



KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN
UNIVERSITAS NEGERI YOGYAKARTA
FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM
Alamat: Karangmalang, Yogyakarta – 55281

SATUAN ACARA PERKULIAHAN (SAP)

Faculty	: MIPA
Study Program	: Pendidikan Matematika
Course name/Code/UOC	: Psychology of mathematics learning/PMA202/2
Class/Semester	: Pend. Mat I/3
Time/Meeting No-	: 100 minutes/1
Course convenor	: Endah Retnowati, Ph.D

A. Learning outcomes in the meeting

1. Explain the meaning and significance of educational psychology for mathematics learning process

B. Indicator

1. Explain the meaning of psychology
2. Mention learning theories developed by associationist and also cognitivists
3. Explain learning theories developed by associationist and also cognitivists
4. Explain the shift from behaviorism into cognitivism
5. Explain the perspective of cognitive psychology to define learning process

C. Bahan Kajian Pembelajaran

Handout is attached.

D. Pengalaman Belajar

1. Starting activities

- ✓ Introduction
- ✓ Learn the content of syllabus and the framework of the lecture, as well as that the lecture uses an e-learning Besmart
- ✓ Pay attention on lecture strategies, assignment planning and assessments
- ✓ Know that the prerequisite course is Psikologi Pendidikan
- ✓ Recall the meaning of psychology, that has already been learned in Psikologi Pendidikan, using question and answer
- ✓ Recall the meaning of learning, that has already been learned in Psikologi Pendidikan, using question and answer

2. Main activity

- ✓ Discuss learning theories from associationist (behaviorism) and cognitivism
- ✓ Analyse the reform or learning from behaviorism to cognitivism
- ✓ Discuss the perspective of cognitive psychology to define meaningful learning process

3. Closing activity

- ✓ Draw conclusion the meaning and significance of psychology of learning to understand the process of meaningful mathematics learning
- ✓ Assignment:
 1. Summarise the difference view of psychology of learning in the associationist and cognitivist era
 2. Explain the significance of cognitive psychology in mathematics learning

E. Resources

Bruning, R. H., Scraw, G. J., Norby, M. N., & Ronning, R. R. (2011). *Cognitive psychology and instruction* (5th ed.). Boston, MA: Pearson. [pp. 1-12]

F. Assessment

Assessment aspects : Attitude of responsibility during learning and also effort to actively involve in the discussions

Assessment technique : Observation (*check-list*)

Assessment instrument : Observation manual

Assessment criteria : (See attachment)

Yogyakarta, 1 September 2014

Dosen

Endah Retnowati, Ph.D.

NIP. 19801228 200212 2 003



KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN
UNIVERSITAS NEGERI YOGYAKARTA
**FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN
ALAM**

Alamat: Karangmalang, Yogyakarta – 55281

SATUAN ACARA PERKULIAHAN (SAP)

Faculty : MIPA
Study Program : Pendidikan Matematika
Course name/Code/UOC : Psychology of mathematics learning/PMA202/2
Class/Semester : Pend. Mat I/3
Time/Meeting No- : 100 minutes/1
Course convenor : Endah Retnowati, Ph.D

A. Learning outcome in the meeting

1. Explain how mathematics knowledge is acquired

B. Indicator

1. Explain how students use sensory memory to give attention, perceive and pattern recognition received information
2. Explain how information is processed by sensory memory for then it is selected to be assign meaning in working memory
3. Explain the role of prior knowledge stored in long term memory that support the process in the sensory and working memory

C. Learning material

Handout is attached.

D. Learning experience

1. Starting activity

- ✓ Showing summary that students have written to lecture for ticking
- ✓ Recall main points of previous lecture
- ✓ Re-explain the significance of cognitive psychology for meaningful mathematics learning
- ✓ Learn that cognitive process occurs during mathematics learning
- ✓ Describe a meaningful mathematics learning

2. Main activity

- ✓ Discuss the modal model that is the diagram of information processing system
- ✓ Discuss learner cognitive architecture to learn the role of three main memories related to learning process: sensory memory, working memory and long term memory when recognising, organising and constructing new (novice) knowledge
- ✓ Learn and evaluate how students themselves processing new knowledge such as the lecture material
- ✓ Discuss the implication of information processing theory in mathematics learning

3. Closing activity

- ✓ Conclude how students acquire and construct mathematics knowledge
- ✓ Assignment:
 1. Summarise how students acquire and construct mathematics knowledge

E. Resources

Bruning, R. H., Scraw, G. J., Norby, M. N., & Ronning, R. R. (2011). *Cognitive psychology and instruction* (5th ed.). Boston, MA: Pearson. [pp. 13-36]

F. Assessment

- Assessment aspects : Attitude of responsibility during learning and accomplishing the assignment and also effort to actively involve in the discussions
- Assessment technique : Observation (*check-list*)
- Assessment instrument : Observation manual
- Assessment criteria : (See attachment)

Yogyakarta, 1 September 2014

Dosen

Endah Retnowati, Ph.D.

NIP. 19801228 200212 2 003