VICTORIAN CURRICULUM AND ASSESSMENT AUTHORITY

2009 Psychology GA 3: Examination 2

GENERAL COMMENTS

Students performed well on the Multiple-choice section of the 2009 Psychology exam paper. Responses to the Short answer section showed a greater spread of achievement. The scores in the Short answer section (overall mean 55%) were 'Memory' (59%), 'Learning' (54%) and 'Research Methods' (54%). In the Multiple-choice section, the mean scores were 'Memory' (81%) and 'Learning' (83%).

Students are encouraged to respond to each question. Leaving a line blank increases the likelihood that later answers on the computer-scored sheet will be out of synchronisation and further marks may be lost. It is advised that use of a ruler, moved down the page as each question is answered, will help to ensure that the correct response line is being completed.

In the Short answer section, some students failed to address the specific instructions in questions, for example, 'According to the semantic network theory' (Question 2), ' … using the method of loci' (Question 3), 'Using the terms of operant conditioning … ' (Question 8b.) and 'Using the terms of … ' (Question 9b). Students also struggled to relate their answers to the specific scenarios described in the questions, for example, 'Max' in Question 8 and 'Pete' in Question 9a. Students appeared to have some difficulty interpreting questions and often did not gain marks due to a lack of precision in their responses. In both the Memory and Learning Areas of Study, the mean score on the Multiple-choice section was, as in previous years, substantially superior to the mean score on the equivalent Short-answer section.

Often in Psychology examinations students will be asked for two pieces of information or two examples. Students must ensure that two pieces of information are given in questions such as this. In Question 12 of Area of Study 3, students were required both to state whether or not participants had been randomly allocated and to explain this answer. Students who did not complete both parts therefore could achieve only one of the two marks.

Almost all questions requiring two parts to an answer showed two separate response spaces on the answer booklet.

All questions in Area of Study 3 required reference to the research study described in the question, as stated in the instructions on the examination paper. Generic answers cannot show clear understanding and interpretation of the specific research study and thus cannot gain full marks.

Students are reminded that while slight spelling errors are not penalised, the meaning must be clear and unambiguous. Substitution of another word, which therefore changes the meaning, is not allowed.

SPECIFIC INFORMATION

Section A – Multiple-choice questions

The table below indicates the percentage of students who chose each option. The correct answer is indicated by shading.

Question	% A	% B	% C	% D	Comments
Area of Study 1 – Memory					
1	1	10	2	87	
2	83	2	13	2	
3	16	4	13	66	Option A eliminated the possibility of storing information from long-term memory, and option B indicated that short-term memory lasts for about 30 minutes – both of which are incorrect. Option C referred to sensory information; if sensory information is retained it can only be in sensory memory as the first encoding must occur when paying attention in order to transfer information into short-term memory.
4	1	98	1	0	
5	19	10	1	70	Many students chose option A; this shows the importance of reading all options, even though the first option may appear to be a possible correct response.
6	2	92	2	3	
7	2	3	88	8	
8	4	5	6	84	
9	7	3	86	3	
10	62	12	10	17	Procedural memory shows little or no decline with age.
11	19	58	4	20	Procedural memory and (well-learned) semantic memory show little decline in a healthy older person.
12	74	10	4	11	
13	2	2	13	83	
14	3	6	13	78	
15	3	6	11	80	
16	89	1	6	4	
17	1	4	82	13	
18	86	7	4	3	
19	93	5	1	0	
20	2	83	6	9	
21	96	2	0	1	
22	69	5	22	4	Anterograde (option D) and retrograde (option B) are terms used to nominate different types of amnesia, not interference. Students who chose option D correctly identified that the difficulty related to newer learning but incorrectly identified amnesia.
Area of Study 2 – Learning					
23	1	2	89	8	
24	2	96	1	1	
25	87	11	1	1	
26	1	4	3	92	
27	85	5	5	5	
28	11	83	3	3	
29	2	10	85	3	
30	1	88	9	1	
31	86	2	3	8	
32	4	2	4	90	

Question	% A	% B	% C	% D	Comments
33	33	31	25	11	Options A and C were accepted as correct responses. If the conditioning was considered as 'operant' then the answer must have been 'A'; if the conditioning is 'classical' then the answer was 'C'. Option B was not a correct response. Negative reinforcement refers to strengthening a response or increasing the frequency of the response.
34	97	1	1	1	
35	2	70	18	11	Reinforcement strengthens a response. It was clear that students who chose option C lacked understanding of this basic fact.
36	77	18	4	1	
37	71	2	5	21	Students who chose option D showed a lack of understanding of the principles of classical conditioning. The unconditioned stimulus elicits the unconditioned response – this is the reflexive response that is an essential feature of classical conditioning.
38	11	5	78	5	
39	84	10	4	2	
40	76	12	6	6	
41	3	3	87	7	
42	11	2	2	85	
43	78	19	1	2	
44	77	6	15	2	

Section B – Short answer questions

For each question, an outline answer (or answers) is provided. In some cases the answer given is not the only answer that could have been awarded marks.

Area of Study 1 – Memory

Question 1a.

Marks	0	1	Average
%	18	82	**0.8**

Anterograde

Students were required to give a single-word answer – other words were not permitted.

Question 1b.

Marks	0	1	Average
%	14	86	**0.9**

Procedural memories

Question 2a.

Marks	0	1	2	Average
%	37	23	40	**1.1**

Each concept (node) linked to other related nodes in a hierarchical manner. Three essential aspects of semantic network theory are:

- hierarchical structure
- nodes
- links.

Question 2b.

Marks	0	1	Average
%	59	41	**0.4**

We search long-term memory for one piece of information which then leads to retrieval of related information through the links.

Question 2c.

Marks	0	1	Average
%	55	45	**0.5**

The shorter the link between nodes in the network, the stronger the association between them and the less time it takes to retrieve related concepts. Therefore, the more closely your retrieval cue is linked to the memory you are trying to retrieve, the faster you will retrieve it.

Question 3

Marks	0	1	2	3	Average
%	39	28	20	13	**1.1**

Method of Loci: visually imagine each object located at a different place in a familiar room or along the route of a well-known journey

To recall the objects, mentally retrace that route.

For example, imagine your route to school and visualise a bar of chocolate at your front gate, a huge head of hair on the pedestrian crossing supervisor, an elephant waiting at the intersection, a view of the beach from the school yard and a giant hand pointing to your classroom. When you wish to retrieve the list, imagine your route to school and the various locations will act as retrieval cues for the items you have visually linked to the locations.

For full marks it was essential that a response demonstrated:

- visualisation process
- method of visualising to assist **encoding**
- method of visualising to assist **retrieval**
- all five items are required **in order** as instructed in the question.

Question 4

Marks	0	1	2	Average
%	13	28	59	**1.5**

Group 2: Generating a word similar in meaning to those in the list enables better storage of the word in a semantic network of long-term memory. The new words will act as retrieval cues for the original list.

Group 1 used maintenance rehearsal whereas Group 2 used elaborative rehearsal, a more effective way of encoding information in long-term memory.

Question 5a.

Marks	0	1	Average
%	35	65	**0.7**

The **unconscious** blocking of memory of an experience from conscious awareness (because of the distressing or disturbing nature of the experience)

Students were not awarded marks if they used the term ‘repressed’ in their response without explanation. Responses such as ‘repression is when memories are repressed unconsciously’ did not gain a mark.

Question 5b.

Marks	0	1	Average
%	34	66	**0.7**

Repression refers to the unconscious blocking of memory of an experience, whereas suppression refers to a conscious process.

Question 5c.

Marks	0	1	Average
%	10	90	**0.9**

Motivated

Area of Study 2 – Learning

Question 6

Marks	0	1	2	Average
%	9	41	50	**1.4**

Two of:

- no harm principle: Albert suffered psychological damage that was not reversed
- voluntary participation: it is unlikely that Albert's mother was aware that he was the subject of the experiment
- informed consent: Albert's parent(s) was not told what would be involved in the experiment and did not agree that he could take part
- withdrawal rights: Albert was not allowed to leave the experimental situation
- debriefing: Albert's parent(s) was not told what had been discovered and was not informed of how they could receive assistance reversing any harmful effects on Albert
- beneficence: the importance of the findings was not sufficient to outweigh the harm done to Albert
- confidentiality: the film was publicly released and Albert's first name and the initial letter of his family name were well known.

It was essential that the named ethical consideration matched the description.

Question 7a.

Marks	0	1	Average
%	15	85	**0.9**

One trial or single trial

Question 7b.

Marks	0	1	2	Average
%	36	27	37	**1**

Two of:

- classical conditioning usually takes several pairings of two stimuli for learning to occur, whereas one-trial learning only takes one pairing
- in classical conditioning, the conditioned response occurs immediately after the conditioned stimulus (or neutral stimulus) and unconditioned stimulus pairing. In one-trial learning, the conditioned response can occur a long time after the conditioned stimulus
- one-trial learning does not usually generalise the conditioned stimulus to other similar stimuli, whereas classical conditioning does generalise
- the response (unconditioned response) of feeling ill is very powerful. In one-trial learning, the conditioned response is very difficult to extinguish. It is easier to extinguish in classical conditioning.

Question 7ci.

Marks	0	1	Average
%	78	22	**0.2**

Sight of grapes

Question 7cii.

Marks	0	1	Average
%	59	41	**0.4**

The feeling of nausea at the sight of the grapes

Question 7ciii.

Marks	0	1	Average
%	74	26	**0.3**

The feeling of nausea due to the virus

It was essential to differentiate the conditioned response (nausea due to grapes) from the unconditioned stimulus (nausea due to virus).

Question 8a.

Marks	0	1	Average
%	20	80	**0.8**

Either of:

- Max could be rewarded with a sticker for every five minutes he remained in his seat (positive reinforcement)
- Max could be scolded when he gets out of his seat (punishment).

Question 8b.

Marks	0	1	2	Average
%	27	27	45	**1.2**

Either of:

- the psychologist gives Max a sticker for every session he does not get out of his seat. The sticker acts a positive reinforcer to encourage the behaviour of staying in his seat
- the psychologist scolded Max when he tried to leave his seat. This acted as punishment, making it less likely that Max would repeat the behaviour.

Many students continue to confuse **negative reinforcement** (which strengthens a response) with **punishment** (which weakens a response).

Question 9a.

Marks	0	1	Average
%	55	45	**0.5**

Positive transfer occurs where learning in one situation enables learning in a new situation to be quicker and/or easier. In learning Spanish, Peter may have developed skills in learning vocabulary or grammatical structures and these skills improve his ability to learn Italian.

Question 9b.

Marks	0	1	2	Average
%	39	45	16	**0.8**

Petra learned to play netball and became skilled in a few weeks. Later her friends persuaded her to try basketball but she found it difficult to learn to run and dribble the ball because she was used to ‘stopping and propping’.

The emphasis must have been on **learning to learn.** Students did not get full marks for simply indicating that there are different skills required, so Petra would not be as good at basketball as she was at netball. For full marks the answer needed to clearly demonstrate that the negative transfer affects the ability to **learn**, not simply the ability to perform.

Area of Study 3 – Research Investigation

Question 10

Marks	0	1	2	Average
%	24	16	61	**1.4**

Grade 4 children in Victoria who watched the literacy program on television will show a greater increase in literacy skills (operationalised as difference in score between literacy tests A and B) than participants who watched cartoons of their choice.

An operational hypothesis is a stated prediction of the outcome of the experiment that includes:

- statement of the population
- statement of the **independent variable** (IV)
- statement of the **dependent variable** (DV)
- operationalisation of the **dependent variable**.

If the independent variable was continuous it would also be operationalised.

A correct response included appropriate operationalisation of the dependent variable and statement of the population, the independent variable and dependent variable.

Students needed to demonstrate their understanding of the concept of operationalisation and their understanding that a hypothesis is a statement of the predicted effect of a change in the independent variable on the value of the dependent variable.

A hypothesis cannot be expressed as a question; some students continue to make this error.

Question 11

Marks	0	1	2	Average
%	16	16	68	**1.5**

Independent variable: watching the literacy program or watching cartoons of choice
Dependent variable: literacy skills in children (operationalised as improvement in score on test B compared with test A)

Question 12

Marks	0	1	2	Average
%	27	23	50	**1.3**

Yes. The computer placed, by chance, one of each pair in each of the groups. Each participant had an equal chance of being in either group.

Question 13a.

Marks	0	1	2	Average
%	31	16	53	**1.2**

Matched participants (matched pairs) or matched subjects. Participants were matched based on similar literacy skills (score on test A) and gender. One participant was then allocated to E group and the other to C group.

Question 13b.

Marks	0	1	2	Average
%	32	20	49	**1.2**

Independent groups disadvantage

- need more participants for the same strength of results
- participant variables such as gender and literacy skills are not controlled

Repeated measures disadvantage

- order effects such as learning or boredom may interfere with results
- more time would be needed (an extra four weeks)

Question 14

Marks	0	1	Average
%	81	20	**0.2**

There is a 5 in 100 (or 1 in 20, or 5 per cent) probability that the results are due to chance alone.

Many students misunderstood the meaning of the term 'probability'. It does not mean that five times in 100 this result will occur by chance. The question was 'What does a level of significance of 0.05 mean?'; however, many students answered as if the question read 'What does $p < 0.05$ mean?'.

Question 15

Marks	0	1	Average
%	41	59	**0.6**

No

Question 16

Marks	0	1	2	Average
%	38	19	43	**1.1**

In this question students needed to name one uncontrolled variable and then explain how this variable affected results.

Question 17

Marks	0	1	2	Average
%	35	27	39	**1.1**

No, these results should not be generalised.

Any of:

- participants were selected according to who volunteered in the first 100
- participants were not randomly selected
- not every Grade 4 child had an equal chance of being selected.

Question 18

Marks	0	1	2	Average
%	39	53	8	**0.7**

- full explanation of the findings in this study
- information about where and how to seek psychological help (counselling) if needed
- the right to withdraw data after the experiment

Debriefing takes place **after** the research has been concluded and conclusions have been drawn. Many students indicated that participants should be told what would be involved in the research, for example, incorrectly implying that debriefing occurs **before** the research.

There was **no** deception involved in this research, so comments relating to deception were irrelevant.