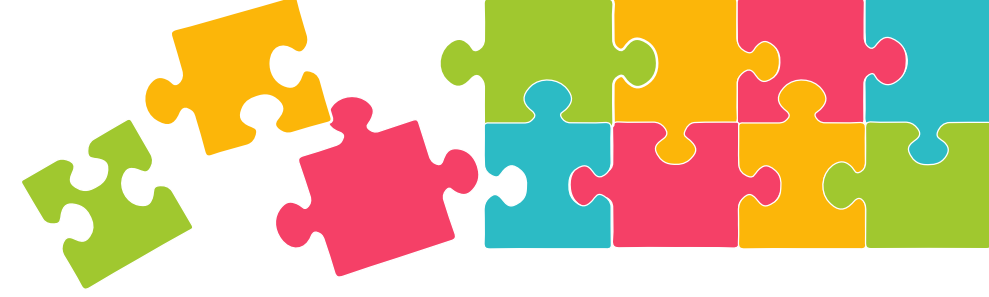
Confirms understanding of concepts



Used as a learning tool



# The Way Forward...



Mapping out LSU over the three-year program

Discussions with the Nursing Department to ensure streamline between teaching and content assessment to resemble what is expected by RENR

Need for student evaluation at end of each year to revise curriculum to align with student needs.

# References

- Heick, T. (2018, July 29). *126 Bloom's taxonomy verbs for digital learning*. Retrieved from <https://www.teachthought.com/critical-thinking/126-blooms-taxonomy-verbs-digital-learning/>
- Johnson, A. G. (2014). *BRS microbiology and immunology* (6th ed.). Philadelphia, PA: Lippincott Williams & Wilkins
- Mcdaniel, R. (2018, August 13). *Bloom's taxonomy*. Retrieved from <https://cft.vanderbilt.edu/guides-sub-pages/blooms-taxonomy/>.
- Wiggins, G. P., & McTighe, J. (2011). *The understanding by design guide to creating high-quality units*. ASCD.