



Learning Outcomes

ECPT5001 & ECPT6003

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Learning outcomes

- Develop learning outcomes and lesson planning
- Consider Bloom's Taxonomy in relation to learning and teaching
- Examine schemes of work

Blooms Taxonomy

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- In 1956, Benjamin Bloom headed a group of educational psychologists who identified three domains of educational activities:
 - Cognitive – mental skills (*Knowledge*)
 - Affective – growth in feelings or emotional areas (*Attitude*)
 - Psychomotor – manual or physical skills (*Skills*)

Major categories - Cognitive Domain

- Knowledge
- Comprehension
- Application
- Analysis
- Synthesis
- Evaluation

Major categories - Affective Domain

- Receiving
- Responding
- Valuing
- Organising
- Characterising

Major categories - Psychomotor Domain

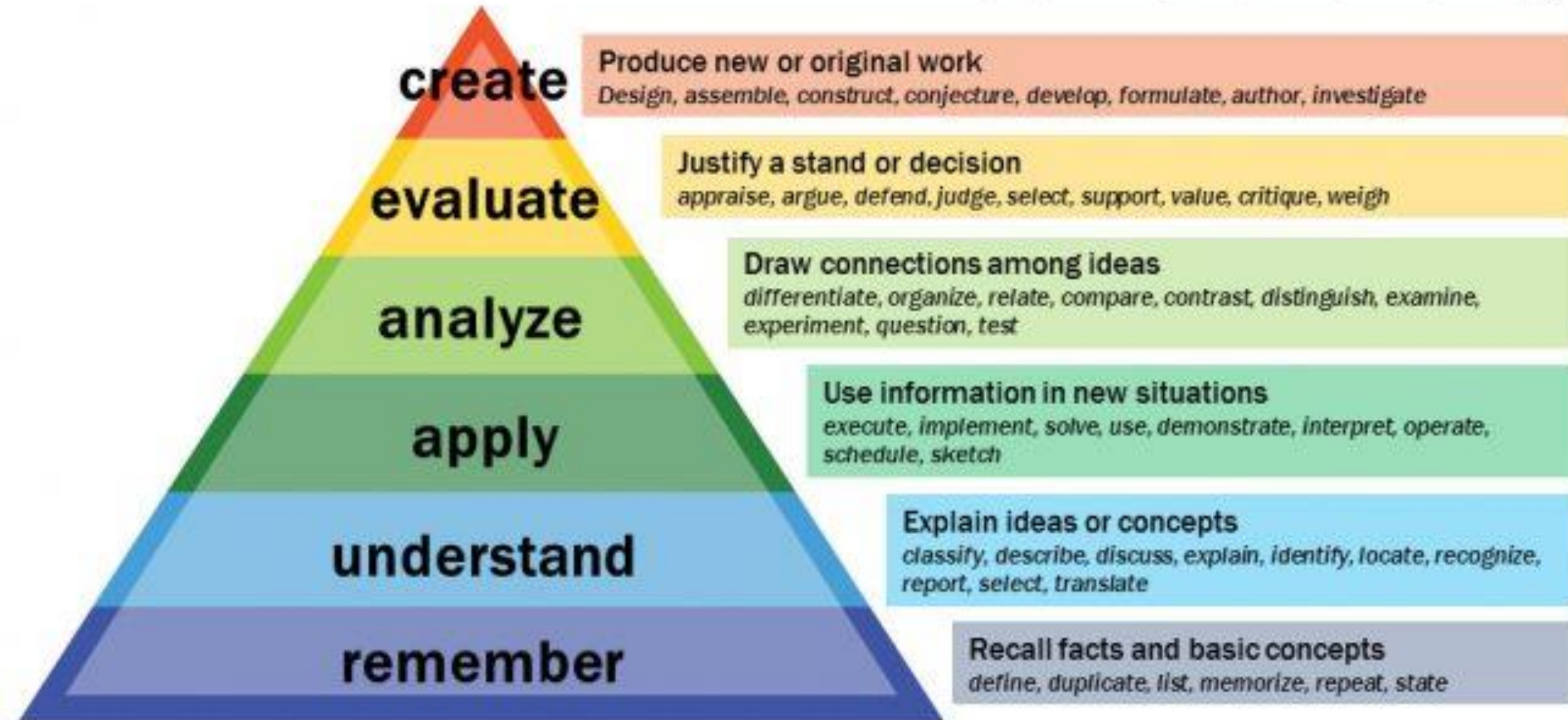
- Imitation
- Manipulation
- Precision
- Articulation
- Naturalisation

Bloom's Taxonomy

Knowledge of the taxonomy helps teachers to:

- Distinguish between different levels of difficulty
- Apply action verbs to learning objectives set so that both they and the learners are clear about what specifically is required
- Use the objectives to better plan learning experiences and appropriate evaluation devices

Bloom's Taxonomy



Level	Definition			Sample verbs			Sample behaviors
KNOWLEDGE	Student recalls or recognizes information, ideas, and principles in the approximate form in which they were learned.	arrange define describe duplicate	identify label list match	memorize name order outline	recognize relate recall repeat	reproduce select state	The student will define the 6 levels of Bloom's taxonomy of the cognitive domain.
COMPREHENSION	Student translates, comprehends, or interprets information based on prior learning.	explain summarize paraphrase describe illustrate classify	convert defend describe discuss distinguish estimate explain	express extend generalized give example(s) identify indicate	infer locate paraphrase predict Recognize	rewrite review select summarize translate	The student will explain the purpose of Bloom's taxonomy of the cognitive domain.
APPLICATION	Student selects, transfers, and uses data and principles to complete a problem or task with a minimum of direction.	use compute solve demonstrate apply construct	apply change choose compute demonstrate discover dramatize	employ illustrate interpret manipulate modify operate	practice predict prepare produce relate schedule	show sketch solve use write	The student will write an instructional objective for each level of Bloom's taxonomy.
ANALYSIS	Student distinguishes, classifies, and relates the assumptions, hypotheses, evidence, or structure of a statement or question	analyze categorize compare contrast separate apply	change discover choose compute demonstrate dramatize	employ illustrate interpret manipulate modify operate	practice predict prepare produce relate schedule	show sketch solve use write	The student will compare and contrast the cognitive and affective domains.
SYNTHESIS	Student originates, integrates, and combines ideas into a product, plan or proposal that is new to him or her.	create design hypothesize invent develop arrange assemble	categorize collect combine comply compose construct create	design develop devise explain formulate generate plan	prepare rearrange reconstruct relate reorganize revise	rewrite set up summarize synthesize tell write	The student will design a classification scheme for writing educational objectives that combines the cognitive, affective, and psychomotor domains.
EVALUATION	Student appraises, assesses, or critiques on a basis of specific standards and criteria.	Judge Recommend Critique Justify Appraise Argue	Assess Attach Choose Compare Conclude Contrast	Defend Describe Discriminate Estimate Evaluate Explain	Judge Justify Interpret Relate Predict	Rate Select Summarize Support Value	The student will judge the effective-ness of writing objectives using Bloom's taxonomy.

Lesson planning

What is the function of lesson planning?

- A Lesson Plan has two functions:
- A strategy or plan for ‘teaching’
- A series of cues to be used during the lesson
- However, any plan needs to be *flexible*. You cannot plan for every eventuality.

Preparing the lesson plan – you need to...

- Analyse the topic in terms of concepts, principles and skills involved
- Identify the most important elements
- Determine whether there are any special skills involved
- Decide what, if any, prerequisite knowledge is required
- State relevant learning outcomes
- Make the lesson content interesting
- Relate new knowledge to that previously learned or held
- Build on existing knowledge
- Provide continuity with previous lessons
- Structure the lesson in a logical sequence
- Integrate the learning with real-life situations
- Encourage participation
- Design the lesson around the students
- Plan for maximum student activity
- Employ appropriate learning aids
- Introduce question-and-answer (Q&A) sessions

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- Provide for assessments of learning
 - Incorporate:
 - Note-taking
 - Frequent summaries and reviews
 - Recapitulation of important information
 - Final summary of lesson content
 - Introduction of next topic
 - Book references
 - Time to set Homework.

Difference between aim and an outcome

AIM

- General statement of direction
- General statement of intent
- General change to be brought about in learner

OUTCOME

- Specific statement of learner's terminal behaviour
- Specific change to be brought about in learner

Learning outcome must be SMART

- **Specific** – Exactly what is intended
- **Measurable** – Should be able to measure that they have actually been achieved
- **Achievable** – Given capabilities and effort required
- **Realistic** – Capable of achievement within time and resources set
- **Time Bound** – Set to a timetable

Badly written outcomes 1

- Are not specific about what they intend to achieve:
- E.g. Reduce the number of children living in families on below average income
(Labour Party, 2001)
- What is wrong with this outcome?

How will they do this?

- Kill all the children in below average income families?
- Stop those people on below average income from having children?
- Take children away from families whose income is below average?

How could they better write this outcome?

- Ensure that families that have children are on or above a certain level of income.

Badly written outcomes 2

- By the end of the session the students will be able to
- Speak Italian, Write Italian and Read Italian
- What is wrong with this outcome?

What to consider

- Think about how you will measure achievement
- Use 'Doing' words – i.e. make sure that the objective is clear about what will actually happen
- Ensure that you are clear about the resources available to you so that your objectives are realistic
- Find out those deadlines that apply so that you can plan effectively – be prepared to adapt to changing deadlines.

Why do we set learning outcomes?

- Properly used, learning outcomes have important benefits for teachers and learners alike:
- Unless you know where you are going the chances are you will end up somewhere else
- They can help provide consistency, especially where a session is to be repeated.
- They provide direction for everyone involved
- They set and emphasise standards

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- To enable the teacher to plan his or her approach
 - Learners are given an idea of what the session entails. This may help overcome any feelings of uncertainty, cynicism or hostility and provides learners with an opportunity to discuss and influence its suitability
 - To 'harden up' the Learning
 - To enable measurement of the effectiveness of the learning to take place – the evaluation process. To help demonstrate that learning provides a quantifiable return on the time, effort and resources invested.

Activity

- Rewrite the following statements using the correct 'action' words.
- You may find that several learning targets can be written from each statement

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1. You must know the method of producing holes using a drilling machine
 2. You must be familiar with measuring lengths
 3. You must know how to build a small wall
 4. You must understand how to bend a pipe
 5. You must understand how a purchase is made

1. You must know how to type
2. You must appreciate the use of the telephone
3. You must have a working knowledge of a knitting machine
4. You must be familiar with a given piece of literature
5. You must be aware of the meaning of a newspaper article

Bloom's Taxonomy Verbs

Evaluation

Make and defend judgments based on internal evidence or external criteria.

appraise
argue assess attach
choose compare conclude
contrast defend describe discriminate
estimate evaluate explain judge justify interpret
relate predict rate select summarize support value

Synthesis

Compile component ideas into a new whole or propose alternative solutions.

arrange assemble categorize collect combine comply
compose construct create design develop devise explain
formulate generate plan prepare rearrange reconstruct relate
reorganize revise rewrite set up summarize synthesize tell write

Analysis

Break down objects or ideas into simpler parts and find evidence to support generalizations.

analyze appraise breakdown calculate categorize compare
contrast criticize diagram differentiate discriminate distinguish
examine experiment identify illustrate infer model outline
point out question relate select separate subdivide test

Application

Apply knowledge to actual situations.

apply change choose compute demonstrate discover
dramatize employ illustrate interpret manipulate
modify operate practice predict prepare produce
relate schedule show sketch solve use write

Comprehension

Demonstrate an understanding of the facts.

classify convert defend describe discuss
distinguish estimate explain express
extend generalized give example(s)
identify indicate infer locate paraphrase
predict recognize rewrite review select
summarize translate

Knowledge

Remember previously learned information.

arrange define describe duplicate
identify label list match memorize
name order outline recognize
relate recall repeat reproduce
select state

Higher Order
Thinking Skills

Lower Order
Thinking Skills

Writing behavioural learning outcomes



When writing behavioural learning outcomes, the teacher needs to know that different verbs are open to varying degrees of interpretation

SOFT



It is therefore possible to 'harden up' outcomes and make them much more measurable by careful choice of the action word

HARD



Behavioural outcomes

- Outcomes should be written so that they specify the following:
- Performance: what the learner is expected to do
- Conditions: the important conditions under which the performance is to occur
- Standards: the minimum criteria that the learner must meet in order for their performance to be acceptable.

Lesson planning

What do you think a lesson plan should contain?

Lesson Plan Structure

Initial information

- Title of the lesson
- Details of the class
- Time of the lesson
- Expected entry behaviour
- Aims/Outcomes of the lesson.

Title

PGCE/PCET – 20+ students

Day/Time:

Monday / 17.00 – 20.30

Entry Behaviour

Domains of Learning, SOW

Outcomes

By the end of the lesson the students will be able to:

1. Identify the various elements of a lesson plan
2. Apply the lesson plan structure.

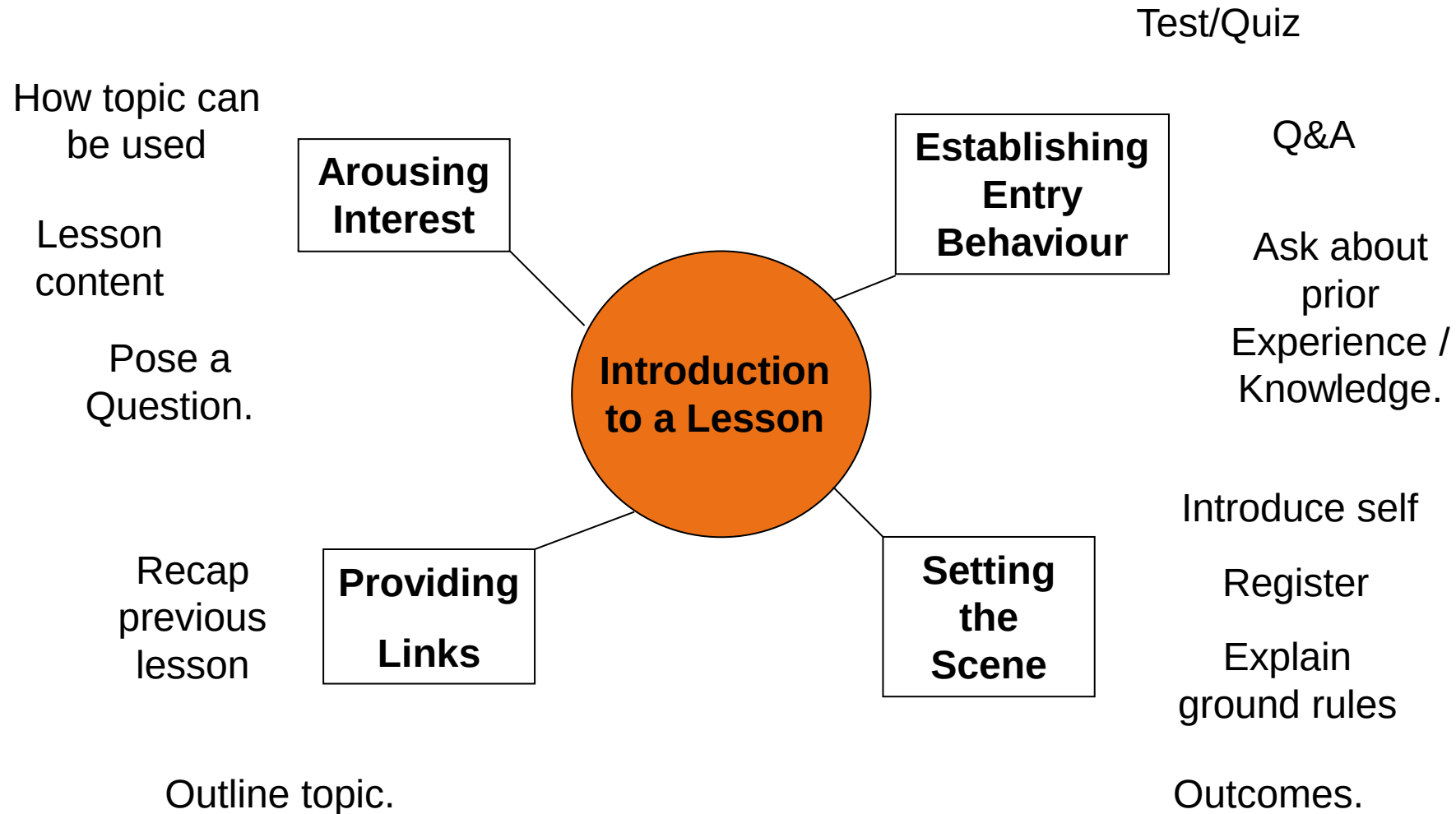
Body of the plan

The body of the plan should follow the Experience, Reflection, Learning Model

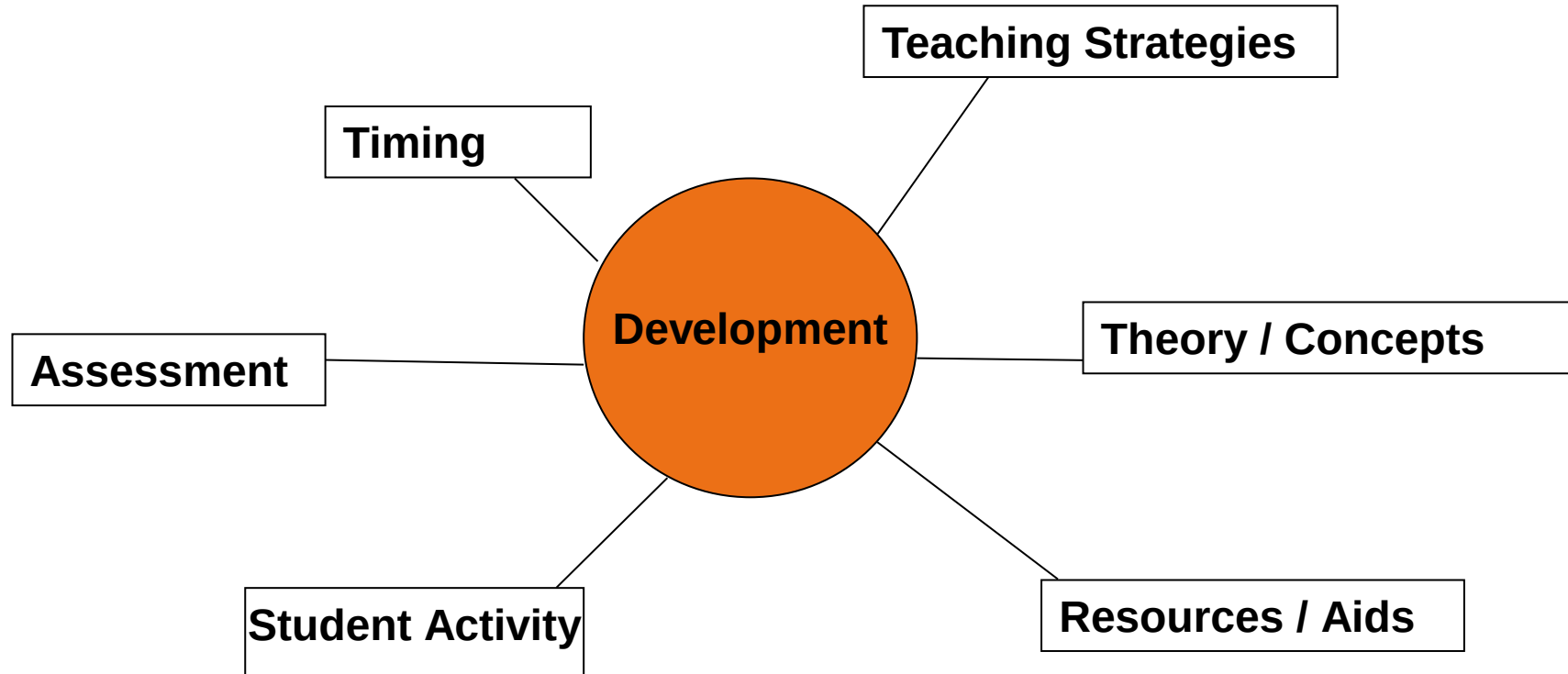
Therefore, you need to plan an:

- Introduction,
- Development and
- Conclusion
- To give students an experience and the opportunity to reflect on that experience.

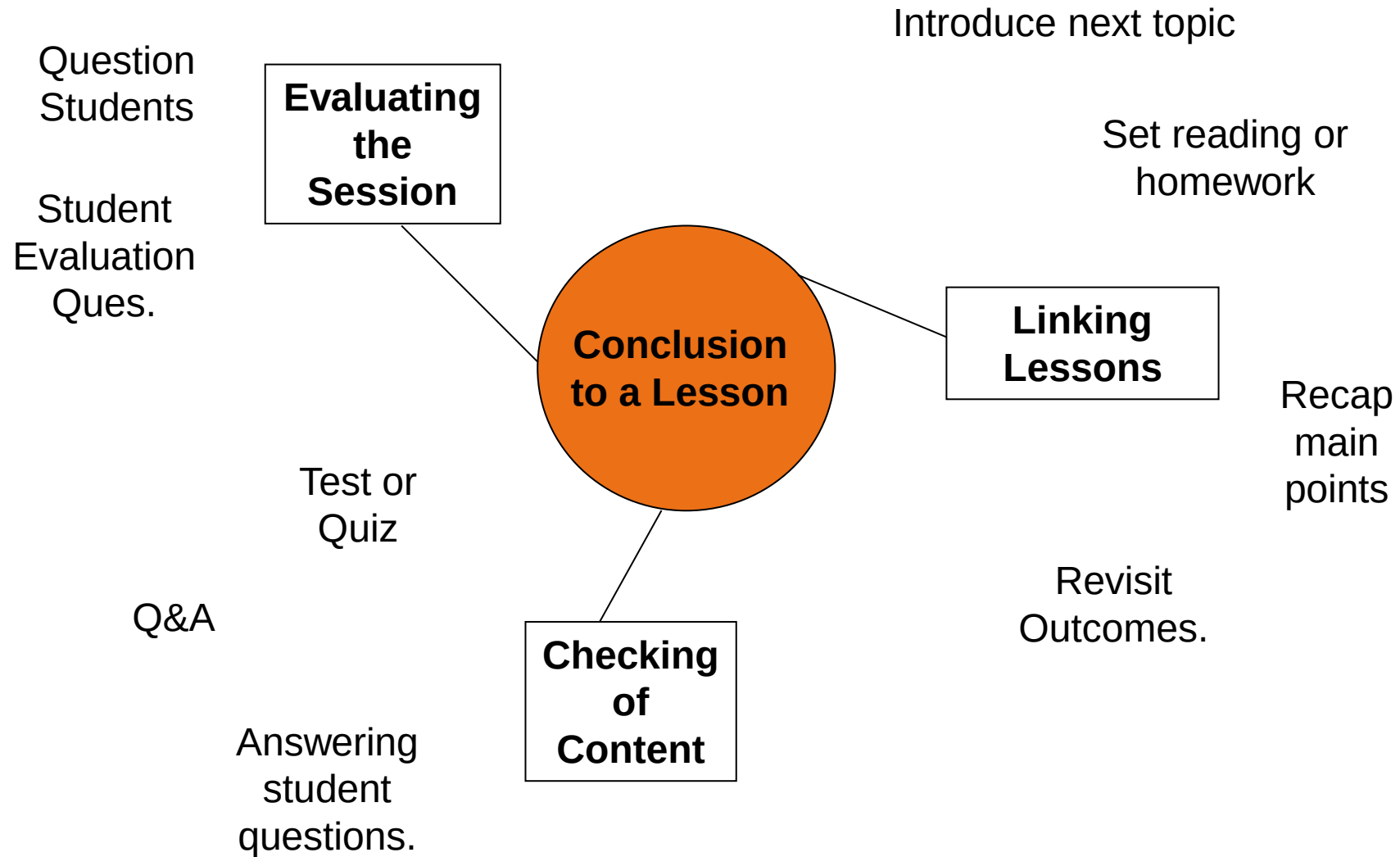
Introduction



Development



Conclusion



Stage	Focus	Strategy	Time
Introduction Assess entry behaviour	Question about area	Q & A Explanation (slides x-x)	10 mins
	Objectives	Outline Objectives and their importance	5 mins
Development Area of a Square	Formula used to calculate Area	Chalk and Talk (slides x-x)	10 mins
	Exercises to practice formula	Exposition	15 mins
	Feedback on Exercises	Circulate to check student progress Complete certain exercises on W/Board (slides x-x)	10 mins
	Check student understanding of topic	Q & A Chalk and Talk (slides x-x)	10 mins
Conclusion	Recap		

Activity

- Design and produce a lesson plan for a 1-hour learning session for a subject of your choice.
- This could be for your micro-teach but does not have to be
- Do not worry about the professional standards or assessment sections at the moment as we will be covering them in future weeks

Topic:		Class:	
Date:	Length of lesson:	Number of students:	
Resources required:			
Aim of Lesson			
Learning Outcomes – The Learners Should Be Able To:			

Previous student knowledge required for the session:

Anticipated difficulties (if applicable):

Professional Standards (where are these being met within the session)

Don't worry about this today as we will be covering it in a future lecture

Assessment Strategies: when and how are they included within the lesson?

Don't worry about this today as we will be covering it in a future lecture

Informal reflection (to be completed after the session)

Don't worry about this section today as you won't be able to reflect on a lesson you have not taught yet.

Scheme of work (SOW)

Definitions

- ‘a series of planned learning experiences, sequenced to achieve the course aims in the most effective way’

(Reece and Walker, 2003)

- ‘... an ordered teaching plan, including content and resources to be used for a specific group of pupils, the teaching methods, modes of assessment and arrangements for recording such assessment’.

(Needham et al)

Sequencing the SOW

- Easiest topics first
- Themes
 - E.g. Parliament: Themes may be elections, legislation, etc.
- Logical
 - E.g. the need to learn addition before multiplication
- Safety
- Familiarity
- Chronological E.g. History
- Normal / Abnormal.
- Sensitivity / Controversial / Group confidence
- Most helpful
- Theory / Practice
- Negotiation
- Availability of resources
- Demands of other subjects / Key Skills
- Opportunistic.
- Order of textbook
- Must know, Should know, Could know
- Past course evaluation.

Factors that influence design

- Level of Unit/Module
- Course Aims/Objectives
- Course Content
- Number/Length of Sessions
- Time Available
- Teaching Strategies
- Assessment Techniques and Outcomes
- Resources Needed
- Reading Requirements

Topic analysis

Davis (1971) suggests asking 5 questions:

- 1. What do you expect the students to demonstrate in order to show that they have learned the topic?

i.e. the Learning Objectives

- 2. What questions do you expect the students to be able to answer?

i.e. the Sub-Topics (indicative content)

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- 3. What tasks, procedures and techniques should the student perform?

i.e. the Student Activities

- 4. What discrimination must be made?

i.e. between what is known and what needs to be known

- 5. What total change in behaviour do you expect and how will this be observed and measured?

i.e. acceptable performance and competence

Things to consider

- How long is the course?
- Are there any basic and necessary subjects to be included in the scheme?
- What is the likely reaction of the students to the course?
- What type of teaching method will be appropriate to their abilities?
- What tutorial arrangements will have to be made?
- What resources are at my disposal?
- What assistance will I have whilst working on the course?
- How can I best assess progress being made towards achieving the aims of the course?
- What, if any, summative assessment is in place?

What might you include in a SOW

- Particulars on Students
- Subject Content
- General Aim
- Learning Objectives
- Teaching Strategies
- Student Activities
- Assessment Methods
- Cross-cutting theme(s)
- Professional / occupational standards
- Resources needed
- Reading References
- Tutor contact details
- Key Dates

Course design

- **WHAT**
 - The course is all about
 - Are the aims and objectives?
 - Will be needed in terms of resources?
- **WHO** is the course being designed for? And **WHY** it should exist?
- **WHEN** will the course be delivered?
- **WHERE** will the course be delivered?
- **HOW** will the course be delivered, assessed and evaluated?

Activity

- Work in groups of 3 to come up with an ideas for a course that are going to design
 - Discuss the evidence you might use to support the need for your course
 - Put together a sketch of what your course will cover for at least 10 weeks.
 - Each lesson/session should be a minimum of 1 hour
 - Groups will feedback at the end
- Your plan should include:
 - a brief description of the course itself,
 - including the level;
 - where will it be delivered and when
 - the target audience - who they are and why the course is relevant to them
 - the learning objectives / outcomes
 - cross-cutting themes included, including justification for their inclusion
 - teaching and learning strategies that will be used and why they were chosen,
 - how the strategies link to learning theories
 - assessment strategies/methods to be used, both formative and summative, and why they were chosen
 - evaluation techniques to be used to evaluate the learning and your teaching, and why they were chosen

Programme Title:	Venue:	Lecturer:
Hours per week:	Day/Time:	Number of weeks

Module Aims:

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-
-

Module Outcomes:

-
-
-

Week Number	Topic	Aim and Objectives	Teaching and learning activities	Resources required	Assessment

Indicative Reading List

References

- Reece & Walker (2007) 'Teaching Training and Learning ; A practical BEP guide' - Chapter 3 provides guidance on some key teaching strategies
- Petty (2009) 'Teaching today' Nelson Thornes - Part 2 provides a comprehensive guide to a range of teaching strategies
- Arend & Davis (2013) 'Facilitating seven ways of learning : A resource for more purposeful , effective and enjoyable teaching ' Stylus
- Carraway K (2014) 'Transforming Your Teaching ,Practical Classroom Strategies Informed by Cognitive Neuroscience' Norton Professional Books
- Skinner D (2011) 'Effective Teaching and Learning on Practice' Bloomsbury