Review for SRL in Serious Games:

Cognitive Theories Section

1. An information processing storage system that can hold a limited amount of information for a few seconds

2. This happens when information gets mixed up with or pushed aside by other information

3. The type of practice that occurs when newly learned information is practiced for shorter durations of time over many sessions

4. The most important principle of this theory is that incoming information that fits into an existing framework is more easily understood

5. The process of thinking about material to be learned in a way that connects the material to information or ideas already in the learner's mind

6. Long term memory in humans corresponds to what part of the computer

7. Name three things that can determine the capacity of one's working memory

8. The ability to retrieve information from long-term memory depends on what?

9. What is the purpose of chunking information?

10. Why is automaticity crucial to effective learning?

11. Understanding how much you know about former presidents is an example of what?

12. Expert chess players can remember game situations better than novices because of the ability to do this:

13. These are a general group of strategies that enhance your memory.

14. What did the Gestalt researchers tell us about memory when using their closure tasks like the Dalmatian picture?

15. Why is our working memory like a bottleneck?

16. What is the more general name for the memory system that includes sensory, short term, & long term memory?

17. Name three ways to increase our ability to effectively encode information in long-term memory

- What are seductive details?
- How do effective learners 'beat the bottleneck' in working memory?
- How does multi-tasking influence your information processing?
- What is cognitive load and what are the specific types of load in a technology-based learning context?
- What did Joshua Foer have to say about memory capabilities?

Metacognition Section

18. Define metacognition

19. Knowing how well you are doing is an example of what?

20. Metacognition can be divided into two parts, name them

21. Planning, monitoring, and evaluation are part of what aspect of metacognition

22. Explain the difference between declarative and conditional knowledge

23. "Mission Control" is another name for this part of your memory system

24. Name the three levels of study strategies that we discussed in class.

25. Name three ways to increase transfer

26. The ability to evaluate conclusions by logically and systematically examining the problem, the evidence, and the solution

27. This becomes more probable when learning in many contexts, from many examples, and reflecting on your existing knowledge

28. World hunger is an example of what kind of problem?

29. Name two parts of the general problem solving model

30. Describe what a heuristic is and give an example

- How is creativity defined in a research context?
- How is creativity measured?
- Why is it important to be calibrated as a learner? Does calibration matter is serious games?
- The 'knowing' and 'adjusting' components of metacognition are called what?
- What is the zone of proximal development?
- What is the relationship between scaffolding and the zone of proximal development?

Motivation Section

31. Any consequence that strengthens (increases the frequency of) a behavior

32. When teachers guide students toward goals by reinforcing the many steps that lead to success the process is called

33. Schedule of reinforcement in which the number of behaviors required for reinforcement is unpredictable

34. Having a pizza party the last day of every month that students behaved well during is an example of what kind of reinforcement schedule?

35. Playing a slot machine sets a person up on what type of reinforcement schedule?

36. Name theorist behind Social Cognitive Theory who did the BoBo Doll experiment.

37. Rewards for learning that are not inherent in the material being learned. Rewards may range from praise to grades to recognition to prizes

38. Explain the difference between an entity and incremental theorist including what types of goals they adopt

39. Define self-efficacy

40. Name three tendencies of a highly efficacious person

41. Which types of goals lead one to be concerned with others' perceptions of one's ability

42. Incremental theorists typically chose these goals

43. Name three external factors that students may attribute their success or failure to

44. Name three ways to enhance intrinsic motivation

45. Name three recommendations for giving extrinsic rewards

46. Attribution theory is an explanation of motivation that focuses on how people explain the causes of their _____ and _____

47. Within attribution theory there are three dimensions for attributing success or failure including internal/external, stable/unstable

48. Explain what attribution theory is

- Who is Alfie Kohn and what does he believe?
- What are general recommendations when considering the use of rewards?
- What is self-regulated learning?
- What does research say about serious digital games and their effectiveness compared to traditional learning environments in terms of learning outcomes and motivation?

Answer Key

1. working memory
2. interference
3. distributed practice
4. schema theory
5. elaboration
6. hard drive
7. innate capacity, mnemonics and strategies, background knowledge
8. how well the information was organized when it was encoded
9. package information to fit it through the working memory bottleneck
10. consumes less of our limited resources, less likely that info will decay, process info more quickly
11. metacognition
12. chunk information into meaningful patterns
13. mnemonics
14. we fill in the gaps
15. limited amount of space
16. information processing system
17. learn in depth, use mnemonics, build schemas, focus on organization, activity, and elaboration, learn in many contexts, be strategic about deliberate practice, block out interference
18. knowledge of cognition and regulation of cognition--knowing the extent of your knowledge and how to plan, monitor, and evaluate what you are doing
19. metacognitive monitoring
20. knowledge of cognition, regulation of cognition
21. regulation of cognition
22. declarative is knowing that/factual information; conditional is knowing when and where/knowledge of strategies

23. metacognition or executive system

24. basic strategies such as notetaking and underlining, comprehension monitoring, develop critical thinking

25. use many examples, concept maps/organizers, rule-example-rule, teach most familiar to least familiar, confront misconceptions

26. critical thinking

27. transfer

28. Ill-defined

29. Identify problem, represent problem, select strategy, implement strategy, evaluate results

30. Widely applicable strategy similar to a "rule-of-thumb"; trial and error, means end analysis, analogy, working backwards

31. reinforcer

32. shaping

33. variable ratio

34. fixed interval

35. variable ratio

36. Bandura

37. extrinsic incentives

38. entity theorists more or less ascribe to the theory that ability is fixed while incremental theorists focus on how ability is gained over time through effort; entity theorists adopt performance goals whereas incremental theorists adopt learning/mastery goals

39. judgment of one's ability to perform a task within a specific domain

40. become less frustrated, more likely to engage in difficult task, more persistence

41. performance goals

42. mastery/learning

43. luck, test difficulty, character of the teacher, room conditions

44. maintain curiosity, give choices, use a variety of presentation modes, have students set goals

45. make informational, unexpected, avoid tangible rewards for something the student already likes, require a standard to be met

46. successes and failures

47. controllable/not controllable

48. the study of what factors individuals attribute as being the cause of their successes and failures