SRI BALAJI VIDYAPEETH
DEEMED TO BE UNIVERSITY
ACCREDITED BY NAAC WITH **A** GRADE

SRI BALAJI VIDYAPEETH

WEB NAR

SBV CONNECT

Shri. M.K. RAJAGOPALAN
Chancellor, SBV

Prof. SUBHASH CHANDRA PARIJA
Vice-Chancellor, SBV

TOPIC :

EVALUATION IN HIGHER MEDICAL EDUCATION

OCT 21 WED 2020

2.30 PM Onwards

Link For Free Registration

https://sbvu.zoom.us/meeting/register/tZ0qde-gqT4pHNfUdKelaBIGWJCfCL0EtH4r
or
https://bit.ly/sbvconnect

ESTEEMED SPEAKERS

Session -1

CONCERNS IN EVALUATION SYSTEM OF HIGHER MEDICAL EDUCATION

Prof. Subhash Chandra Parija
Hon'ble Vice Chancellor
Sri Balaji Vidyapeeth, Puducherry

Session -2

OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE) AS A TOOL OF "ASSESSMENT – AS – LEARNING" IN HIGHER MEDICAL EDUCATION

Prof. K. R. Sethuraman,
Former Vice Chancellor, SBV
Dean, Faculty of Medicine,
AIMST University, Malaysia

Session - 3

ADVANCES IN EVALUATION OF HIGHER MEDICAL EDUCATION

Prof. ArunJamkar,
Former Vice Chancellor,
Maharashtra University of Health Sciences, Nashik
Chair, National Bioetics Curriculum Implementation,
UNESCO Chair in Bioethics, Haifa

Moderated by

Prof. M. Ravishankar
Director, E Learning,
SBV, Puducherry

Sri Balaji Viadhyapith Webinar

SBV connect

Advances In Evaluation in Higher Medical Education

21st October 2020 :300 pm

Prof Arun Jamkar

President AHPE

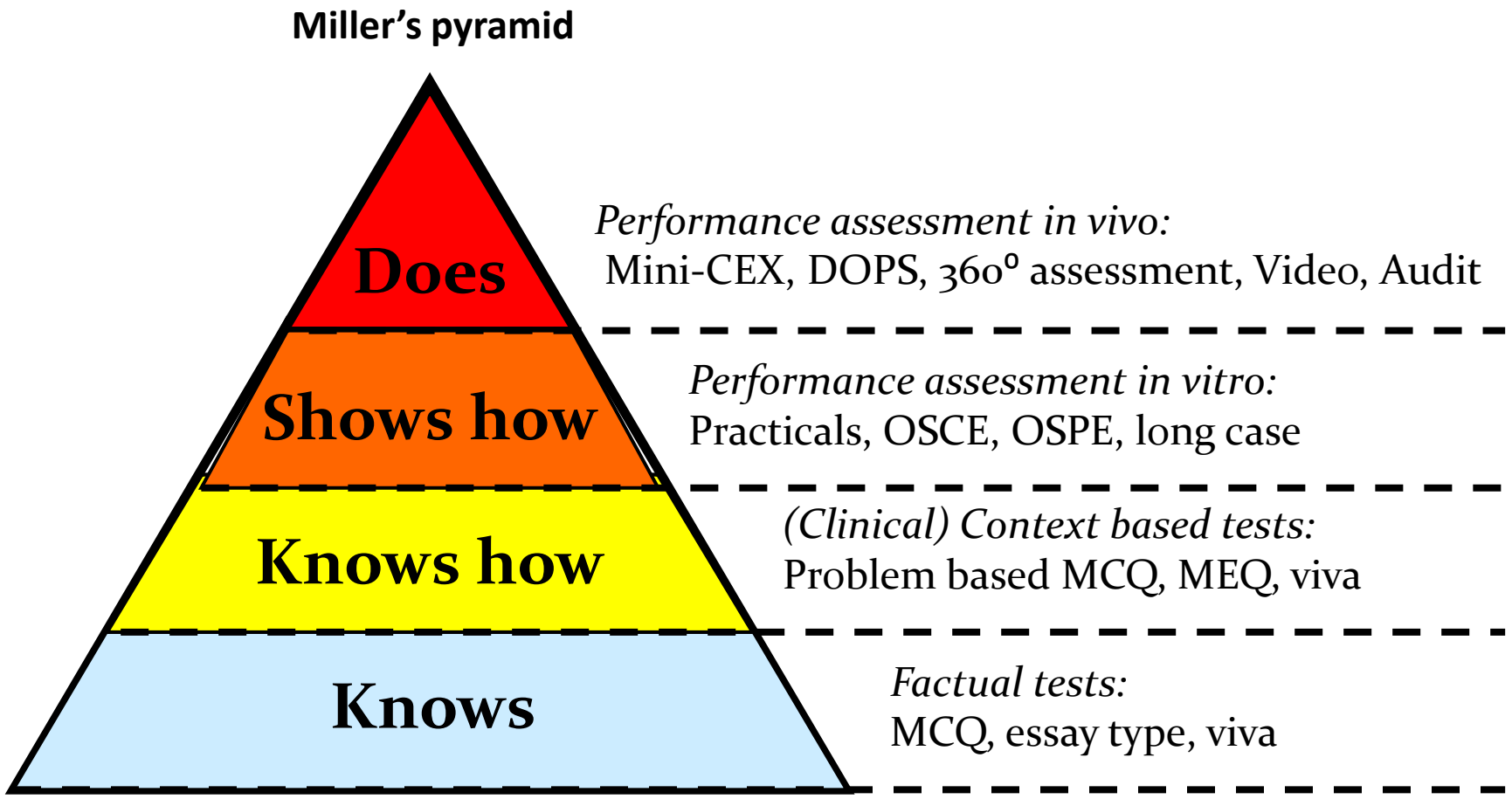
and

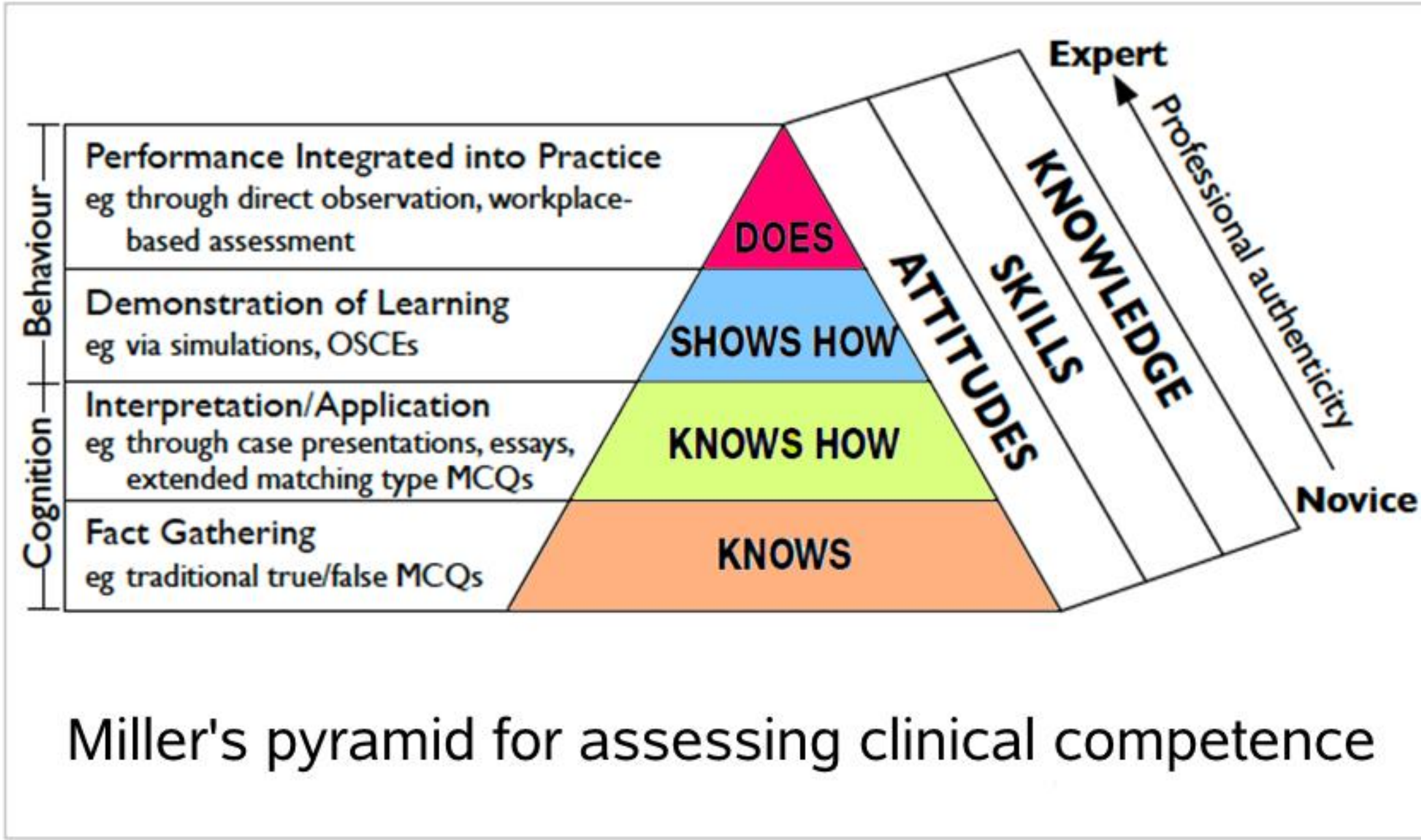
Ex Vice-Chancellor of

Maharashtra University of Health Sciences

- Prof Dr Arun Jamkar,
  M.S. Ph D (Surgical Oncology),FICS, FIAGES, FMAS, FAIMER fellow
- Ex Vice Chancellor, Maharashtra university of Health sciences, Nashik
- Consultant , Persistent Systems Ltd, Pune
- Distinguished Professor, Symbiosis International University Pune
- Director, Post graduate programme, Research and Development, MIT group of Medical Colleges Pune
- Ex Dean, B J Medical College Pune and RCSM Govt Medical College Kolhapur

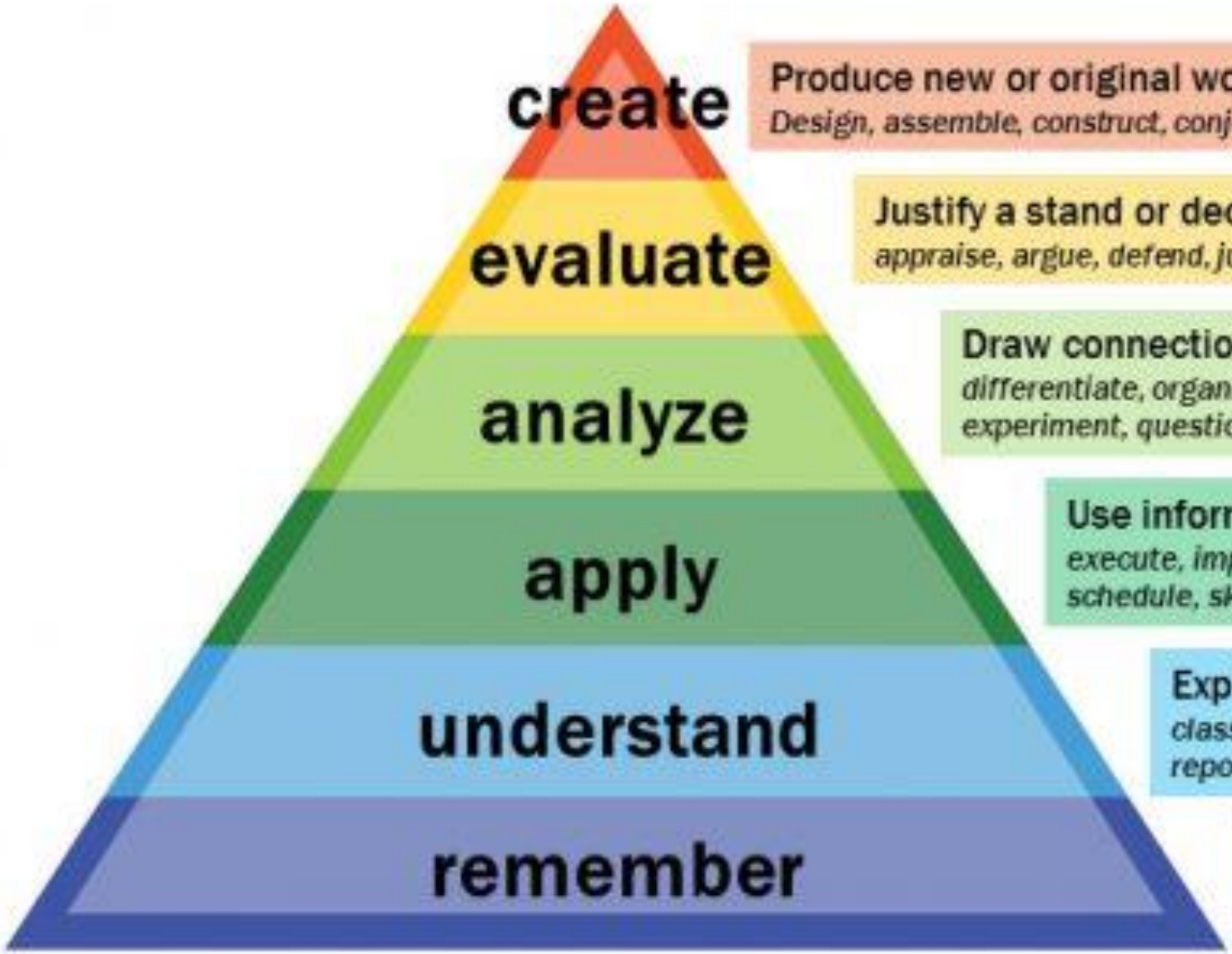
Differing levels for different levels of learners





Miller's pyramid for assessing clinical competence

Bloom's Taxonomy



Produce new or original work
Design, assemble, construct, conjecture, develop, formulate, author, investigate

Justify a stand or decision
appraise, argue, defend, judge, select, support, value, critique, weigh

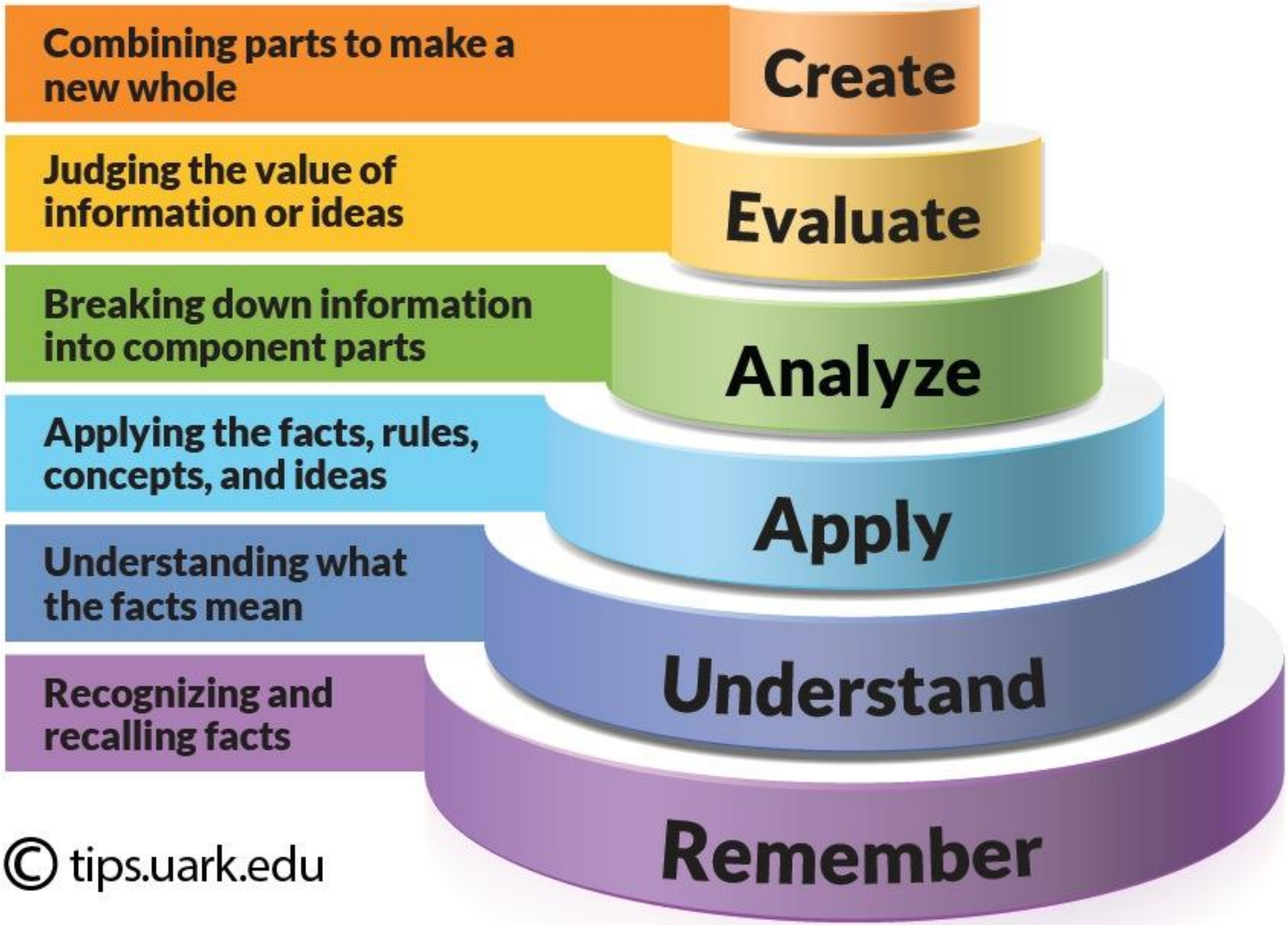
Draw connections among ideas
differentiate, organize, relate, compare, contrast, distinguish, examine, experiment, question, test

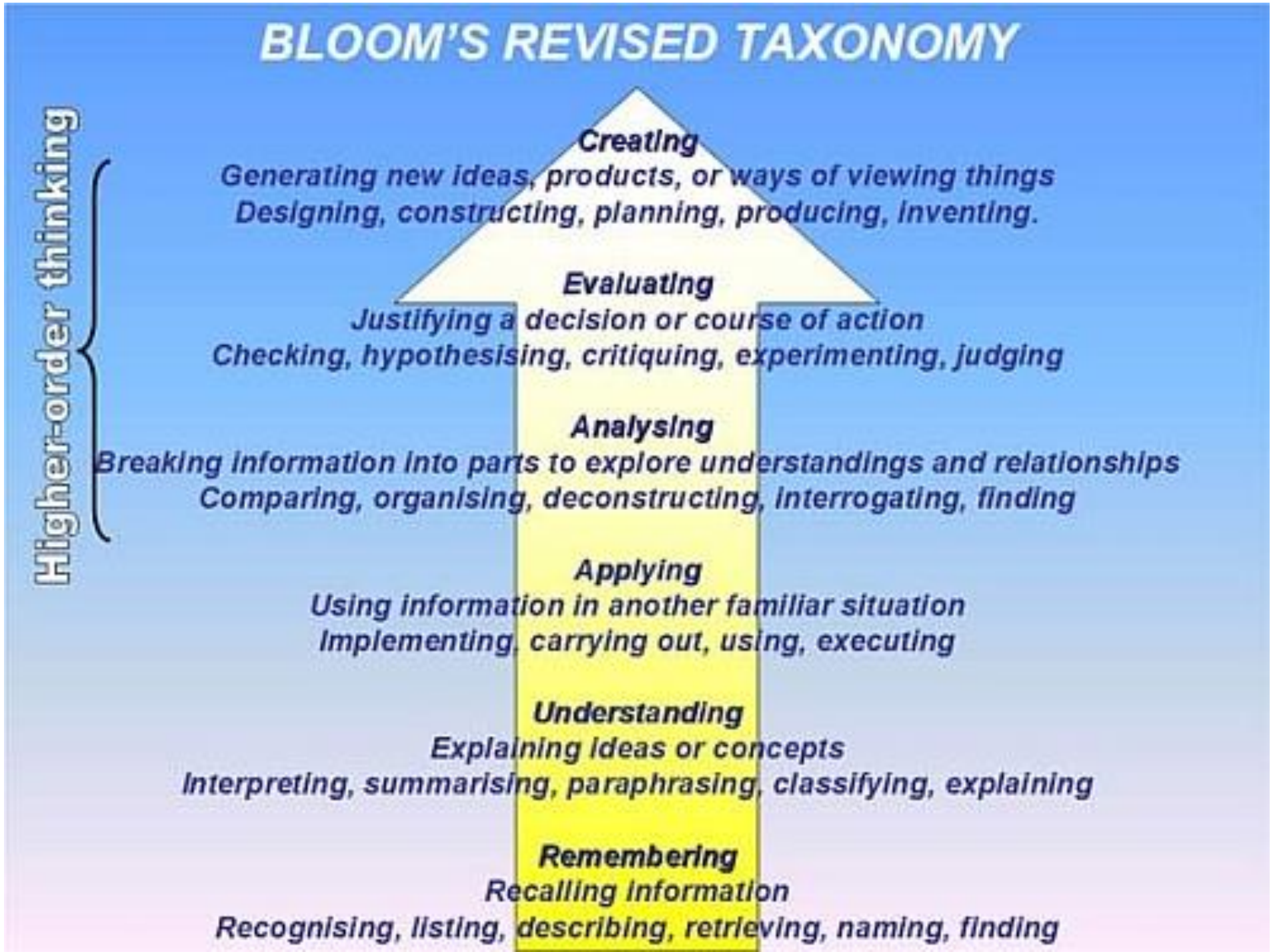
Use information in new situations
execute, implement, solve, use, demonstrate, interpret, operate, schedule, sketch

Explain ideas or concepts
classify, describe, discuss, explain, identify, locate, recognize, report, select, translate

Recall facts and basic concepts
define, duplicate, list, memorize, repeat, state

Vanderbilt University Center for Teaching


Combining parts to make a new whole
Create
Judging the value of information or ideas
Evaluate
Breaking down information into component parts
Analyze
Applying the facts, rules, concepts, and ideas
Apply
Understanding what the facts mean
Understand
Recognizing and recalling facts
Remember
© tips.uark.edu


BLOOM'S REVISED TAXONOMY
Higher-order thinking
Creating
Generating new ideas, products, or ways of viewing things
Designing, constructing, planning, producing, inventing.
Evaluating
Justifying a decision or course of action
Checking, hypothesising, critiquing, experimenting, judging
Analysing
Breaking information into parts to explore understandings and relationships
Comparing, organising, deconstructing, interrogating, finding
Applying
Using information in another familiar situation
Implementing, carrying out, using, executing
Understanding
Explaining ideas or concepts
Interpreting, summarising, paraphrasing, classifying, explaining
Remembering
Recalling information
Recognising, listing, describing, retrieving, naming, finding

A statement of a **learning objective** contains a **verb** (an action) and an **object** (usually a noun).

- The **verb** generally refers to [actions associated with] the intended **cognitive process**.
- The **object** generally describes the **knowledge** students are expected to acquire or construct. (Anderson and Krathwohl, 2001, pp. 4–5)

In this model, each of the colored blocks shows an example of a learning objective that generally corresponds with each of the various combinations of the cognitive process and knowledge dimensions.

Remember: these are **learning *objectives***—not learning *activities*. It may be useful to think of preceding each objective with something like: "Students will be able to . . ."

*Anderson, L.W. (Ed.), Krathwohl, D.R. (Ed.), Airasian, P.W., Cruikshank, K.A., Mayer, R.E., Pintrich, P.R., Raths, J., & Wittrock, M.C. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of Educational Objectives* (Complete edition). New York: Longman.

Model created by: Rex Heer
Iowa State University
Center for Excellence in Learning and Teaching
Updated January, 2012
Licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.
For additional resources, see:
www.celt.iastate.edu/teaching/RevisedBlooms1.html

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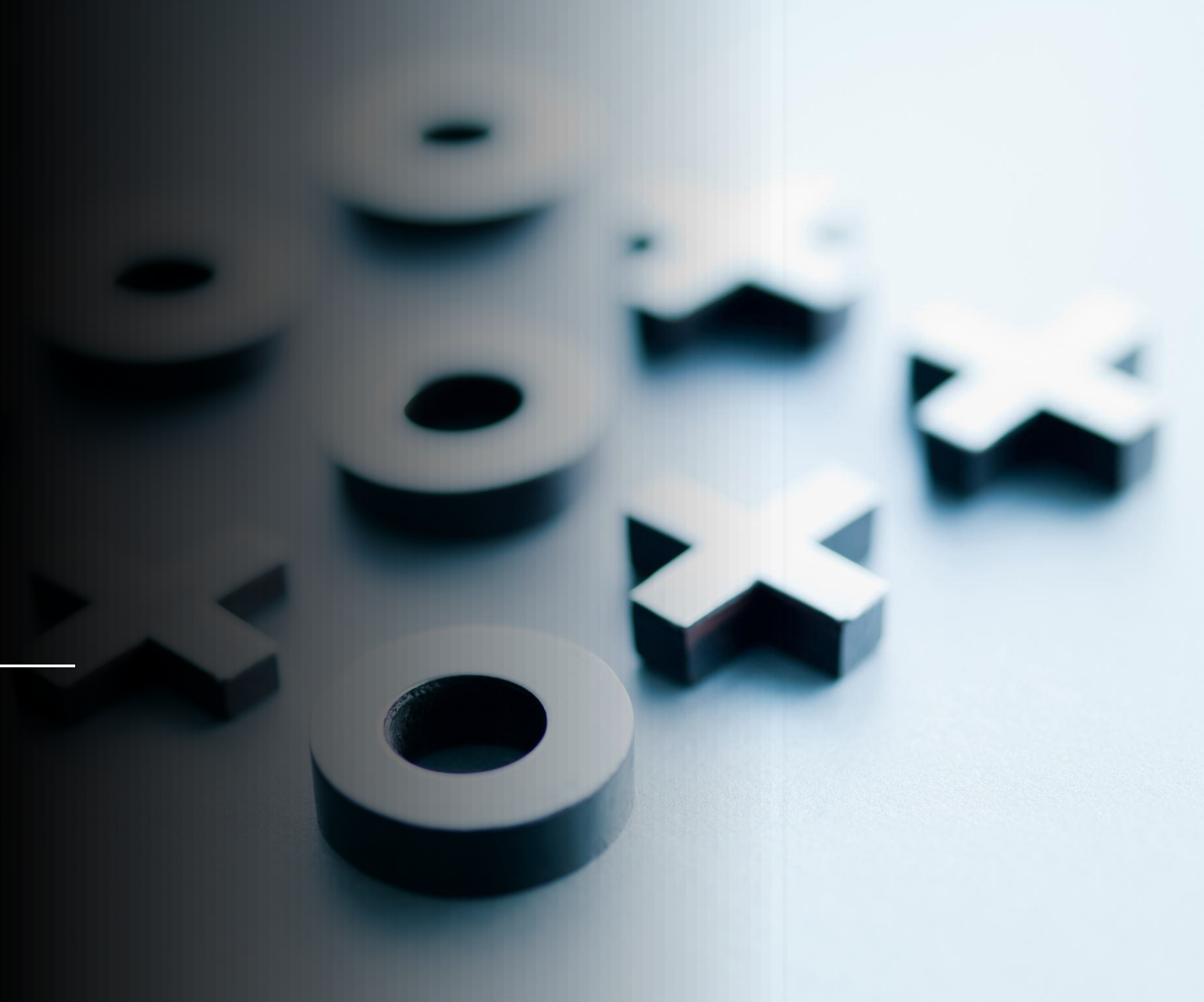
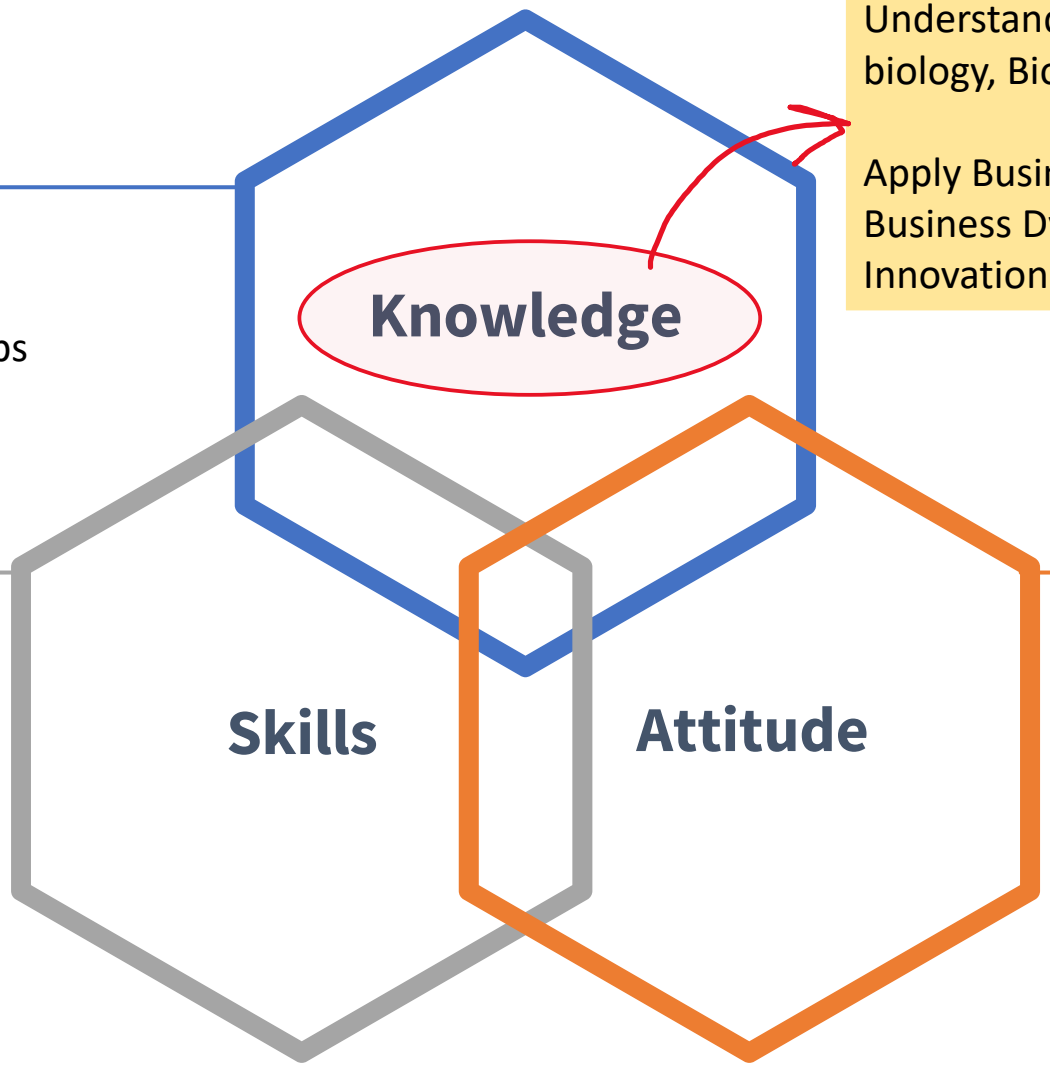
Categories of Programme Outcomes



Categories of Program Outcomes

Factual: The basic elements students must know
Conceptual: The interrelationships between the basic elements

Procedural: How to do something, methods, skills, techniques



Understand the nature and basic concepts of cell biology, Biochemistry, Taxonomy and ecology.

Apply Business oriented knowledge in complex Business Dynamics leading to Creativity and Innovation.

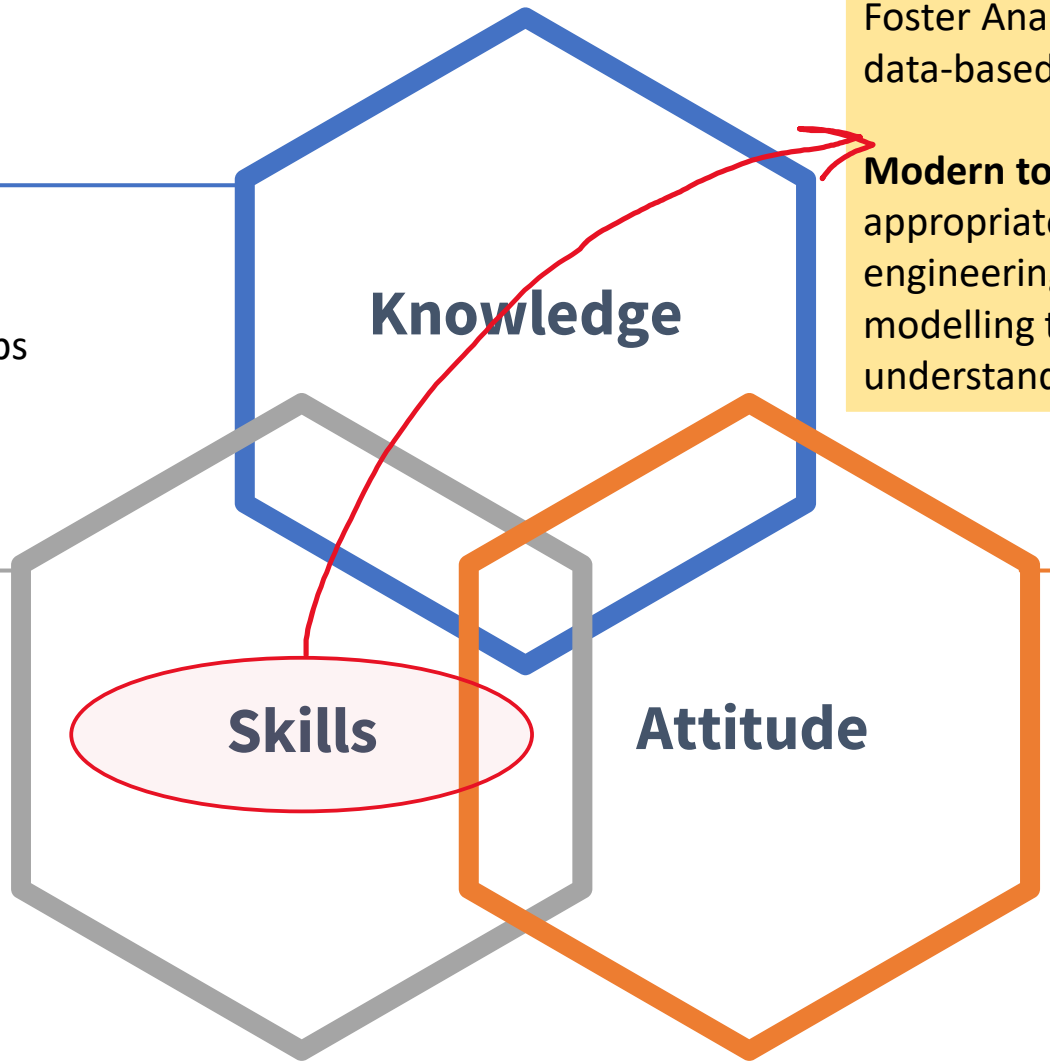
Meta-cognitive: how individuals act, and especially how they interact with others

inpods

Categories of Program Outcomes

Factual: The basic elements students must know
Conceptual: The interrelationships between the basic elements

Procedural: How to do something, methods, skills, techniques



Foster Analytical and **critical thinking** abilities for data-based decision making

Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations..

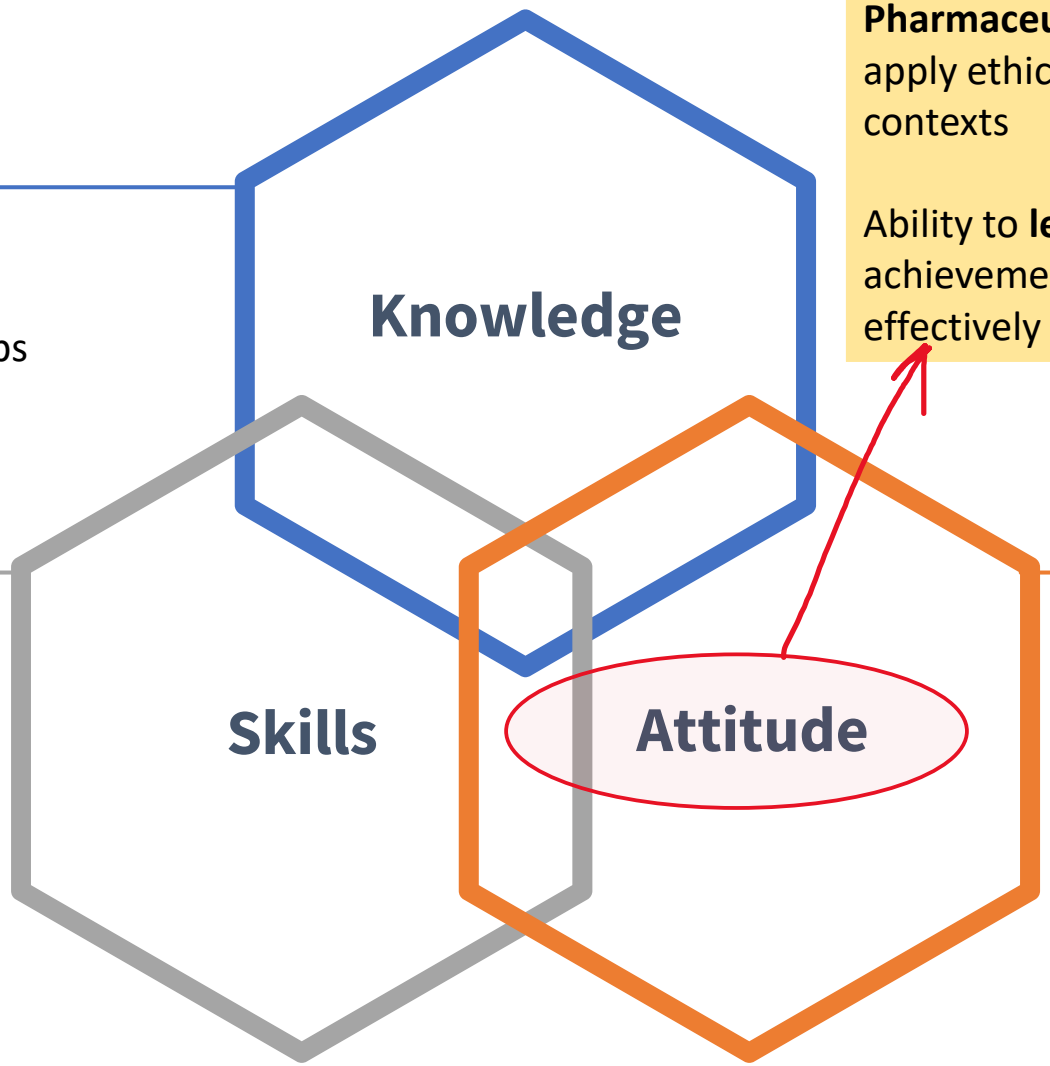
Meta-cognitive: how individuals act, and especially how they interact with others

inpods

Categories of Program Outcomes

Factual: The basic elements students must know
Conceptual: The interrelationships between the basic elements

Procedural: How to do something, methods, skills, techniques

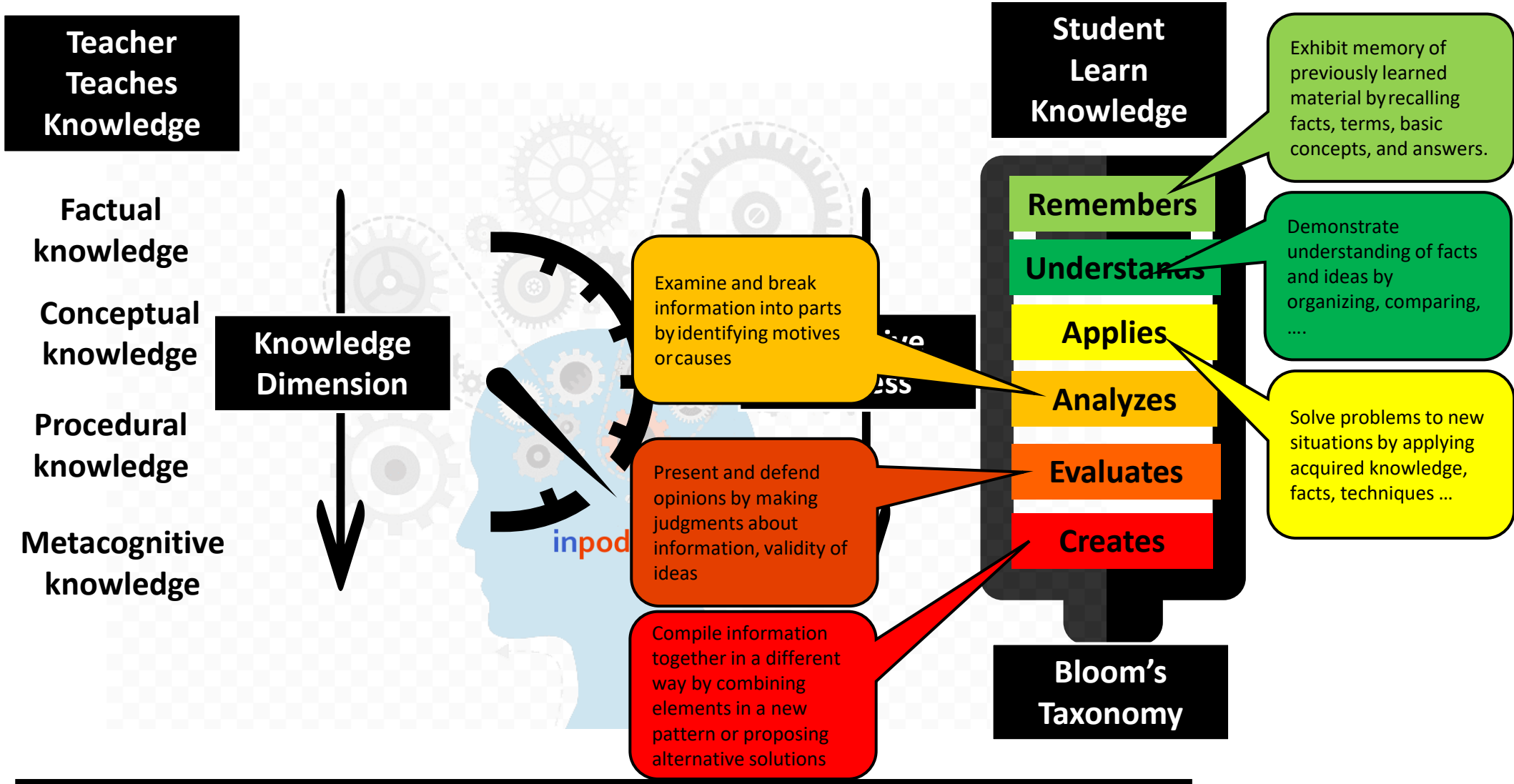


Pharmaceutical Ethics: Honour personal values and apply ethical principles in professional and social contexts

Ability to **lead themselves and others** in the achievement of organizational goals, contributing effectively to a team environment.

Meta-cognitive: how individuals act, and especially how they interact with others

inpods

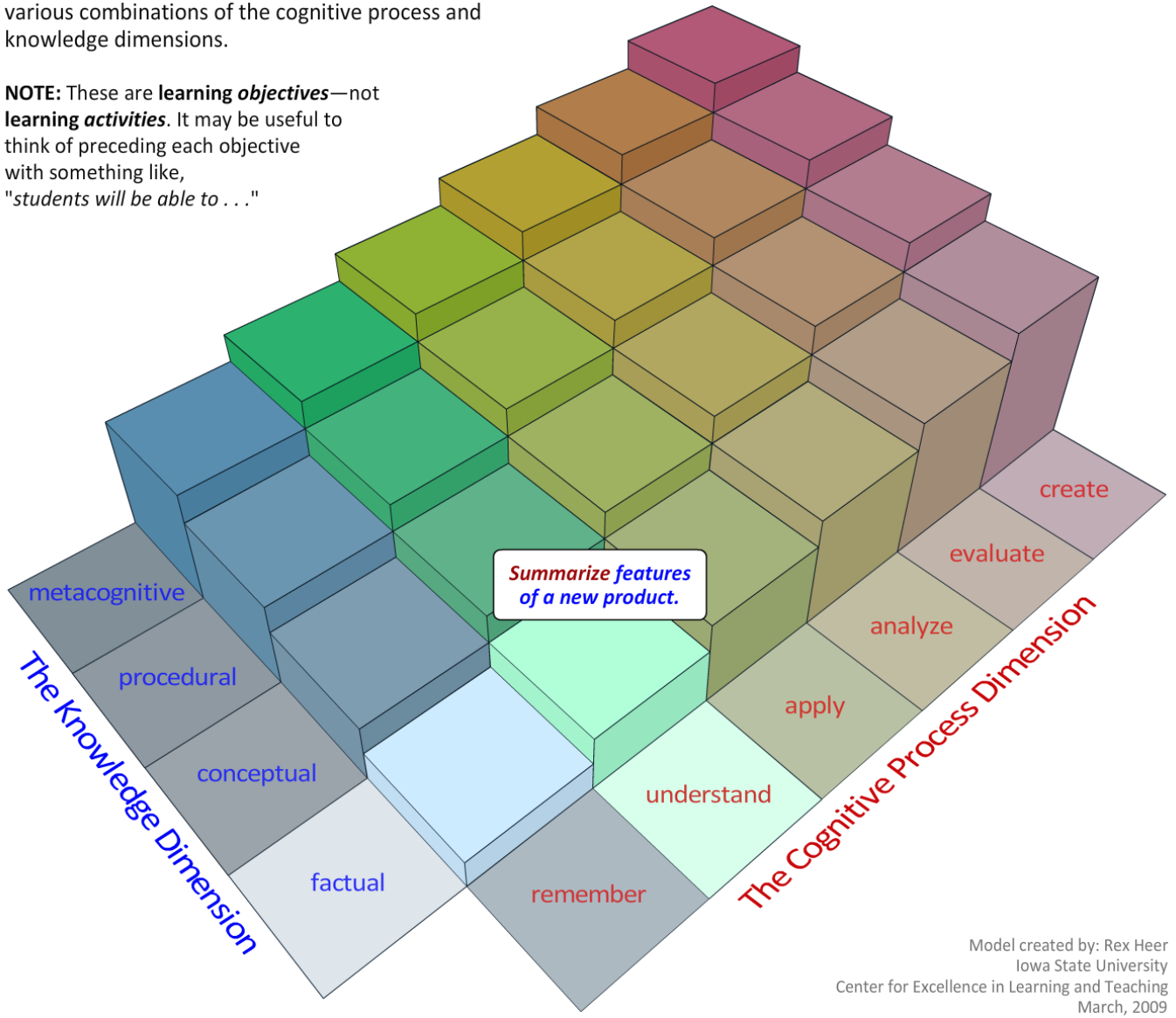


Cognition = the mental action or process of acquiring knowledge and understanding through thought, experience, and the senses.
Recalling, Interpreting, Organizing, Testing, Producing, Constructing

inpods

various combinations of the cognitive process and knowledge dimensions.

NOTE: These are **learning *objectives***—not **learning *activities***. It may be useful to think of preceding each objective with something like, "*students will be able to . . .*"



Model created by: Rex Heer
Iowa State University
Center for Excellence in Learning and Teaching
March, 2009

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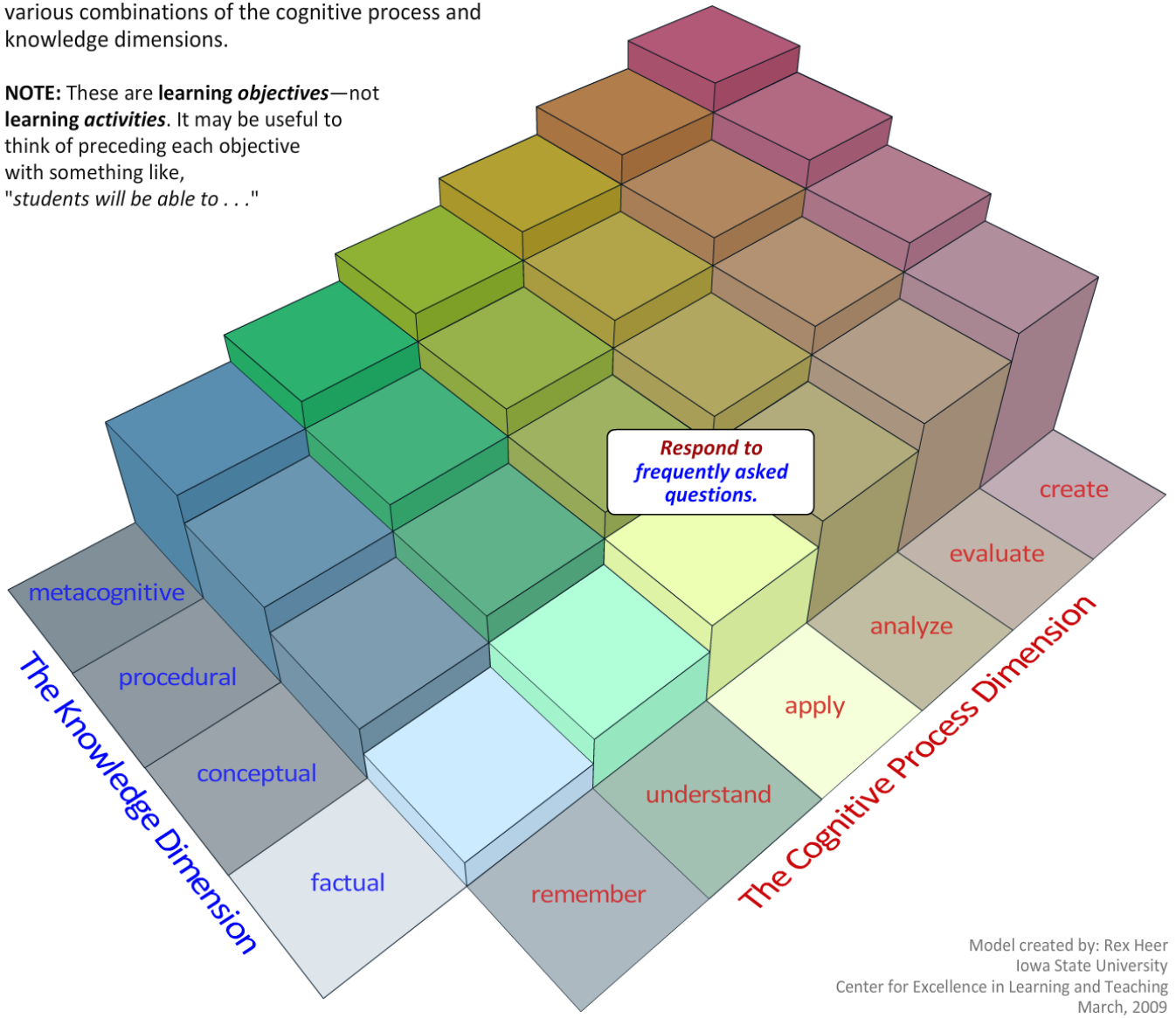

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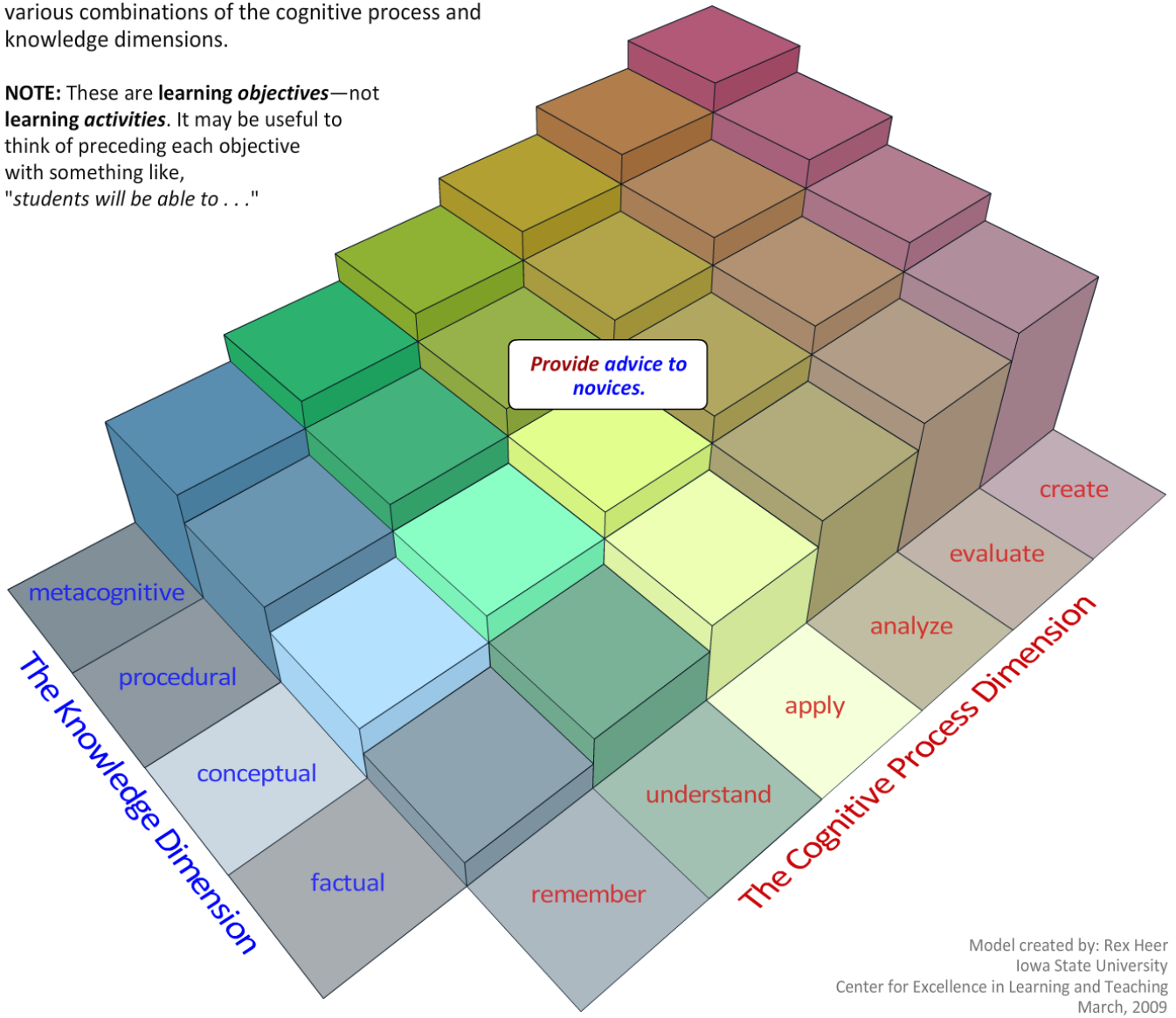

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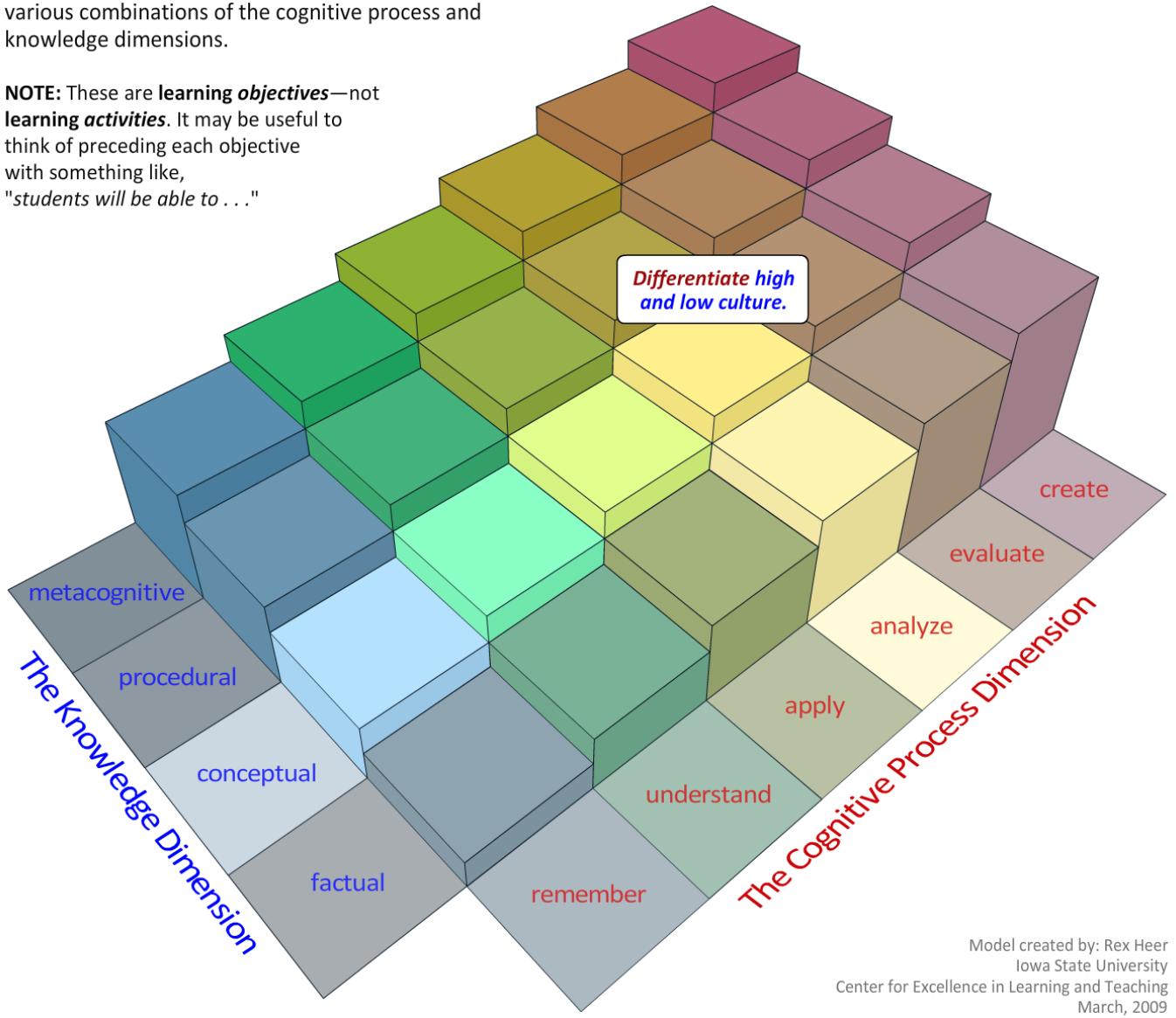

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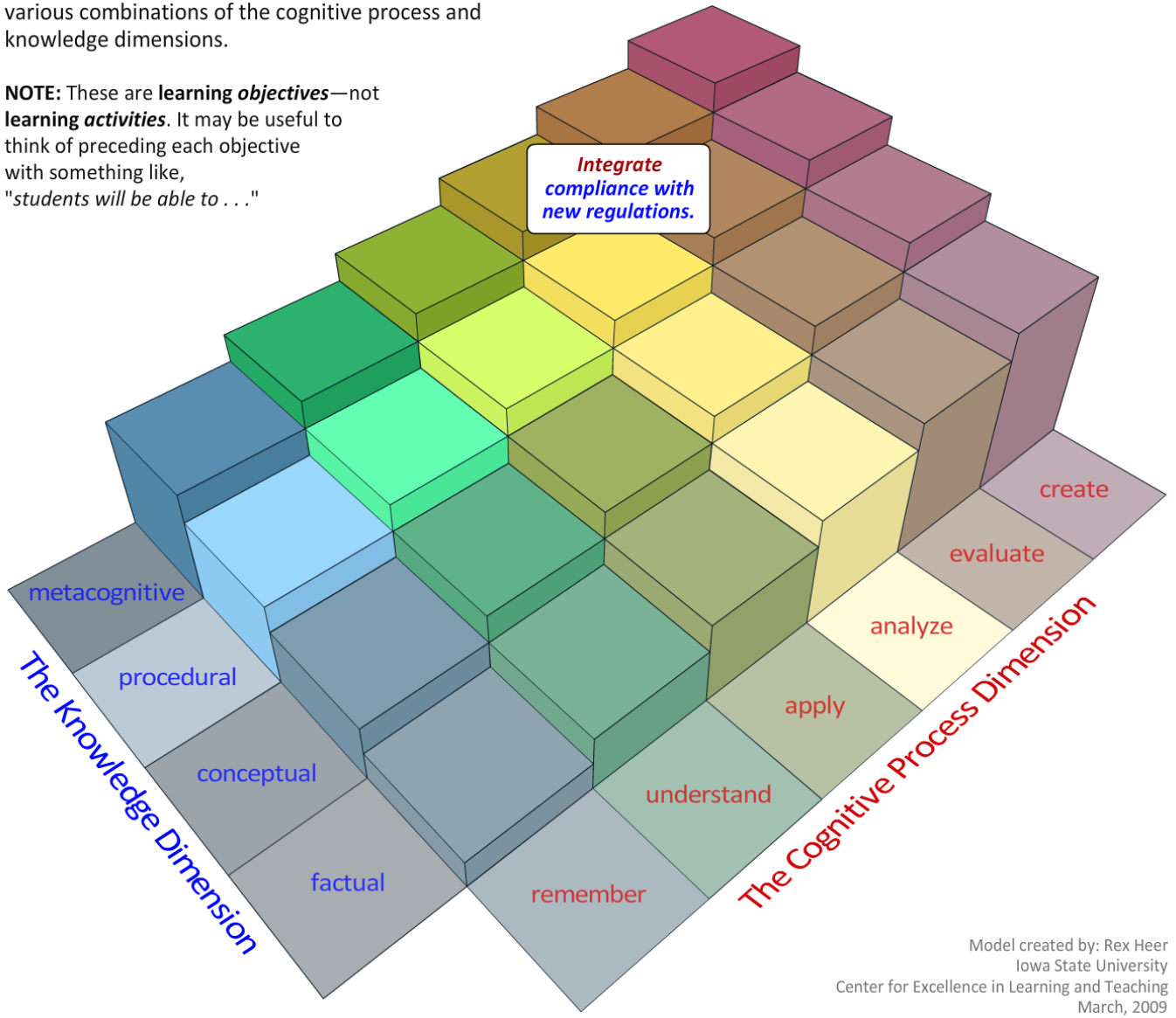

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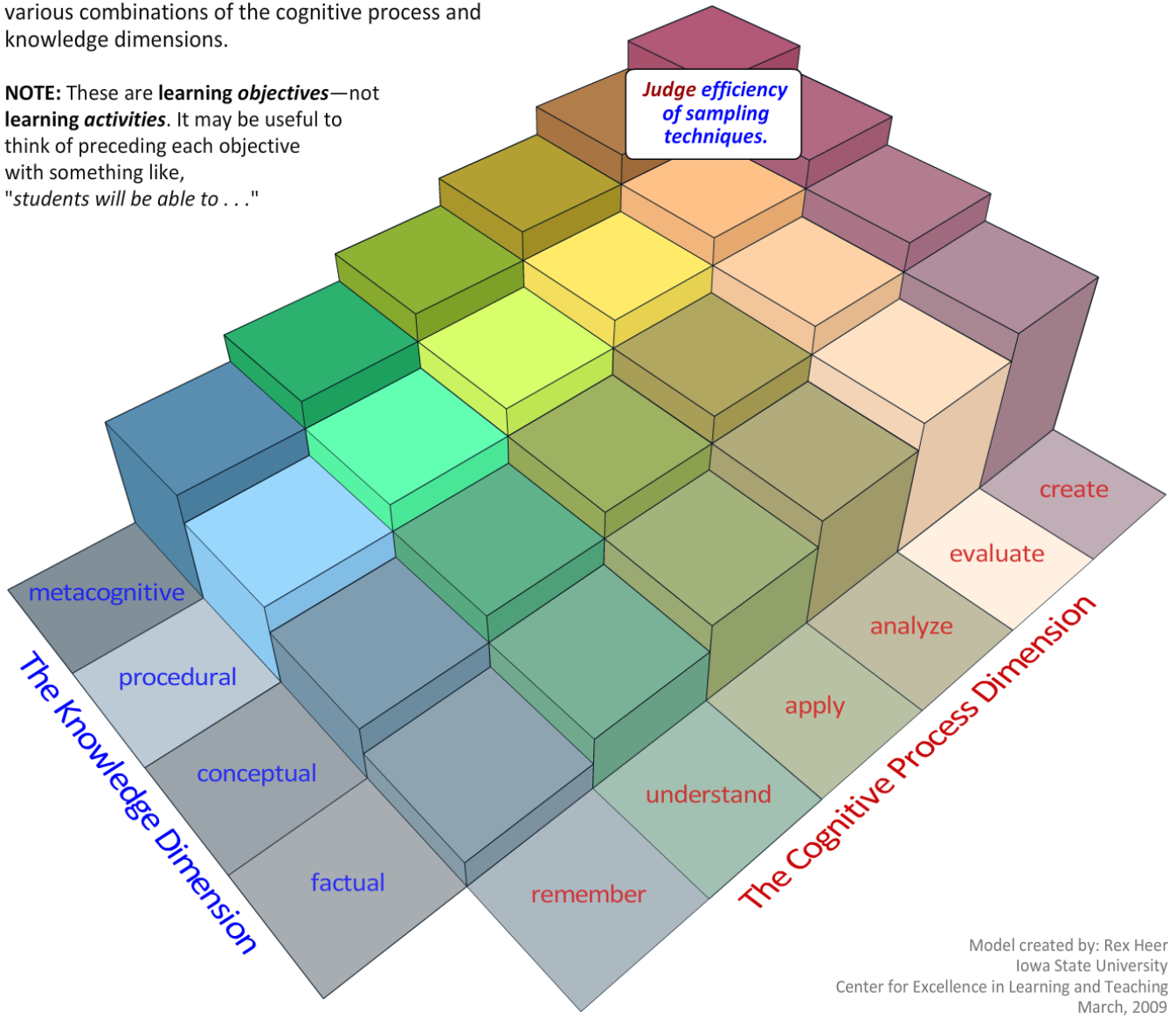

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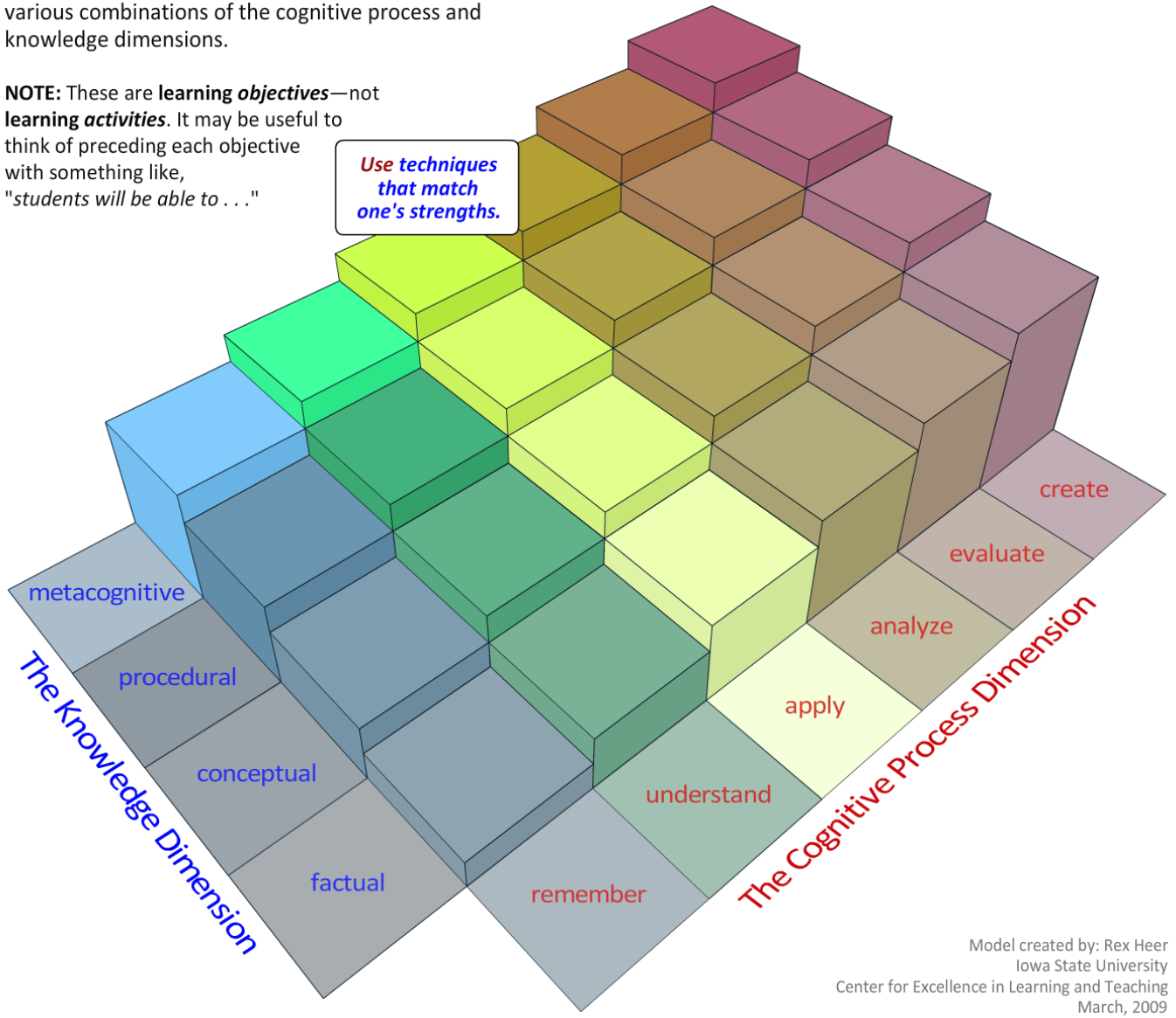
Use techniques that match one's strengths.



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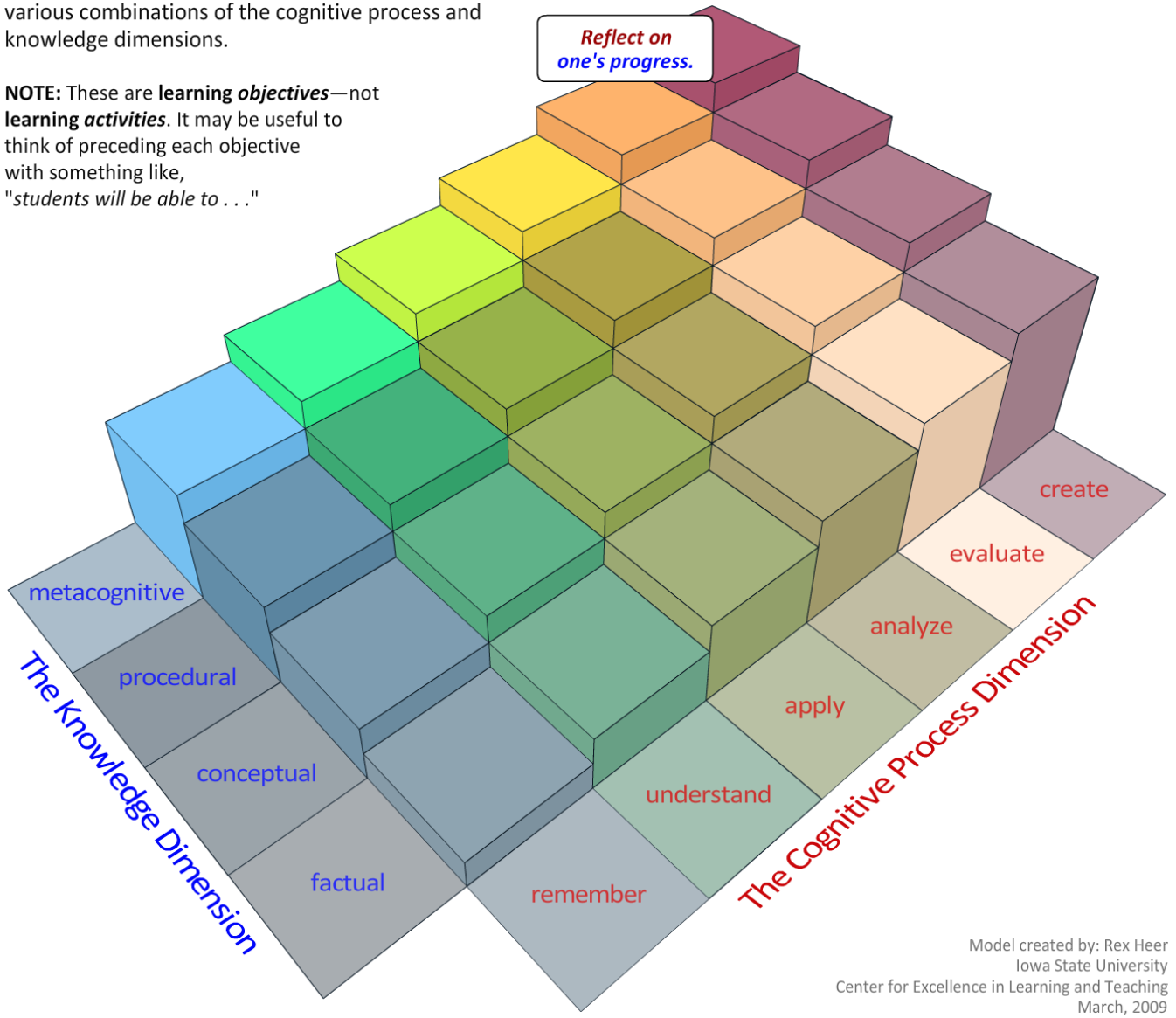

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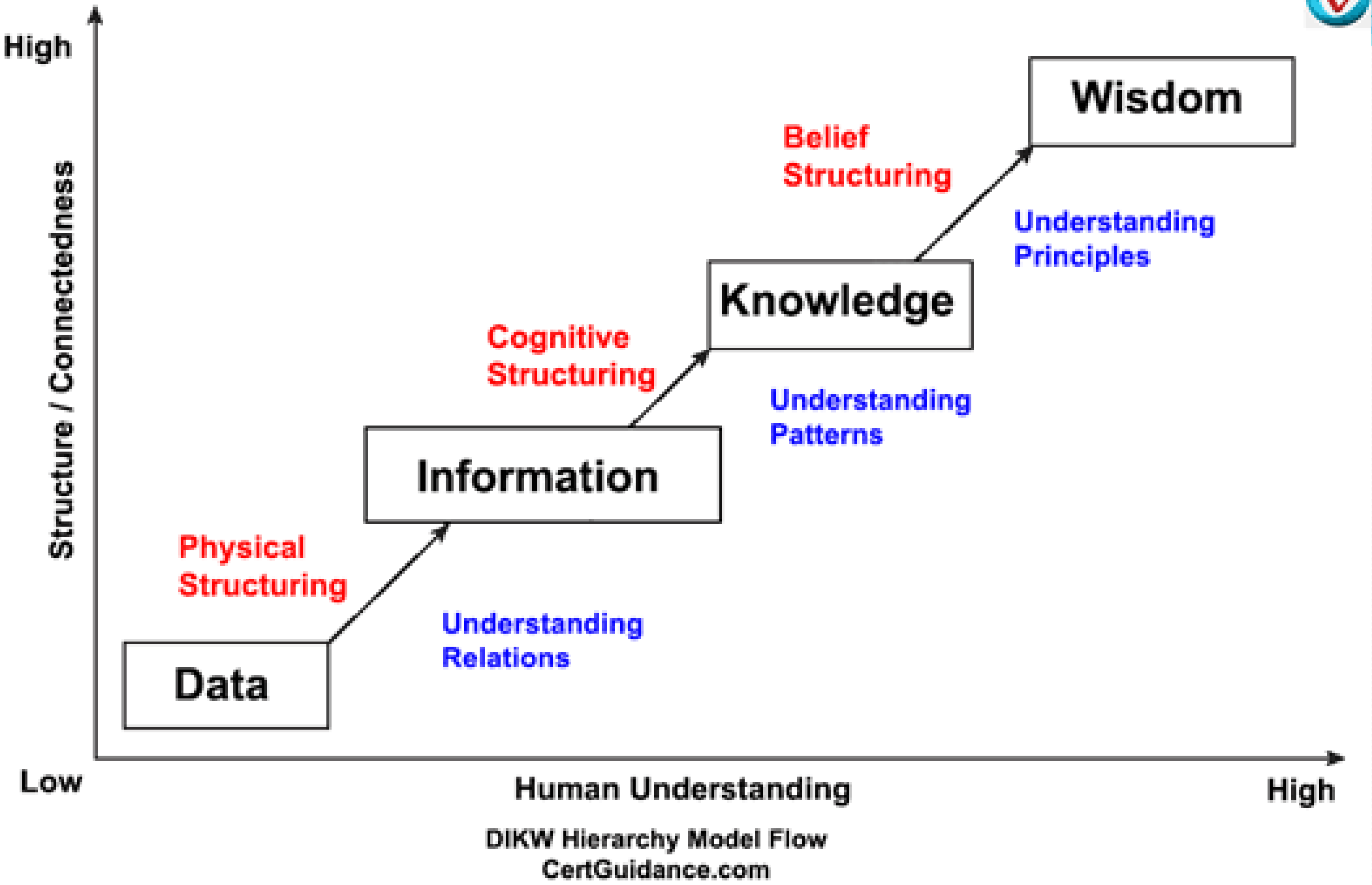
March, 2009

Medical Education and Health care needs
Augmented Intelligence leading to
Artificial wisdom

Artificial Intelligence (AI)
As Defined By John Mccarthy In 1955

The term AI, is defined as a machine with intelligent behaviour such as perception, reasoning, learning, or communication and the ability to perform human tasks

- **Artificial wisdom** is a software system that can demonstrate one or more qualities of being wise.
- **Artificial wisdom** can be described as **artificial** intelligence reaching the top-level of decision-making when confronted with the most complex challenging situations.


High
Structure / Connectedness
Low
Human Understanding
High
Data
Information
Knowledge
Wisdom
Physical Structuring
Understanding Relations
Cognitive Structuring
Understanding Patterns
Belief Structuring
Understanding Principles
DIKW Hierarchy Model Flow
CertGuidance.com

Artificial Intelligence Systems In Medical Education

- AI systems in Curriculum
- AI systems in Academic Goverence
- AI systems Dynamic Real time assessment of student
- AI systems in Self Directed Learning
- AI system In Assessment
- AI systems for CPE of CBME
- AI systems in Resource Management

- Applications and Challenges of Implementing Artificial Intelligence in Medical Education: Integrative Review
- Kai Siang Chan1*; Nabil Zary1,2*, PhD
- http://mededu.jmir.org/2019/1/e13930/

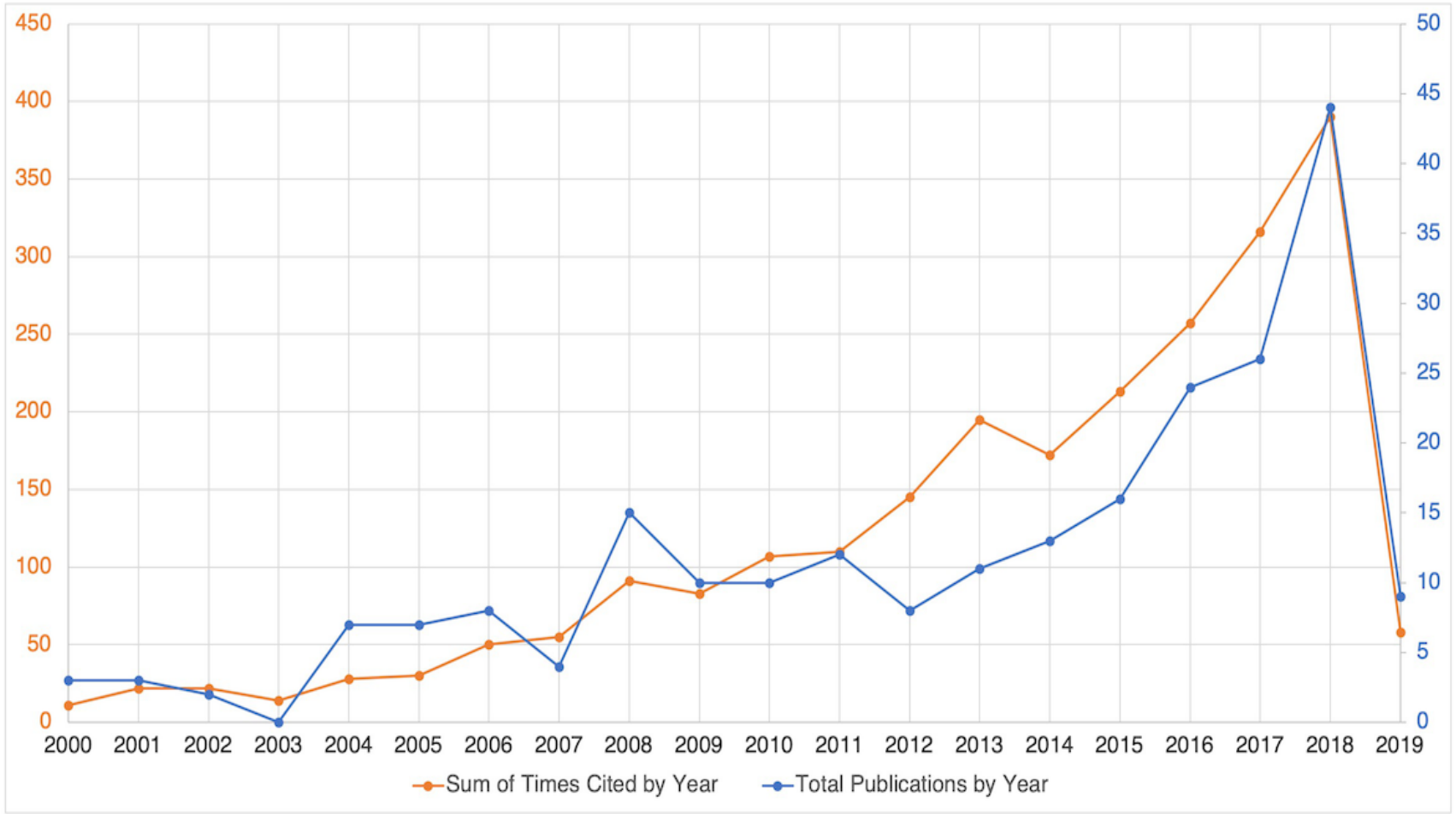
Results:

- A total of 37 articles were identified. Three primary uses of AI in medical education were identified: learning support (n=32), assessment of students' learning (n=4), and curriculum review (n=1).
- The main reasons for use of AI are its ability to provide feedback and a guided learning pathway and to decrease costs. Subgroup analysis revealed that medical undergraduates are the primary target audience for AI use.
- In addition, 34 articles described the challenges of AI implementation in medical education;
- Two main reasons were identified: difficulty in assessing the effectiveness of AI in medical education and technical challenges while developing AI applications.

Overview of the current uses of artificial intelligence in medical education identified from review of 37 full text articles.

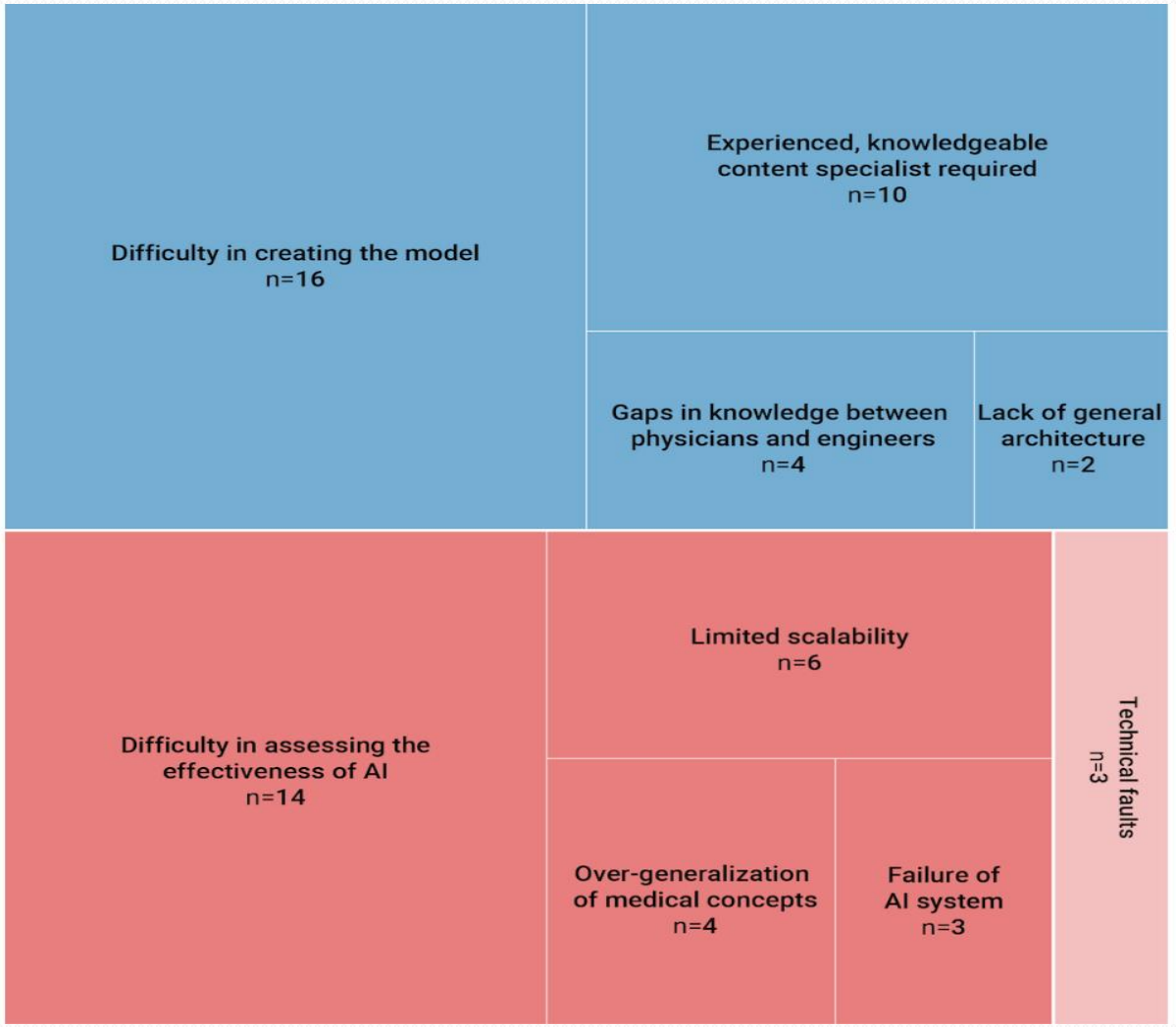
Focus and advantages of use	Total number of articles
Comprehensive analysis of the curriculum	1
Learning	
Feedback for learning	21
Evaluation of the learning process with guided learning pathway	18
Decreased costs	8
No harm to patients	6
Less teacher supervision required	3
Assessment	
Quicker assessment	4
Objective assessment	3
Feedback on assessment	2
Decreased costs	1

Total publications and sum of times cited by year in the last two decades. Retrieved from Web of Science for artificial intelligence in medical education, dated April 1, 2019



http://mededu.jmir.org/2019/1/e13930/

Hierarchical Presentation Of The Challenges Of Implementation Of Artificial Intelligence (AI) In Medical Education. The Upper Blue Rectangle Shows The Proportion Of Articles In Each Challenge Category In The Technical Aspects Of AI. The Lower Red Rectangle Shows The Proportion Of Articles For Challenges Relating To Perceived Usefulness (In Red) And Perceived Ease Of Use (In Light Red).



Kai Siang Chan1; Nabil Zary
JMIR Med Educ 2019;5(1):e13930)
doi: 10.2196/13930

Conclusions:

- The primary use of AI in medical education was for learning support mainly due to its ability to provide individualized feedback. Little emphasis was placed on curriculum review and assessment of students' learning due to the lack of digitalization and sensitive nature of examinations, respectively.
- Big data manipulation also warrants the need to ensure data integrity.
- Methodological improvements are required to increase AI adoption by addressing the technical difficulties of creating an AI application and using novel methods to assess the effectiveness of AI.
- To better integrate AI into the medical profession, measures should be taken to introduce AI into the medical school curriculum for medical professionals to better understand AI algorithms and maximize its use.

AI Techniques Can Be Implemented At 3 Levels Of Medical Education:

Tushar Garg, Medical Student quoting Noorbakhsh-Sabet

- Curriculum development and analysis, learning, and assessment.
- In curriculum assessment,
  - the use of AI helps to decrease the time needed to evaluate multiple curriculums,
  - solve multidimensional problems, provide greater classification accuracy, and establish a relationship between different variables.
- AI can be used to check the effectiveness of the curriculum and overall satisfaction of the medical

  students with the program, as this is important in training future doctors.
- In the learning process,
  - AI can help to provide students with adaptive and personalized educational content, which is further improved with student feedback and this, therefore, allows students to identify knowledge gaps and respond to them effectively
- Assessment of learning with the help of AI can help make the process of evaluation
  - more objective, fast, cost-efficient, and
  - provide extensive individualized feedback.

Artificial Intelligence Systems In Medical Education

- AI systems in Curriculum
- AI systems in Academic Goverence
- AI systems Dynamic Real time assessment of student
- AI systems in Self Directed Learning
- AI system In Assessment
- AI systems for CPE of CBME
- AI systems in Resource Management

Aim Of AI system in Assessment

- To create a question paper based on designated Assessment parameters from a validated Question bank
- Multiple question papers need to be created based on Difficulty index and differentiation index
- Graded question paper, Progressive Difficult questions
- To follow routine procedure of Setting up a question paper
- Each exam center can have a different set of question paper so that problem of leakage to be addressed
- To use advanced methods like scenario based question / Real time patient scenario
- Question bank should have all types of assessment methods to suitably address desired competency

Creating Rubric for Assessments

Title Hydraulic Mechanics Rubric

Description Description

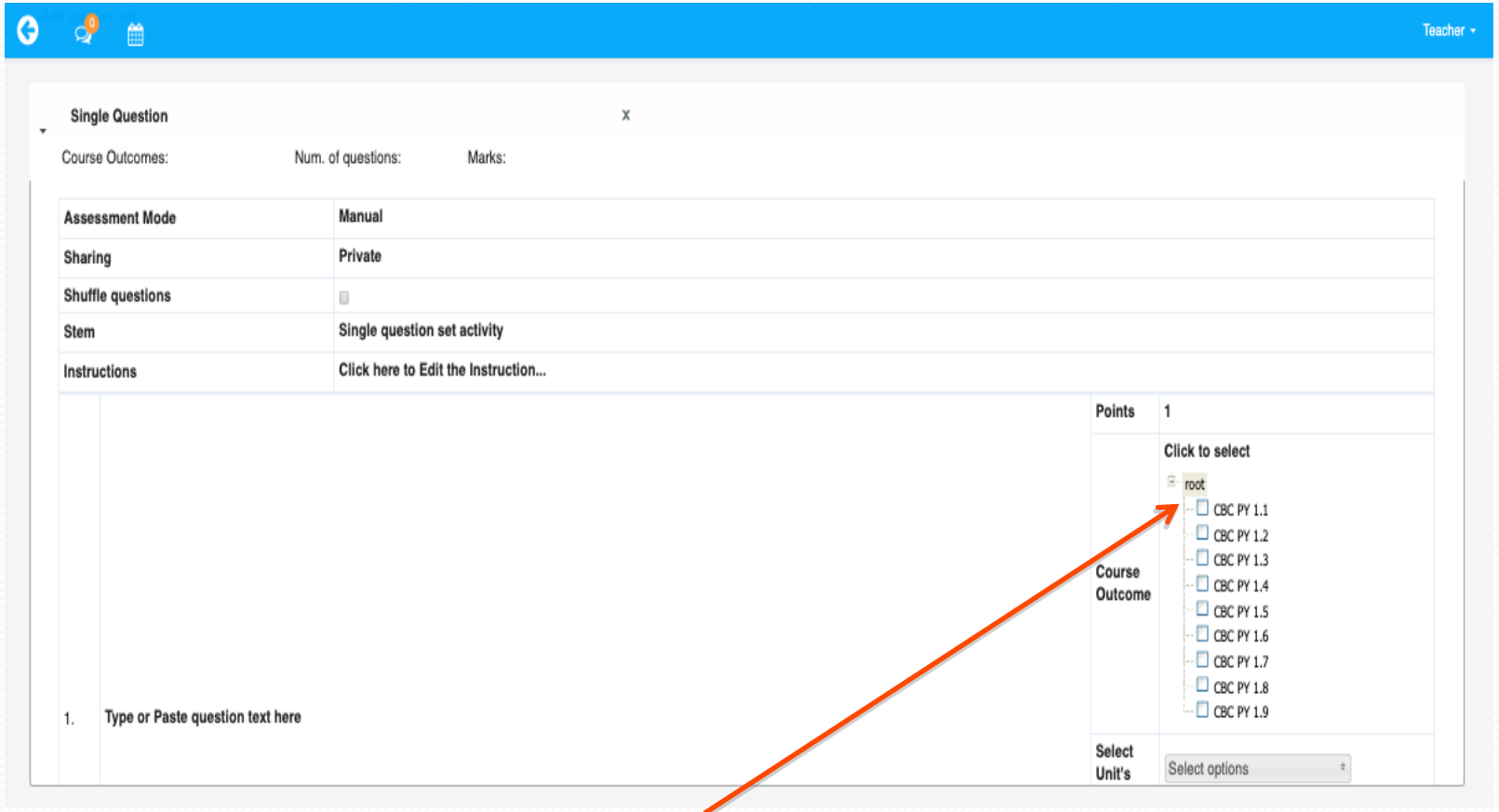
Criteria

Criteria	Weightage (%)	Exceeds Expectation 92 - 100 %	Meets Expectation 72 - 91 %	Below Expectation 48 - 71 %	Below Expectation 0 - 47 %
		Lower Range:91	Lower Range:72	Lower Range:48	Lower Range:0
Writing Journal	40	Completed with Neat diagrams, observations and correct answers of post lab questions and conclusion	Fairly completed with neat diagrams, observations and correct answers of post lab questions and conclusions	Either of diagram / post lab questions is incomplete Completed after guidance from the Professor	Partially incomplete write-ups
Performance in lab	40	Designs and simulates independently with clear concepts	Designs and simulates independently but after trial and error	Designs and simulates with help of Professor	Not able to design and simulate even after help
Viva	20	All the concepts regarding the experiment are clear	All the concepts regarding the experiment are partially clear	All the concepts regarding the experiment are not clear	Very bad fundamental knowledge.

Difficulty index and differentiation index van be used in addition

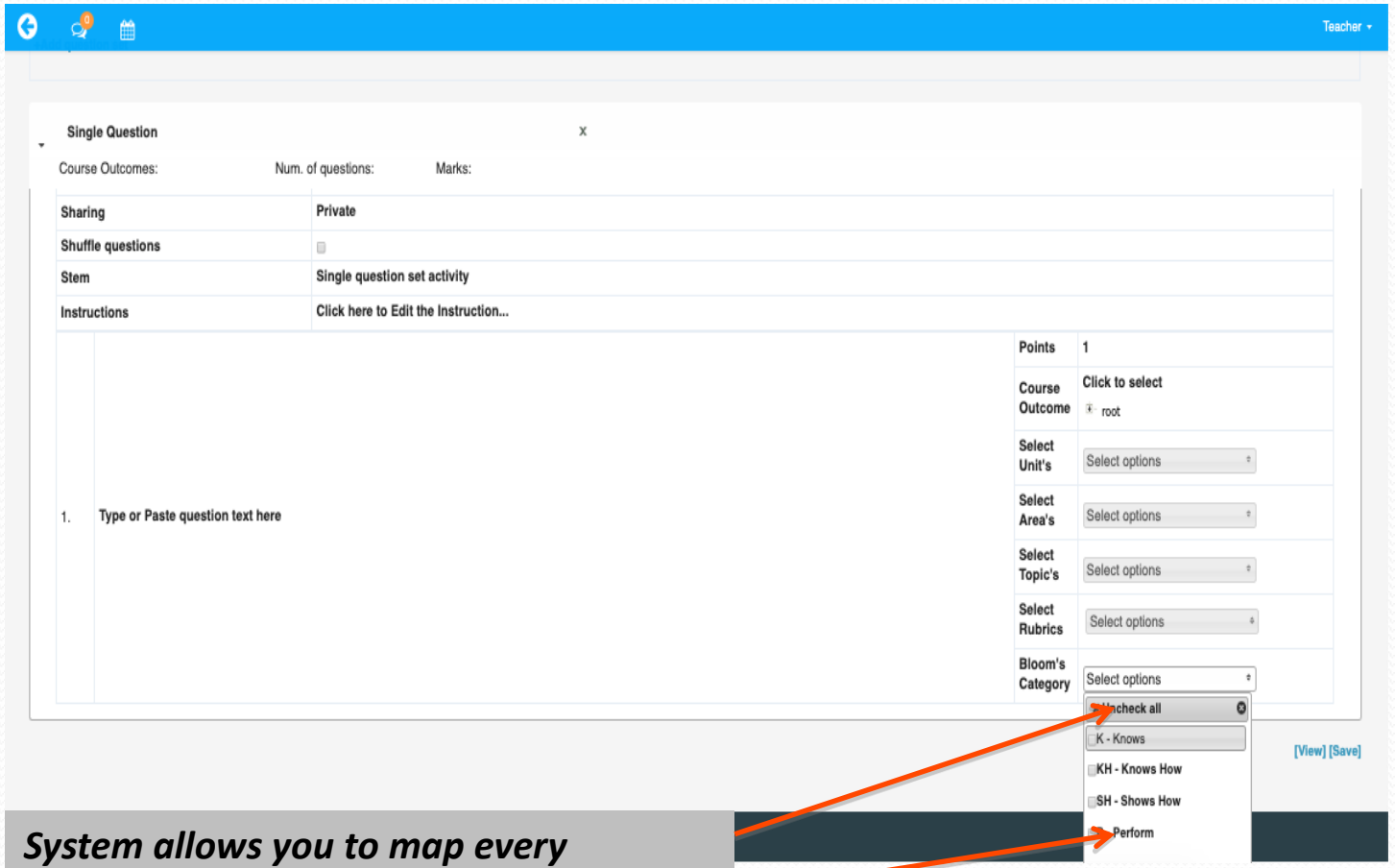
Calculation of Difficulty index and differentiation index of past question papers designing New Question paper using AI systems

Mapping Questions to Competencies



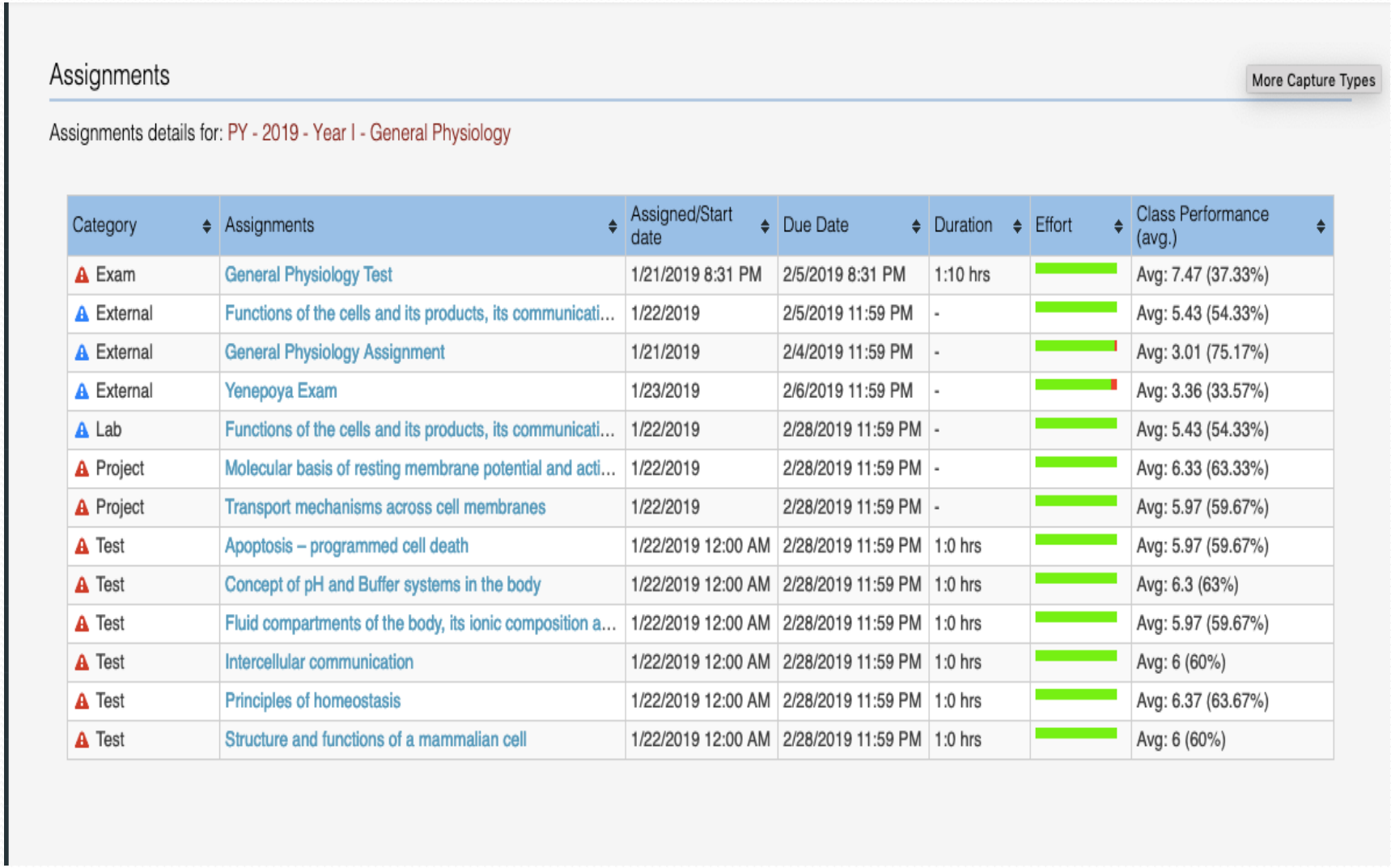
System allows you to map every question to Competencies

Mapping Rubrics and Level of Competency



System allows you to map every question to Rubrics and level of Competencies

Mapping Rubrics and Level of Competency



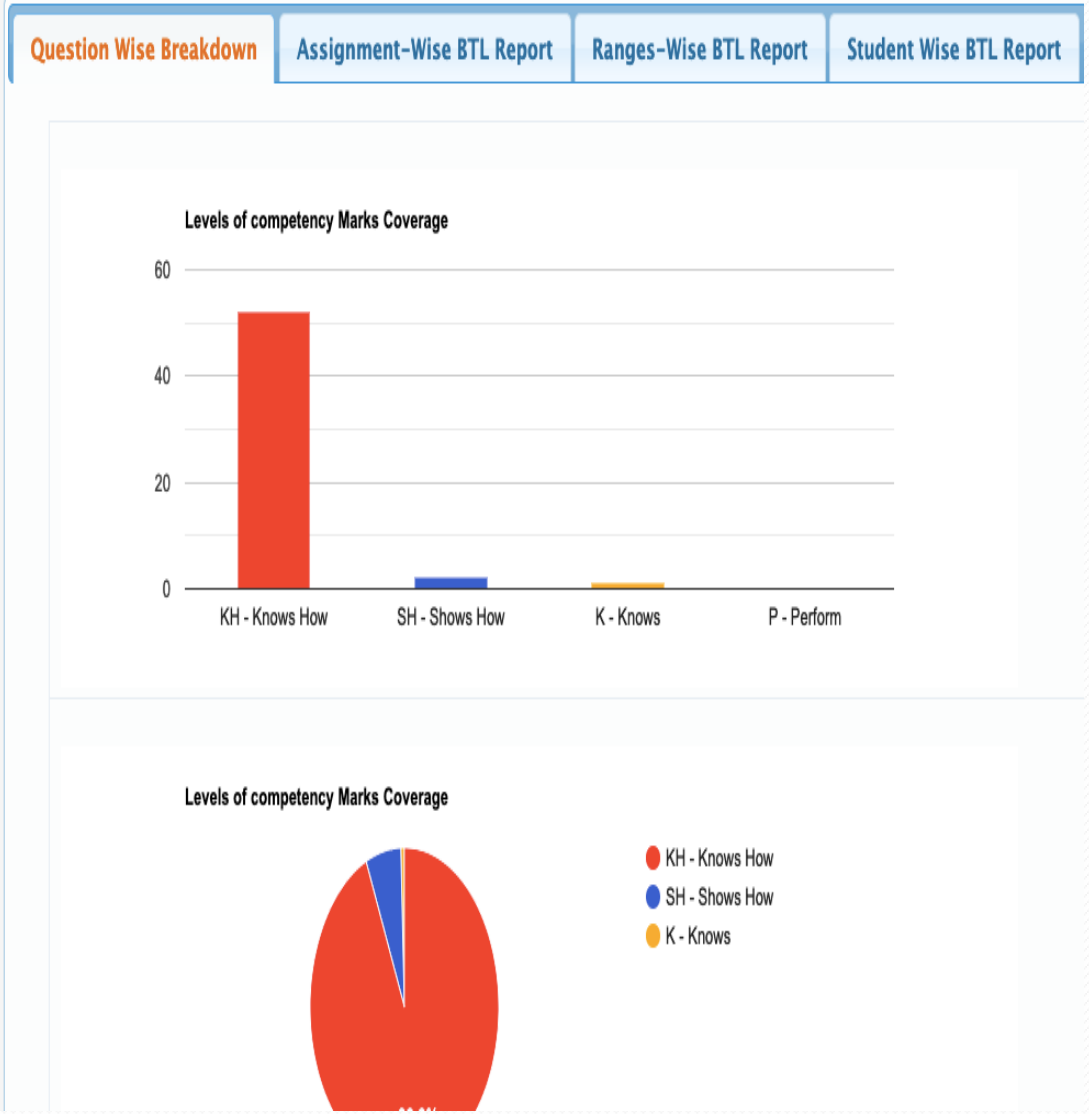
Assignments

More Capture Types

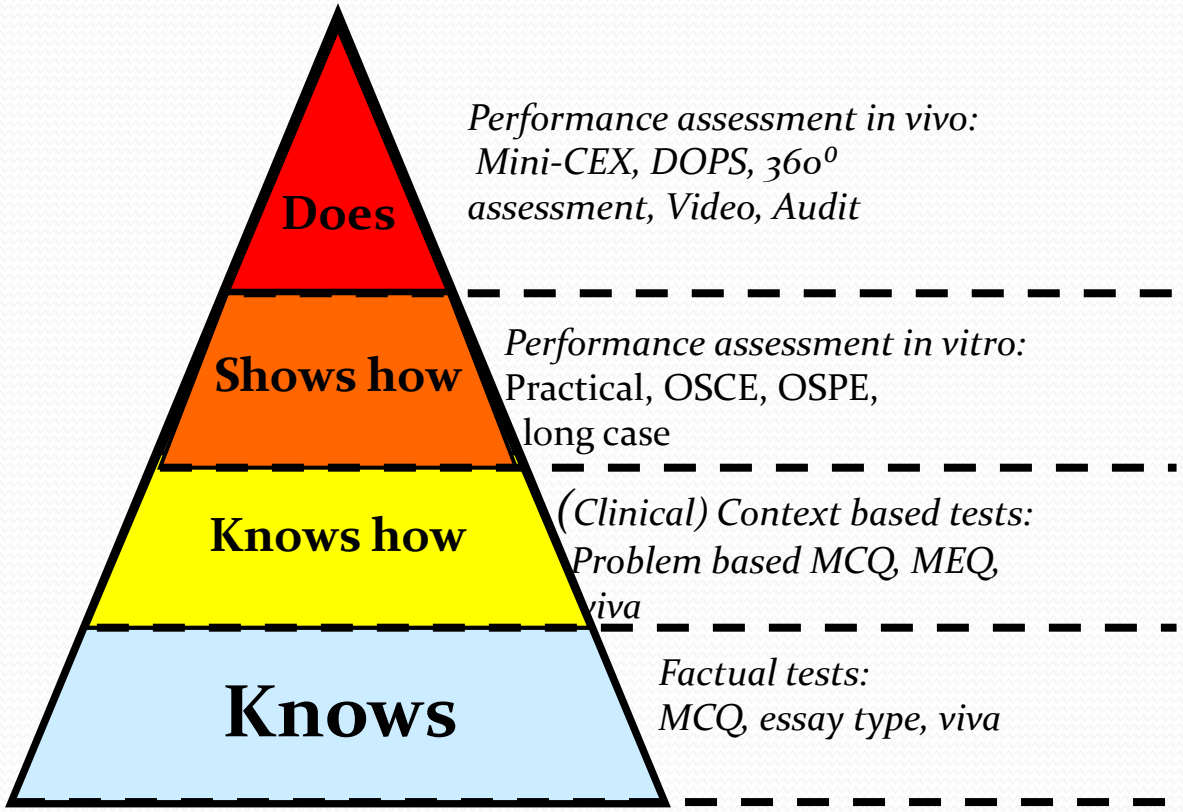
Assignments details for: PY - 2019 - Year I - General Physiology

Category	Assignments	Assigned/Start date	Due Date	Duration	Effort	Class Performance (avg.)
Exam	General Physiology Test	1/21/2019 8:31 PM	2/5/2019 8:31 PM	1:10 hrs		Avg: 7.47 (37.33%)
External	Functions of the cells and its products, its communicati...	1/22/2019	2/5/2019 11:59 PM	-		Avg: 5.43 (54.33%)
External	General Physiology Assignment	1/21/2019	2/4/2019 11:59 PM	-		Avg: 3.01 (75.17%)
External	Yenepoya Exam	1/23/2019	2/6/2019 11:59 PM	-		Avg: 3.36 (33.57%)
Lab	Functions of the cells and its products, its communicati...	1/22/2019	2/28/2019 11:59 PM	-		Avg: 5.43 (54.33%)
Project	Molecular basis of resting membrane potential and acti...	1/22/2019	2/28/2019 11:59 PM	-		Avg: 6.33 (63.33%)
Project	Transport mechanisms across cell membranes	1/22/2019	2/28/2019 11:59 PM	-		Avg: 5.97 (59.67%)
Test	Apoptosis – programmed cell death	1/22/2019 12:00 AM	2/28/2019 11:59 PM	1:0 hrs		Avg: 5.97 (59.67%)
Test	Concept of pH and Buffer systems in the body	1/22/2019 12:00 AM	2/28/2019 11:59 PM	1:0 hrs		Avg: 6.3 (63%)
Test	Fluid compartments of the body, its ionic composition a...	1/22/2019 12:00 AM	2/28/2019 11:59 PM	1:0 hrs		Avg: 5.97 (59.67%)
Test	Intercellular communication	1/22/2019 12:00 AM	2/28/2019 11:59 PM	1:0 hrs		Avg: 6 (60%)
Test	Principles of homeostasis	1/22/2019 12:00 AM	2/28/2019 11:59 PM	1:0 hrs		Avg: 6.37 (63.67%)
Test	Structure and functions of a mammalian cell	1/22/2019 12:00 AM	2/28/2019 11:59 PM	1:0 hrs		Avg: 6 (60%)

Questions Coverage



Miller's pyramid



Competency Levels

Topic Outcome	Beginner Range 0 - 41 %	Developing Range 41 - 81 %	Proficient Range 81 - 100 %
CBC PY 1.1	75.00 (3)	25.00 (1)	0.00 (0)
CBC PY 1.2	75.00 (3)	25.00 (1)	0.00 (0)
CBC PY 1.3	57.14 (4)	0.00 (0)	42.86 (3)
CBC PY 1.4	66.67 (4)	33.33 (2)	0.00 (0)
CBC PY 1.5	50.00 (1)	50.00 (1)	0.00 (0)
CBC PY 1.6	0.00 (0)	50.00 (1)	50.00 (1)
CBC PY 1.7	0.00 (0)	50.00 (1)	50.00 (1)
CBC PY 1.8	50.00 (1)	50.00 (1)	0.00 (0)
CBC PY 1.9	50.00 (2)	50.00 (2)	0.00 (0)

Question-level analysis

Refresh

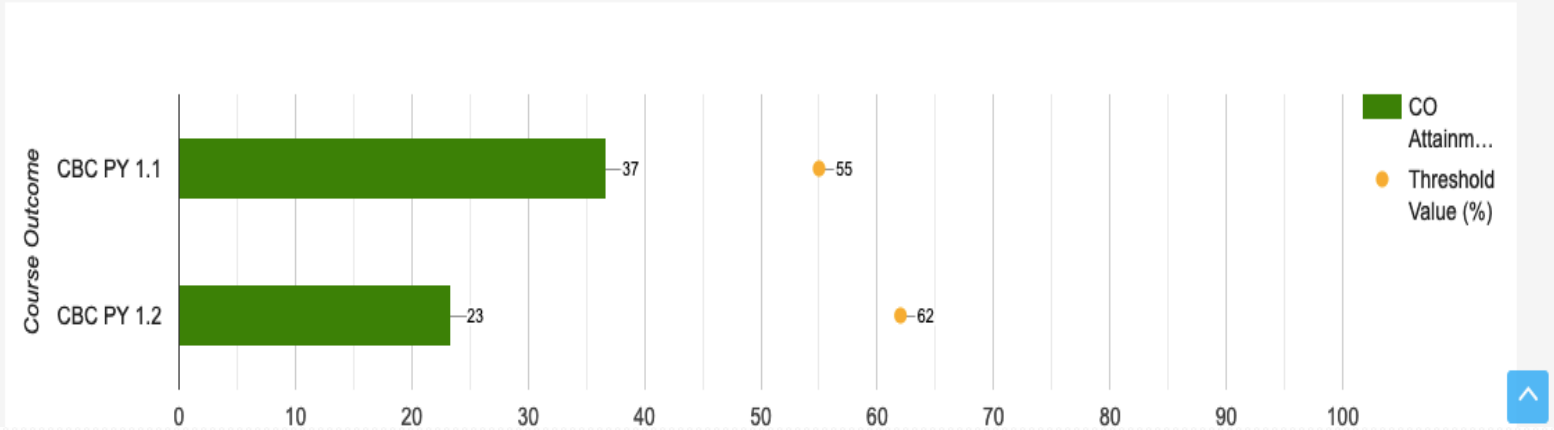
Questions	Course Outcomes	Rubrics	Blooms	Marks	Average	Standard Deviation	Max	Min	% Of Attem
Q1	CBC PY 1.1		SH - Shows How	5	2.47	1.81	5	0	63.33
Q2	CBC PY 1.2		SH - Shows How	5	2.47	1.81	5	0	63.33

More Capture Types

Question-CO Analysis Report

Area Of Weakness Report

Yenepoya Exam CO Attainment Chart



Topic-wise Analysis – for an assignment

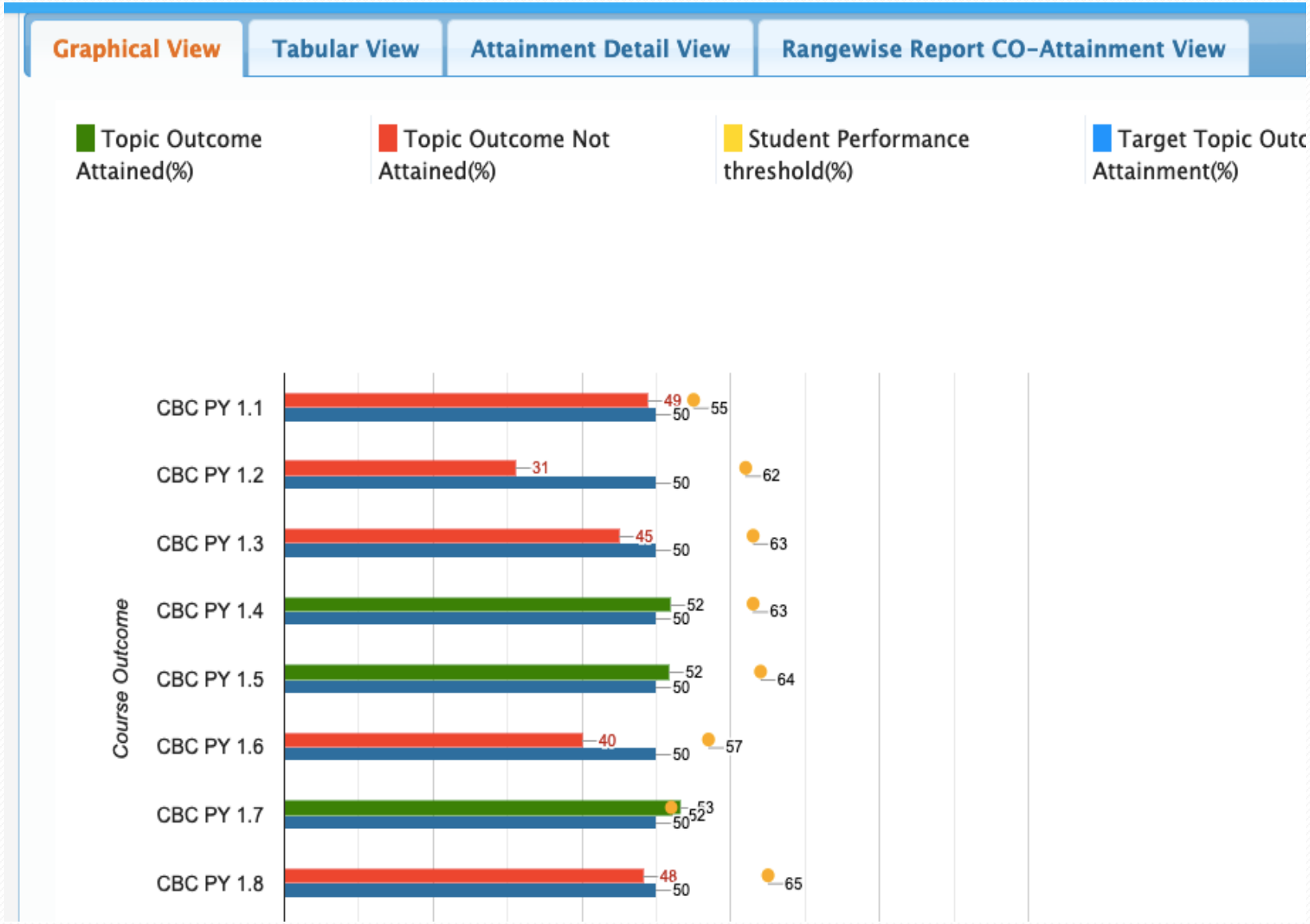
Question-Topic Outcome Analysis Report

More Capture Ty

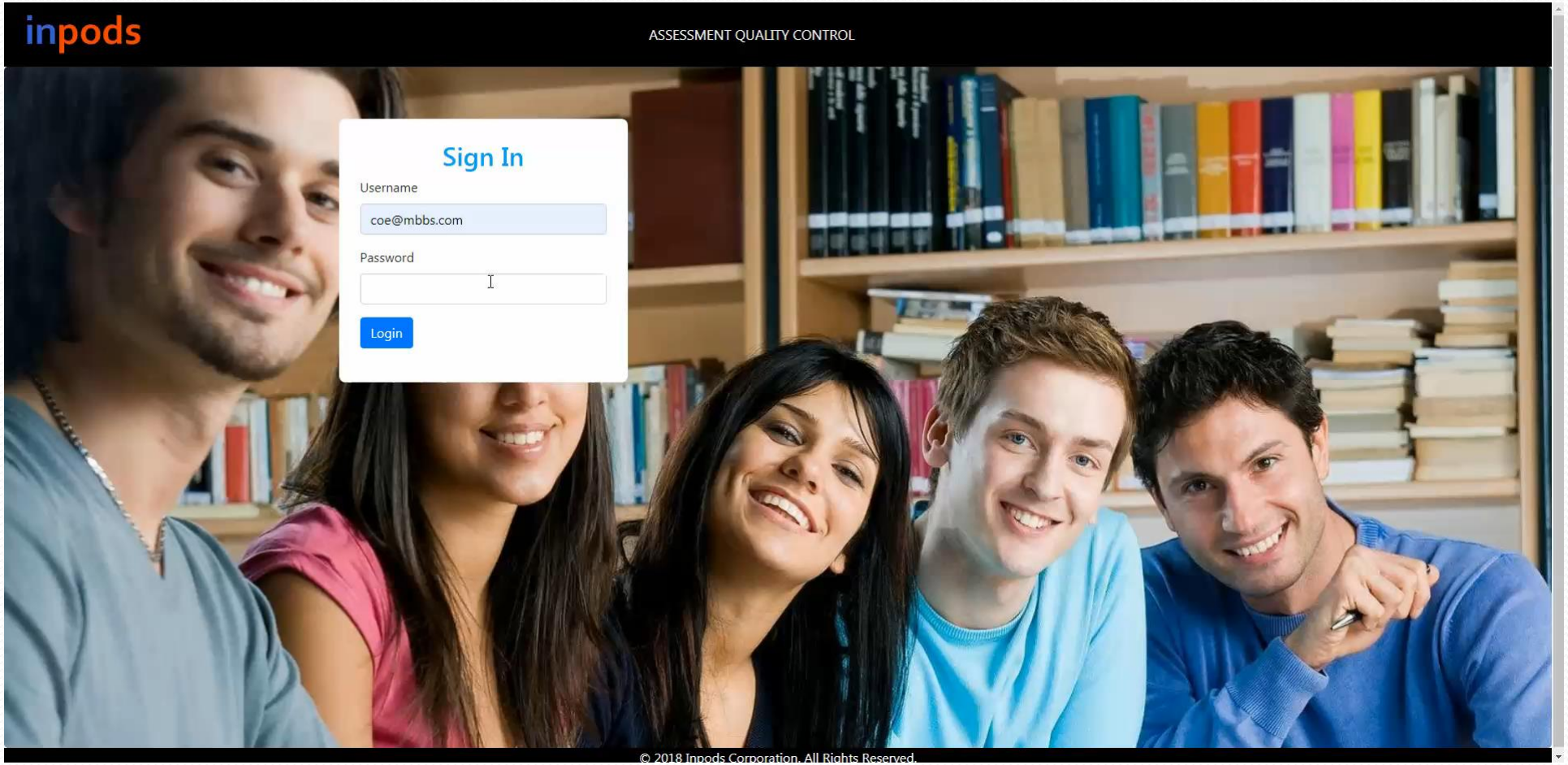
Click here to add Remedial Actions

Sr No.	Name of the student	Roll No	Cumulative Marks for CBC PY 1.1	Cumulative Marks for CBC PY 1.2
12	Student 12	12	5/5 (100.00 %)	0/5 (0.00 %)
21	Student 21	21	5/5 (100.00 %)	0/5 (0.00 %)
1	Student 1	1	4/5 (80.00 %)	0/5 (0.00 %)
11	Student 11	11	4/5 (80.00 %)	0/5 (0.00 %)
22	Student 22	22	4/5 (80.00 %)	0/5 (0.00 %)
24	Student 24	24	4/5 (80.00 %)	0/5 (0.00 %)
28	Student 28	28	4/5 (80.00 %)	3/5 (60.00 %)
10	Student 10	10	3/5 (60.00 %)	0/5 (0.00 %)
23	Student 23	23	3/5 (60.00 %)	0/5 (0.00 %)
25	Student 25	25	3/5 (60.00 %)	0/5 (0.00 %)
27	Student 27	27	3/5 (60.00 %)	4/5 (80.00 %)
14	Student 14	14	2/5 (40.00 %)	4/5 (80.00 %)
26	Student 26	26	2/5 (40.00 %)	5/5 (100.00 %)
13	Student 13	13	1/5 (20.00 %)	0/5 (0.00 %)
2	Student 2	2	0/5 (0.00 %)	0/5 (0.00 %)
3	Student 3	3	0/5 (0.00 %)	3/5 (60.00 %)

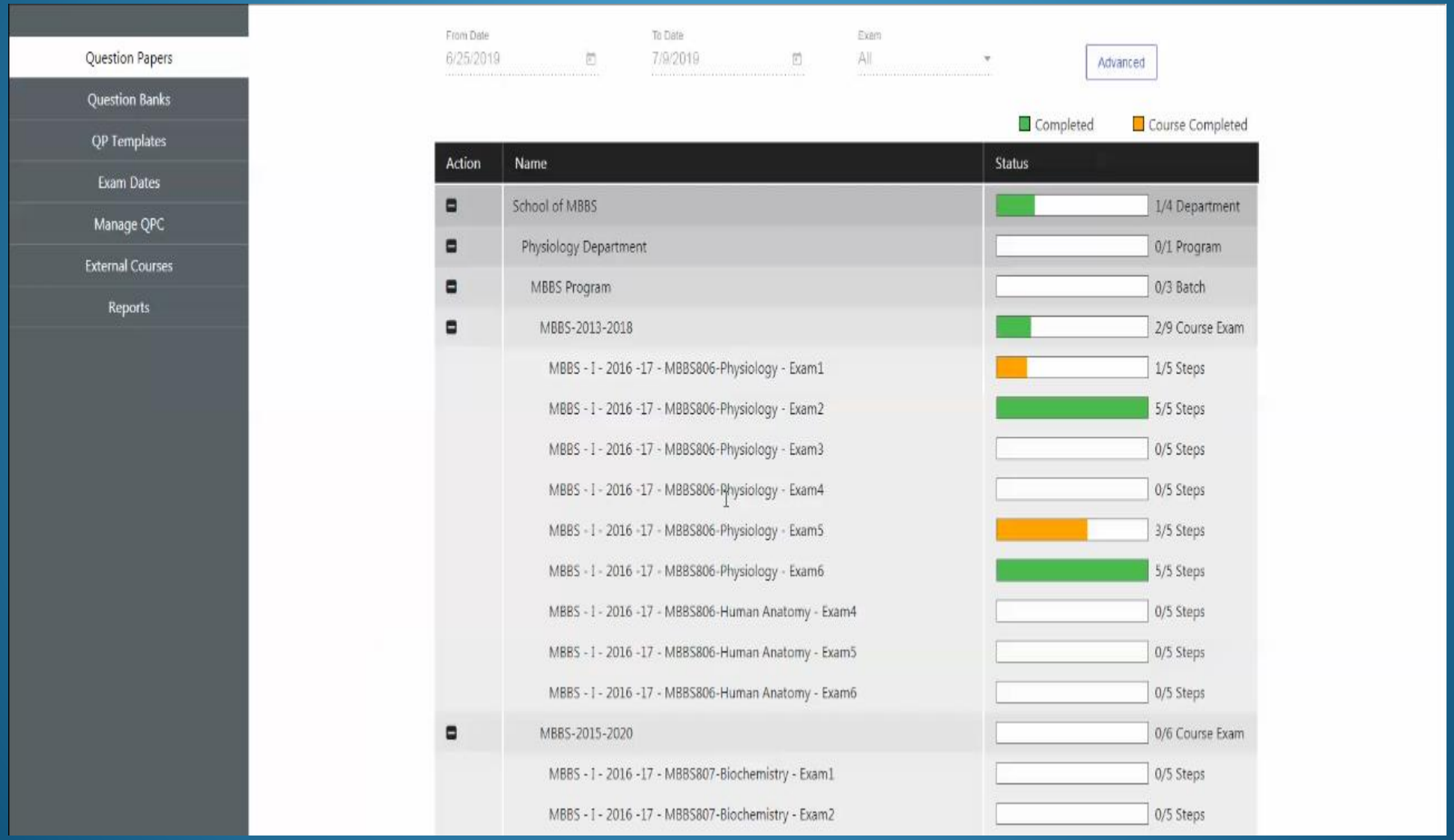
Topic Level Competencies Attainment



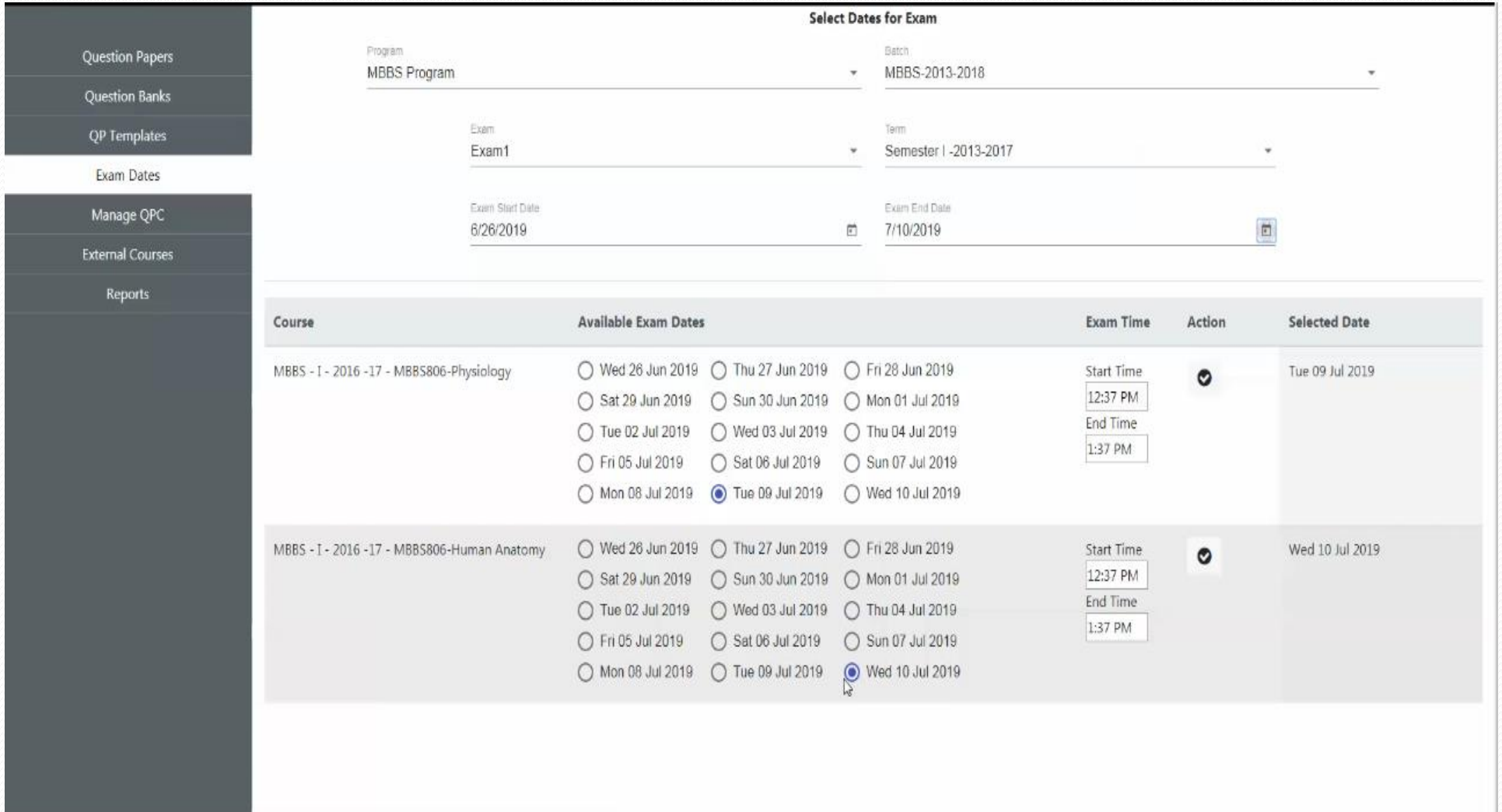
Question Paper Management System



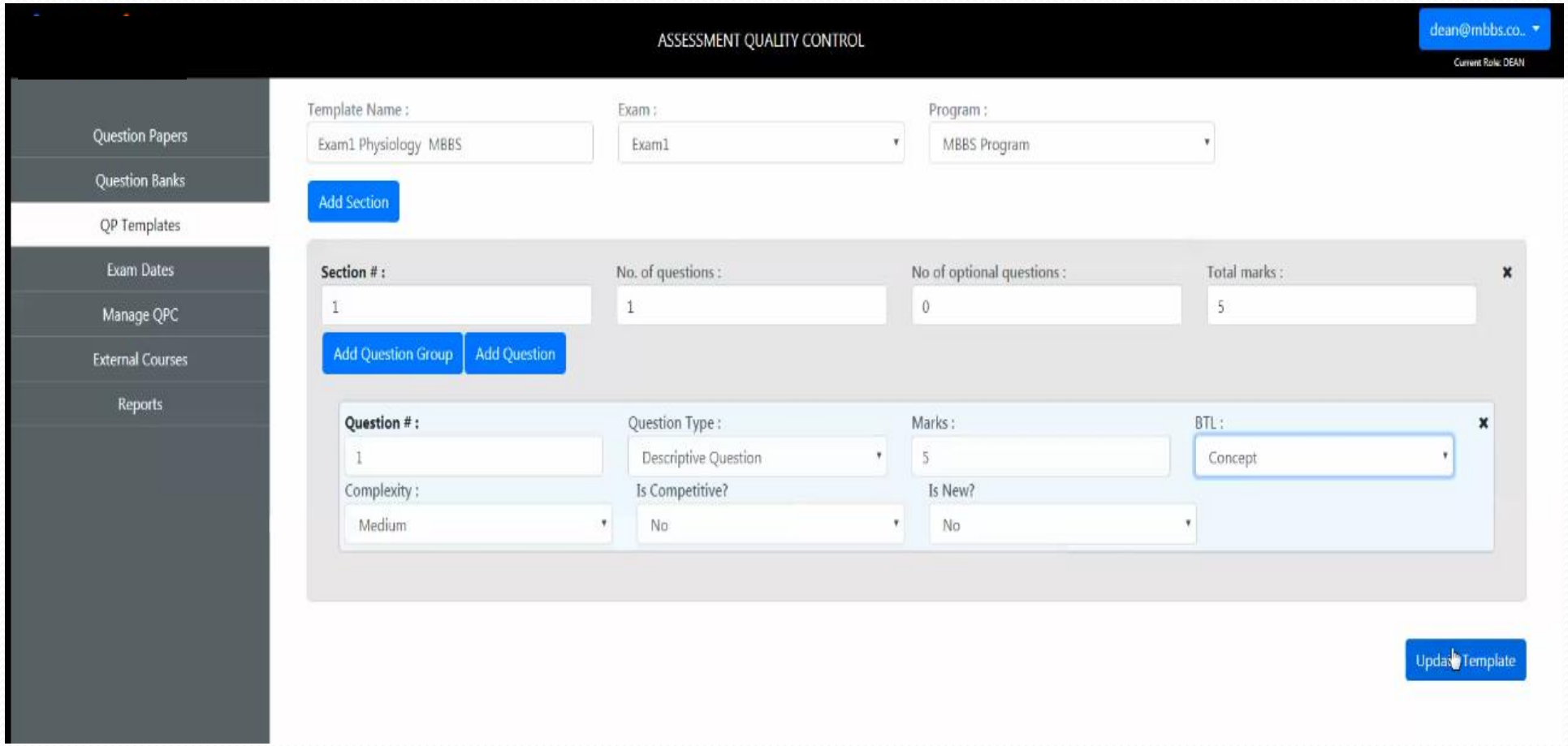
Dean's Login Status



Selection of Exam Date

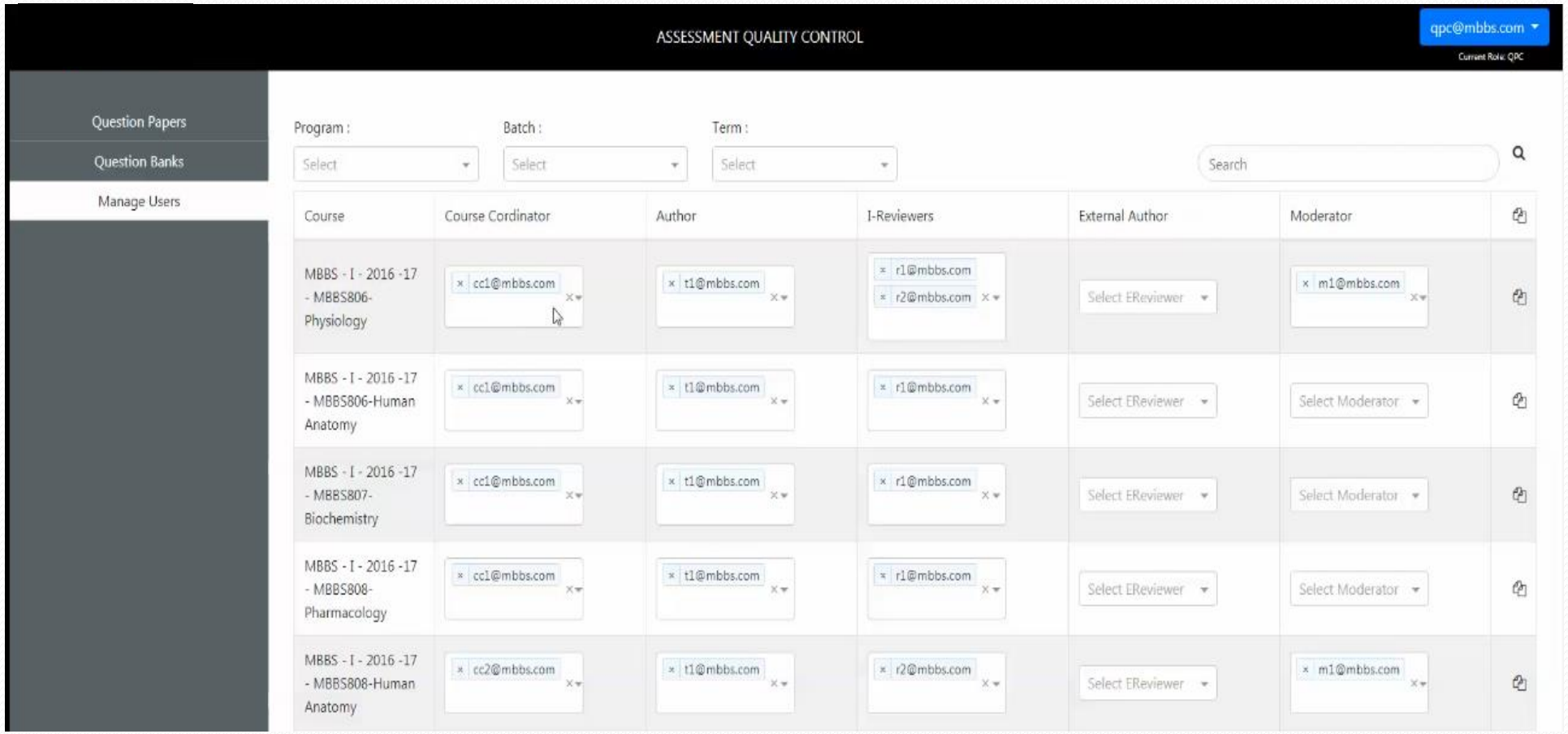


Creating an exam template

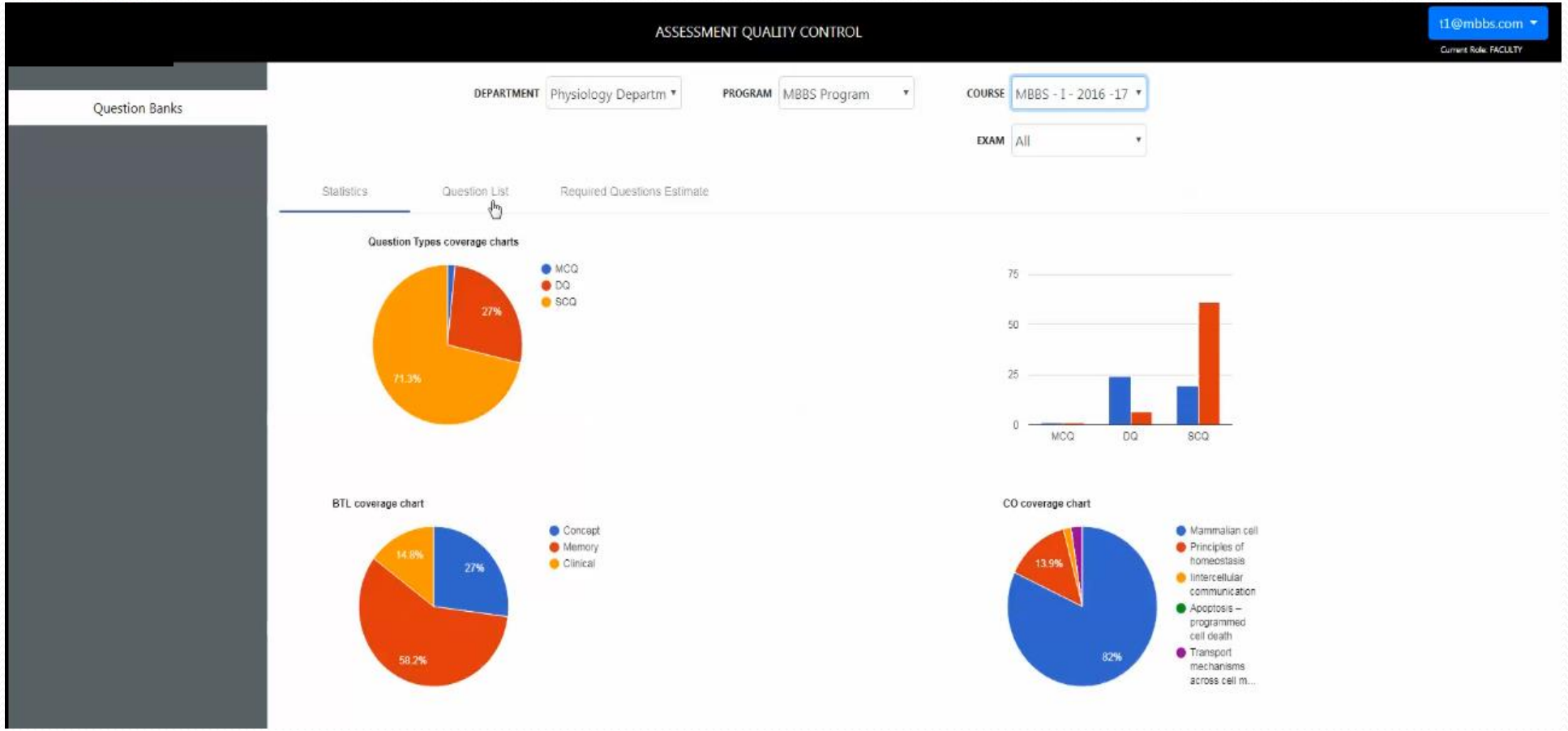


Status of Question Paper

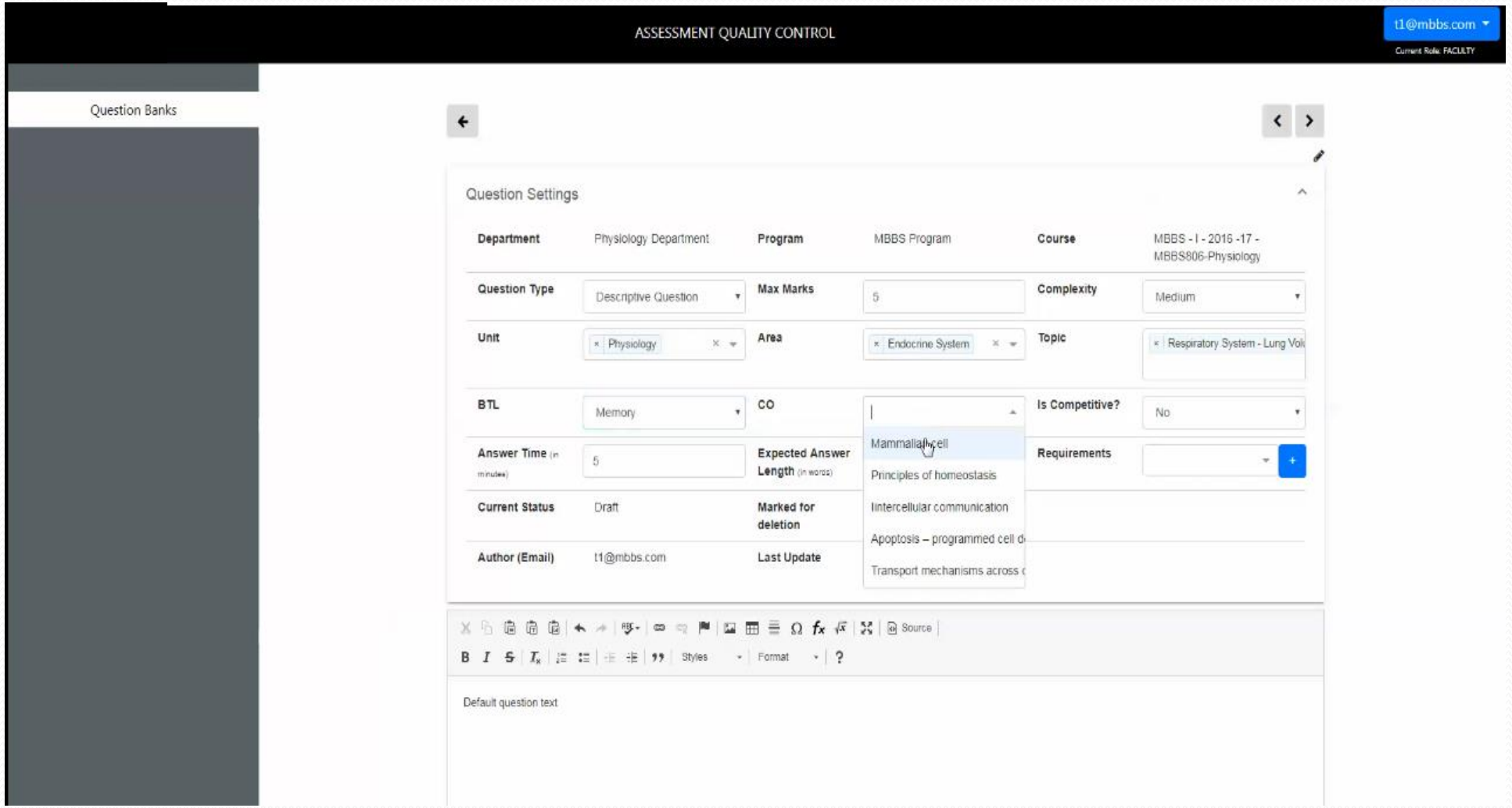
Mapping roles to the teachers



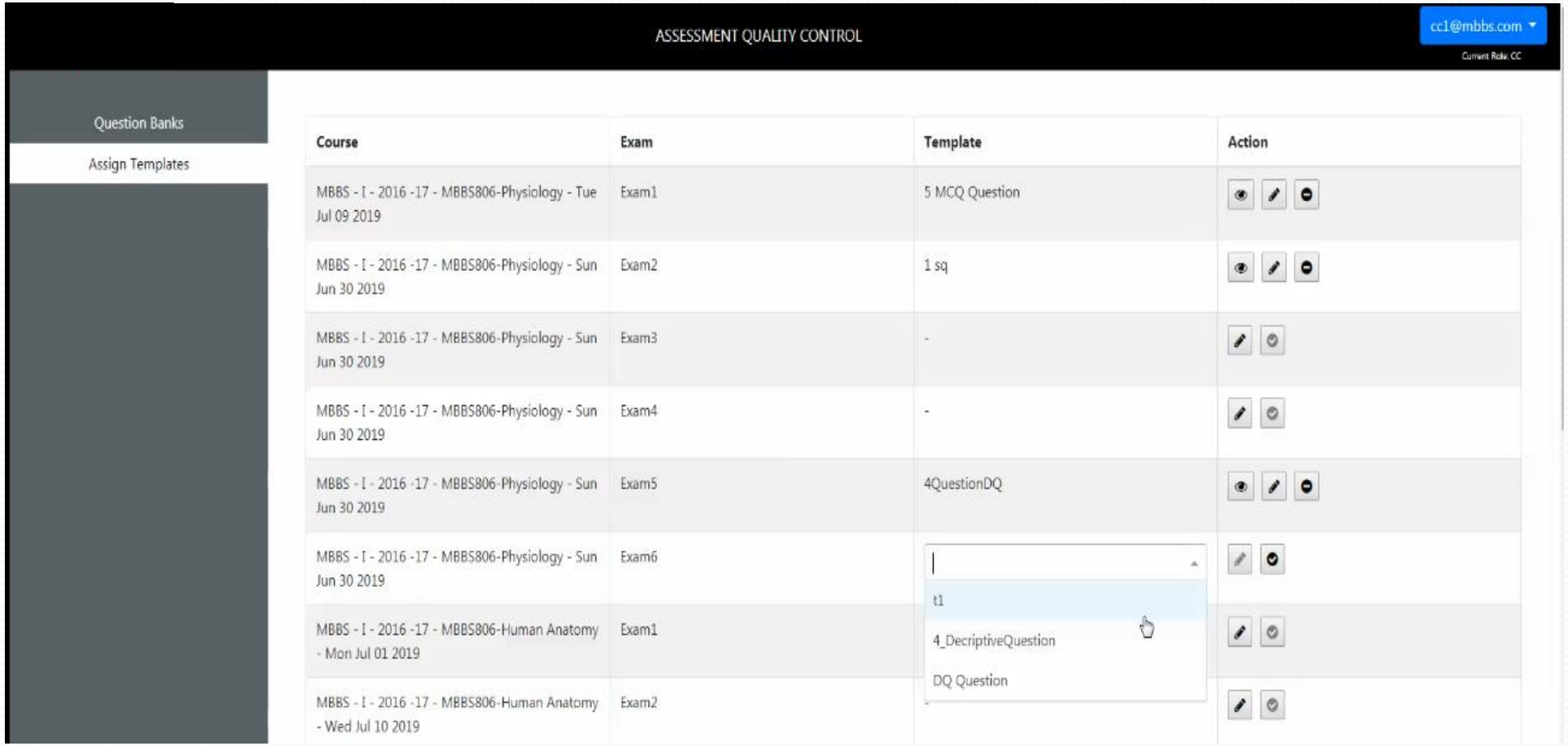
Teacher login – Question Bank statistics



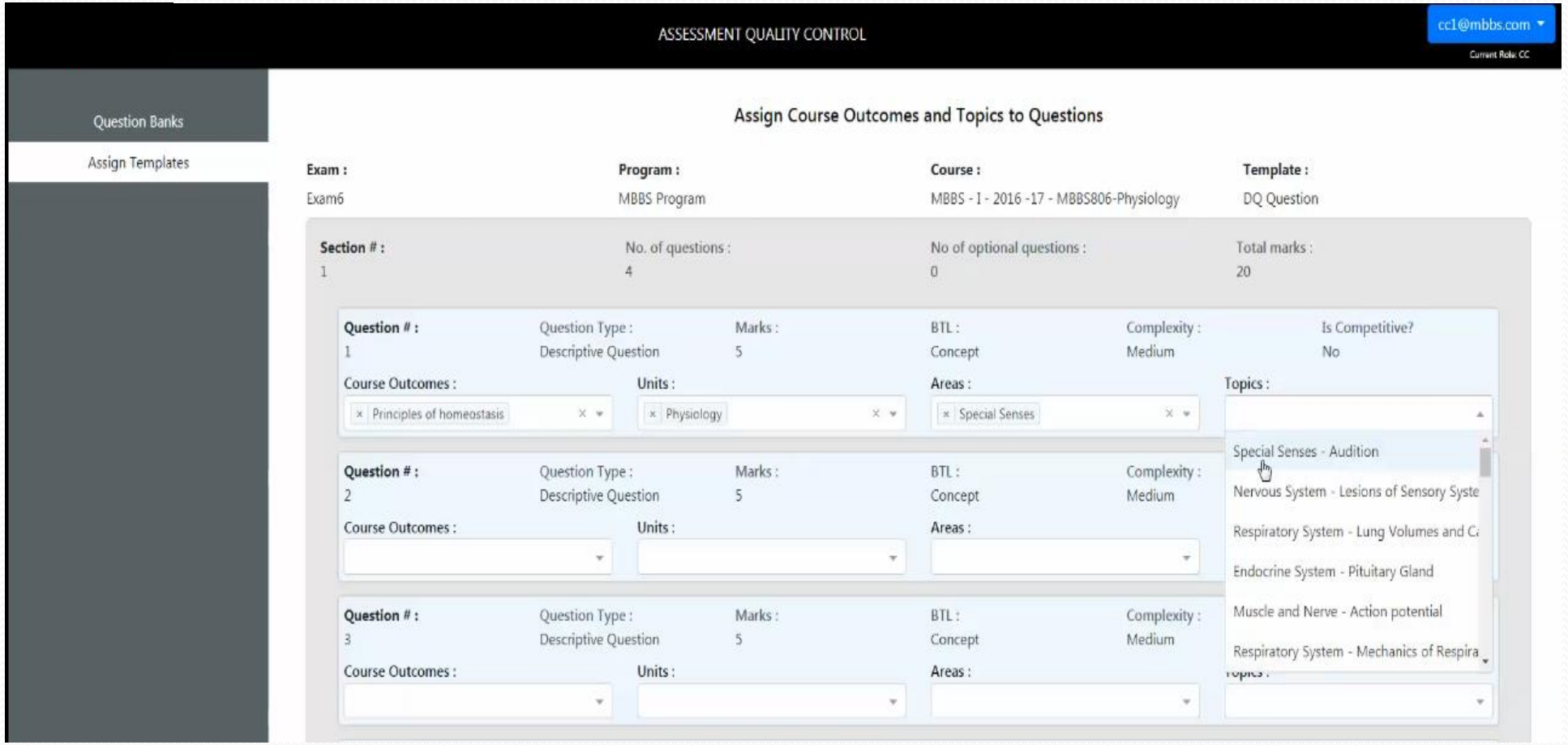
Addition of a new question



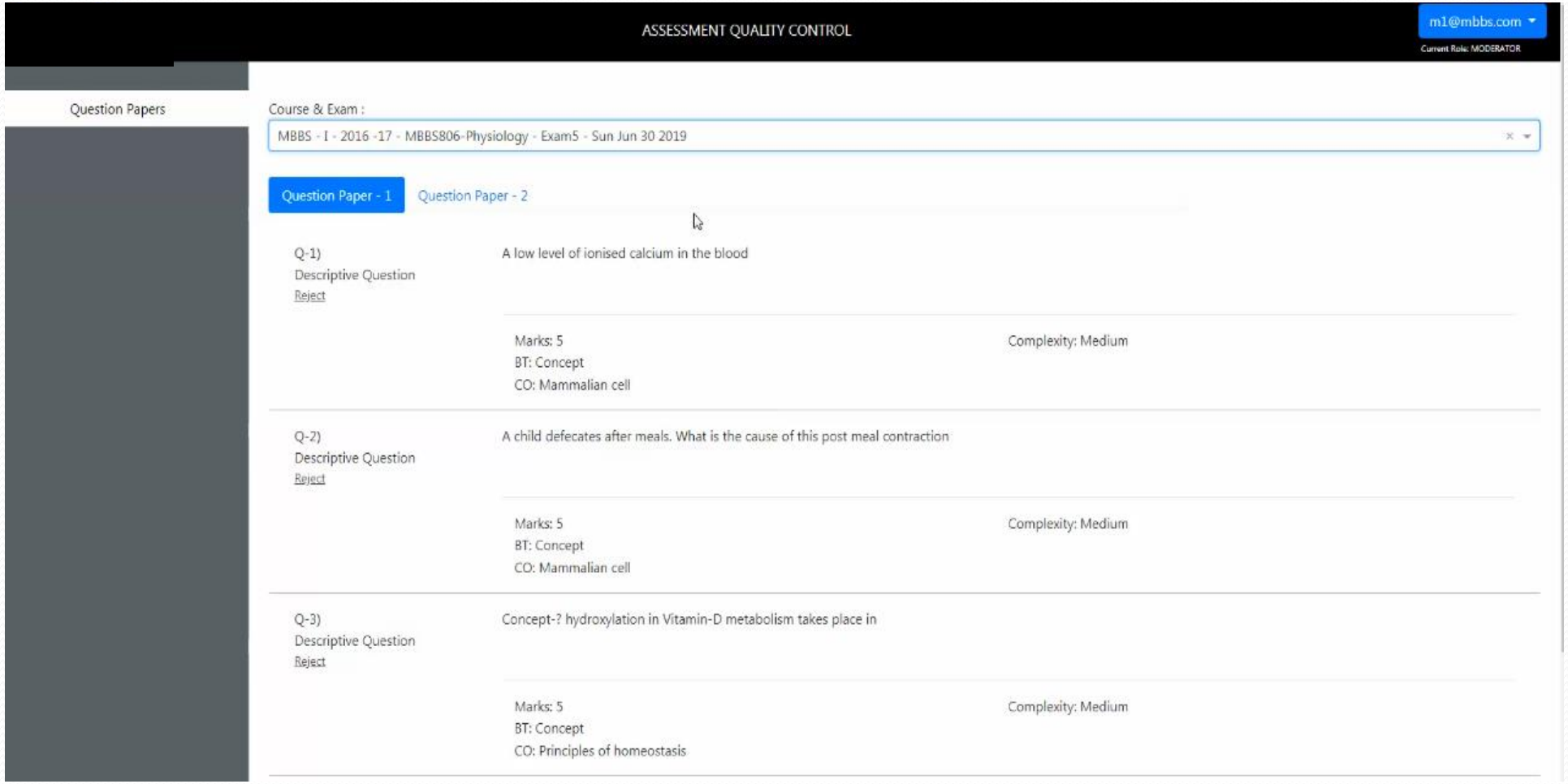
Course Coordinator Login – Assigning template to a course



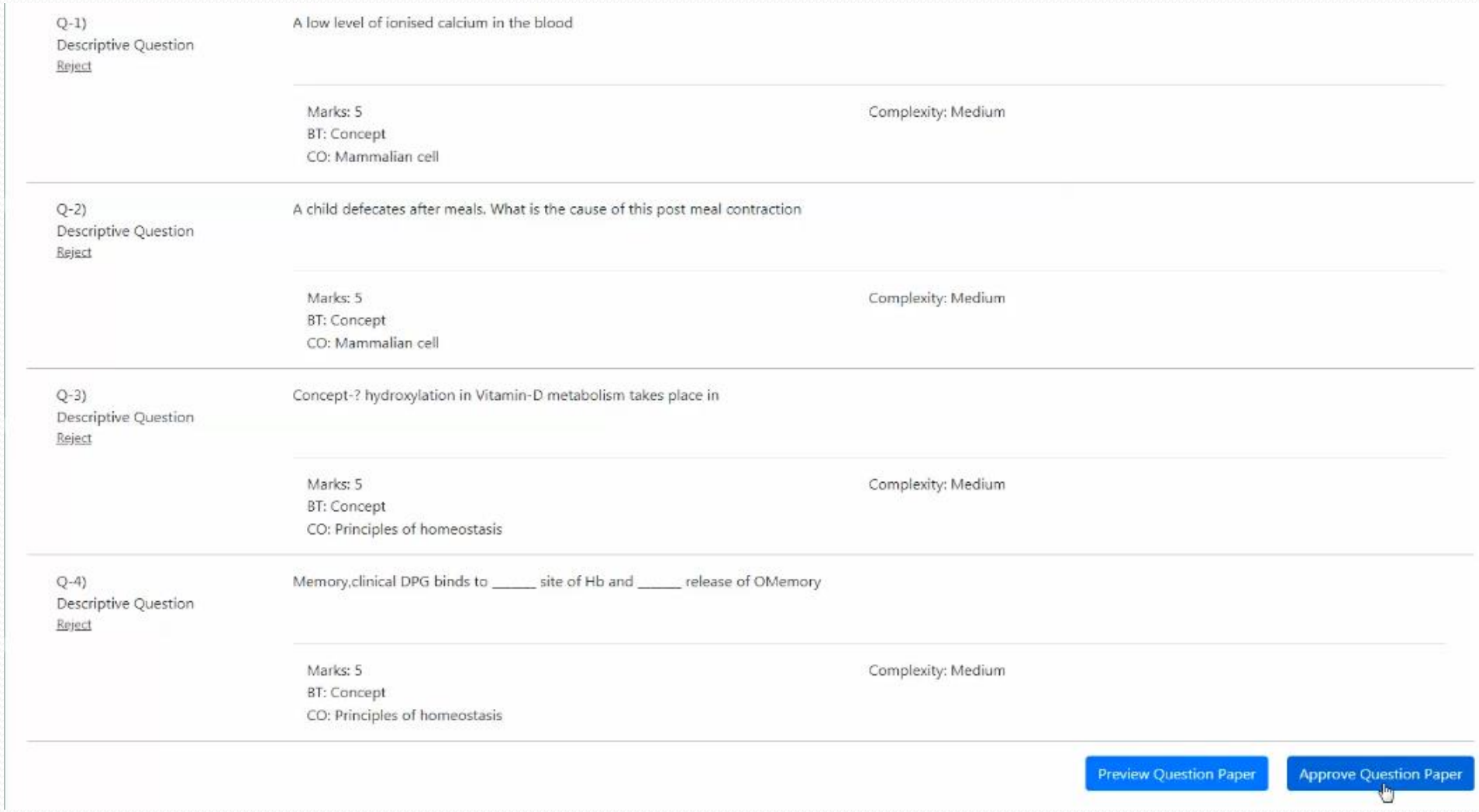
Setting the question parameters



Moderator login – Question paper generated



Cont.. Approval of a question paper



Question paper preview

Name :

Student ID :

School of MBBS

Physiology Department

Exam5 - Jun 2019

MBBS - I - 2016 -17 - MBBS806-Physiology

Total Marks (20)

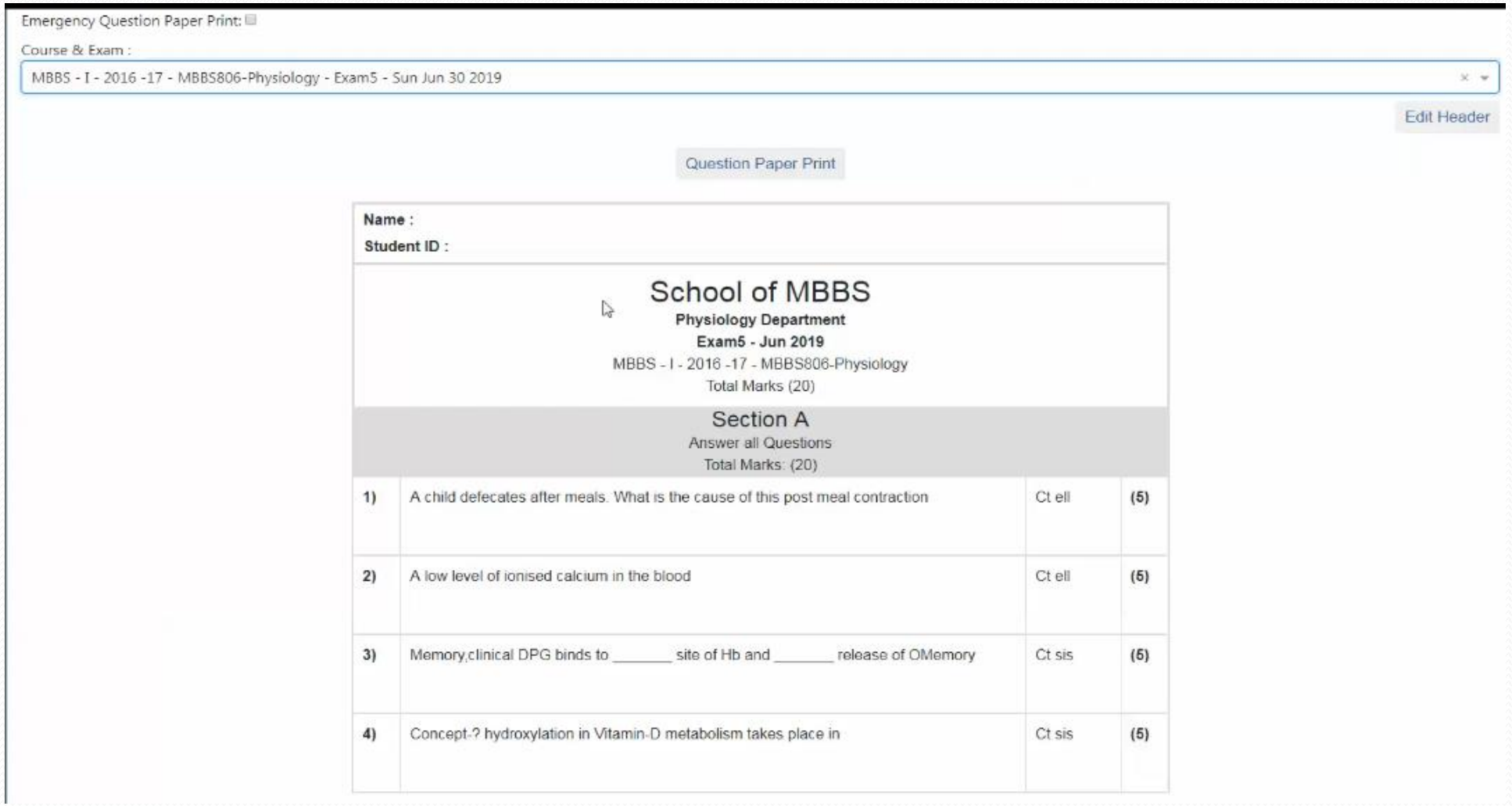
Section A

Answer all Questions

Total Marks: (20)

1)	A child defecates after meals. What is the cause of this post meal contraction	Ct ell	**(5)**
2)	A low level of ionised calcium in the blood	Ct ell	**(5)**
3)	Memory,clinical DPG binds to _____ site of Hb and _____ release of OMemory	Ct sis	**(5)**
4)	"Delta cells" of stomach secrete	Ct sis	**(5)**

Question paper printing



Emergency Question Paper Print:

Course & Exam :

MBBS - I - 2016 -17 - MBBS806-Physiology - Exam5 - Sun Jun 30 2019

Edit Header

Question Paper Print

Name :

Student ID :

School of MBBS

Physiology Department

Exam5 - Jun 2019

MBBS - I - 2016 -17 - MBBS806-Physiology

Total Marks (20)

Section A

Answer all Questions

Total Marks: (20)

1)	A child defecates after meals. What is the cause of this post meal contraction	Ct ell	**(5)**
2)	A low level of ionised calcium in the blood	Ct ell	**(5)**
3)	Memory,clinical DPG binds to _____ site of Hb and _____ release of OMemory	Ct sis	**(5)**
4)	Concept-? hydroxylation in Vitamin-D metabolism takes place in	Ct sis	**(5)**

Competency based Scenarios for MCQ designs

Competency: Medical Knowledge/Scientific Concepts: Applying Foundational Science Concepts Content Area: Cardiovascular System

- A 55-year-old man has had crushing sub sternal chest pain on exertion over the past 6 weeks. He had a myocardial infarction 2 months ago.
- He takes nitro-glycerine as needed and one aspirin daily. He has smoked two packs of cigarettes daily for 30 years.
- Examination shows normal heart sounds and no carotid or femoral bruits.
- Treatment with a β-adrenergic blocking agent is most likely to improve his symptoms due to which of the following mechanisms?
  - (A) Decreasing myocardial contractility
  - (B) Dilating the coronary arteries
  - (C) Peripheral vaso dilation
  - (D) Preventing fibrin and platelet plugs

Competency: Patient Care: Management: Pharmacotherapy

Content Area: Hematopoietic and Lymphoreticular System: Adverse effects of drugs

- A 55-year-old woman with small cell carcinoma of the lung is admitted to the hospital to undergo chemotherapy. Six days after treatment is started, she develops a temperature of 38°C (100.4°F). Physical examination shows no other abnormalities. Laboratory studies show a leukocyte count of 100/mm3 (5% segmented neutrophils and 95% lymphocytes). Which of the following is the most appropriate pharmacotherapy to increase this patient's leukocyte count?

  (A) Darbepoetin

  (B) Dexamethasone

  (C) Filgrastim

  (D) Interferon alfa

  (E) Interleukin-2 (IL-2)

  (F) Leucovorin

Competency: Professionalism
Content Area: Social Sciences

- A 45-year-old man comes to the physician for HIV testing. He says that he has been having an extramarital affair with a woman for 6 months, and he hopes this affair will continue because it has made him very happy. He has no plans to tell his wife about the affair. The wife is also a patient of the physician. Physical examination shows no abnormalities, and the result of a serum HIV antibody test is negative. Which of the following is the most appropriate action by the physician?

  (A) Alert the local public health department to the patient's activities

  (B) Explain to the patient that one of them must tell the wife about the affair for her own safety

  (C) Refer the patient for counselling

  (D) Say nothing about the affair to anyone other than the patient

  (E) Tell the patient's wife about the affair so she can make an informed decision about possibly being placed at risk in the future

Competency: Patient Care: Management - Clinical Interventions
Content Area: Female Reproductive & Breast

- A previously healthy 27-year-old nulligravid woman comes to the emergency department because of a 2-day history of moderate-to-severe pain and swelling of the left labia.
- She is sexually active and uses condoms inconsistently. Her temperature is 37.2°C (99°F), pulse is 92/min, respirations are 18/min, and blood pressure is 115/75 mm Hg.
- Pelvic examination shows a 4 x 3-cm, tender, fluctuant mass medial to the left labium majora compromising the introital opening.
- Which of the following is the most appropriate next step in management?

(A) Administration of intravenous metronidazole
(B) Administration of intravenous penicillin G
(C) Ultrasound-guided needle aspiration of the mass
(D) Incision and drainage
(E) Vulvectomy

Competency based Scenarios for MCQ designs are applied world over

- USMLE questions
- MRCP questions
- AMC questions

Artificial Intelligence Systems In Medical Education

- AI systems in Curriculum
- AI systems in Academic Goverence
- AI systems Dynamic Real time assessment of student
- AI systems in Self Directed Learning
- AI system In Assessment
- AI systems for CPE of CBME
- AI systems in Resource Management

Reliability of tools

Testing time in hours	MCQ (1)	Case Based Essays (2)	PMP (1)	Oral Exams (3)	Long Case (4)	OSCE (5)	Mini-CEX (6)
1	0.62	0.68	0.36	0.50	0.60	0.47	0.73

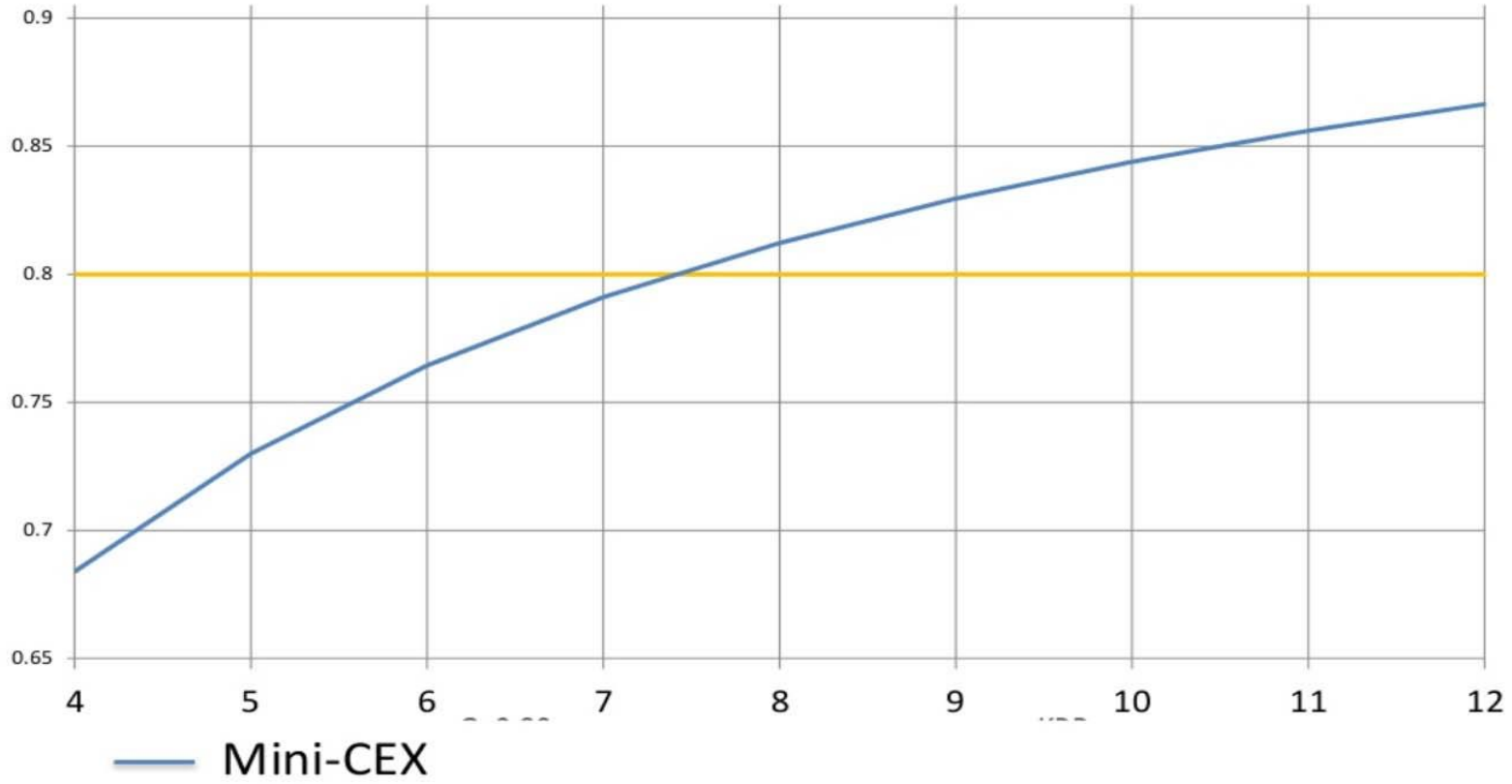
Reliability of tools

Testing time in hours	MCQ (1)	Case Based Essays (2)	PMP (1)	Oral Exams (3)	Long Case (4)	OSCE (5)	Mini-CEX (6)
1	0.62	0.68	0.36	0.50	0.60	0.47	0.73
2	0.76	0.74	0.53	0.69	0.75	0.64	0.84
4	0.93	0.84	0.69	0.82	0.86	0.78	0.92
8	0.93	0.84	0.82	0.90	0.90	0.88	0.96

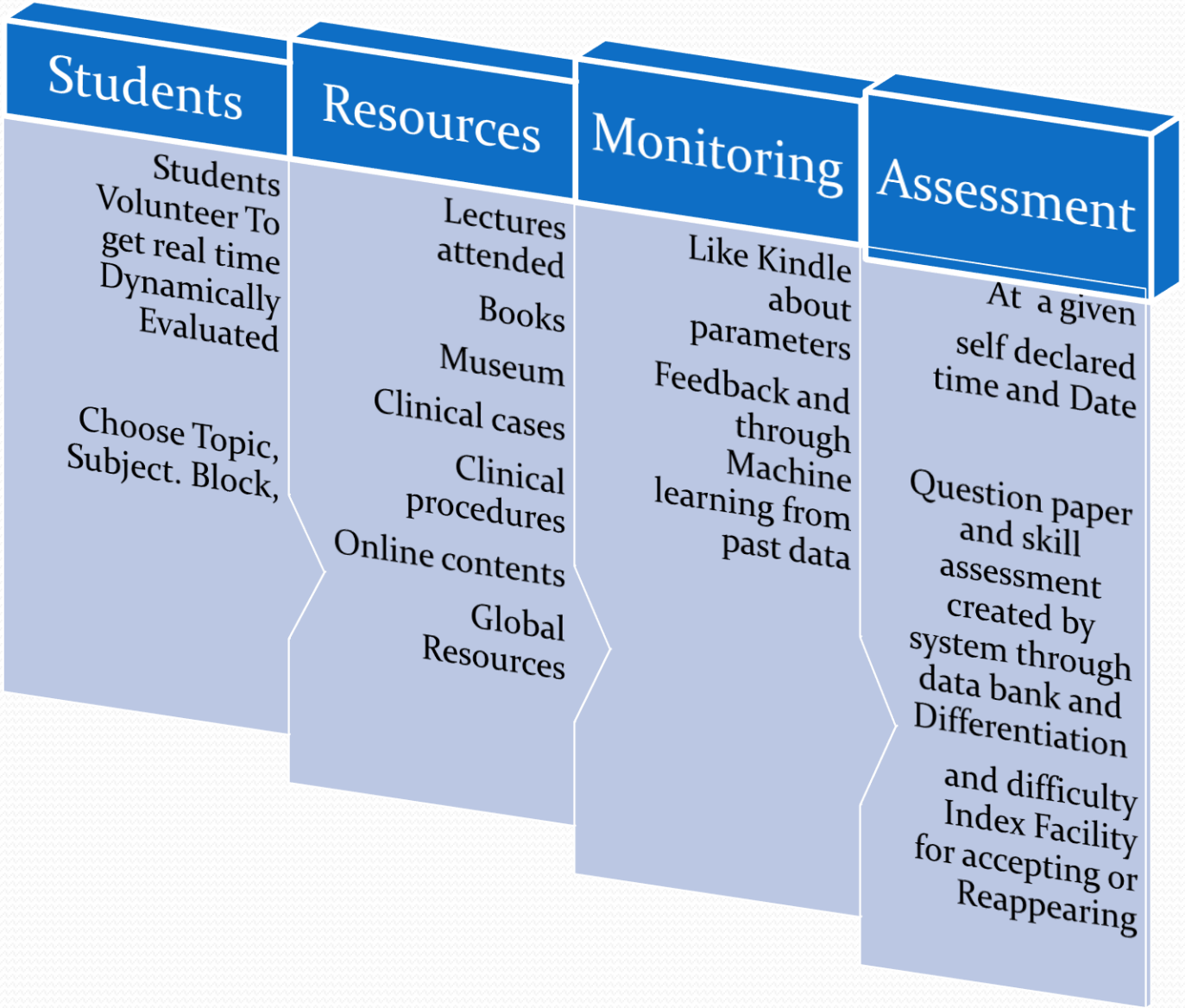
1 Norcini et al., 1985; 2 Stalenhoef-Halling et al., 1990; 3 Swanson, 1987; 4 Wass et al., 2001; 5 Petrusa, 2002; 6 Norcini et al., 1999

Reliability as a function of sample size

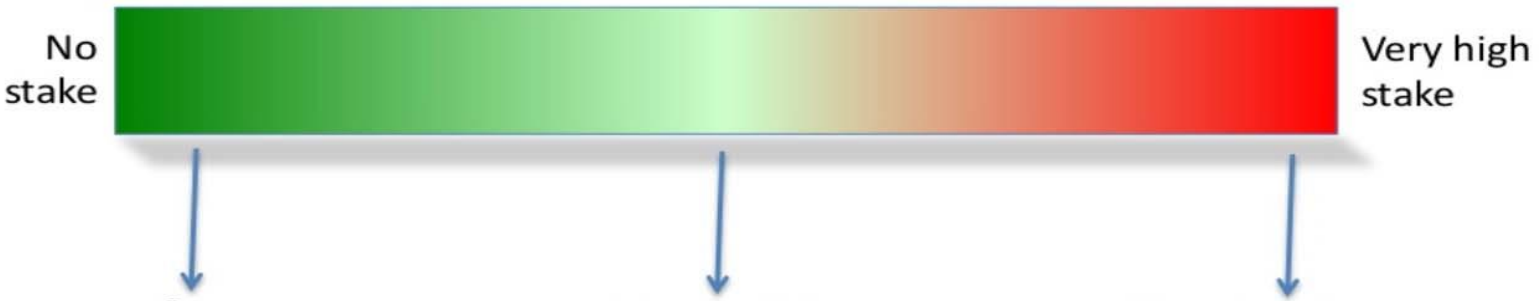
(Moonen et al., 2013)



Dynamic Real time assessment of student



Continuum of stakes, number of data point and their function



One Data point:

- Focused on information
- Feedback oriented
- Not decision oriented

Intermediate progress decisions:

- More data points needed
- Focus on diagnosis, remediation, prediction

Final decisions on promotion or selection:

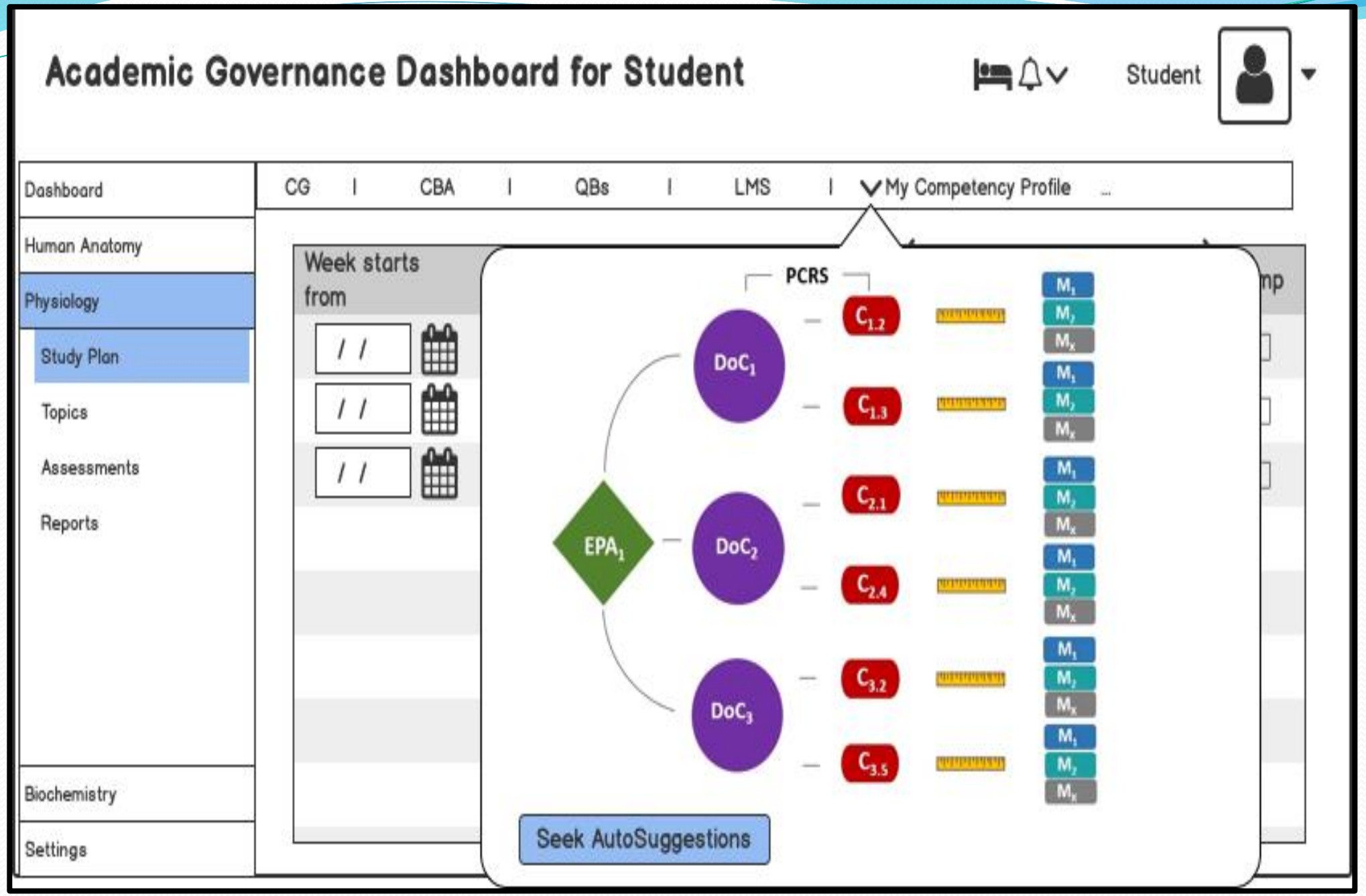
- Many data points needed
- Focused on a (non-surprising) heavy decision

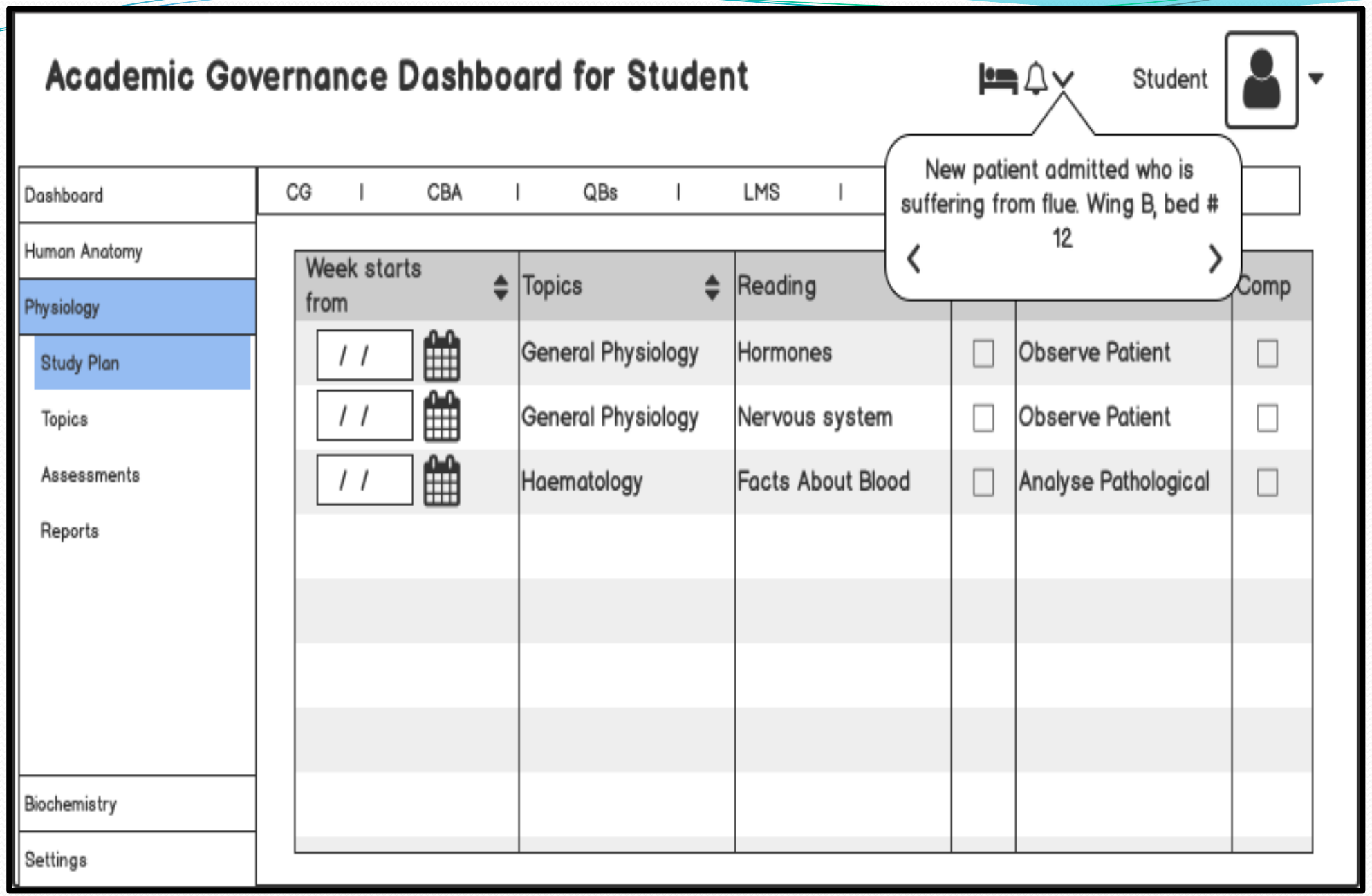
Programmatic Assessment : For

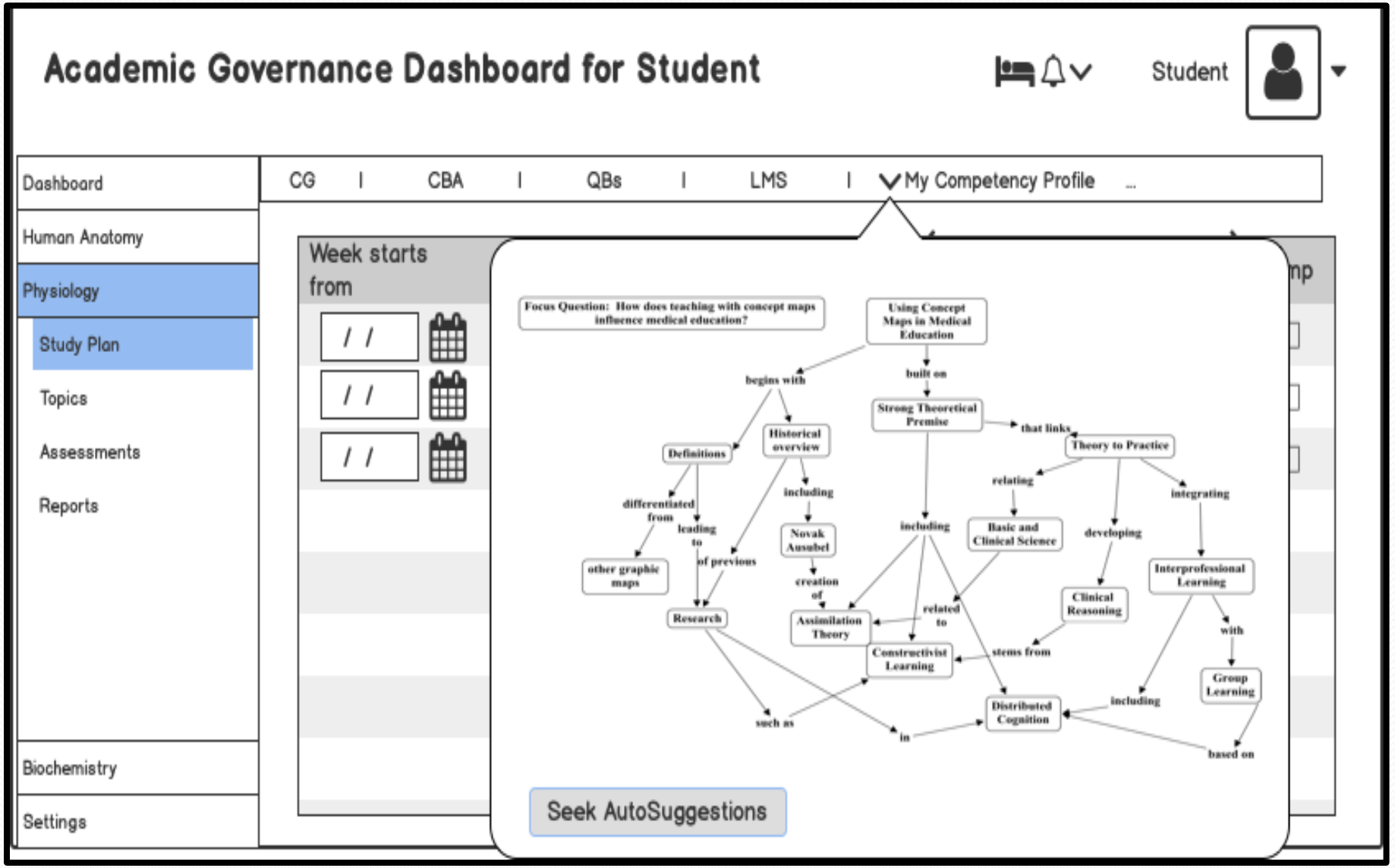
- Neutralizes the limitations of traditional assessment
- High-stakes decision is not based on the outcome of a single assessment
- Informal assessments also find a place in the final decision
- Feedback is the back bone of the entire process
- Both quantitative and qualitative feedback are given equal weight-age
- Mentor-Mentee system plays an important role in improving the student performance
- Helps Assessors to take an evidence based high-stakes decision

Programmatic Assessment : Against

- It requires extensive microplanning for the success of this form of aassessment
- The performance in each of the assessments has to be compiled for each student, which is a tedious task
- Difficult to quantify for inexperienced faculty members
- Feedback can be disheartening, if not delivered constructively
- Compilation remains a difficult task
- Often it takes a back-seat and faculty members do not find time for the same
- Provided the plan for the entire academic year is well designed right at the start of the year


Academic Governance Dashboard for Student
Student
Dashboard
Human Anatomy
Physiology
Study Plan
Topics
Assessments
Reports
Biochemistry
Settings
CG
CBA
QBs
LMS
My Competency Profile
Week starts from
PCRS
EPA1
DoC1
DoC2
DoC3
C1.2
C1.3
C2.1
C2.4
C3.2
C3.5
Seek AutoSuggestions


Academic Governance Dashboard for Student
Student
New patient admitted who is suffering from flue. Wing B, bed # 12
Dashboard
Human Anatomy
Physiology
Study Plan
Topics
Assessments
Reports
Biochemistry
Settings
CG
CBA
QBs
LMS
Week starts from
Topics
Reading
Comp
/ /
General Physiology
Hormones
Observe Patient
/ /
General Physiology
Nervous system
Observe Patient
/ /
Haematology
Facts About Blood
Analyse Pathological


Academic Governance Dashboard for Student
Student
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Human Anatomy
Physiology
Study Plan
Topics
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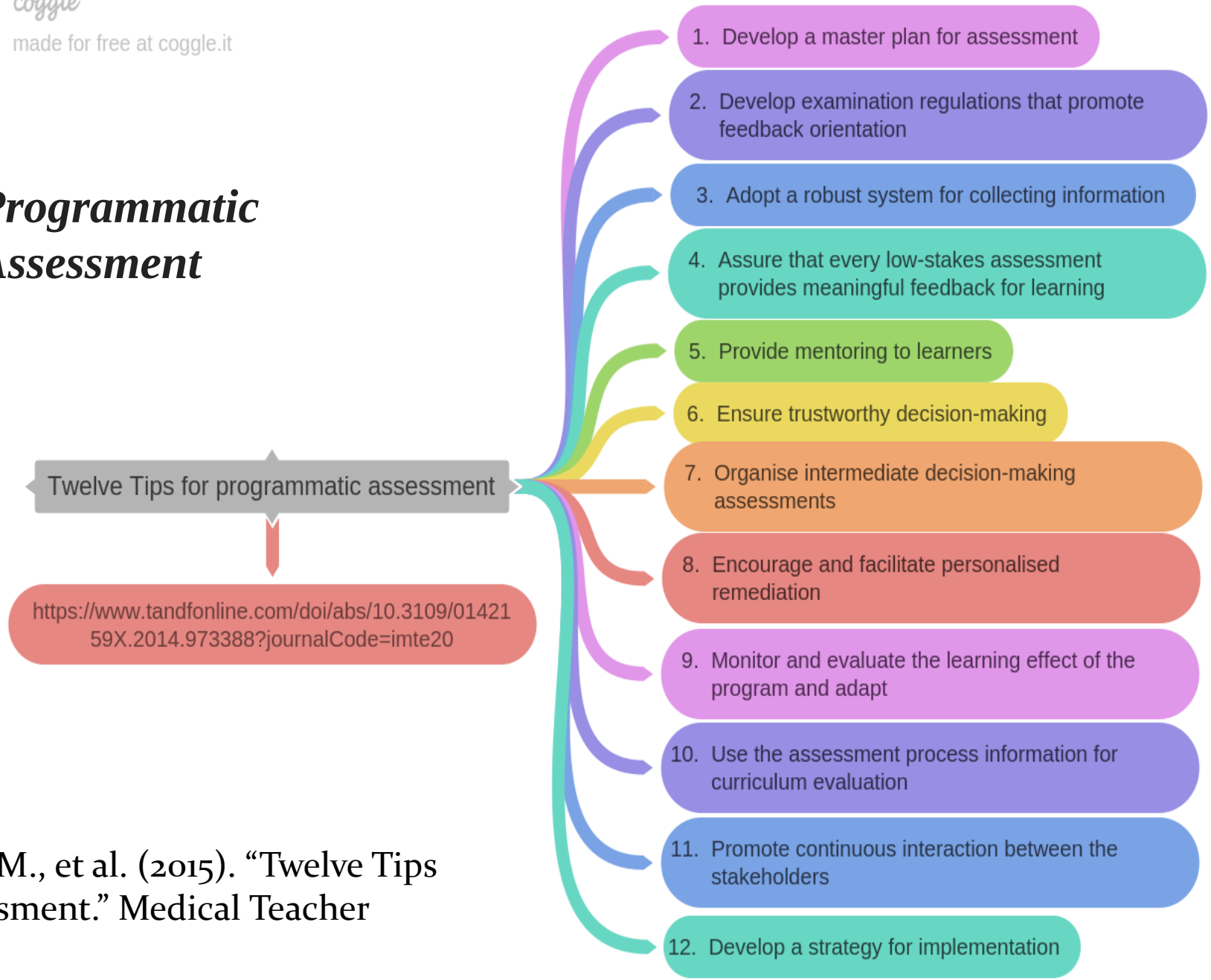
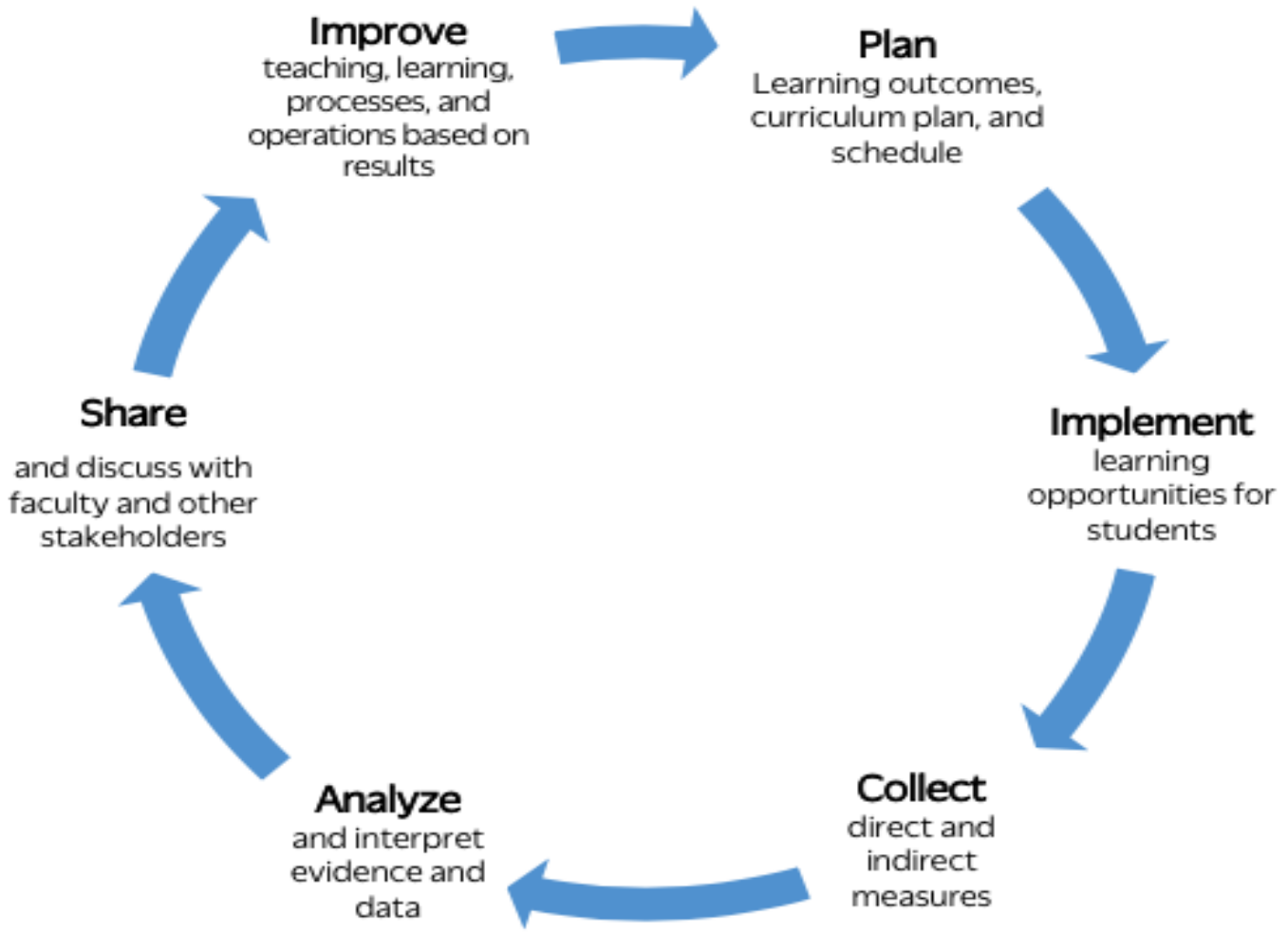
Reports
Biochemistry
Settings
CG
CBA
QBs
LMS
My Competency Profile
Week starts from
Focus Question: How does teaching with concept maps influence medical education?
Using Concept Maps in Medical Education
begins with
built on
Definitions
Historical overview
Strong Theoretical Premise
that links
Theory to Practice
differentiated from
leading to
other graphic maps
of previous
Research
including
Novak Ausubel
creation of
Assimilation Theory
related to
Constructivist Learning
including
Basic and Clinical Science
relating
developing
integrating
Clinical Reasoning
Interprofessional Learning
stems from
with
Group Learning
such as
in
Distributed Cognition
including
based on
Seek AutoSuggestions

coggle
made for free at coggle.it

Programmatic Assessment

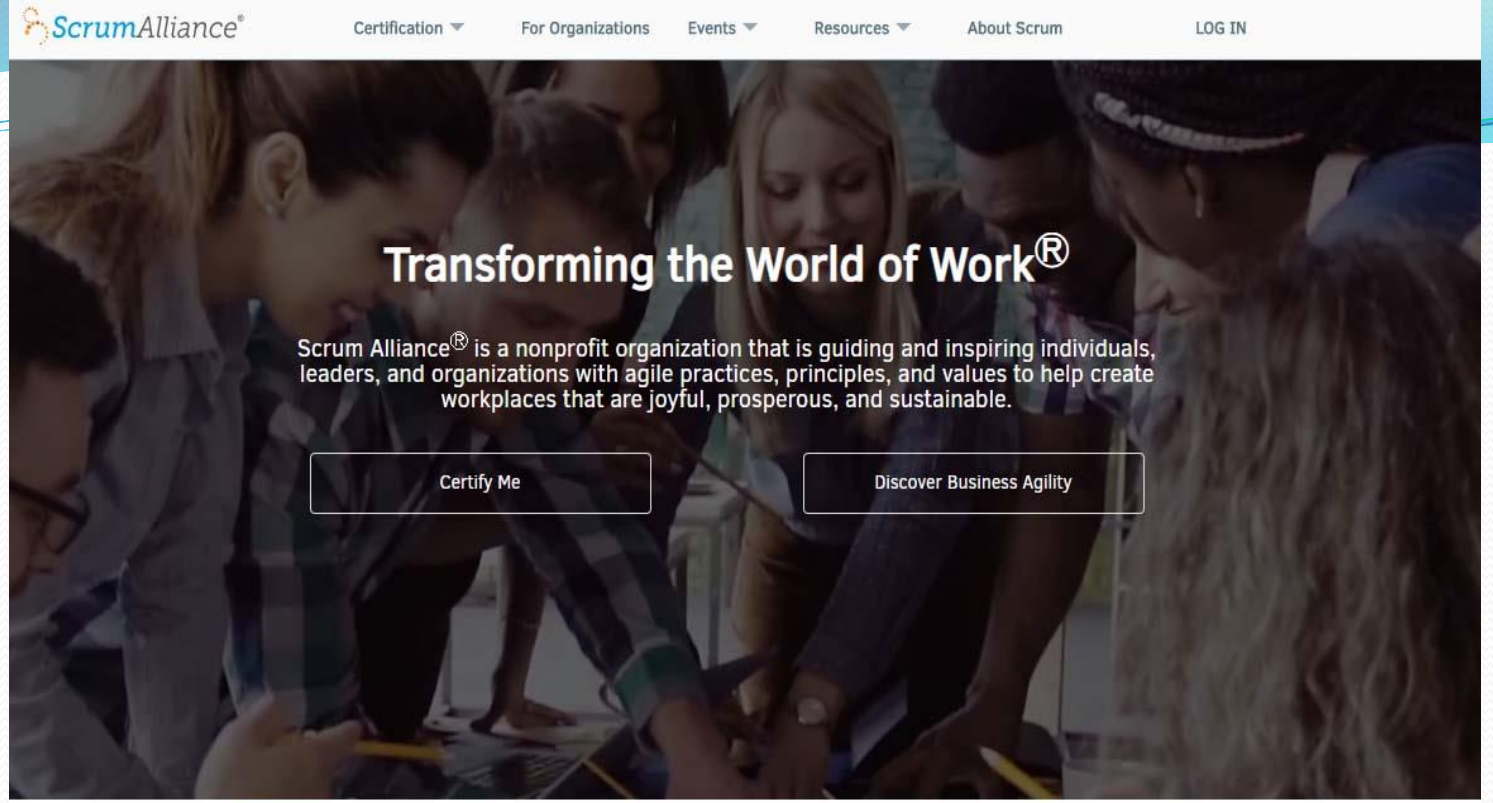


Van Der Vleuten, C. P. M., et al. (2015). "Twelve Tips for programmatic assessment." Medical Teacher 37(7): 641-646.


Improve
teaching, learning, processes, and operations based on results
Plan
Learning outcomes, curriculum plan, and schedule
Implement
learning opportunities for students
Collect
direct and indirect measures
Analyze
and interpret evidence and data
Share
and discuss with faculty and other stakeholders

Competency based professional development education

Case Study of ScrumAlliance https://www.scrumalliance.org/



Start your journey here

Through the certification process, you'll gain an understanding of the agile mindset and learn about Scrum roles, events, and artifacts. Start your journey here as a Certified ScrumMaster®. You'll help your team be at its best.

Learn more

Find All Certification Types And Course Offerings Here

All Course Types

All Countries/Regions

03/22/2020

Search

Scrum Education Units

What qualifies as SEUs?

Any activity that helps you develop as a Scrum or agile practitioner will be accepted. Many educational activities easily count for SEU credit. Reading books, attending mentoring or training sessions, watching webinars, and volunteering are just a few ideas. Please review the SEU page for more examples.

How do I know which category to log it under?

If you are unsure or if it qualifies in multiple categories, please log it under the one you feel fits best.

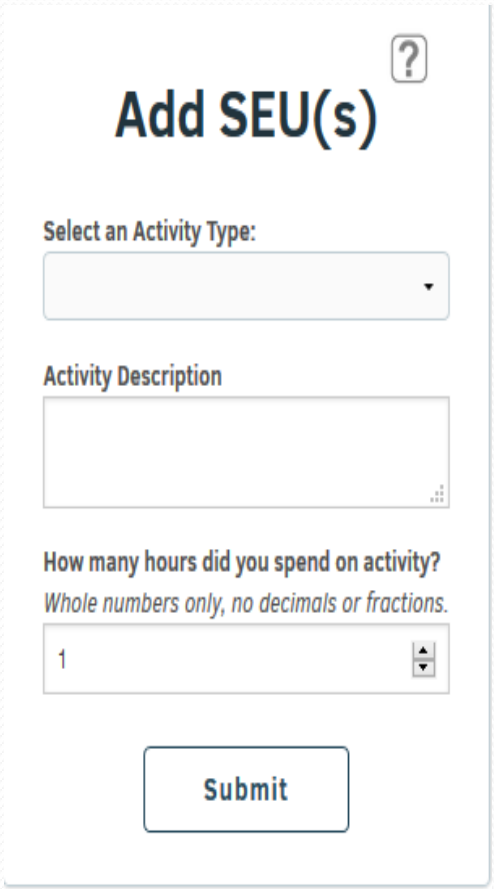
How recent do they have to be?

For all certification renewal cycles, SEUs must have been earned within 30 months of your next renewal date.

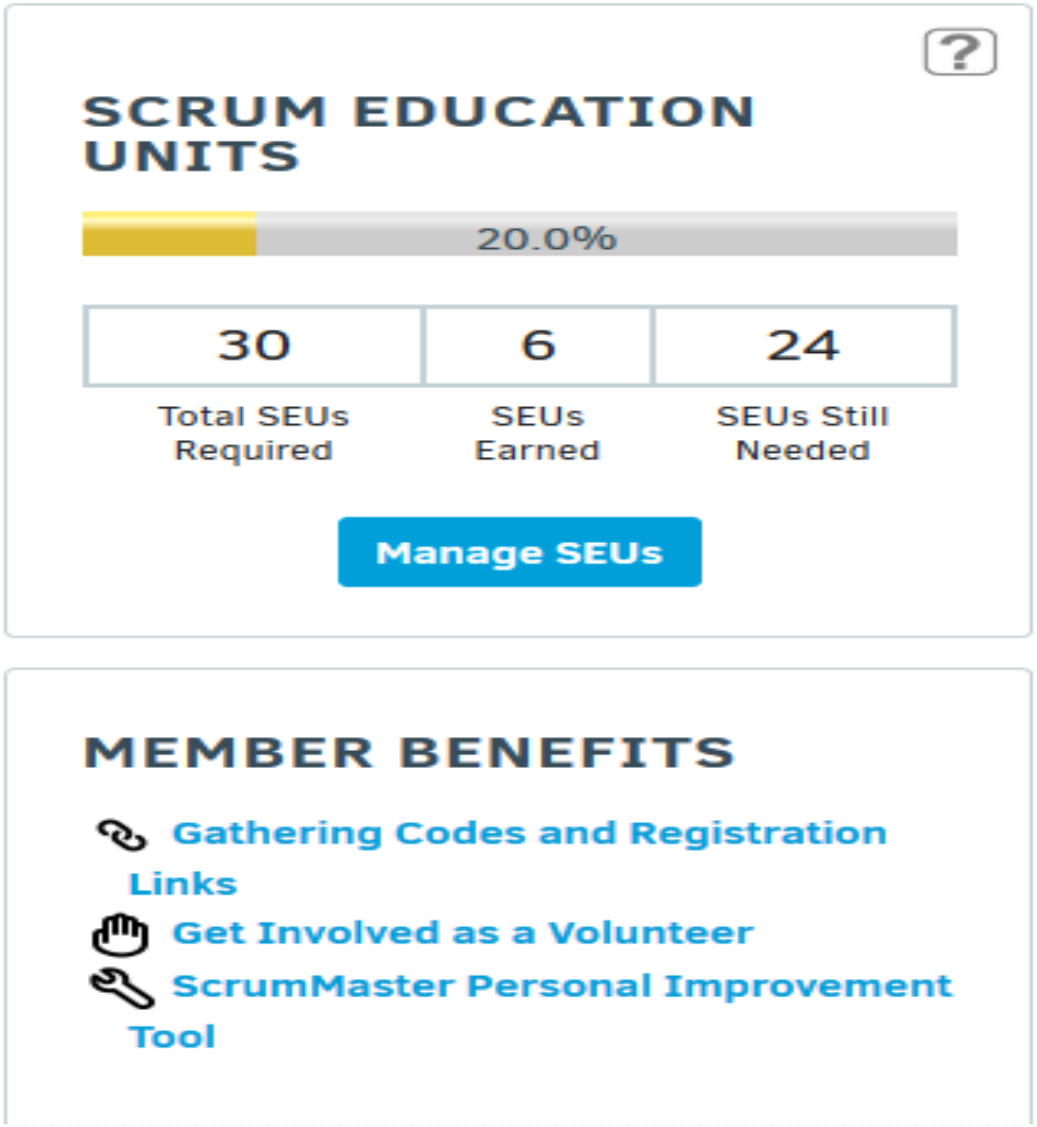
Is there a guide to entering hours?

All hours are entered as whole numbers. Please round up as required. For example, if you watched a webinar for 30 minutes, round up to 1 hour.

Add and manage SEUs



Gamified Dashboard showing Progress



Artificial Intelligence Systems In Medical Education

- AI systems in Curriculum
- AI systems in Academic Goverence
- AI systems Dynamic Real time assessment of student
- AI systems in Self Directed Learning
- AI system In Assessment
- AI systems for CPE of CBME
- AI systems in Resource Management

Resource management for Student

- Books
- Recorded VDOs
- Global Resources
- Online PowerPoints
- Live chat
- Related patient in Ward
- Related Operation in OT blocks

- Global Resources
- Endoscopic Thyroidectomy https://websurg.com/fr/doi/lt03enanuwong001/

- Online Power Points
- Iodine deficiency goiter
- https://static1.squarespace.com/static/573786f87c65e49dc21b27c1/t/5c497298758d46280bf2e85d/1548317343081/iodine+deficiecy+goiter+upload.pdf

Resource management for Student

- Books
- Recorded VDOs
- Global Resources
- Online PowerPoints
- Live chat
- Related patient in Ward
- Related Operation in OT blocks

- Related patient in Ward
- Connect with EMR system of Medical college Hospitals

- SMS to student as per his area of study

- Related Operation in OT blocks
- Connects OT list of all Theater

- SMS to student as per his area of study

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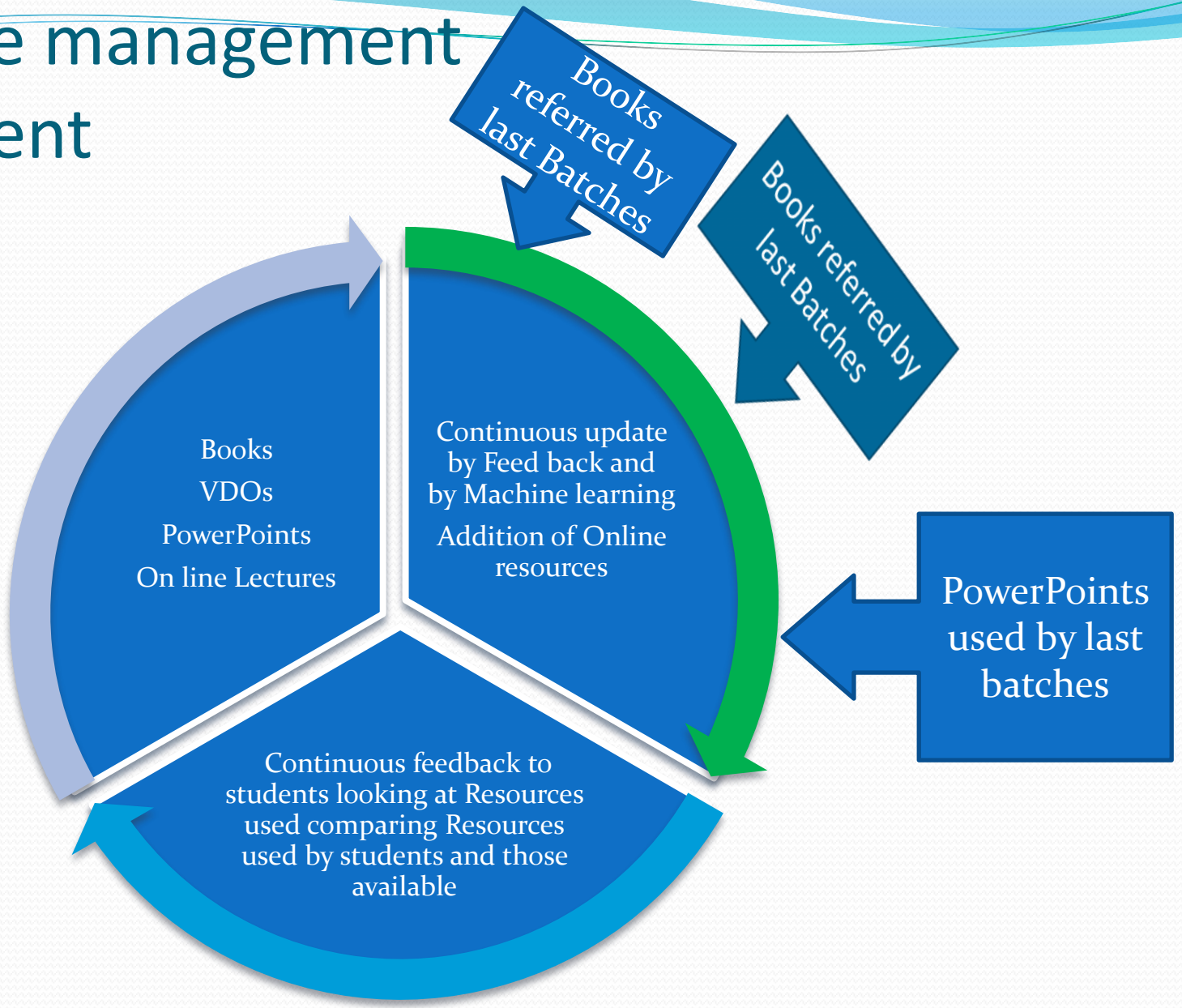
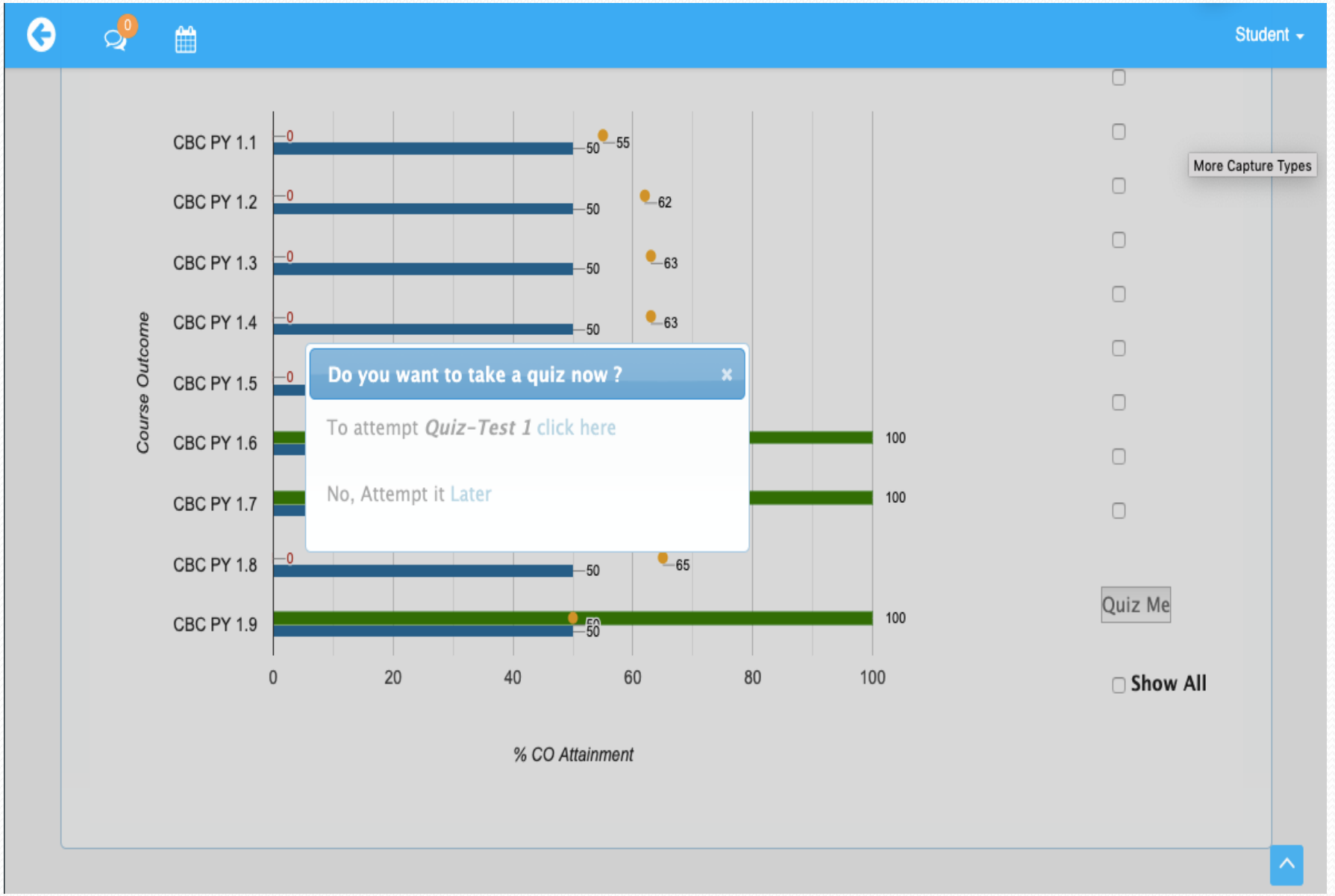
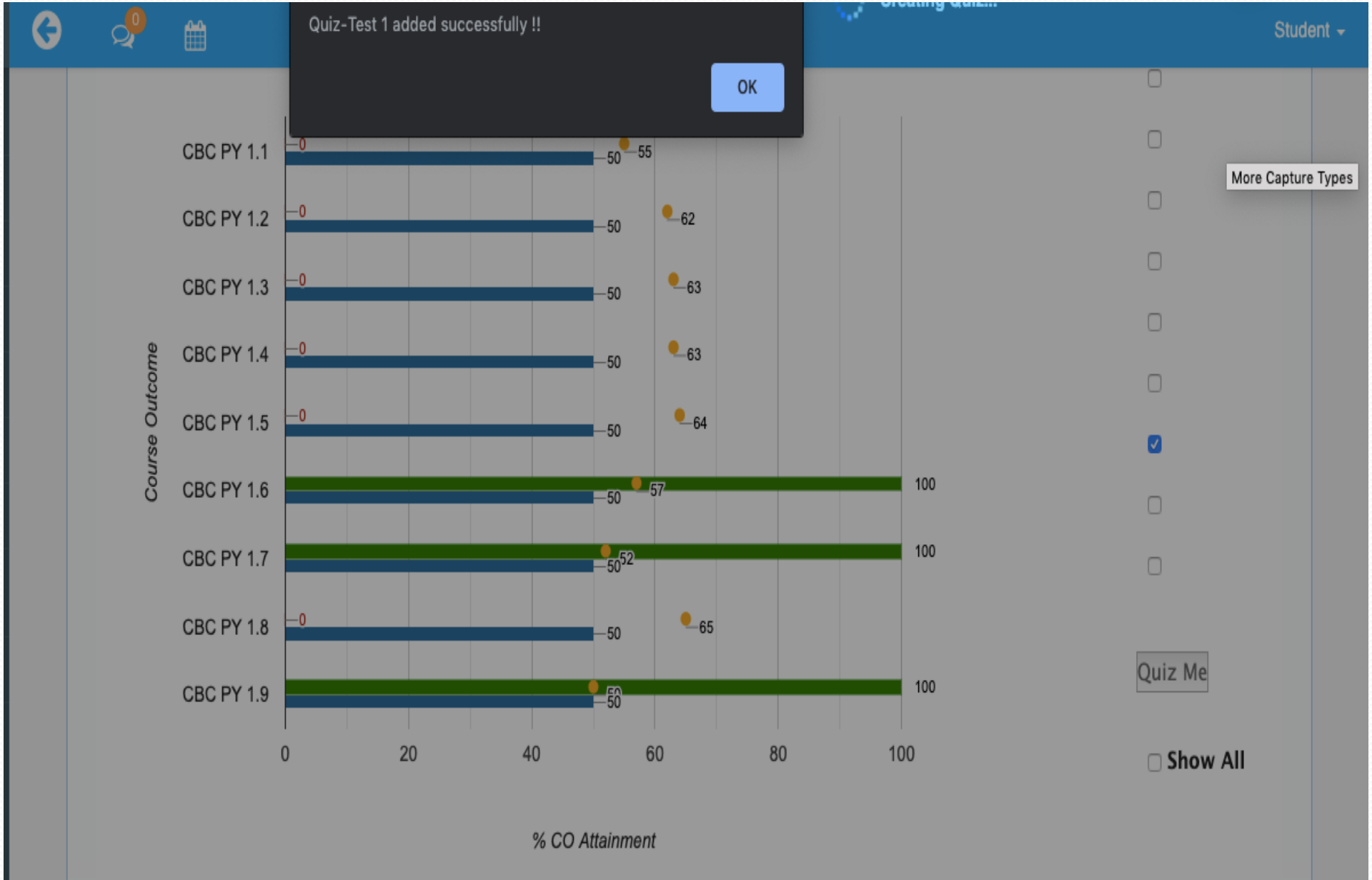
Resource management for Student

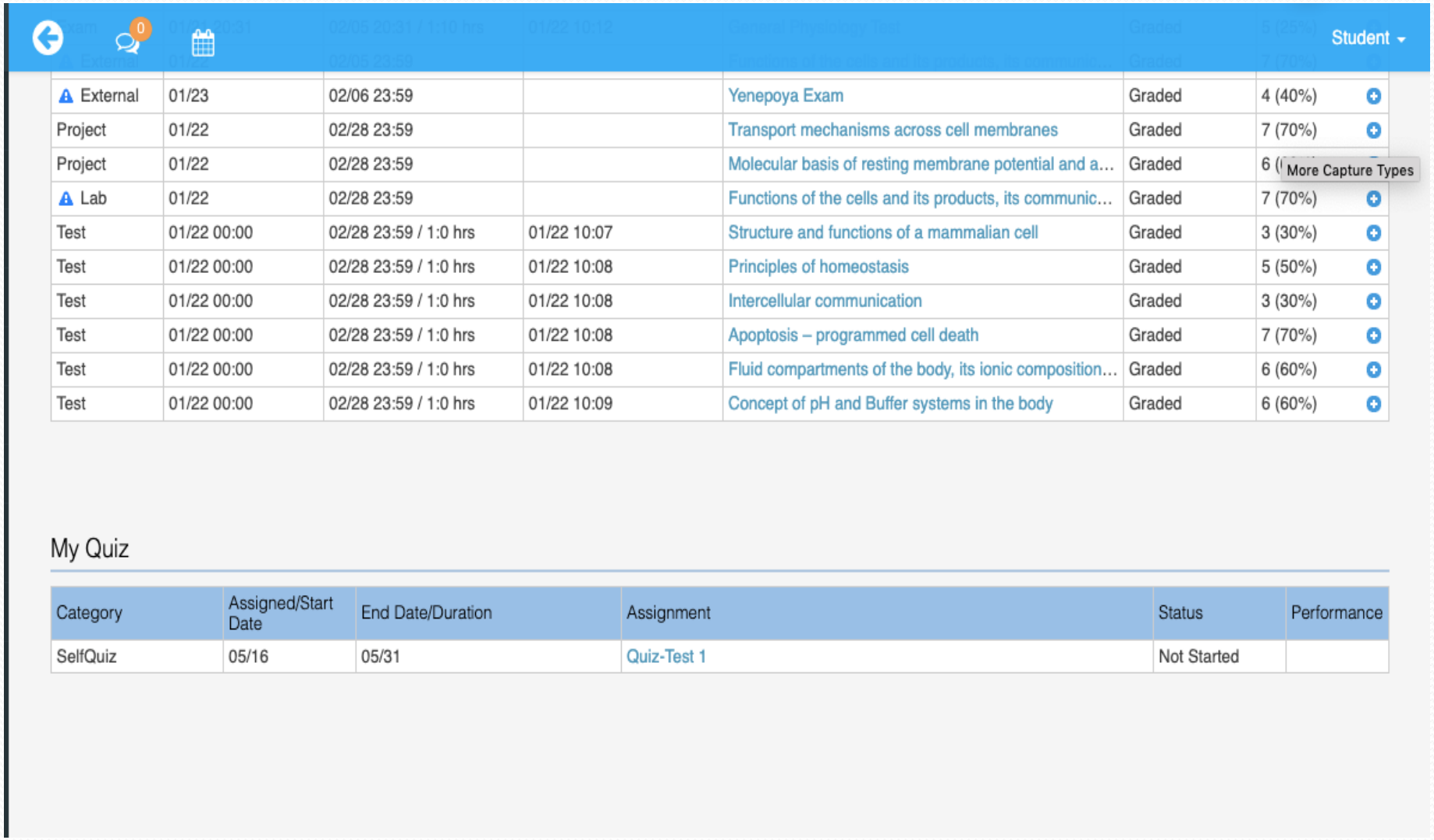



Student
CBC PY 1.1
CBC PY 1.2
CBC PY 1.3
CBC PY 1.4
CBC PY 1.5
CBC PY 1.6
CBC PY 1.7
CBC PY 1.8
CBC PY 1.9
Course Outcome
0
20
40
60
80
100
% CO Attainment
55
62
63
63
65
Do you want to take a quiz now ?
To attempt Quiz-Test 1 click here
No, Attempt it Later
More Capture Types
Quiz Me
Show All

Self-Learning: Self Quiz Initiated



Self-Learning: Quiz Accessed



Student

Quiz-Test 1 | Not submitted

[Start Time : 0.00] - [Test Duration : 00:00:00] - [Time Left : 0:00]

More Capture Types

Question Set 1 Of 1 Previous Next Submit

1 2

1. A newly posted junior doctor had difficulty in finding out base deficit/excess for blood in a given patient. An experienced senior resident advised a quick method to determine acid base composition of blood based on PC02- Which of the following is the likely method he suggested to predict acid base composition of blood? (1)

A. Red ford normogram
B. DuBio's normogram
C. Goldman constant field equation
D. Siggard-Andersen normogram

2. A newly posted junior doctor had difficulty in finding out base deficit/excess for blood in a given patient. An experienced senior resident advised a quick method to determine acid base composition of blood based on PC02- Which of the following is the likely method he suggested to predict acid base composition of blood? (1)

A. Red ford normogram
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Artificial Intelligence Systems In Medical Education

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- AI system In Assessment
- AI systems for CPE of CBME
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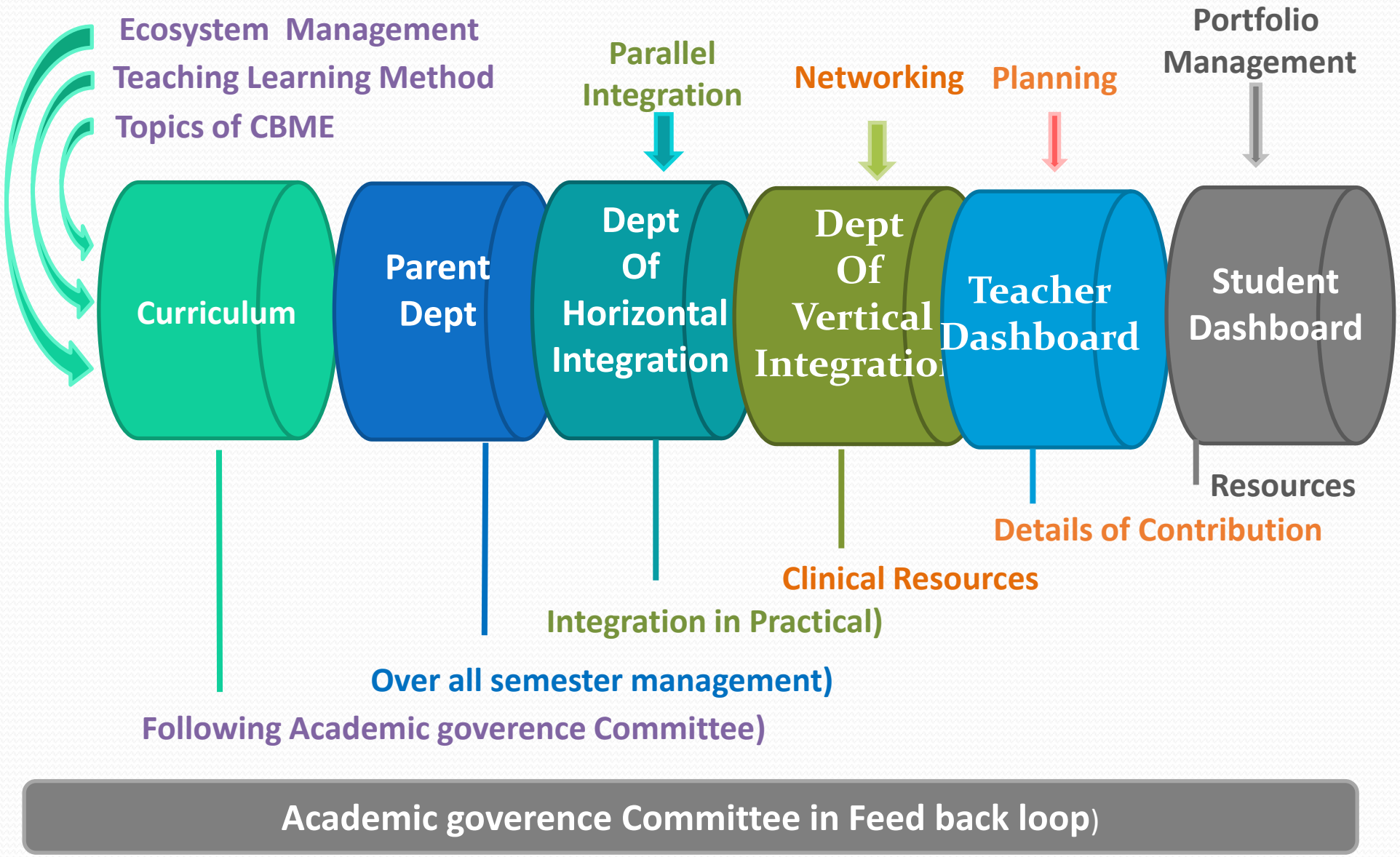
Academic Governance



Academic goverence Committee in Feed back loop)

Curriculum Committee

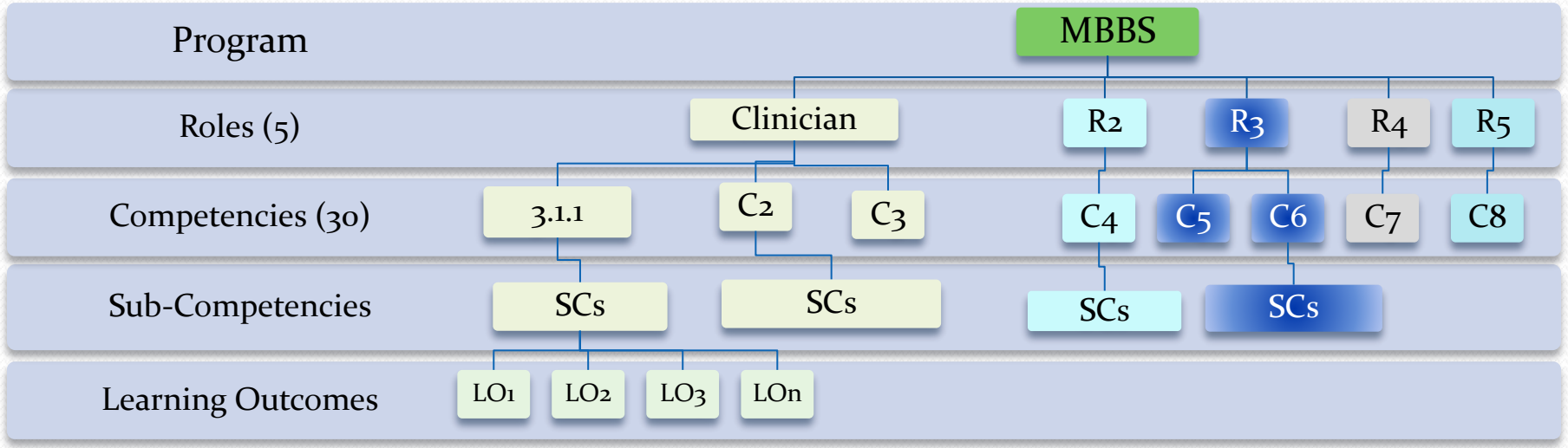
Competency-driven
Medical Education Technology

Competency Based Learning Management System

GOVERNMENT MEDICAL COLLEGE
BHAVNAGAR

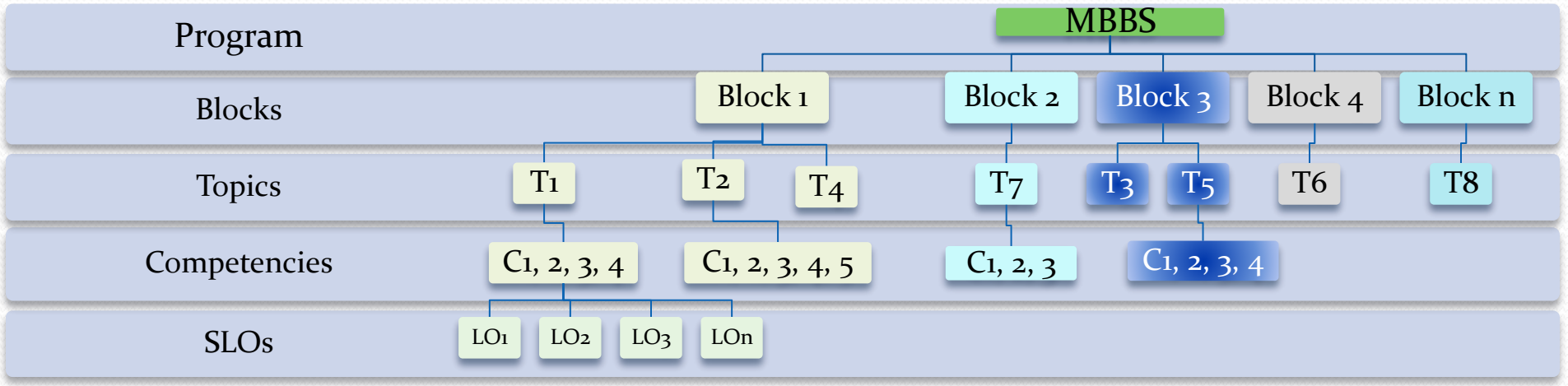
Starting soon...

Curricular Governance

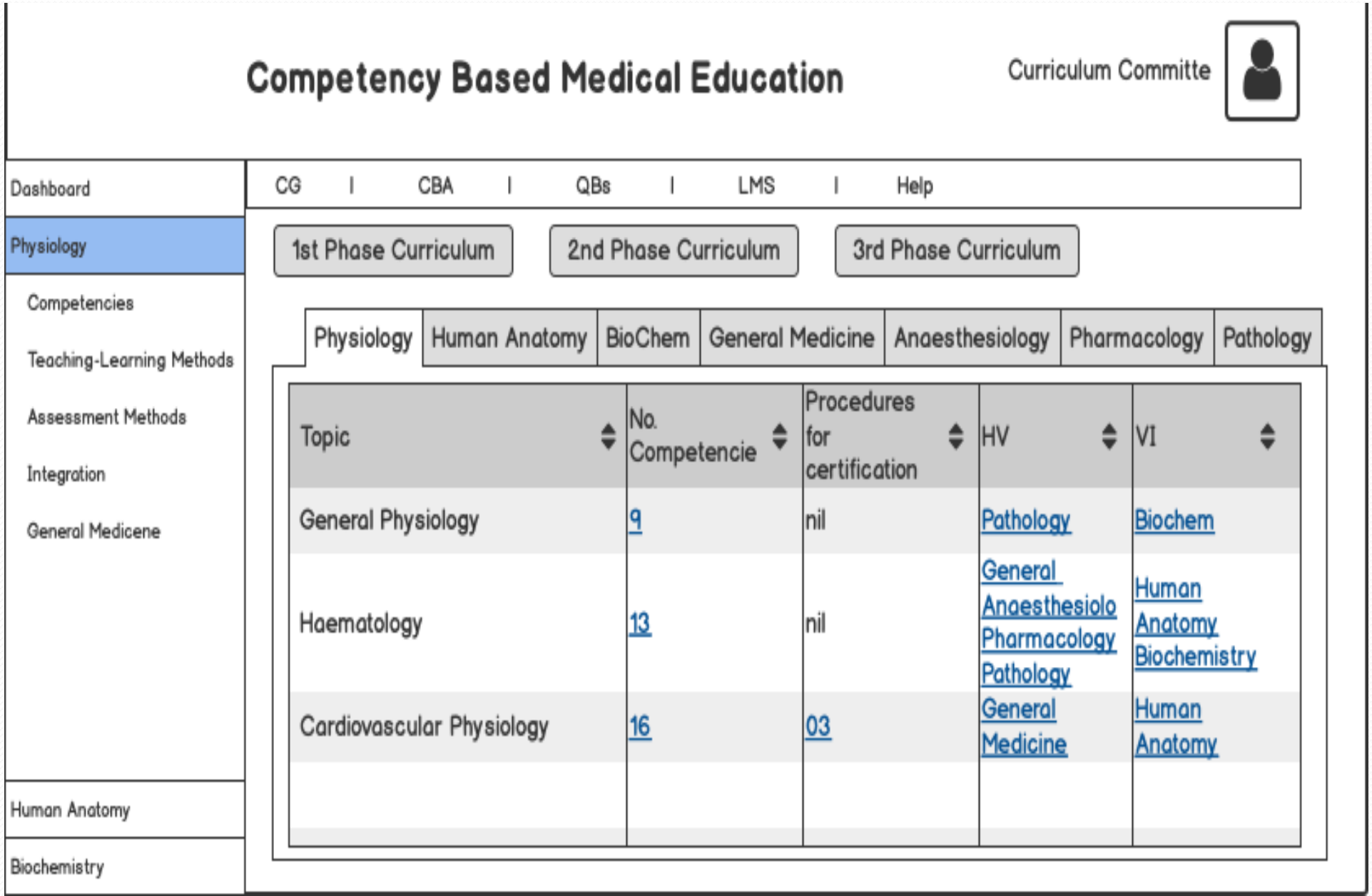


To compute the LO attainment, define parameters such as Students Performance Thresholds, Weightages, etc

Curricular Governance



To compute the LO attainment, define parameters such as Students Performance Thresholds, Weightages, etc


Competency Based Medical Education
Curriculum Committe
Dashboard
Physiology
Competencies
Teaching-Learning Methods
Assessment Methods
Integration
General Medicene
Human Anatomy
Biochemistry
CG | CBA | QBs | LMS | Help
1st Phase Curriculum
2nd Phase Curriculum
3rd Phase Curriculum
Physiology
Human Anatomy
BioChem
General Medicine
Anaesthesiology
Pharmacology
Pathology
Topic
No. Competencie
Procedures for certification
HV
VI
General Physiology
9
nil
Pathology
Biochem
Haematology
13
nil
General Anaesthesiolo Pharmacology Pathology
Human Anatomy Biochemistry
Cardiovascular Physiology
16
03
General Medicine
Human Anatomy

Topic Outcome

Status

Select Batch

Competency based Curriculum

Select Course

- ✓ PY - 2019 - Year I - CBC Cardiovascular Physiology
- PY - 2019 - Year I - CBC Endocrine Physiology
- PY - 2019 - Year I - CBC Gastro-intestinal Physiology
- PY - 2019 - Year I - CBC General Physiology
- PY - 2019 - Year I - CBC Haematology
- PY - 2019 - Year I - CBC Integrated Physiology
- PY - 2019 - Year I - CBC Nerve PYd Muscle Physiology
- PY - 2019 - Year I - CBC Neurophysiology
- PY - 2019 - Year I - CBC Renal Physiology
- PY - 2019 - Year I - CBC Reproductive Physiology
- PY - 2019 - Year I - CBC Respiratory Physiology

Approved and Final

Update

Topic Outcome | Institution Goals

Topic Outcome for PY - Physiology

Name	Description		Associated Levels of competency	Associated Domains of learning
CBC PY 5. 1	Describe the functional anatomy of heart including chambers, sounds; and Pacemaker tissue and conducting system.		KH - Knows How	Knowledge
CBC PY 5. 2	Describe the properties of cardiac muscle including its morphology, electrical, mechanical and metabolic functions	Topic Level Outcomes (TLO)	KH - Knows How	Knowledge
CBC PY 5. 3	Discuss the events occurring during the cardiac cycle	Topic Level Outcomes (TLO)	KH - Knows How	Knowledge
CBC PY 5. 4	Describe generation, conduction of cardiac impulse	Topic Level Outcomes (TLO)	KH - Knows How	Knowledge
CBC PY 5. 5	Describe the physiology of	Topic Level Outcomes (TLO)	KH - Knows How	Knowledge

Topic Outcome

Status

Select Batch

Human Anatomy

Select Course

- ✓ Anatomical terminology
- Axilla, Shoulder and Scapular region
- Features of individual bones (Upper Limb)
- General Features of lymphatic system
- General features of Muscle
- General features of bones And Joints
- General features of skin and fascia
- General features of the cardiovascular system
- Introduction to the nervous system
- Pectoral region

Approved and Final

Update

Topic Outcome | PO and Topic C

Topic Outcome for Anat

Name	Description		Associated Levels of Competencies
AN1.1	Demonstrate normal ar position, various planes, relation,comparison, laterality And movement in our body"		SH - Shows how
AN1.2	Describe composition of bone and bone marrow	Topic Level Outcomes (TLO)	KH - Knows how

History

Topic Outcome

Select Batch

Biochemistry

Basic Biochemistry
✓ Chemistry and Metabolism of Carbohydrates
Chemistry and Metabolism of Lipids
Chemistry and Metabolism of Proteins
Enzyme
Extracellular Matrix
Metabolism and homeostasis
Molecular biology
Nutrition
Oncogenesis and immunity

Topic Outcome | PO and Topic C

Status

Approved and Final

Update

Topic Outcome for Cher ohydrates

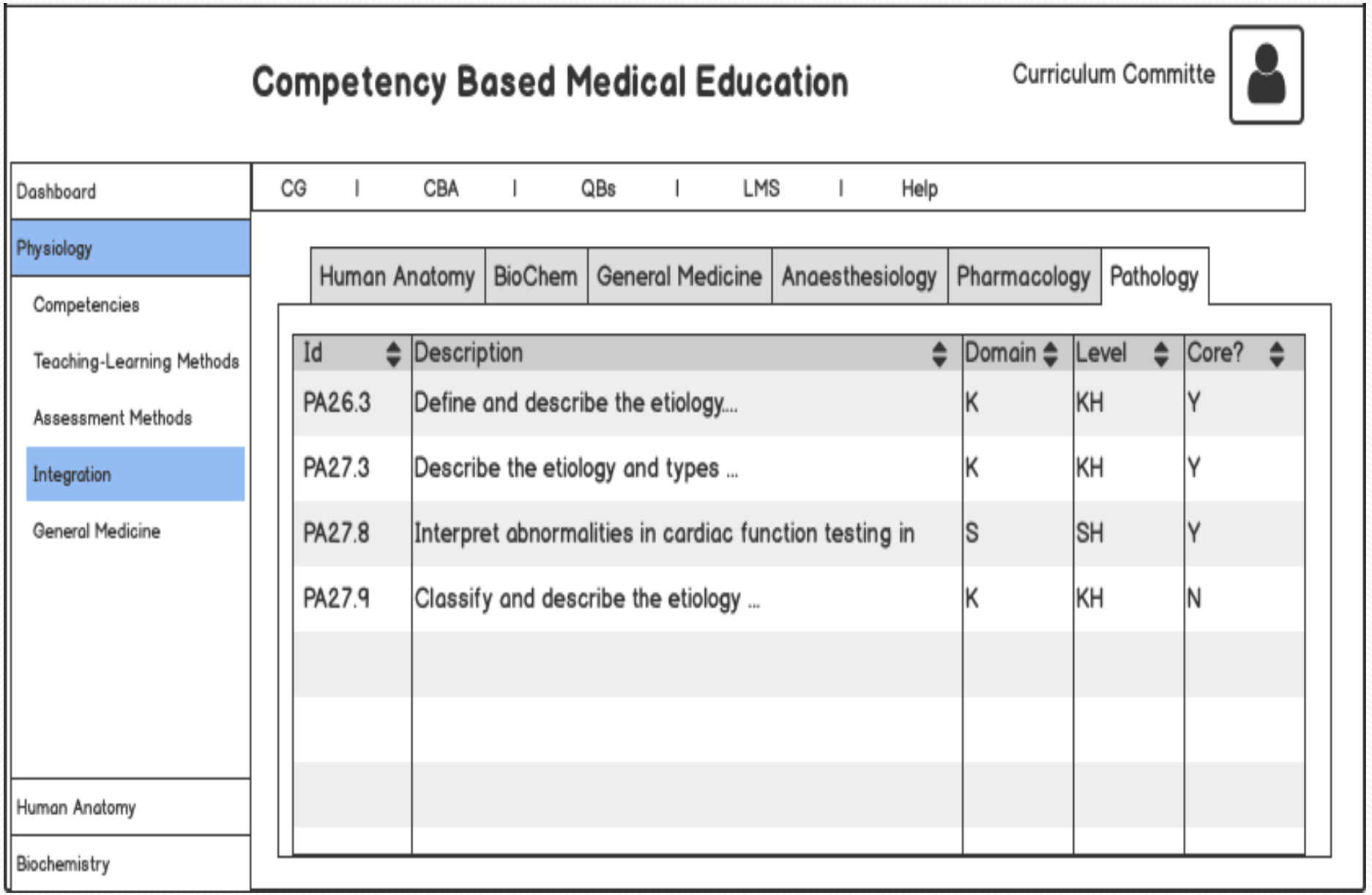
Name	Description		Associated Levels of Competencies
BI3.1	Discuss and differentiate monosaccharides, di-saccharides andpolysaccharides giving examples of main carbohydrates as energy fuel,structural element and storage in the human body"	Topic Level Outcomes (TLO)	KH - Knows how
BI3.10	Interpret the results of blood glucose levels and other laboratoryinvestigations related to disorders of carbohydrate metabolism."	Topic Level Outcomes (TLO)	KH - Knows how
BI3.2	Describe the processes involved in digestion and assimilation ofcarbohydrates and storage"	Topic Level Outcomes (TLO)	KH - Knows how

Topic Outcome | PO and Topic Outcome Mappings

Topic Outcome for PY - 2019 - Year I - CBC General Physiology

Name	Description	Topic Level Outcomes (TLO)	Associated Levels of Competencies
CBC PY 1.1	Describe the structure and functions of a mammalian cell	Topic Level Outcomes (TLO) CBC PY 1.1.TLO1 CBC PY 1.1.TLO2	KH - Knows how KH - Knows how KH - Knows how
CBC PY 1.2	Describe and discuss the principles of homeostasis	Topic Level Outcomes (TLO)	KH - Knows how
CBC PY 1.3	Describe inter-cellular communication	Topic Level Outcomes (TLO)	KH - Knows how
CBC PY 1.4	Describe apoptosis – programmed cell death	Topic Level Outcomes (TLO)	KH - Knows how
CBC PY 1.5	Describe and discuss transport mechanisms across cell membranes	Topic Level Outcomes (TLO)	KH - Knows how
CBC PY 1.6	Describe the fluid compartments of the body, its ionic composition & measurements	Topic Level Outcomes (TLO)	KH - Knows how
CBC PY 1.7	Describe the concept of pH & Buffer systems in the body	Topic Level Outcomes (TLO)	KH - Knows how
CBC PY 1.8	Describe and discuss the molecular basis of resting membrane potential and action potential in excitable tissue	Topic Level Outcomes (TLO)	KH - Knows how
CBC PY 1.9	Demonstrate the ability to describe and discuss the methods used to demonstrate the functions of the cells and its products, its communications and their applications in Clinical care and research.	Topic Level Outcomes (TLO)	KH - Knows how

Horizontal and Vertical Integration



Course Outcome level Attainment settings for PY - Master - Year I - CBC General Physiology

More Capture T

Back

Enable Edit Settings

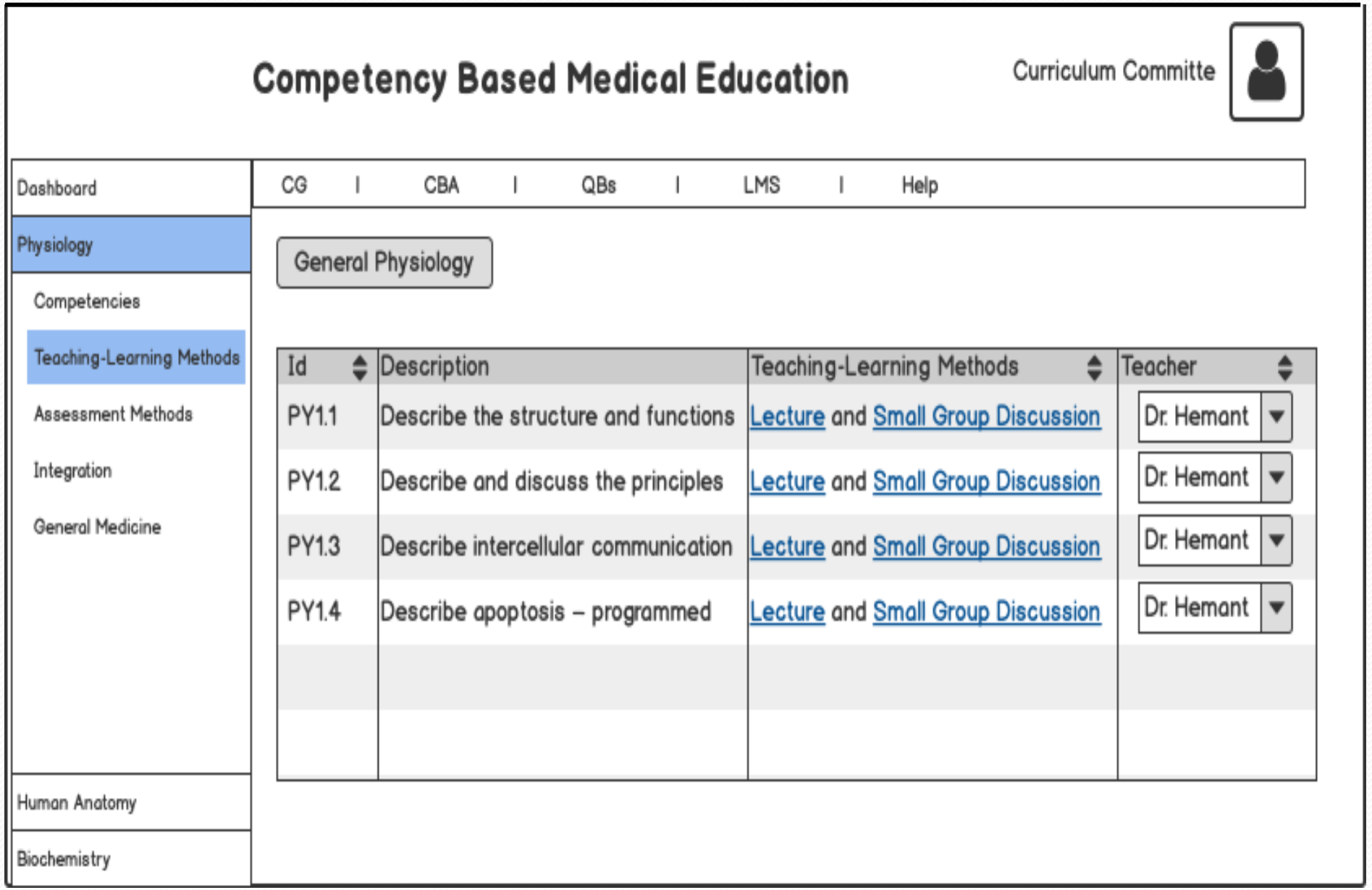
Return to List

Direct Assessments | Target of attainment and Levels | Bucket Settings

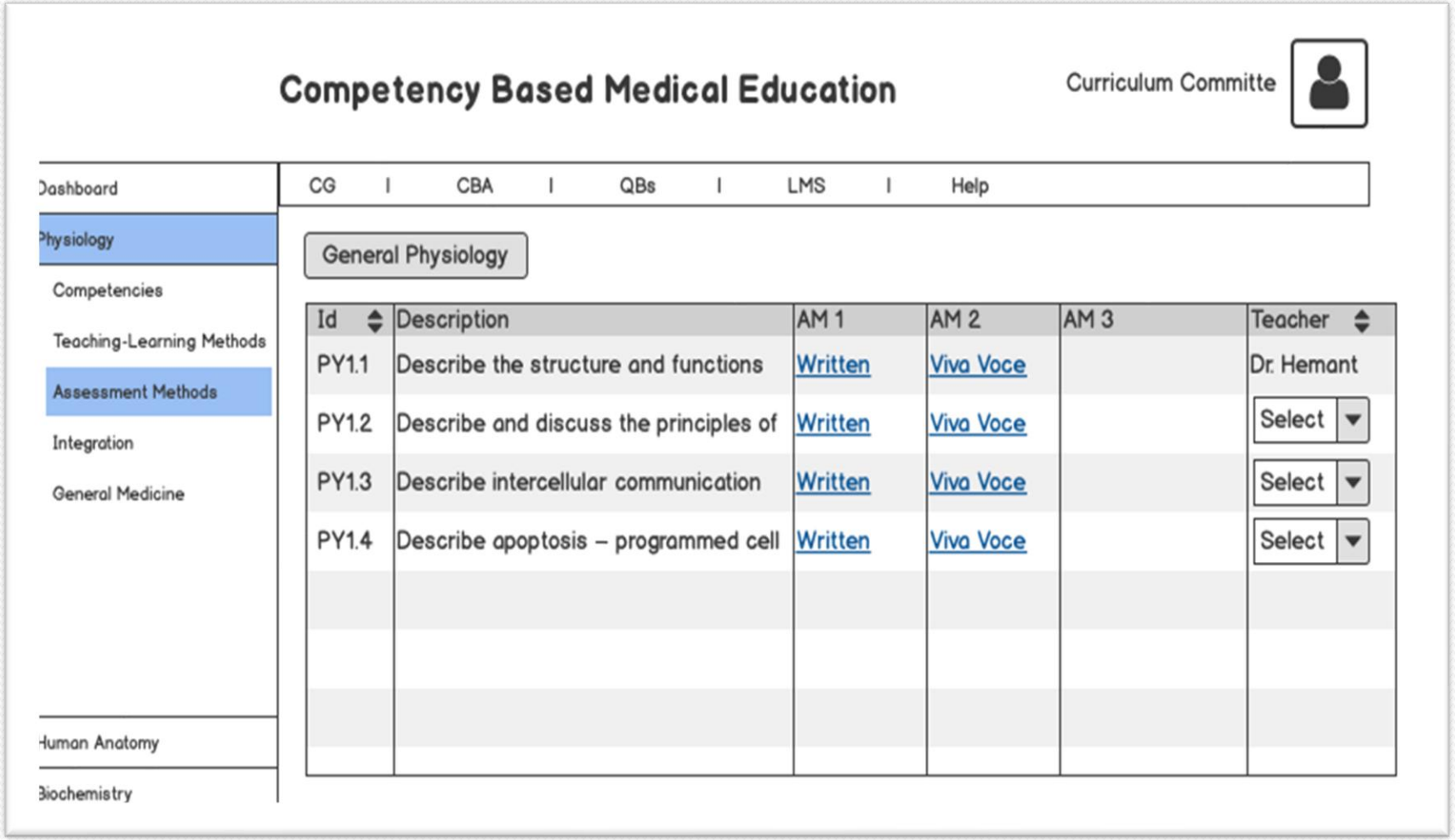
Direct Assessments

Course Outcomes	Student Performance Threshold % [?]
CBC PY 1.1	60
CBC PY 1.1	50
CBC PY 1.2	63
CBC PY 1.2	50
CBC PY 1.3	60
CBC PY 1.3	50

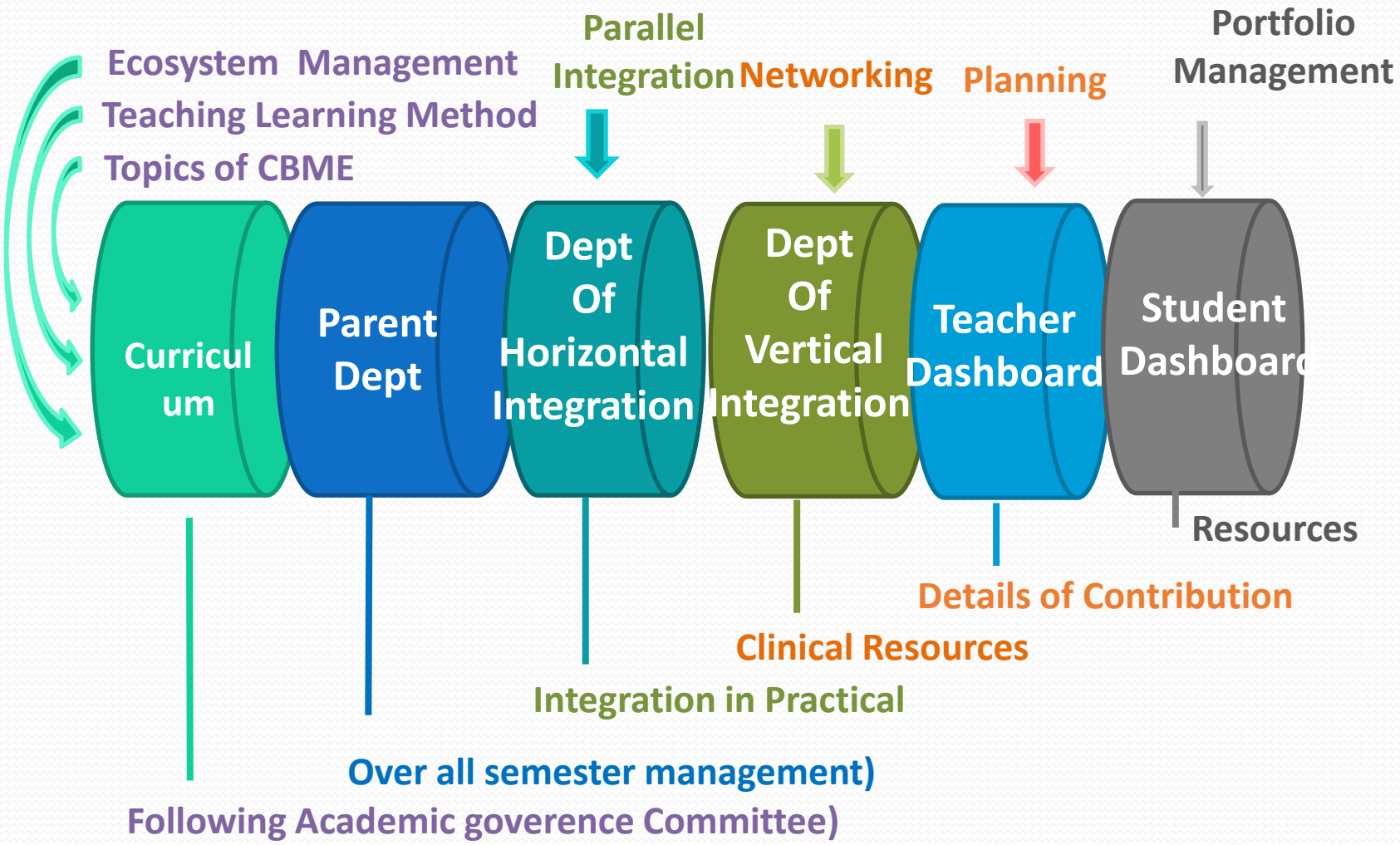
It can be programmed to map suitable Teaching Learning Methods



It can be programmed to map suitable Assessment Methods

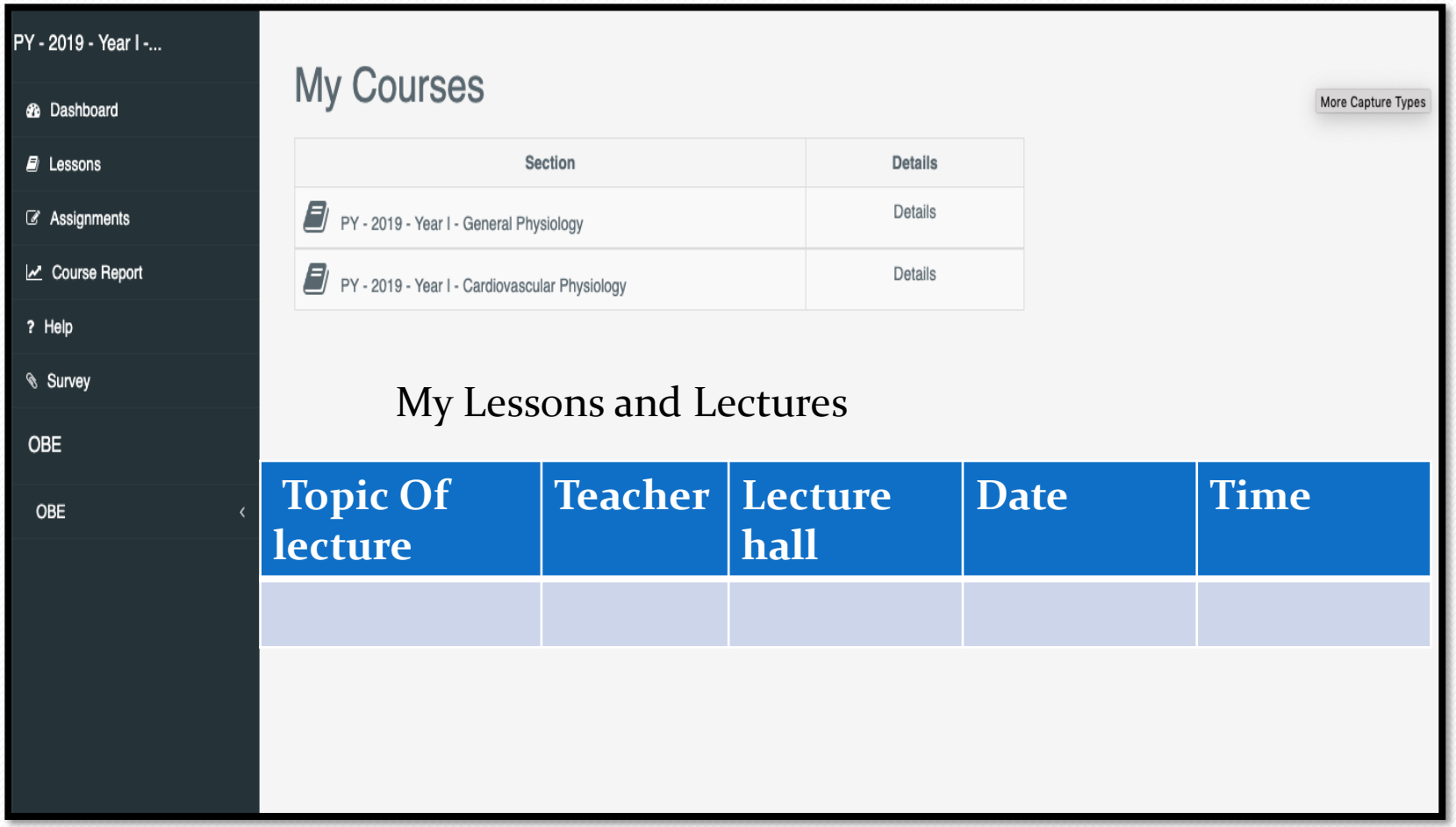


Academic Governance



Academic goverence Committee in Feed back loop)

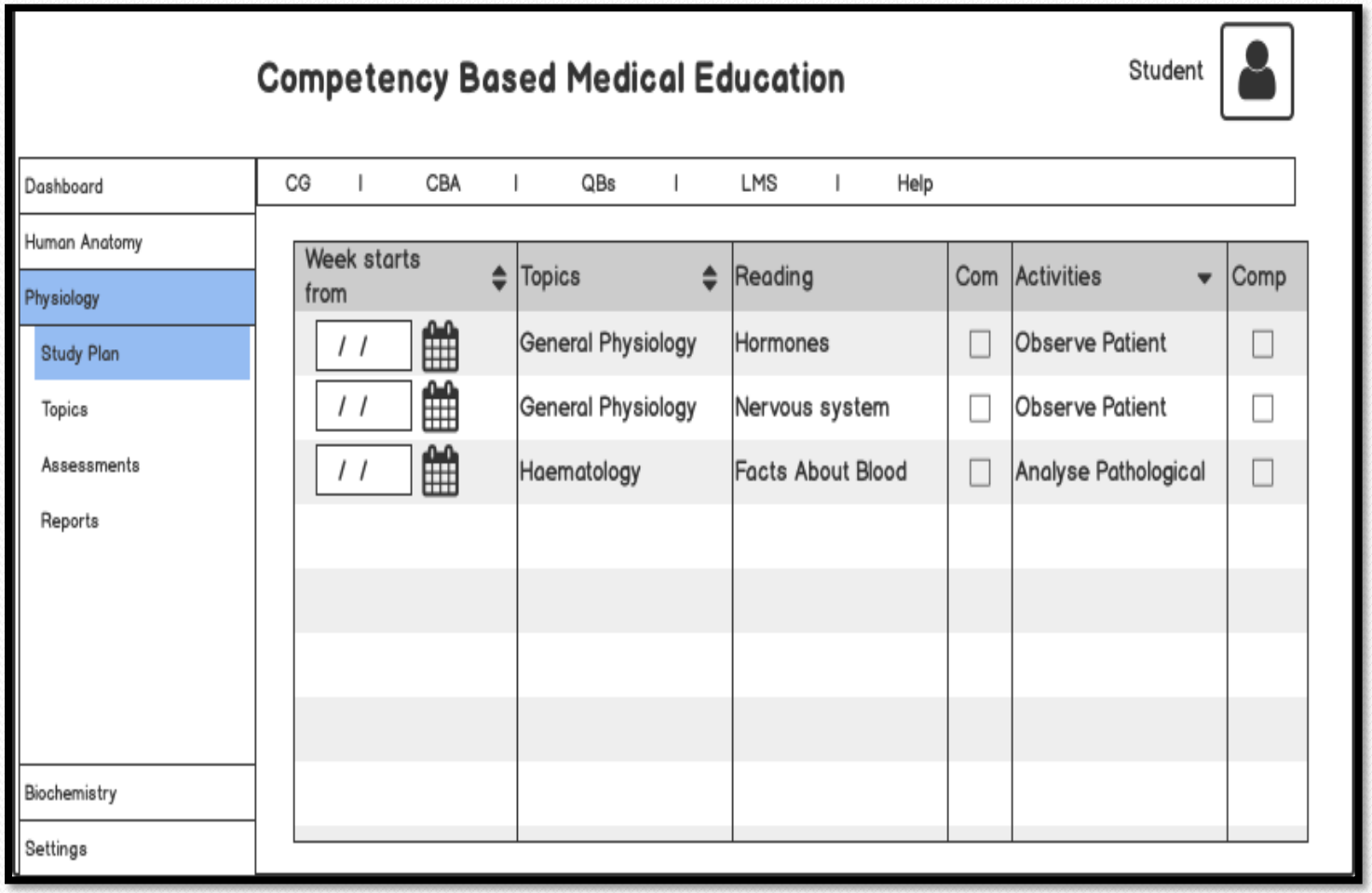
Student Dashboard



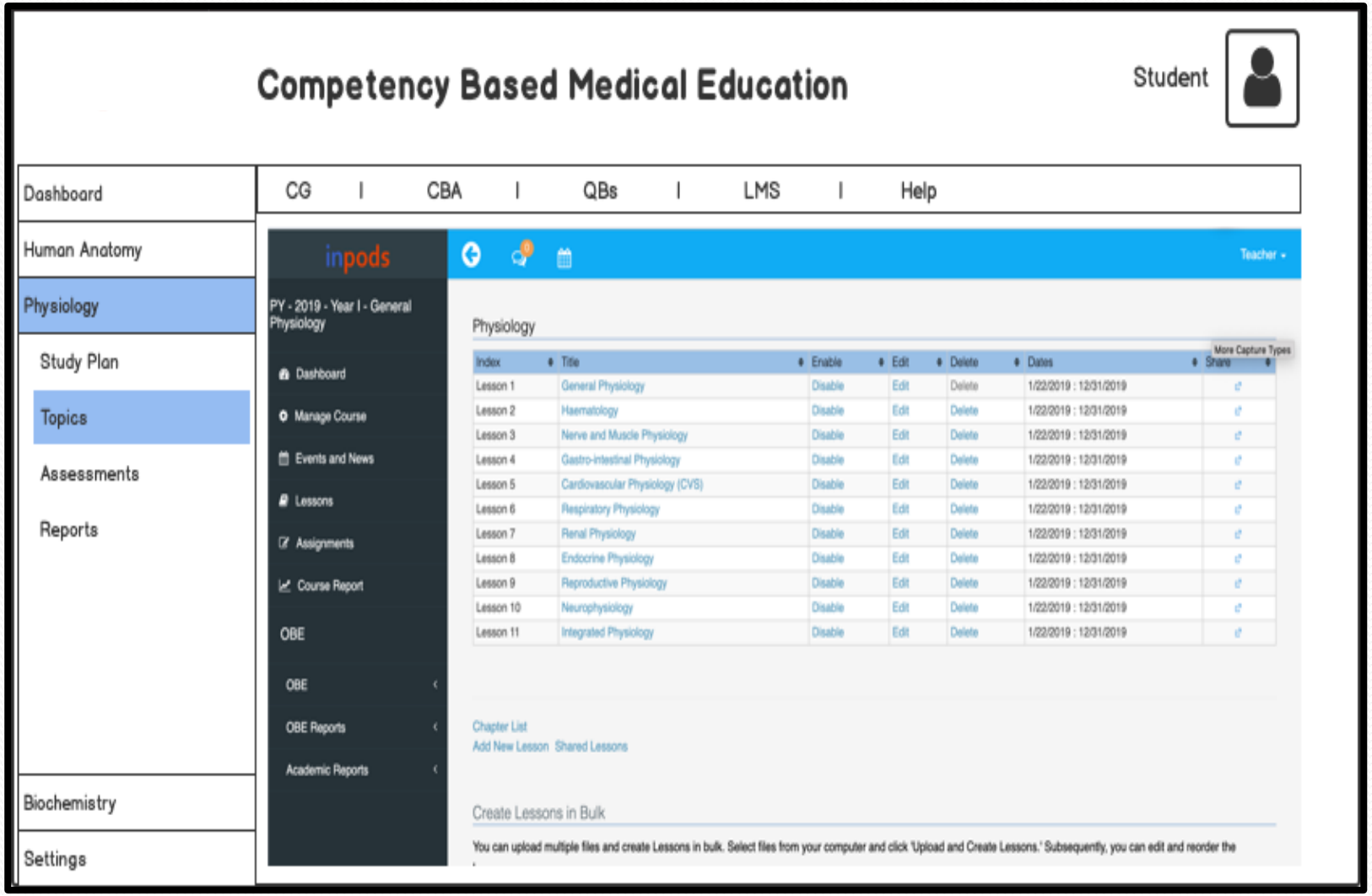
My Lessons and Lectures

Topic Of lecture	Teacher	Lecture hall	Date	Time

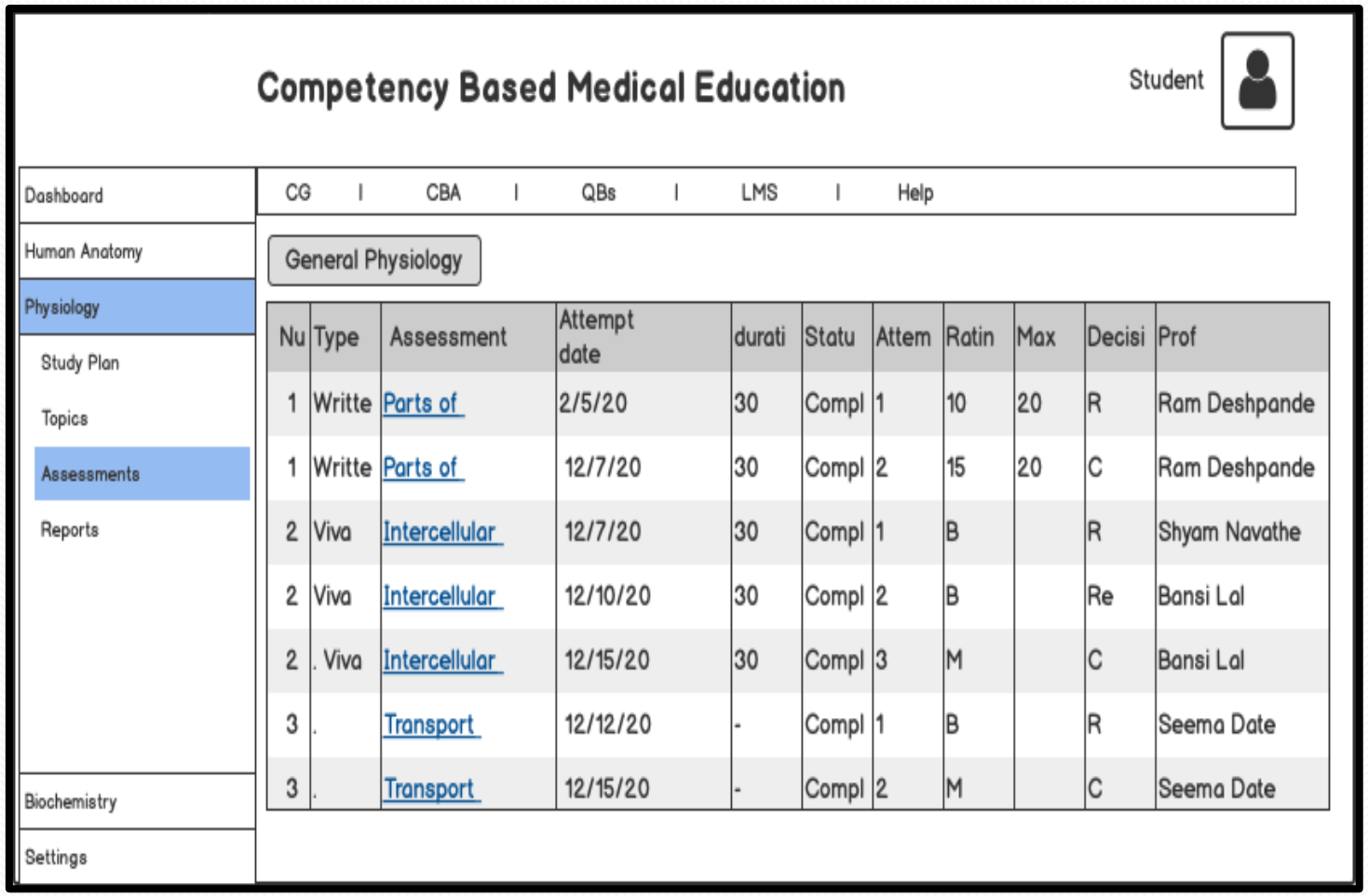
It can be programmed to map suitable Teaching Learning Methods



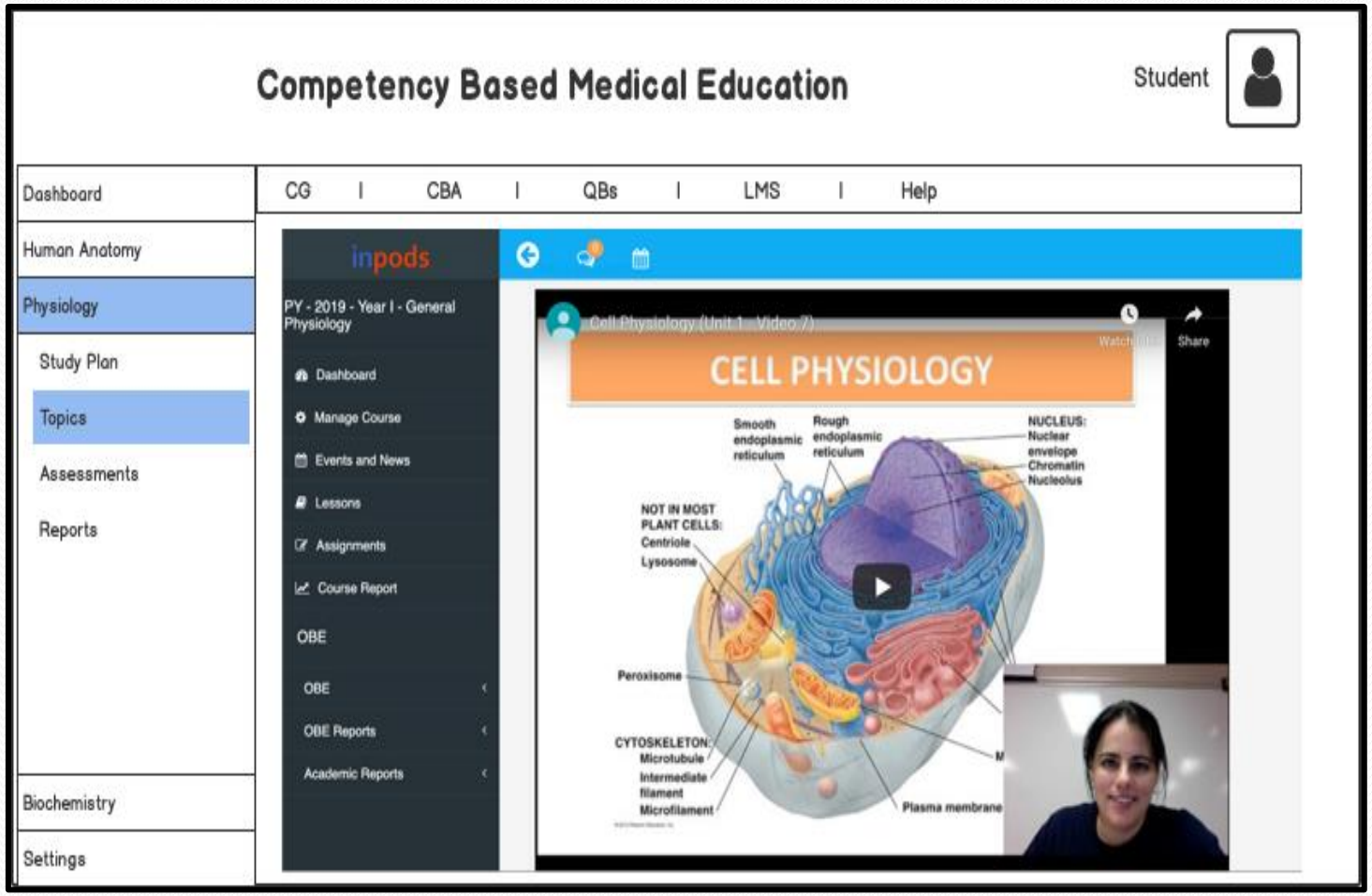
It can be programmed to map to assigned Teacher



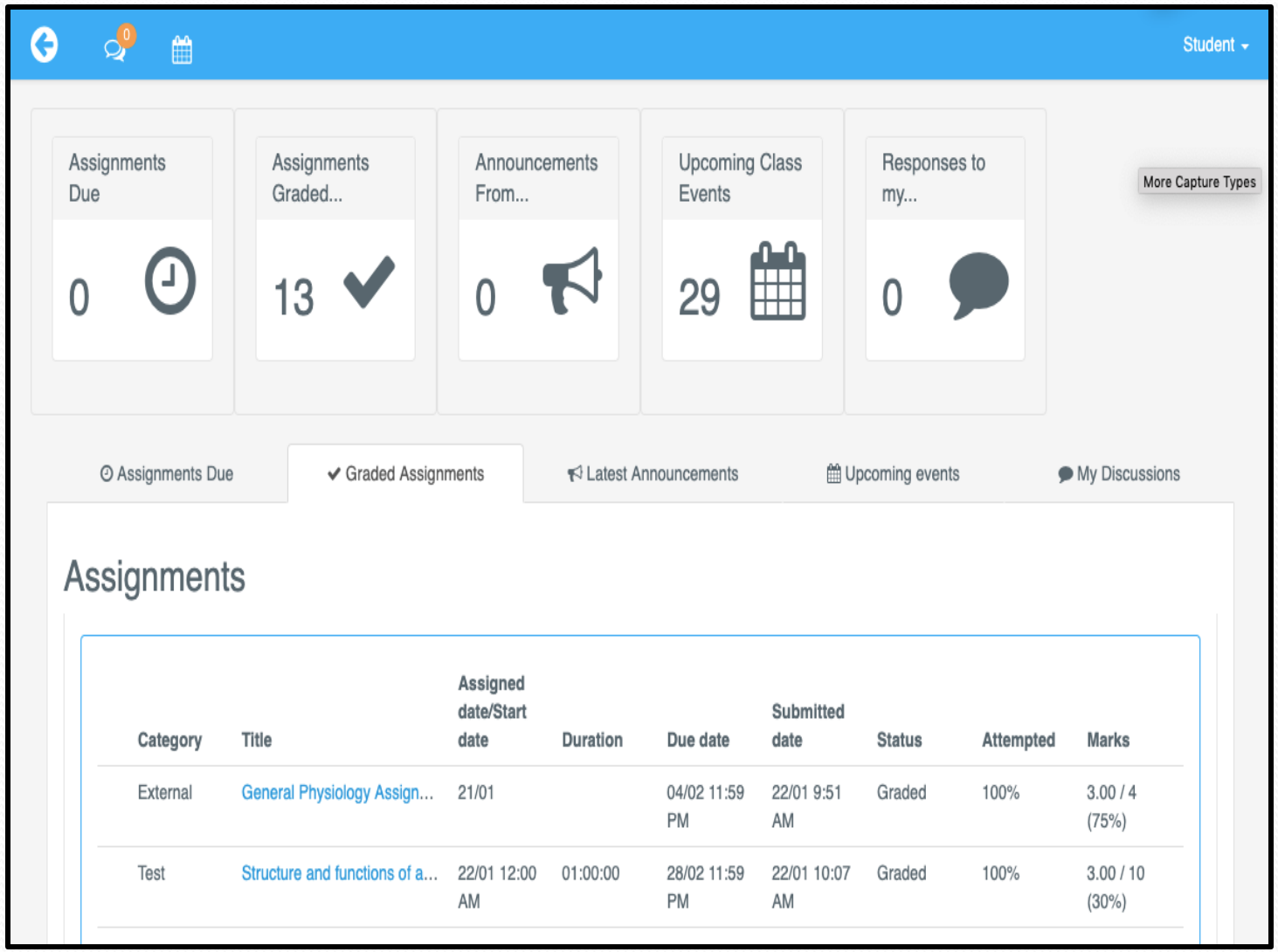
It can be programmed to map to assigned Teacher



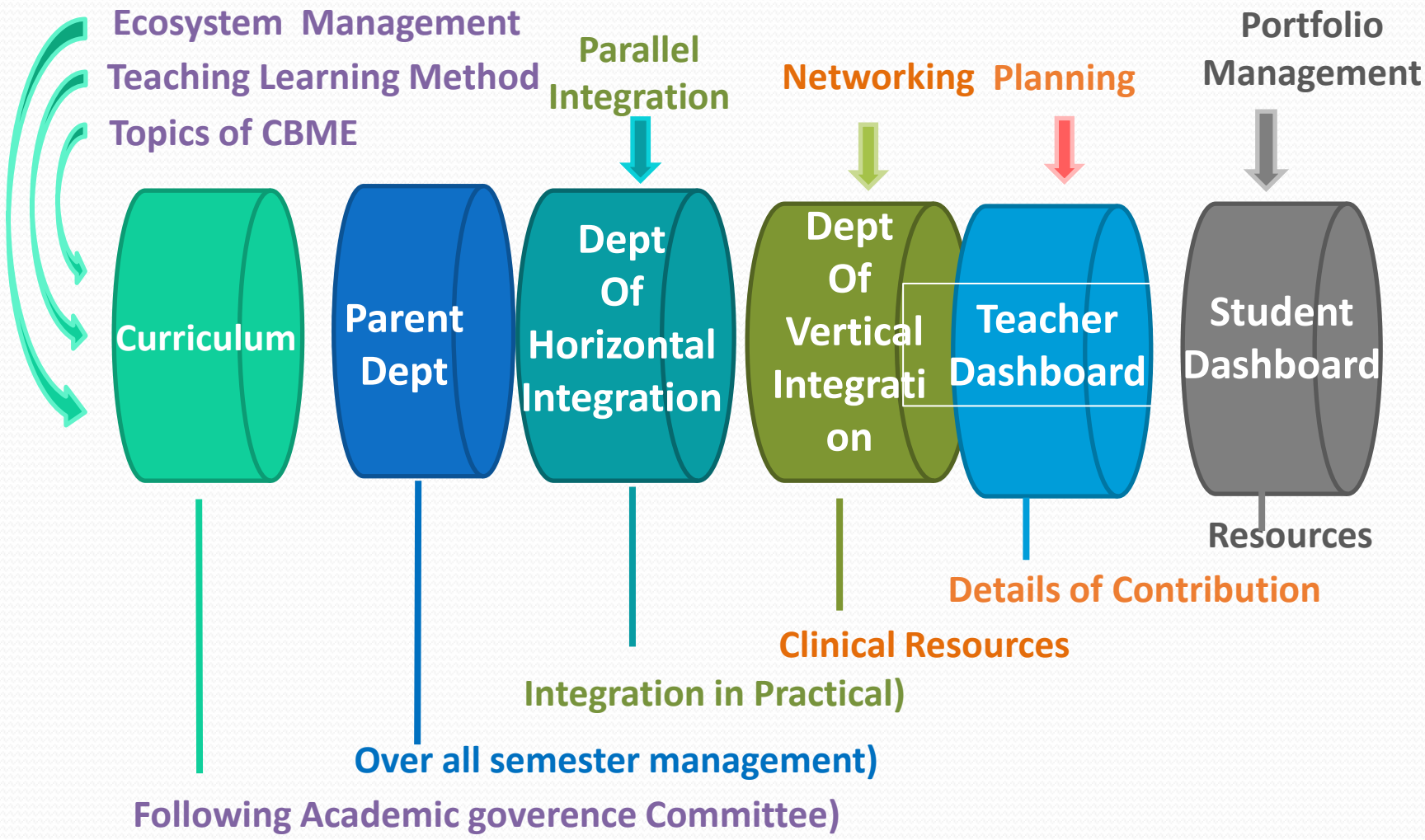
It can be programmed to map suitable Resources



Student’s Dashboard of a Course

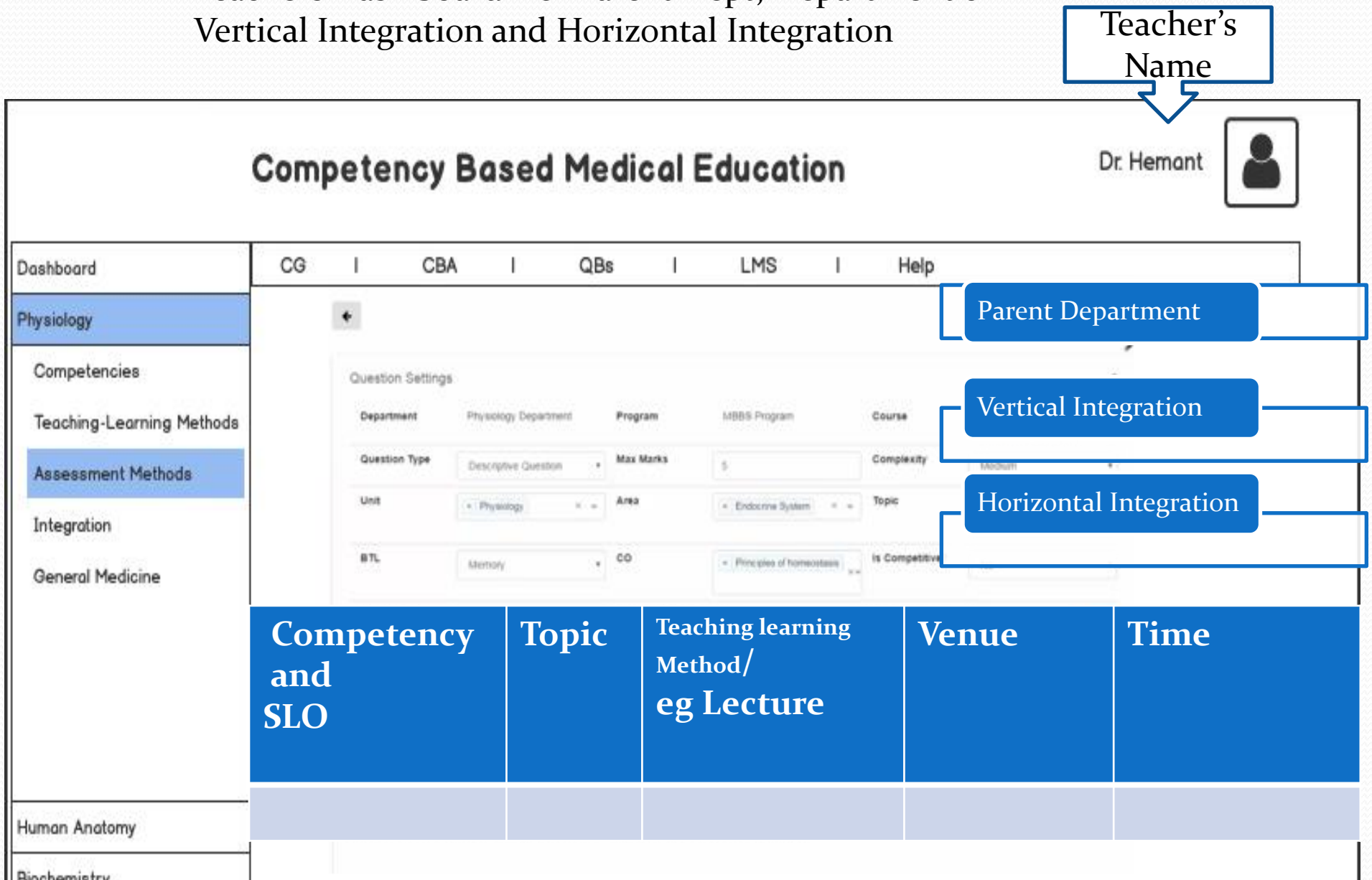


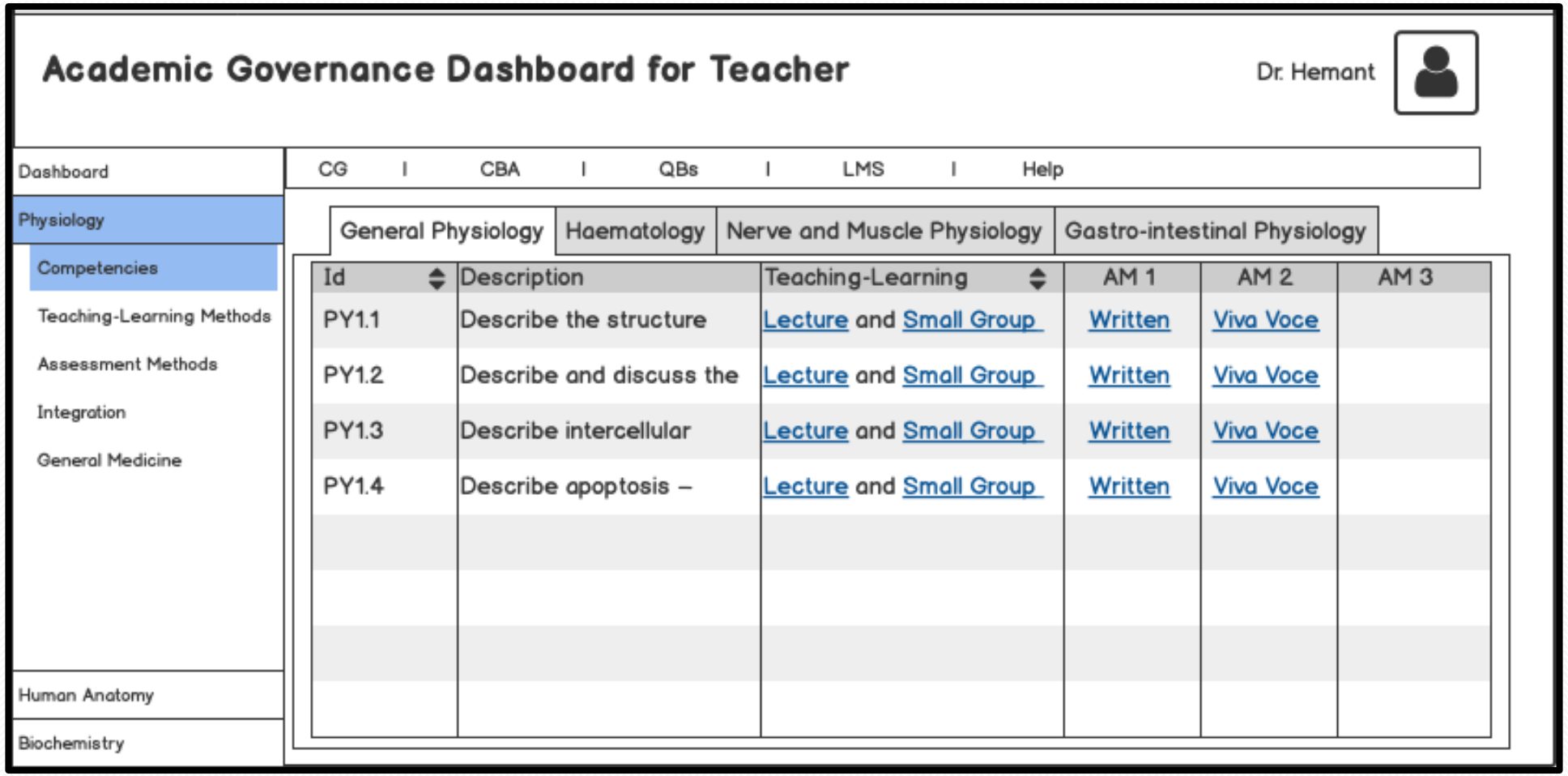
Academic Governance

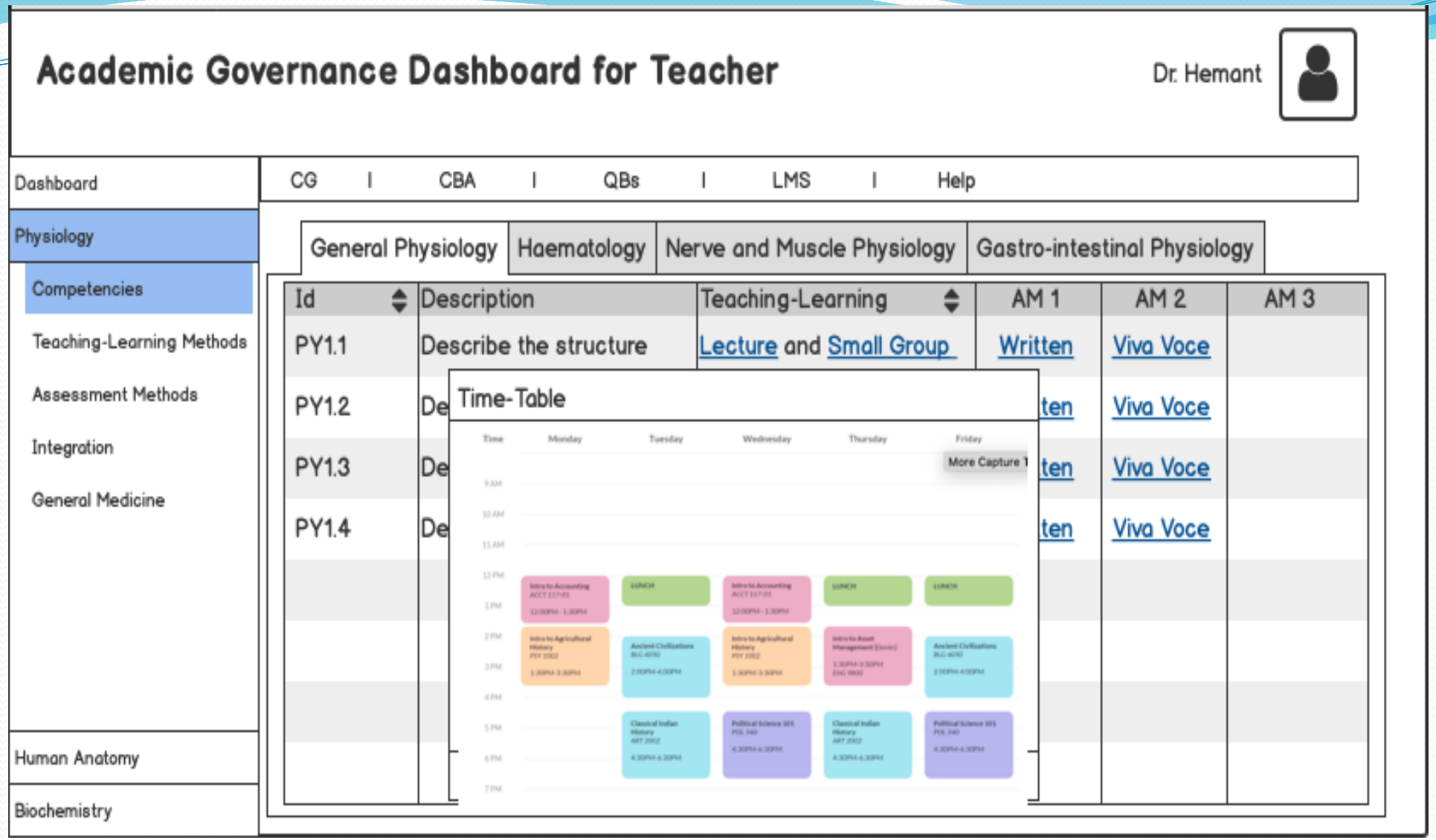


Academic goverence Committee in Feed back loop)

Teachers Dash board For Parent Dept, Department of Vertical Integration and Horizontal Integration




Academic Governance Dashboard for Teacher
Dr. Hemant
Dashboard
Physiology
Competencies
Teaching-Learning Methods
Assessment Methods
Integration
General Medicine
Human Anatomy
Biochemistry
CG | CBA | QBs | LMS | Help
General Physiology
Haematology
Nerve and Muscle Physiology
Gastro-intestinal Physiology
Id
Description
Teaching-Learning
AM 1
AM 2
AM 3
PY1.1
Describe the structure
Lecture and Small Group
Written
Viva Voce
PY1.2
Describe and discuss the
Lecture and Small Group
Written
Viva Voce
PY1.3
Describe intercellular
Lecture and Small Group
Written
Viva Voce
PY1.4
Describe apoptosis –
Lecture and Small Group
Written
Viva Voce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Id
Description
Teaching-Learning
AM 1
AM 2
AM 3
PY1.1
Describe the structure
Lecture and Small Group
Written
Viva Voce
PY1.2
PY1.3
PY1.4
Time-Table
Time
Monday
Tuesday
Wednesday
Thursday
Friday
More Capture

Competency Based Medical Education

Dr. Hemant

Dashboard

Physiology

- Competencies
- Teaching-Learning Methods
- Assessment Methods
- Integration
- General Medicine

Human Anatomy

Biochemistry

CG | CBA | QBs | LMS | Help

General Physiology

Numb	Type	Assessment	Attempt date	duration	Status
1	Written	Parts of Mitochondrea	12/5/20	30	Complete
2	Viva	Intercellular communication	12/7/20	30	In Progress
3	Logbook	Transport mechanism across	12/12/20	-	Not Started

Competency Based Medical Education

Dr. Hemant

Dashboard

Physiology

- Competencies
- Teaching-Learning Methods
- Assessment Methods
- Integration
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Human Anatomy

Biochemistry

CG | CBA | QBs | LMS | Help

Assessments and Activities > Normal Respiratory System

Previous Student Next Student

You are grading the logbook of Ganesh Iyer

Grade using Rubric

4.1 : Examination of the Respiratory System in normal persons

4.1.1 : Attend teaching session

☑ Mark completed

4.1..2: Attend practical session

☑ Mark completed

4.1..3: Review video

☐ Mark completed

4.1..4: Demonstrate examinatory of respiratory system

☑ Mark completed

Respiratory exa

4.1..5: Interpret a set of patterns

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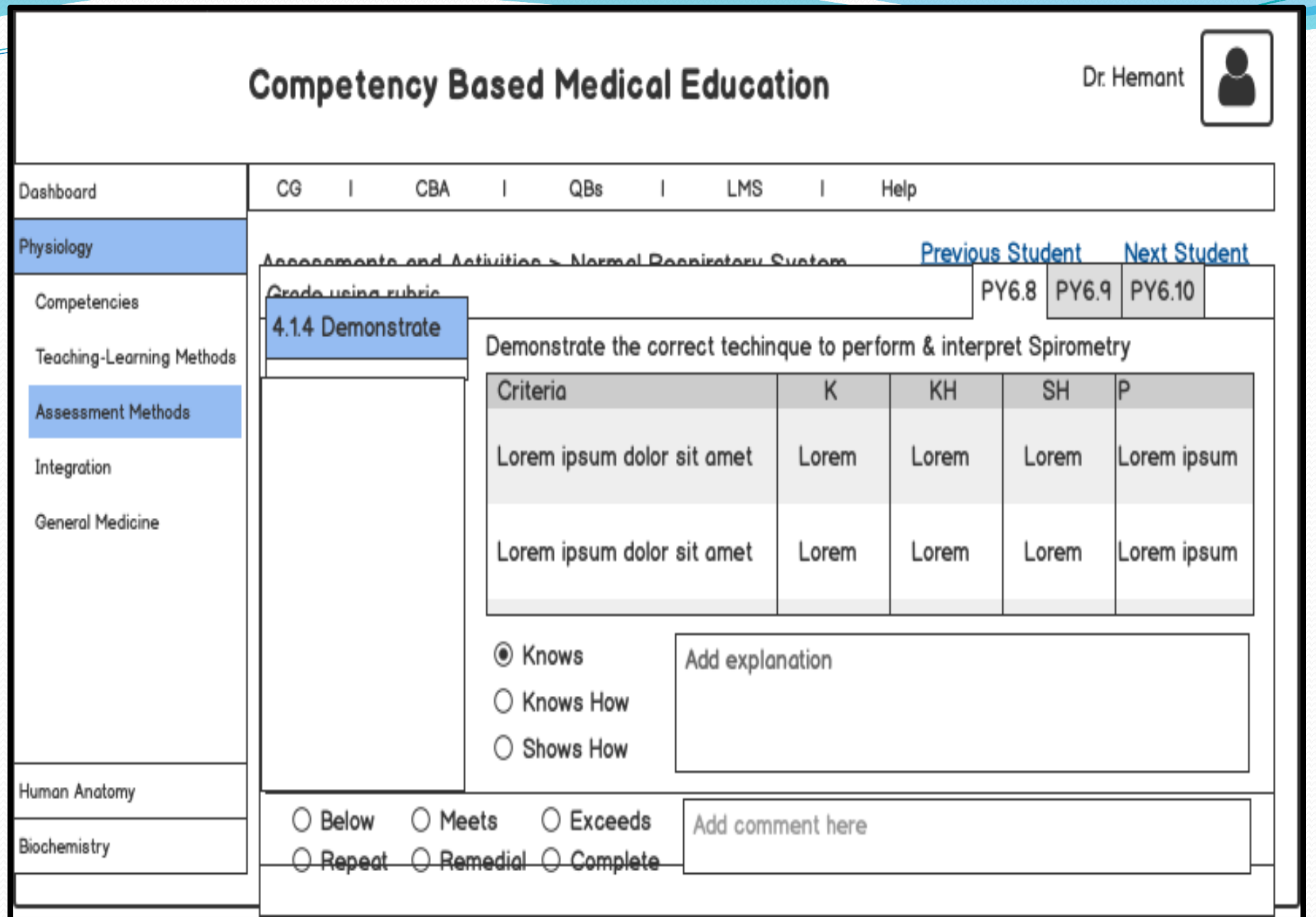

Competency Based Medical Education
Dr. Hemant
Dashboard
Physiology
Competencies
Teaching-Learning Methods
Assessment Methods
Integration
General Medicine
Human Anatomy
Biochemistry
CG | CBA | QBs | LMS | Help
Previous Student
Next Student
PY6.8
PY6.9
PY6.10
4.1.4 Demonstrate
Demonstrate the correct techinque to perform & interpret Spirometry
Criteria
K
KH
SH
P
Lorem ipsum dolor sit amet
Lorem
Lorem
Lorem
Lorem ipsum
Lorem ipsum dolor sit amet
Lorem
Lorem
Lorem
Lorem ipsum
Knows
Knows How
Shows How
Add explanation
Below
Meets
Exceeds
Repeat
Remedial
Complete
Add comment here

Competency Based Medical Education

Dr. Hemant

Dashboard

Physiology

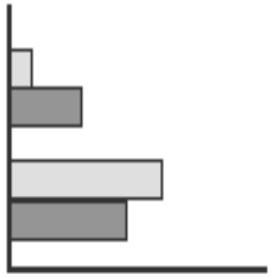
- Competencies
- Teaching-Learning Methods
- Assessment Methods
- Integration
- General Medicine

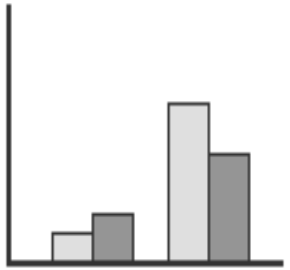
Human Anatomy

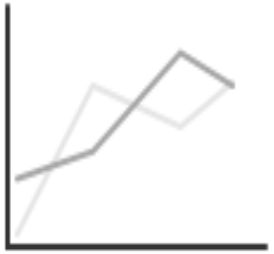
Biochemistry

CG | CBA | QBs | LMS | Help

Assessments and Activities > Transport Mechanism Across Membrane







Nu	Name	Start date	end date	duration	Repeat	Status	Perf	Decision
24	Shama Patil	12/5 12:00	12/5 12:25	25	1	Graded	15/20	Complete
24	Ganesh Iyer	12/5 12:00	12/5 12:30	30	1	Graded	5/20	Remedial
213	Ramnath Guha	12/5 12:00	12/5 12:30	30	1	Graded	10/20	Repeat
38	Hamid Ansari	12/5 12:00	12/5 12:30	30	1	Graded	18/20	Complete

Stay Safe !

Stay Home !

Dr Arun Jamkar

https://www.arunjamkar.com

PERSISTENT