PSYC 332
COGNITIVE PSYCHOLOGY
1
STUDY GUIDE
UNIVERSITY OF GHANA
SCHOOL OF CONTINUING
AND DISTANCE EDUCATION
PSYC 332
COGNITIVE PSYCHOLOGY 1

STUDY GUIDE
For Undergraduates Level 300

2015/16 – 2016/17 Academic Year

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Acknowledgements

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COURSE DESCRIPTION

1. COURSE WEBSITE
   http://sakai.ug.edu.gh/XXXXXXXXX

2. INSTRUCTOR
   Dr. Benjamin Amponsah
   Dept. of Psychology
   University of Ghana
   P. O. Box LG84
   Legon, Accra

   Email: bamponsah@ug.edu.gh
   Office: Folson's Block Rm 4,
   Department of Psychology

   Dr. Benjamin Amponsah is the
   corresponding instructor.

3. Support Contact Information
   School of Continuing and Distance Education
   University of Ghana
   P. O. Box XXXXXXX
   Legon, Accra

   Phone: XXXXXXXXX
   Email: XXXXXXXXX
4. OVERVIEW

Cognitive Psychology I, as the name implies is an introduction to cognitive psychology course. The course is intended to cover topics in memory and cognition. As you may reason, treating all the major topics in one semester will be a herculean task for students. Cognitive Psychology I, therefore introduces the first part of the study of cognition. At level 400, Cognitive psychology II will be introduced to complement the first part. The objective of the course is to introduce the substantive fundamental issues of cognitive psychology. The course is prepared with the conviction that Distance Education students can be introduced to cognitive psychology – specifically areas in cognition concerning human memory in an easy and readable way. It is also anticipated that the principles, theories and assumptions underlying the course will be revealed in simple and nontechnical way.

To meet these objectives, I have chosen to discuss basic conceptual issues in detail, believing that the reporting of data makes little meaning unless the issues and problems are clear. I believe this approach is very important in introductory course like this, where in many cases the conceptual issues tend to be very abstract. The course is rich with a lot of practical examples and research findings from several renowned cognitive psychologists which I duly acknowledge. Besides, the review questions are well selected to enable you think through what you have read. This approach is also well intended especially when you are introducing students to cognitive psychology. Following such an introduction, students should have a firm foundation on which to build additional knowledge and understanding in advanced courses.

The interesting thing about this course is that it is not only designed to help you understand your own memory processes and improve upon them, it will also enable you to appreciate the difficulties of your colleagues who need your help.

The course is structured to include structural explanation of memory, evaluation of the traditional modal model, processing view of memory – acquisition of information, storage, retrieval of information and causes of failure to access information and finally, the constructive description of human memory,

5. PROBLEM-BASED LEARNING APPROACH

Problem-based learning (PBL) is a student-centered pedagogy in which students learn about a subject through the experience of problem solving. The goals of PBL are to help the students develop flexible knowledge, effective problem solving skills, self-directed learning, effective collaboration skills and intrinsic motivation. This course will use a problem-based learning approach.

Working in groups, students identify what they already know, what they need to know, and how and where to access new information that may lead to resolution of the problem. The role of the instructor/lecturer/tutor is to facilitate learning by supporting, guiding, and monitoring the learning process. The tutor will help build students’ confidence to take on the problem, and encourage the students, while also stretching their understanding.

6. COURSE FORMAT

The course content will be delivered online through the SAKAI Learning Management System (Sakai LMS). The Sakai LMS will be used to deliver
Announcements will be posted to the course website and/email accordingly. It is the responsibility of students to check on announcements made in class, on the Course Website, and through email.

7. LEARNING OUTCOMES

The learning outcomes for the course are outlined along three strands: knowledge, skills and outcomes.

7.1 KNOWLEDGE

Students must have knowledge on

1. Substantive and fundamental issues of cognitive psychology especially on human memory and cognition.
2. The structures of human memory.
3. Evaluate research on the classical modal model of memory.
4. The view that memory is a process by first describing the encoding process.
5. The description of memory as a storage process and examine evidence from neuropsychology.
6. Retrieval process and retrieval failure.
7. The constructive nature of memory, eyewitness testimony and aging.

7.2 SKILLS

Students must be able to

1. Apply the knowledge in cognitive psychology in understanding of everyday practical problems of memory and cognition.
2. Evaluate and design simple experiments in the field of cognition.
3. Analyse human mental function in terms of encoding information and the various storage process.
4. Apply the knowledge to improve their learning strategies and retention of information.
5. Apply the appropriate retrieval strategies to minimize human forgetting. These might include development of proper cues, mnemonic strategies and minimizing interference.
6. Describe the memory process as constructionist based on general schema and experience.
7. Describe the complexities of using eye and ear witness testimonies in the judicial process and ways to improve their reliability.
8. Describe memory pathologies and the aging process.

7.3 COMPETENCE

Students should in the future be able to

1. Initiate and lead the conduct of research in human memory and cognition.
2. Able to explain some learning difficulties and recommend strategies to minimize them.
3. Apply some of the findings in cognitive psychology to improve acquisition of information, storage and retrieval of such information.

4. Design general strategies to help improve upon learning and memory.
8. ASSESSMENT

The assessment for this course has been designed to help all students to maximize their individual and group/team learning opportunities. A summary of the assessment tasks is provided below.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>FORM OF ASSESSMENT</th>
<th>DELIVERED</th>
<th>MARKS</th>
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<tbody>
<tr>
<td>Individual</td>
<td>Multiple Choice Questions (MCQs)</td>
<td>Alongside Sessions</td>
<td>15%</td>
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<tr>
<td>Assignments</td>
<td>Short Essays</td>
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<td>Term Paper/Presentation</td>
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<td>Group Assignments</td>
<td>Term Project/Paper/Presentation</td>
<td>Beginning of Semester</td>
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<td>Written Examination</td>
<td>Semester Examination</td>
<td>End of semester</td>
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<td><strong>Total</strong></td>
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8.1 Individual Assignments

Individual assignments will be provided at end of sessions. These assignments may be in the form of Multiple Choice Questions (MCQs), Short Essays and/or a Term paper or presentation. Deadlines will be provided for each assignment with respect to scheduling of the sessions.

9. RECOMMENDED TEXT

- Akotia, C. S. & Mate-Kole, C. C. (2014, Eds.). *Contemporary Psychology: Readings from Ghana* (Chapter 4, p. 53 - 69)
DETAILED CLASS SCHEDULE

The course is organized into 13 SESSIONS along the following lines: (1) Overview; (2) Goals and Objectives; and (3) Activities and Assignments.

10. SCHEDULE OF SESSIONS

<table>
<thead>
<tr>
<th>Week</th>
<th>Session</th>
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<td>1</td>
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<td>13</td>
<td>Session 13</td>
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</tbody>
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11. SESSION 0 – INTRODUCTION TO UGBS 302

11.1 Overview

Introductions and orientation to the use of the Sakai Learning Management System (LMS) and the available tools for the course.

11.2 Learning Objectives

At the end of the session, the student will

1. Understand the subject matter of this course – Research Methods and how the course is organized
2. Become familiar with the tools in the Sakai LMS to be used in the course.
3. Do self-introductions and discuss the expectations for the course in the Chat Room

11.3 Activities and Assignments

This week, complete the following tasks:

1. Log onto the UG Sakai LMS course site: http://sakai.ug.edu.gh/XXXXXXXXXX
2. Watch the Video for Session 1 - Course Introduction
3. Visit the Chat Room and introduce yourself while discussing expectations for the course
4. Explore the online tools available in Sakai.
12. SESSION 1 – ORIGINS OF MEMORY RESEARCH

12.1 Overview

This section introduces you to the historical antecedents of the field of Memory research and that will provide you with a useful framework to follow contemporary research trends. You will realise that as a result of intense effort by many cognitive psychologists to refine and advance knowledge in the area of memory, our understanding of this complex subject has increased dramatically.

12.2 Goals and Objectives

At the end of the session, the student will be able to

1. Describe the roots of memory research tracing it from the classical Greek philosophers
2. Identify the influential researchers in the field of memory
3. Understand the uses and functions of memory
4. Show how contemporary researchers emerged and the future of the discipline

12.3 Activities and Assignments

This week, complete the following tasks:

1. Log on to the UG Sakai LMS course site: http://sakai.ug.edu.gh/XXXXXXXXX
2. Visit the Chat Room and introduce yourself while discussing expectations for the course
3. Review Lecture Slides: Session 1 – Origins of memory research
4. Visit the Chat Room, introduce yourself and discuss expectations for the course
5. Complete the Individual Assignment for Session 1

13. SESSION 2 – STRUCTURAL ACCOUNTS OF MEMORY

13.1 Overview

This section aims to help you to appreciate human memory in terms of its structures of sensory memory, short term memory and long term memory. This view point maintains that memory can be considered as a system of components that have both structural and process aspects. This view point maintains that memory can be considered as a system of interrelated components that have both structural and process aspects. Structurally, memory seems to differ markedly in their nature and organization. By process aspects we are referring to the cognitive operations that transferred and altered the memories stored in different locations

13.2 Goals and Objectives

At the end of the session, the student will

1. Understand the structures of memory including sensory memory, short-term memory and long-term memory.
2. Be able to describe the relationship that exist between the structures and their interdependence.
3. Understand that cognitive operations are brought psychologically to bear on the information before the transfer can be evacuated from one location to another.
13.3 Activities and Assignments
This week, complete the following tasks:
1. Log onto the UG Sakai LMS course site
2. Review Lecture Slides: Session 2
3. Visit the Chat Room and discuss the Forum question for Session 2
4. Complete the Individual Assignment for Session 2

14. SESSION 3 – EVALUATION OF THE MODAL MODEL OF MEMORY

14.1 Overview
The session will critically examine the rationale for the existence and importance of the sensory register. We would also examine the functional distinction between the short-term and the long-term memories.

14.2 Goals and Objectives
At the end of the session, the student will be able to
1. Evaluate the existence and Importance of the Sensory Register
2. Decide on the propriety of the distinction between STM and LTM
3. Propose a model that will rectify the structural and functional difficulties of the separate existence of the two stores

14.3 Activities and Assignments
This week, complete the following tasks:
1. Log on to the UG Sakai LMS course site
3. Visit the Chat Room and discuss the Forum question for Session 3
4. Complete the Individual Assignment for Session 3

15. SESSION 4 – WORKING MEMORY

15.1 Overview
Several arguments levelled against the structures of sensory and short-term storages have convinced most researchers that the modal model may not be quite as useful as once thought. In this session we are going to consider the working memory model as an attempt to address the weaknesses in the modal model.

15.2 Goals and Objectives
At the end of the session, the student will
1. Understand the rationale for the institution of the working memory
2. Be able to explain the characteristics of the working memory
3. Be able to evaluate the working memory model in terms of its appropriateness in dealing with the weaknesses of the modal model

15.3 Activities and Assignments
This week, complete the following tasks:
1. Log onto the UG Sakai LMS course site: http://sakai.ug.edu.gh/XXXXXXXXX
16. SESSION 5 – DUAL-CODE POSITION

16.1 Overview

In this section, we examine the argument of dual-code position. An argument suggesting that there are two different modes of representing material in the brain and the implications. This theory has implications for why visual material is better recalled than abstract material.

16.2 Goals and Objectives

At the end of the session, the student will be able to:

1. Explain the dual-code hypothesis as suggested by Allan Paivio
2. Describe the nature of visual coding or representation
3. Describe the nature of verbal coding or representation
4. Evaluate the implications of the two modes of representation

16.3 Activities and Assignments

This week, complete the following tasks:

1. Log onto the UG Sakai LMS course site: http://sakai.ug.edu.gh/XXXXXXXXX
2. Review Lecture Slides: Session 5 – Dual-Code Position
3. Read Chapter 5***
4. Visit the Chat Room and discuss the Forum question for Session 5
5. Complete the Individual Assignment for Session 5

17. SESSION 6 – PARALLEL DISTRIBUTED PROCESSING

17.1 Overview

Attempts to explore alternatives to the information-processing approach in the early 1980s led to the development of the framework known as the Parallel-Distributed Processing (sometimes called Connectionist model). This model may be seen as a model of memory which is fundamentally different from the other models of memory.

17.2 Goals and Objectives

At the end of the session, the student will be able to:

1. Describe another contemporary model of memory that builds on earlier models with somewhat different conceptualizations
2. Explain the assumptions underlying the parallel distributed processing
3. Evaluate the theory in terms of their strengths and weaknesses

17.3 Activities and Assignments

This week, complete the following tasks:
18. SESSION 7 – MEMORY PROCESSING VIEW - ENCODING

18.1 Overview
The general idea here is to consider memory as a process starting from the initial encoding of information. Encoding is simply about all the necessary psychological arrangements made to acquire and prepare the information for eventual storage.

18.2 Goals and Objectives
At the end of the session, the student will
1. Understand the level of processing as a facility of encoding
2. Understand the issue of context as the bedrock of encoding
3. Understand the importance of effort and encoding in the processing of information
4. Be able understand the notion of encoding specificity in the preparation of information for storage

18.3 Activities and Assignments
This week, complete the following tasks:
1. Log onto the UG Sakai LMS course site: http://sakai.ug.edu.gh/XXXXXXXXX
2. Review Lecture Slides: Session 7 – Memory Processing View - Encoding
3. Read ***
4. Visit the Chat Room and discuss the Forum question for Session 7
5. Complete the Individual Assignment for Session 7

19. SESSION 8 – STORAGE IN MEMORY

19.1 Overview
We are going to introduce yet another process of memory – storage. Presumably, that is where the encoded information is stored in memory. We will look at the concept of storage and proceed to look at early attempts to locate the engram (the record left in memory by an experience). We will examine neuropsychological evidence of memory as well.

19.2 Goals and Objectives
At the end of the session, the student will be able to
1. Appreciate the historical attempts to locate the engram
2. Examine the evidence from anterograde amnesia
3. Review neuropsychological literature concerning the location for storage of information

19.3 Activities and Assignments
This week, complete the following tasks:
1. Log onto the UG Sakai LMS course site: http://sakai.ug.edu.gh/XXXXXXXXX
2. Review Lecture Slides: Session 8 – Storage in memory
3. Read ***
4. Visit the Chat Room and discuss the Forum question for Session 8
5. Complete the Individual Assignment for Session 8

20. SESSION 9 – NATURE OF INFORMATION IN THE STORE HOUSE

20.1 Overview

We are always aware of something and we can always retrieve information we have been privy to including objects and events. The problem we face now is how to determination of the specific location of storage. We have made progress through the work of neuropsychologists and we look forward considerably to the future for more research evidence. In this section we turn our attention to look at what is in the storehouse without bothering to know the precise location.

20.2 Goals and Objectives

At the end of the session, the student will be able to
1. Understand how memory is represented
2. Explain our memory representation in terms of category, exemplar, and generalization
3. Explain the classical view of identification
4. Explain the typicality effects
5. Explain category hierarchy, prototypes and exemplar models

20.3 Activities and Assignments

This week, complete the following tasks:
1. Log onto the UG Sakai LMS course site: http://sakai.ug.edu.gh/XXXXXXXXX
2. Review Lecture Slides: Session 9 – XXXXXXXXXX
3. Read ****
4. Visit the Chat Room and discuss the Forum question for Session 9
5. Complete the Individual Assignment for Session 9

21. SESSION 10 – RETRIEVAL STM/WORKING MEMORY

21.1 Overview

In this session we turn our attention to how we access or retrieve information stored in short-term memory. Think about the equivalent question of how we retrieve information from long-term memory which is more meaningful to us. Such a question is particularly interesting when retrieval, whether short- or long-term memory, is extremely rapid and out of conscious awareness. So the question is how does the rapid process of retrieval happen in short-term memory?

21.2 Goals and Objectives

At the end of the session, the student will be able to
1. Conceptualize short-term memory briefly and its trace life
2. Discuss serial versus parallel search in the short-term memory
3. Explain the concepts self-terminating search and exhaustive search in the short-term memory
4. Appreciate pronunciation time as important in retrieving information from short-term memory
5. Affirm that without rehearsal the active information stays maximally for approximately 30 seconds

21.3 Activities and Assignments
This week, complete the following tasks:
1. Log onto the UG Sakai LMS course site: http://sakai.ug.edu.gh/XXXXXXXXX
2. Review Lecture Slides: Session 10 – Retrieval from STM/working memory
3. Read ****
4. Visit the Chat Room and discuss the Forum question for Session 10
5. Complete the Individual Assignment for Session 10

22. SESSION 11 – RETRIEVAL FROM LONG-TERM MEMORY
22.1 Overview
This section discusses factors that facilitate retrieval of information from the long-term memory as opposed to the short-term. This is based on the appreciation of the fundamental dichotomy in the memory system that gives rise to the notion of short- and long-term memory retentions.

22.2 Goals and Objectives
At the end of the session, the student will
1. Be able to discuss the view that long-term memory retrieval is the ultimate aim of memory
2. Understand why cues are important in the retrieval process
3. Appreciate the two competing theories of retrieval from the long-term memory

22.3 Activities and Assignments
This week, complete the following tasks:
1. Log onto the UG Sakai LMS course site: http://sakai.ug.edu.gh/XXXXXXXXX
2. Review Lecture Slides: Session 11 Retrieval from the long-term memory
3. Read ****
4. Visit the Chat Room and discuss the Forum question for Session 11
5. Complete the Individual Assignment for Session 11

23. SESSION 12 – CONSTRUCTIVE NATURE OF MEMORY I
23.1 Overview
We discuss constructive nature of memory, an idea that departs from laboratory work and emphasizes on the use of global knowledge to construct the to-be-remembered information. Several of these reconstructions are found in memories of autobiographic, flashbulb memories, eye and earwitness testimonies.
23.2 Goals and Objectives
At the end of the session, the student will be able to
1. Describe autobiographic memory
2. Understand the complexities in flashbulb memories
3. Discuss memory and eye witness testimony
4. Evaluate the evidence as to the nature of recovered memories

23.3 Activities and Assignments
This week, complete the following tasks:
1. Log onto the UG Sakai LMS course site: http://sakai.ug.edu.gh/XXXXXXXXX
2. Review Lecture Slides: Session 12 – Constructive nature of memory
3. Read ****
4. Visit the Chat Room and discuss the Forum question for Session 12
5. Complete the Individual Assignment for Session 12

24. SESSION 13 – MEMORY AND AGING

24.1 Overview
We look at the issue of Memory and Aging. The subject is interesting in its own right because we are all subject to aging and the eventual shrinking of neural tissues, which affect the way we encode, store and retrieve information. We look at issues of memory in childhood and age related pathologies

24.2 Goals and Objectives
At the end of the session, the student will be able to
1. Appreciate some briefs on memory in childhood
2. Understand issues in aging and their impact on memory
3. Understand current trends in the study of the subject matter

24.3 Activities and Assignments
This week, complete the following tasks:
1. Log onto the UG Sakai LMS course site: http://sakai.ug.edu.gh/XXXXXXXXX
2. Review Lecture Slides: Session 13 – Memory and Aging
3. Read ****
4. Visit the Chat Room and discuss the Forum question for Session 13
5. Complete the Individual Assignment for Session 13