Outcome based Approach to Student Learning

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1. Introduction

2. Student Learning Perspective

3. Outcome based approaches to student learning

4. Progress so far

As part of the move towards the 4-year undergraduate curriculum, the University is adopting an outcome based approach to student learning.

Commonplace in many universities in the United Kingdom, the United States of America and Australia.

Professional accrediting agencies are adopting outcome based approaches.

The University has agreed with the UGC to adopt an Outcome based approach in the development of the new 4-year undergraduate curriculum in Hong Kong.

"The UGC's goal in promoting outcome based approaches is simple and straightforward – improvement and enhancement in student learning and teaching quality"
(Alice Lam, Chair, UGC, May 2006)

Good teaching at The University of Hong Kong (HKU) has always essentially been outcome based.

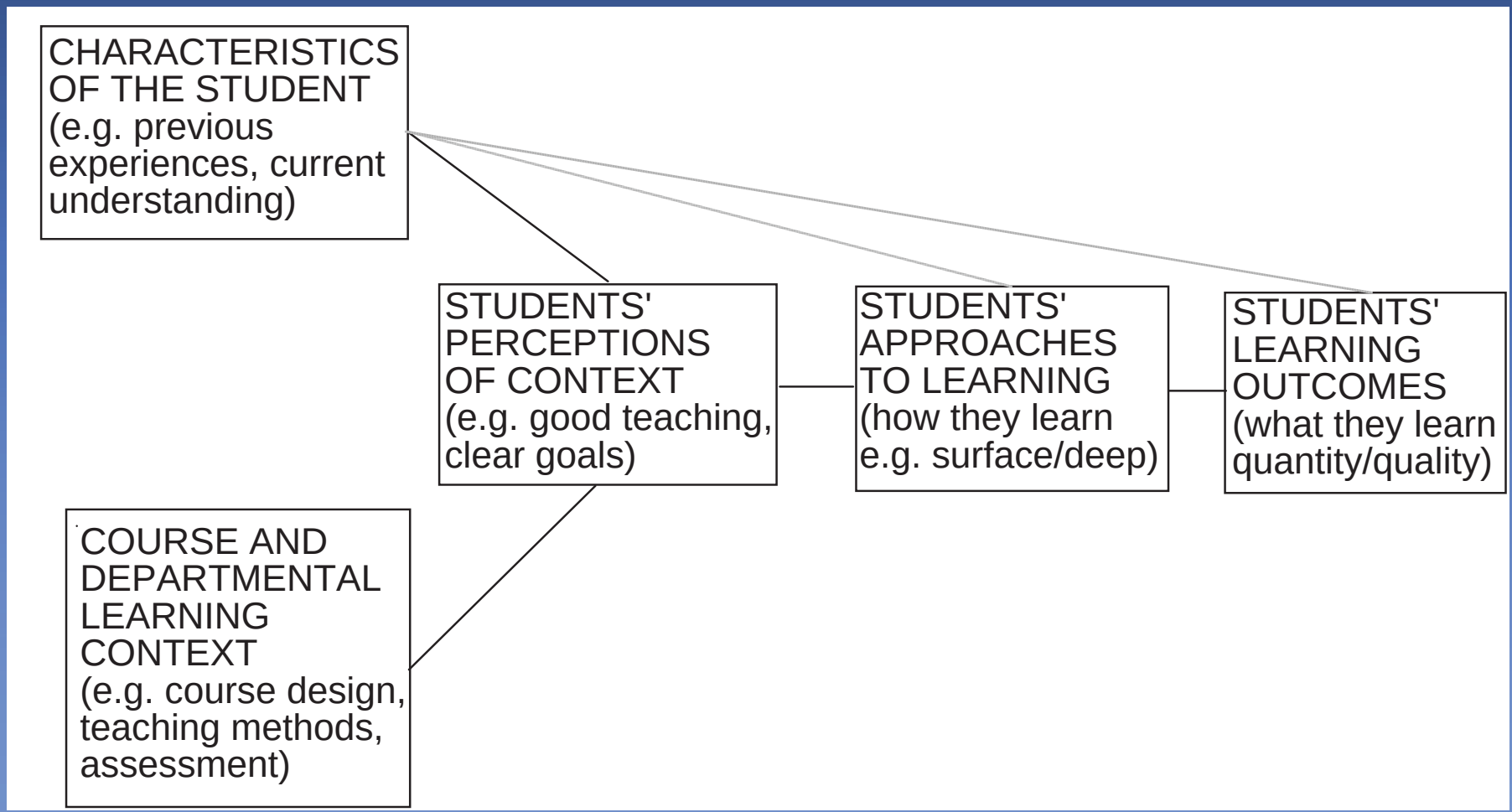
Good teachers at HKU have always thought carefully about:

- what they intend their students to learn in their course, and *how that fits into the programme as a whole*,
- how they can design teaching and learning activities linked to what they intend their students to learn, and finally
- how they can asses students in ways to test that learning.

If this is what good teaching is, how can we help good teachers be more explicit – and how can we help more teachers become good teachers?

Overview of the student learning perspective

Figure 1: Model of Student Learning



HKU's Educational Aims (University Level)

(Learning Outcomes)

HKU has identified a set of educational aims and associated learning outcomes for its undergraduate curriculum.

These were initially proposed in the report *Transforming Student Learning* and have been endorsed by the University community.

They are to enable students to develop capabilities in:

- Critical intellectual inquiry and life-long learning
- Tackling novel situations and ill-defined problems
- Critical self-reflection and greater understanding of others
- Communication and collaboration
- Intercultural communication, multicultural understanding and global citizenship
- Leadership and advocacy for the improvement of the human condition

HKUCEQ

Key Scales:

- Educational Aims
- Approaches to Study
  - Surface (short term reproduction)
  - Deep (longer term understanding)
- Student Learning Experiences
  - Good teaching
  - Clear Goals and Standards
  - Appropriate Workload
  - Appropriate Assessment
- Overall satisfaction

Factor Analysis of Experiences of T & L Context and Approach to Study

Scale	Factors	
	1	2
Perceptions of Context		
Good Teaching	.76	
Clear Goals and Standards	.67	
Appropriate Workload		-.54
Appropriate Assessment		-.62
Approach to Study		
Surface Approach		.73
Deep Approach	.53	
HKU Educational Aims	.86	
Overall satisfaction	.77	

Principal Components, Variamax Rotation

At HKU:

1. the achievement of the educational aims and overall satisfaction is associated with:
    - the adoption of deep approaches to study
    - perceptions that the teaching is good
    - perceptions that the goals (learning outcomes) are clear
    - perceptions that standards of assessment are clear

2. the adoption of a surface approach is associated with:
    - perceptions that the workload is too high to understand it all
    - perceptions that assessment tests short term reproduction rather than longer term understanding

The results of the survey suggest that if students:

- are clear about the goals and learning outcomes
- perceive that the teaching is good
- are clear about the standards of work expected of them – standards of assessment
- perceive that assessment tests understanding rather than short term reproduction

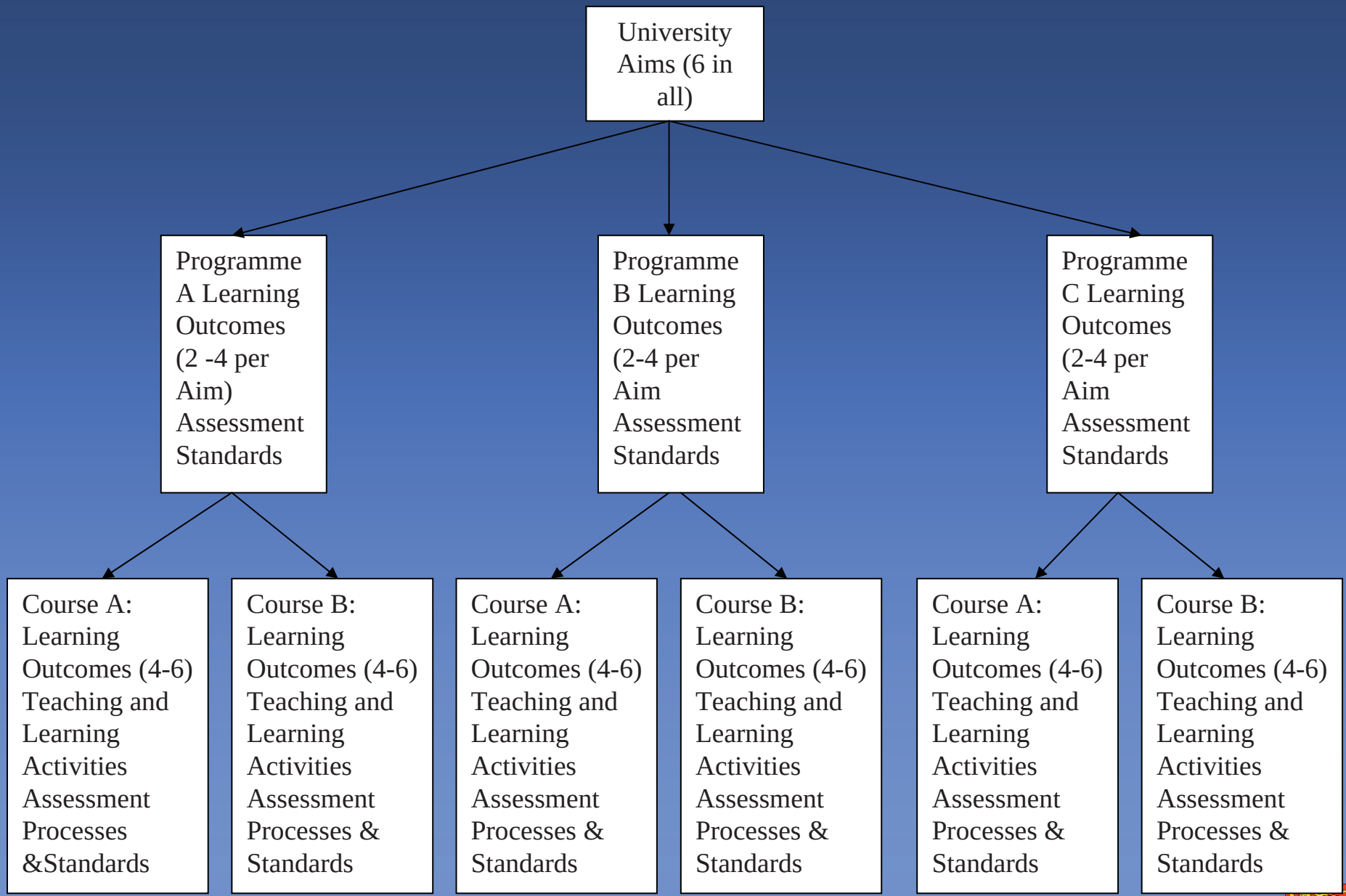
then they are likely to be:

- adopting deep approaches to study
- achieving the educational aims
- more satisfied with their experiences

The focus needs to change from us as teachers and what and how we are going to teach to our students as learners and what and how they are going to learn

We need to state our outcomes in terms of what we intend our students will learn, rather than what we will teach

We need then to design teaching and learning activities focused on what we want our students to learn and assessment activities focused on assessing what we want them to learn


University Aims (6 in all)
Programme A Learning Outcomes (2 -4 per Aim) Assessment Standards
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University Aims and Learning Outcomes

and

Programme Learning Outcomes

Aim 1: pursuit of academic/professional excellence, critical intellectual inquiry and life-long learning

- demonstrate knowledge and understanding of a discipline / field of study, what constitutes disciplinary knowledge, the theoretical underpinnings of the discipline and its methods of inquiry

Aim 2: tackling novel situations and ill-defined problems

- apply knowledge and skills acquired in the disciplinary and interdisciplinary studies to new situations

Aim 3: critical self-reflection, greater understanding of others and upholding personal and professional ethics

- identify personal strengths and weaknesses

Aim 4: **intercultural understanding and global citizenship**

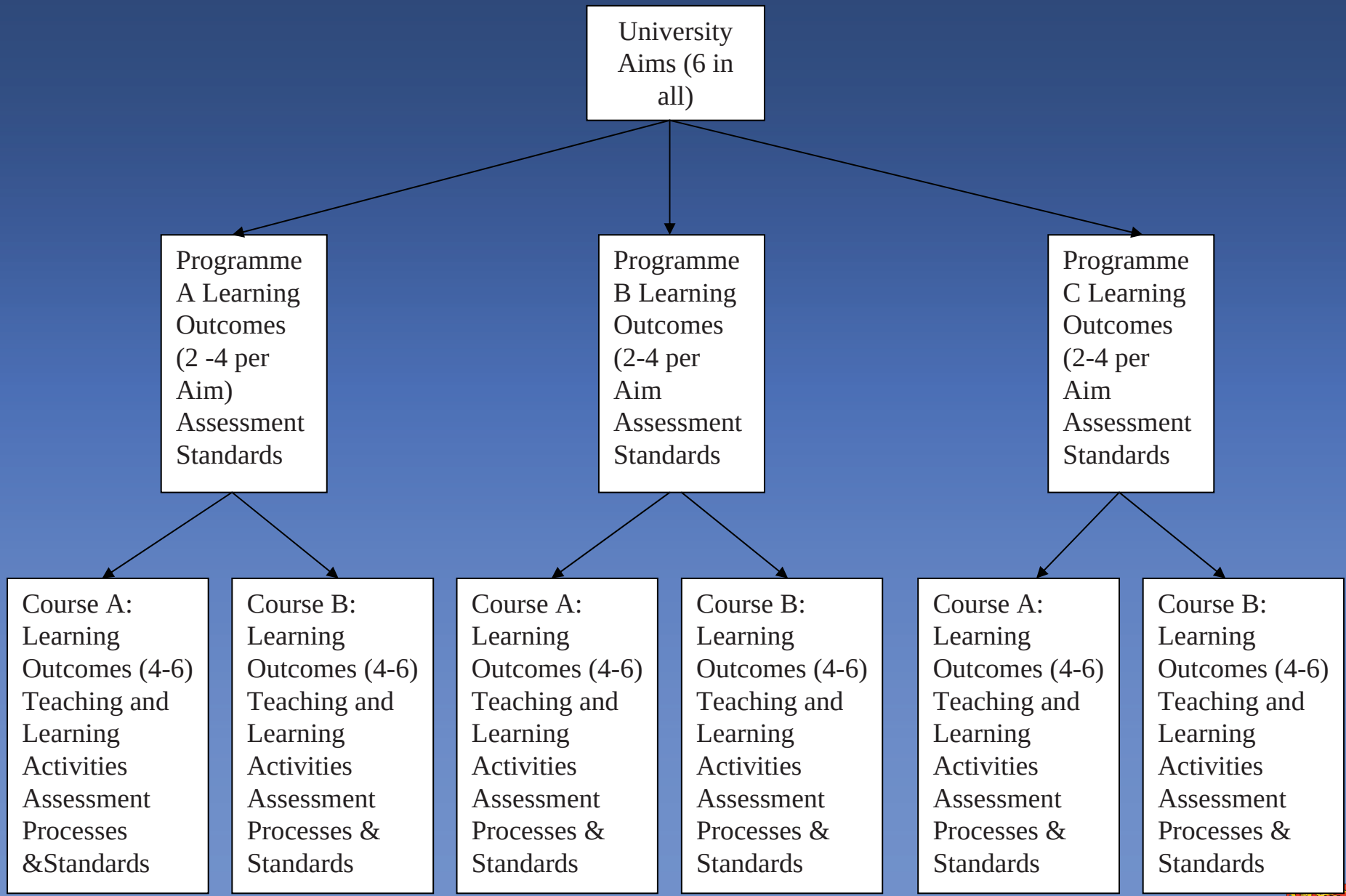
- demonstrate an awareness of their own culture and other cultures

Aim 5: collaboration and communication

- express facts, ideas and opinions effectively in various types of oral and written communication in academic, professional and social settings

Aim 6: **leadership and advocacy for the improvement of the human condition**

- build and sustain effective relationships with people of diverse views and predispositions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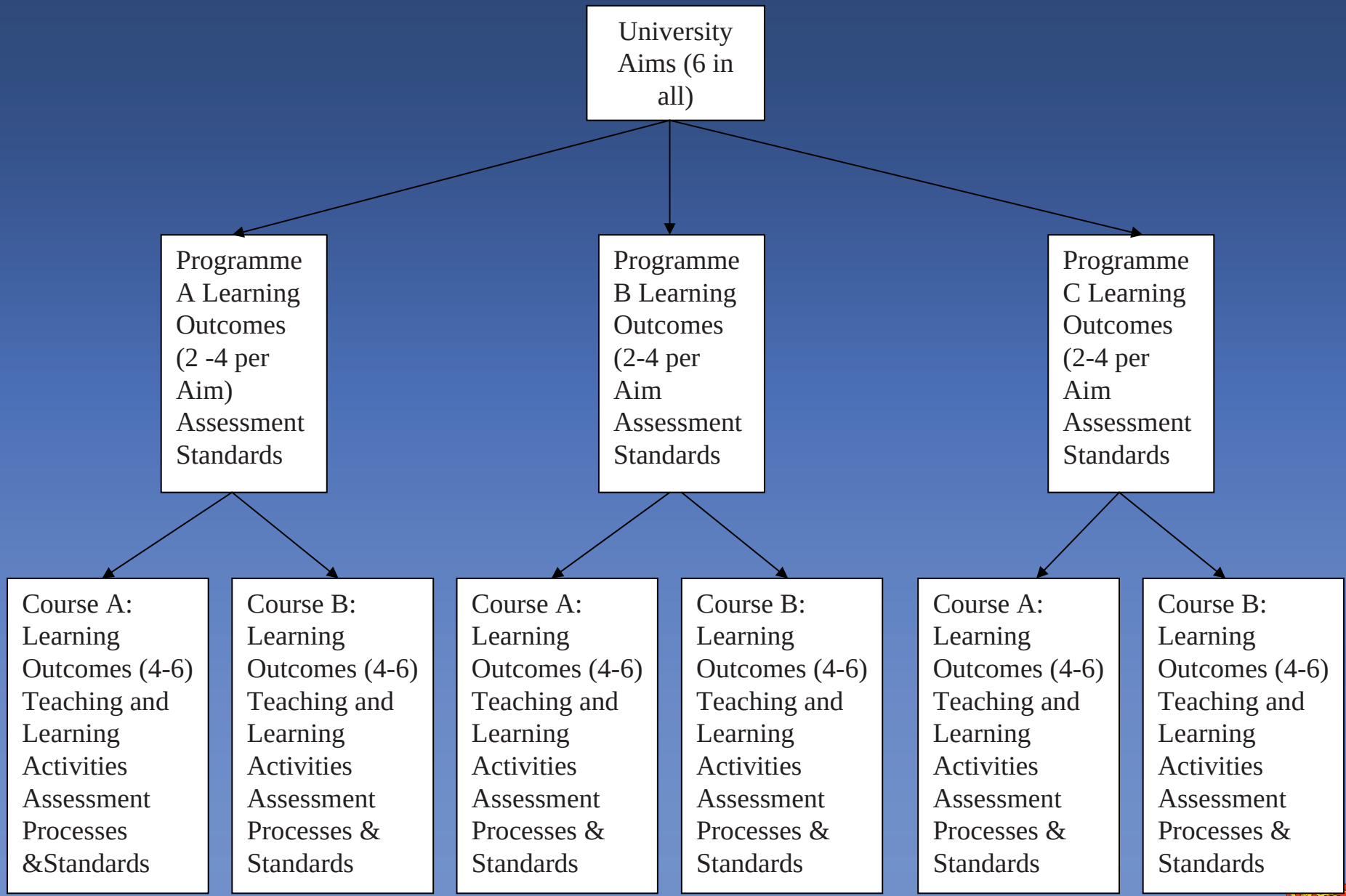
Draft Medical Programme Learning Outcomes

- Pursuit of academic/professional excellence, critical intellectual inquiry and life-long learning - Students should be able to:
  a. Critique the management of a clinical/healthcare issue in light of the best available evidence
  b. Generate enquiries about the manifestations of a health problem and derive an appropriate management plan
- Tackling novel situations and ill-defined problems – Students should be able to:
  c. Recognize the implication and potential of risk in any unprecedented or recurrent but unresolved problem
  d. Identify potential clinical or research approach or research which will lead to improvement in diagnosis or treatment
- Critical self-reflection, greater understanding of others and upholding personal andn professional ethics – Students should be able to:
  e. Engage in realistic appraisal of one's own capabilities and limitations, and make appropriate decisions accordingly for the best of patient care
  f. Analyse a clinical scenario from multiple perspectives, including that of the patient, the patient's family, and colleagues in the professional team

- Intercultural communication and global citizenship – Students should be able to:
  - g. Identify socio-cultural factors that contribute to variations in disease patterns and the acceptance of or conformity to treatment
  - h. Recognize the diversity in health-care practice and standards, and the health economics of developed and less developed countries
- Collaboration and communication – Students should be able to:
  - i. Demonstrate the ability to communicate effectively with patients and their families, staff members, peers and other health care professionals orally and in writing
  - j. Respect the roles and contributions of other members of the team
- Leadership and advocacy for the improvement of the human condition – Students should be able to:
  - k. Recognize research as a valuable tool for the improvement of human condition
  - l. Participate in the generation, interpretation, application and dissemination of significant advances in medical knowledge
  - m. Initiate or participate in community projects for the betterment of health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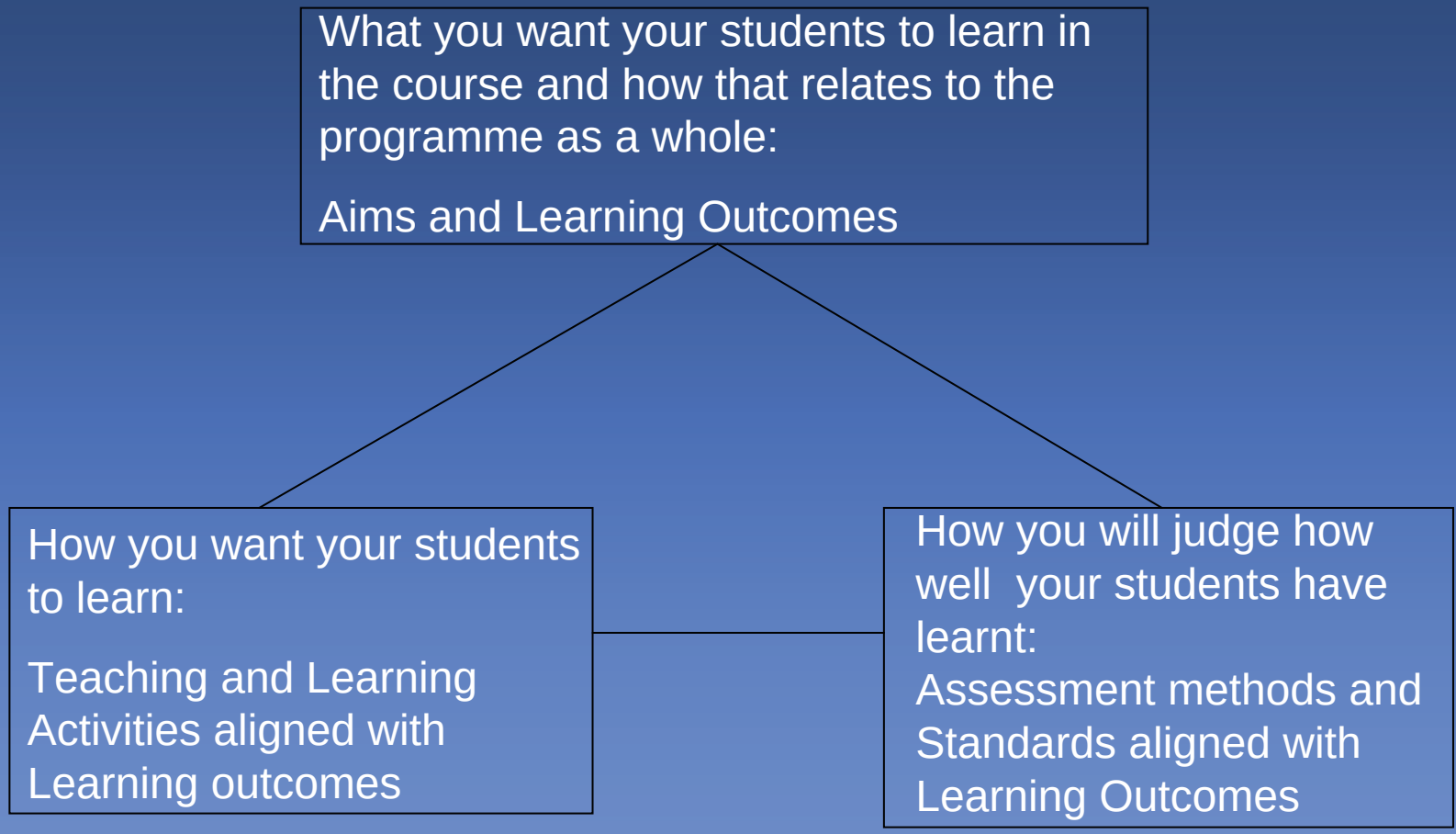
Mapping of University Aims against draft Medical Programme Learning Outcome

	Medical Program Learning Outcomes												
University Aims	a	b	c	d	e	f	g	h	i	j	k	l	m
Critical intellectual inquiry and life-long learning;	x	x	x	x	x								
Tackling novel situations and ill-defined problems;						x	x						
Critical self-reflection and greater understanding of others;								x	x				
Communication and collaboration;										x	x		
Intercultural communication, multicultural understanding and global citizenship;						x			x			x	
Leadership and advocacy for the improvement of the human condition.						x							x

Course Learning Outcomes

Model of Outcome Based Approach to Student Learning at Course Level



First year Engineering Physics Course Learning Outcomes

1. describe the motion of objects in terms of their position, velocity and acceleration

2. apply Newton's three laws of motion to explain the motion of objects undergoing uniform acceleration in translation and rotation

4. use the laws of conservation of energy and momentum to solve more difficult problems involving, for example, collisions

5. be able to engage in an examination of truth and validity in scientific argument and discourse and evaluate the relative importance of ideas

Course Learning Outcome	Teaching and Learning Activities	Assessment	Programme Level Outcomes
1. describe the motion of objects in terms of their position, velocity and acceleration			a
2. apply Newton's three laws of motion to explain the motion of objects undergoing uniform acceleration in translation and rotation			a
4. use the laws of conservation of energy and momentum to solve more difficult problems involving, for example, collisions			g
5. be able to engage in an examination of truth and validity in scientific argument and discourse and evaluate the relative importance of ideas			i

FACULTY OF ARTS

Extract from General expectations of student's performance at the various grades

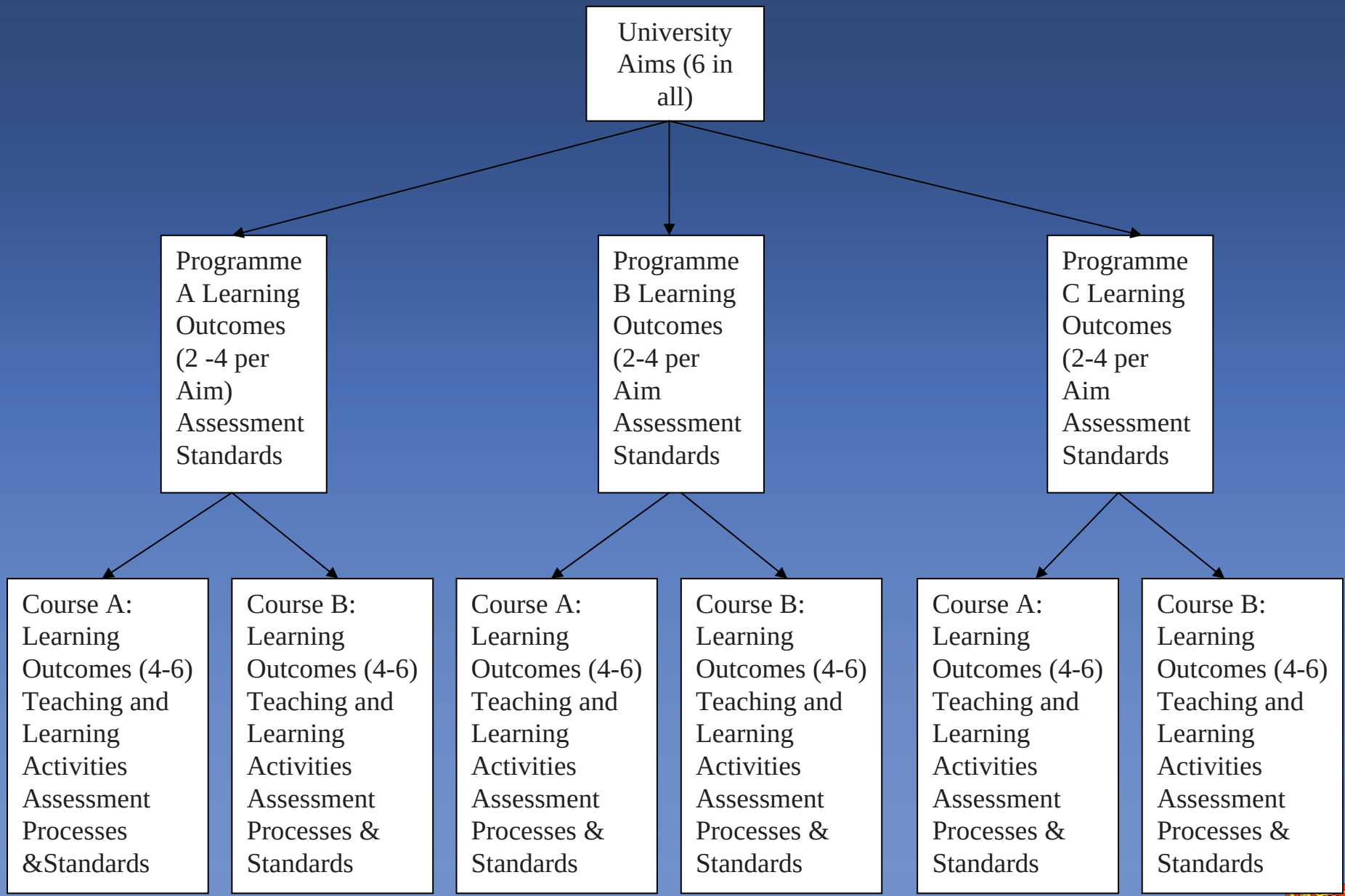
(A+, A, A-) Excellent result. Students with this grade must show evidence of original thought, strong analytical and critical abilities as well as a thorough grasp of the topic from background reading and analysis; should demonstrate excellent organizational, rhetorical and presentational skills.

(B+, B, B-) Good to very good result, achieved by the next group of students who are critical and analytical but not necessarily original in their thinking; show adequate grasp of the topic from background reading and analysis; should demonstrate strong organizational, rhetorical and presentational skills.

(C+, C, C-) Satisfactory to reasonably good result. The students have shown a reasonable grasp of their subject but most of their information is derivative, with rather little evidence of critical thinking; should demonstrate fair organizational, rhetorical and presentational skills.

(D+, D) Barely satisfactory result. Students who receive this grade will have assembled the bare minimum of information, poorly digested and not very well organized in presentation. There is no evidence of critical thinking.

Fail Hopelessly muddled usually with a great deal of irrelevant information and containing fundamental errors. Work fails to reach degree level. Failure to attempt an answer.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Mapping of Courses against draft Engineering Programme Learning Outcome

	Program Learning Outcomes												
Course	a	b	c	d	e	f	g	h	i	j	k	l	m
First year:													
CIVL1001. Computer applications in civil engineering (6 credit-units)	x			x		x	x					x	
CIVL1002. Construction materials (6 credit-units)		x	x	x	1								x
CIVL1003. Engineering drawing (6 credit-units)	x								x				
CIVL1004. Engineering mathematics I (6 credit-units)	x						x				x		
CIVL1005. Environmental engineering (6 credit-units)							x						
etc													
Number of courses contributing strongly to each program outcome	3	1	0	0	0	0	1	0	1	0	0	0	0

To reiterate:

- The University has agreed with the UGC to introduce OBASL in designing the new curriculum
- Many of our student tell us that they:
    - are not clear about what they are supposed to be learning (objective and learning outcomes)
    - believe assessment tests short term reproduction rather than longer term understanding,
    - do not understand the standards of assessment
    - do not perceive their teaching to be of high quality
- All these are associated with how they approach their studies, their perceptions of achieving of the broad educational aims and overall satisfaction

The approach to OBASL outlined in this paper is designed to address these issues.

The key to success will be how successfully we are able to engage our teachers in thinking about their learning outcomes and then *aligning their teaching and learning and assessment activities* with the learning outcomes