Enhancing Student Support: Personal Tutor group sessions

Graduate Attributes: Research and Enquiry: Approaching Problems

The **aim** of this session is to explore various strategies for approaching problems and to discuss problem identification, analysis and solving in the context of the Graduate Attribute: Research and Enquiry. The plan below outlines potential activities that may be undertaken by the tutor during the session in order to meet the objective and the outcomes; *it isn't however a fixed structure and should be adjusted according to the needs and expectations of the learners and their particular discipline context.*

This introductory session is planned to take between 45 and 60 minutes (depending on group size, level and needs of students, etc), with an interactive, student-centred focus from the start and reflective aspects enabling the students to translate their learning into their own unique context. Tutees will be encouraged to record and share any reflections with their peer group after the session and possibly design a plan for working with those abilities, if relevant.

SESSION OBJECTIVES

By the end of the session learners/tutees will have:

1. Recalled and reflected on prior knowledge of and personal experience in approaching, analysing and solving problems.
2. Discussed the relevance and value of problems, problem analysis and problem solving in the context of Research and Enquiry (Graduate Attribute)
3. Explored and practised some strategies and approaches to problem analysis and problem solving.
4. Reflected on the relevance and value of problem solving skills in the context of own employability and graduate attributes development.

For feedback and/or queries relating to this resource, please contact: Agata.Wojtkowska@ed.ac.uk

Activity and proposed timing	Learning approaches or methods used	Resources	Objective	Comments (e.g. adapting of resource, learning styles)	Potential challenges	Potential benefits
Introduction and warmer Up to 10 mins max	Slide 2 a). a quick warm up activity (2-3mins max): students get into pairs and make a list of words that they associate with the word 'problem'. These may be nouns, adjectives, verbs, phrases, collocations, etc. The aim here would be to 'test' their thinking about problems, whether problems are seen more as a difficulty, an obstacle or a constructive challenge; the activity can be followed by a reflection: are your words mostly positive or negative? The pairs sitting next to one another can swap their lists to share thoughts. b). a longer activity (7-8 mins) and a lead-in to the session: in pairs, students recall the time when they successfully solved a complex or/and challenging problem; it might be a problem relating to study, work, etc (tutors should encourage students to share non-confidential problems, e.g. relating to study, work or extra-curricular activities. Once recalled the situation, students should share the ways or strategies they used to approach the problem: what did	Blank sheets of paper (one per pair), pens.	1	The first activity should be timed and fast-paced to allow for generating 'first thoughts' and engaging all students. The second activity builds on their prior knowledge and experience; it allows for a more personal and reflective learning approach	Timing should be kept to10 mins max to keep the activities focused	The first activity may expose negative perceptions of 'problems' as 'something to be avoided' or/and lead to an interesting peer discussion on general perceptions. The second activity builds on prior learning and experience, potentially boosting students' confidence and encouraging peer learning

	they do first, next, etc? Why did this approach work?					and sharing.
Problem analysis and solving in the context of Research and Enquiry 10 mins	Agree/disagree <u>slide 3</u>, aimed at stimulating students' thinking on problems and problem solving in the context of Graduate Attribute Research and Enquiry. Students should work in small groups to briefly discuss the reasons why they agree or disagree.	PowerPoint (enclosed), projector	1 and 2	Students at this point can be encouraged to relate their discussions to their academic context (discipline)		Eliciting rather than 'telling them' engages students as active participants and builds on their prior knowledge and peer learning
Approaching problems: some strategies 10 mins	<u>Slide 4:</u> Tutor first elicits any approaches to problem analysis and/or solving already known to students. <u>Some</u> of the approaches below can then be explored (see PowerPoint for more info): this section should be adapted according to prior knowledge and needs of a particular cohort of students • Similarity approach • Expertise metaphor • OPAL • STAR • The 5 D approach • Multiple solution approach • Others! (elicit from students) To elicit their prior knowledge and/or	PowerPoint, projector, handout (enclosed)	2 and 3	This section can be adapted to suit the students and their level and needs (incl. prior knowledge): not all approaches should be 'covered' and tutors can be flexible in their choices	Considering the time available and the wealth of approaches, the tutor can be selective here and encourage self-study (point the students to reflective sheets on Graduate Attributes)[1]	Working out the acronyms and fostering students' prior knowledge and/or understandin g (even if it's guessing) involves their deductive thinking

[1] To be published in due course

	understanding, get the students into small groups and get them to work out what steps each strategy involves (including working out the acronyms). The students can feedback back to the class; students can also share examples of whether and how they used any of these strategies in the past and how they worked. For less advanced groups, the tutor may briefly present the strategies.					
Wider context: Employability 10 -15 mins	'Thinking like a …(insert career or discipline)…' activity Slide 5 Students identify as many benefits of good problem solving skills in their (potential) careers as possible. This is aimed at students practising **translating** their Graduate Attribute to their specific and personal employability context [2] Students can get into small groups for this activity. They can briefly discuss their career plans and/or personal development aspirations (see notes for differentiation and possible challenges on the right). On Post-It notes they then individually should identify practical applications of their problem analysis and solving skills in their professional life as a graduate. They can then draw one stick figure to represent a UoE graduate	PowerPoint, projector. A3 pieces of paper	4	This activity is engages visual and kinaesthetic learners. Some student groups, particularly lower UG or with less career awareness, may require some prompts from the tutor		

[2] *Note: a separate session has been designed to focus more on the University's Graduate Attributes and employability and can be used to introduce students to these concepts*

	and stick their benefits and/or applications around it. Students should be encouraged to identify links with **task management skills, project management, collaboration skills, creative thinking, decision making, managing change, dealing with uncertainty, developing resilience, communication (e.g. for clearly articulating the problem or/and solution) etc.**					
Close and creative thinking exercise 5-7 mins	Slide 6: 'Applying someone else's solution' quick exercise (taking the solution or approach from the warmer exercise and applying different approach or thinking to it). This can be done by students simply taking a different approach and applying it to the same problem, or, asking a different person in the group how they would approach the issue. With more advanced groups, students can imagine how someone in a different discipline or (prospectively) working in a sector that is very different to theirs, would approach the problem: applying a different 'disciplinary hat' to the problem. *A creative thinking follow up to the session is an exploration of the '6 thinking hats' developed by Edward de Bono:* *http://www.mindtools.com/pages/article/newTED_07.htm*	PowerPoint, projector	3	Encouraging creative problem solving skills and widening perspective.	This may be a challenging activity and highly dependent on the type of problem identified earlier. Since the aim of this exercise is to encourage students to use a different approach, it's an opportunity to recap on the approaches presented earlier and to encourage active experimentation	This short exercise is an opportunity to promote looking at problems from different angles, adopting multidisciplinary approaches, appreciating collaborative aspects of research.