

Lesson plan: Sports psychology (arousal and the inverted-U theory)

This is a sample lesson plan to help teachers to structure a one hour lesson on 'arousal and the inverted-U theory', as part of the sports psychology topic on paper 2 for GCSE Physical Education (week 16, year 2 scheme of work, 2 year plan). It is suggested as a guide only and can be amended to suit teachers and their students' needs.

Learning objectives

- Develop knowledge and understanding of what arousal is, including the relationship between arousal level and performance level, as illustrated by the inverted-U theory.
- Develop knowledge and understanding of how optimal arousal levels vary according to the skill being performed.
- Develop the ability to apply knowledge of optimum arousal levels to evaluate the appropriate level for a wide range of sporting skills.

Learning outcomes

- All students should be able to define arousal.
- All students should be able to describe the inverted-U theory and explain the relationship between arousal level and performance level.
- All students should be able to draw an inverted-U graph and label it appropriately.
- All students should be able to know and understand that the level of optimal arousal varies with the demands of a skill ie different skills in different sports require differing levels of optimal arousal.
- Some students should be able to explain that optimal arousal levels vary depending on the skill being performed by giving specific examples eg rugby tap tackle compared to a rugby front on tackle at speed.
- Some students should be able to apply their knowledge of optimum arousal to evaluate the appropriate level of arousal required when presented with a wide range of sporting skills.

Prior knowledge needed

Students should be asked in the previous lesson to bring a list of five skills that they have recently performed in their practical PE lessons. They should be asked to make a quick comment on each of the skills in relation to how excited, alert and 'up for it' they were required to be to perform that skill well. Students could also be asked to place each skill on a continuum from 1–10, with 10 requiring the highest level of excitement/alertness.

Lesson preparation

Handouts containing the following:

- the definition of arousal
- a copy of the inverted-U theory diagram and salient points that explain the theory
- blank graph paper for students to complete their own versions of the inverted-U diagram, to illustrate different levels of optimal arousal (homework).

Handouts 1 and 2 give examples of what these resources may look like, handout 2 can also be used to initiate summative assessment.

The teacher should set up three practical activities for the students to complete. These should include:

- an activity that requires a low level of arousal, eg balancing a table tennis ball on one finger
- an activity that requires a moderate level of arousal, eg a light jog whilst bouncing a ball with a tennis racket
- an activity that requires a high level of arousal, eg punching a punch bag.

Activity

Duration	Activity	Group size	Assessment objective
5–10 minutes	Students work in groups of four. Students asked to discuss the skills they have written down in preparation for the lesson and to group the skills into those requiring high, medium and low levels of alertness/excitement.	Groups of four.	All students should be able to know and understand that the level of optimal arousal varies with the demands of a skill.

	Each group to feedback an example of a skill and its corresponding level of arousal to the rest of the class.		
10 minutes	<p>Introduction to the concept of arousal.</p> <p>Students given the definition of arousal and introduced to the inverted-U theory and the salient points that explain it (Handout 1).</p>	Whole class.	<p>All students should be able to define arousal.</p> <p>All students should be able to describe the inverted-U theory and explain the relationship between arousal level and performance level.</p> <p>All students should be able to draw an inverted-U graph and label it appropriately.</p>
15 minutes	<p>Students to work in small groups. They should be asked to have several attempts at the activities set up round the room and take note of how much:</p> <ul style="list-style-type: none"> • concentration was required • precision was required • excitement/alertness was required. 	Work in small groups.	All students should be able to know and understand that the level of optimal arousal varies with the demands of a skill.

	<p>They should also comment on the level of arousal needed (ie the teacher should not tell students the level of arousal each activity is targeting).</p> <p>NB Although activities can be varied the following are given as good examples to use:</p> <ul style="list-style-type: none"> • an activity that requires a low level of arousal eg balancing a table tennis ball on one finger • an activity that requires a moderate level of arousal eg a light jog whilst bouncing a ball with a tennis racket • an activity that requires a high level of arousal eg punching a punch bag. 		
	<p>Whole group discussion on the outcome of the activity.</p>	<p>Whole class.</p>	
<p>15 minutes</p>	<p>Students to work in pairs and given a variety of sporting skills to discuss (handout 1). What optimal level of arousal is needed for these skills?</p> <p>NB The idea is that there is not always a definitive answer – it sometimes depends on how the skill is done eg a tap tackle (low) in rugby compared to a front on tackle at speed (high).</p>	<p>Pair and group work.</p>	<p>All students should be able to know and understand that the level of optimal arousal varies with the demands of a skill.</p> <p>Some students should be able to apply their knowledge of</p>

	<p>The teacher should encourage debate and reasoned conclusions within student's justification of their chosen response.</p> <p>Pairs can then join other pairs to compare answers.</p> <p>Students could also be asked to discuss occasions in their sporting life when they clearly were not at the optimal level of arousal.</p>		<p>optimum arousal to evaluate the appropriate level of arousal required when presented with a wide range of sporting skills.</p>
<p>10 minutes</p>	<p>Plenary.</p> <p>Time should be taken to reflect upon student responses and pick out particularly well-reasoned responses as to the optimal level of arousal.</p> <p>The teacher can introduce the idea that the inverted-U can move, depending on the skill.</p> <p>Whole class task. List words that are integral concepts in deciding what the optimal level of arousal is, for example:</p> <ul style="list-style-type: none"> • precision • concentration • fine movements • gross movements • power/strength • aggression. 	<p>Whole class.</p>	<p>All students should be able to define arousal.</p> <p>All students should be able to describe the inverted-U theory and explain the relationship between arousal level and performance level.</p> <p>All students should be able to know and understand that the level of optimal arousal</p>

			varies with the demands of a skill.
5 minutes	Homework task. Handout 2 explained and set. Students to start it in the lesson (see below).	Students work on their own.	<p>All students should be able to draw an inverted-U graph and label it appropriately.</p> <p>All students should be able to know and understand that the level of optimal arousal varies with the demands of a skill.</p> <p>Some students should be able to explain that optimal arousal levels vary depending on the skill being performed by giving specific examples</p>

Further work and reading

Extension

Extension work (differentiation task): some students could also research and give examples of skills from the same sport that may require differing levels of optimal arousal depending on how they are performed. For example, how a rugby tackle may require high levels of arousal when performed 'front to' but much lower levels if it was a 'tap' tackle.

Some students can start to prepare for the next lesson to research techniques that can be used to control arousal levels in sporting situations.

Preparation for next lesson

Students should complete homework and read over notes written in the lesson.

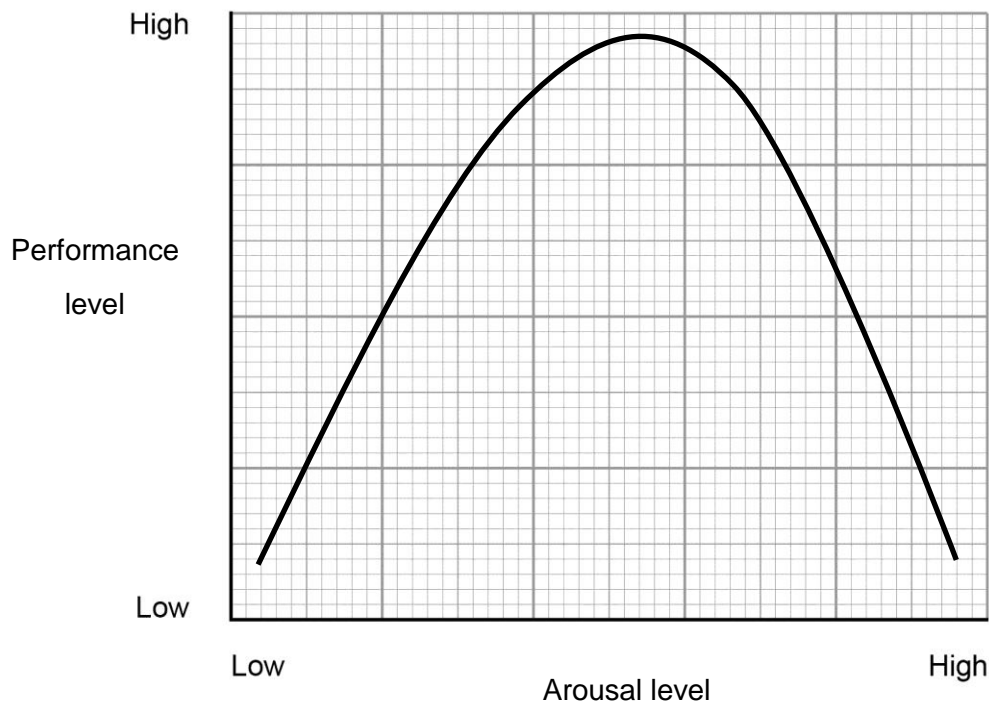
Homework

Students should complete handout 2. The tasks are based on the content covered in the lesson.

Handout 1

Arousal is deemed to be a physical and mental (physiological and psychological) state of alertness/readiness, varying from deep sleep to intense excitement/alertness.

Inverted U-theory graph



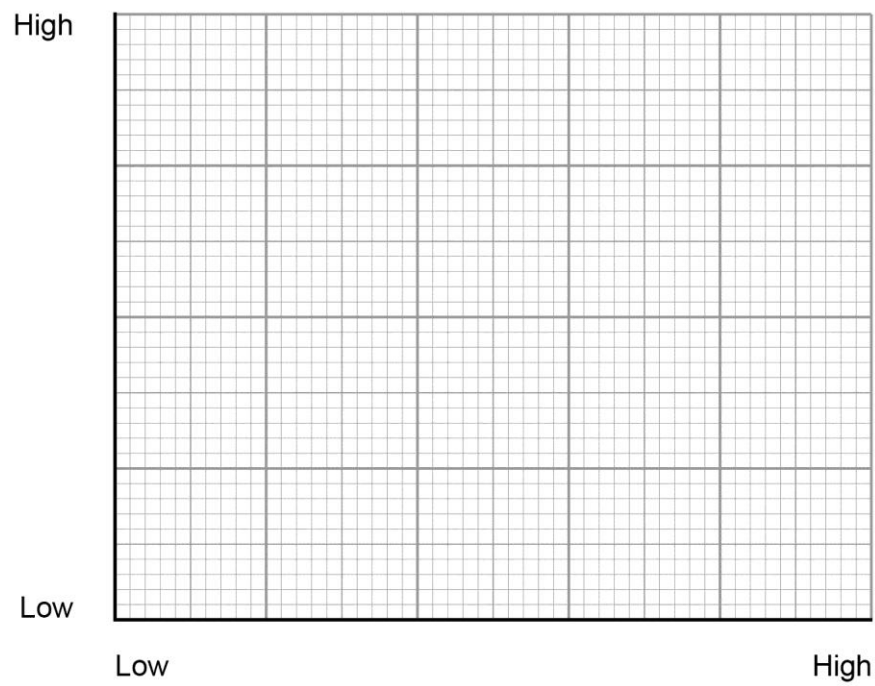
- As arousal increases so does performance.
- Performance will only increase up to an optimal level.
- As arousal increases beyond the optimal level, performance decreases.

Comments on activity 1
Comments on activity 2
Comments on activity 3

What level of arousal is required (at the optimal level) for the following skills?

Skill	Required optimal level of arousal (low, medium or high)
Punching in boxing	
Passing a football	
Swimming butterfly	
Rugby tackle	
Sprinting	
Flicking on a football with a header	
One handed catch in netball	

Handout 2 – Homework



1. Label the axes and draw three inverted U's to illustrate a low (A), medium (B) and high (C) optimal arousal level.

2. Using the table below, write which sporting skills you feel require:

- a low optimal level of arousal
- a medium optimal level of arousal
- a high optimal level of arousal.

Justify your choices.

Optimal level of arousal	Sporting skills	Justification
Low		
Medium		
High		