NAME: _________________________________________________________________

East Carolina University
PSYC 3206 – Developmental Psychology

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Study Questions for Chapter 9: Intelligence
Study Questions for Achievement Motivation and Schooling
(selected pages from Chapter 10)

ASSIGNMENT on Achievement Motivation is posted at the end of this module. This assignment is due on Friday, April 3 by the end of class time (noon). The assignment must be typed and it must be approved by one of your instructors before being accepted. Be sure to turn in a draft early or check with us during times when the lab is not busy. Do a thorough job answering the questions so that you don’t have to revise your assignment.


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**Learning Objectives for Chapter 9**

- Be able to state the psychometric definition of intelligence.
- Be able to define fluid and crystallized intelligence and recognize examples of each.
- Be able to state the original purpose of intelligence tests.
- Be familiar with the scales on the Wechsler IQ test and be able to recognize examples of tasks from Wechsler's verbal and performance IQ scales.
- Be able to explain the normal distribution of IQ scores.
- Be able to define reliability and validity, and be familiar with research findings on the reliability and validity of IQ tests.
- Be familiar with what the Bayley Infant Scales measure and how well they do or do not predict IQ in childhood. Also be able to state what infant skills are the best predictors of IQ in childhood.
- Be able to state what factors can lead to increases or decreases in children’s IQ scores over time.
- Be able to describe the long-term effects of Head Start programs.
- Be able to summarize what research with adolescents and adults tells us about the validity of IQ scores.
- Be able to state what factors IQ scores predict well and what factors IQ scores do not predict very well.
- Describe the role that cohort effects play in cross-sectional and longitudinal studies of the development of intelligence over the lifespan.
• Be familiar with results of Schaie's sequential study.
• Be able to recognize tasks that elderly individuals would have more or less trouble with.
• Be able to define terminal drop.
• Be able to describe factors that are related to intellectual decline in old age.
• Be able to discuss plasticity of the nervous system across the lifespan.
• Be familiar with the Schaie and Willis training study.

What is intelligence?

1. The theory that intelligence is a trait that can be measured is known as the __________________ approach.

2. Cattell and Horn, more recently, described two types of intelligence. The ability to use your mind actively to solve novel problems is known as __________________ intelligence.

3. This type of intelligence is measured by tasks such as:

4. Fluid intelligence includes what three skills?

NOTE: Fluid intelligence also includes "response fluency" which means being able to make a response very quickly, or generate a number of answers in a short time, e.g., name as many words as you can think of that start with the letter "s" as quickly as you can. Remember the digit span task from last week? That also would illustrate fluid intelligence. The digit span task was a measure of __________________.

5. The use of knowledge acquired through school and other life experience is referred to as __________________ intelligence.

6. This type of intelligence is measured by tasks such as:

7. Here are some types of items found on intelligence tests. Categorize each example as measuring crystallized intelligence (CI) or fluid intelligence (FI).
   _____What is the color of emeralds?
   _____If one pencil costs 15 cents, how much will 5 pencils cost?
   _____What comes next in this pattern?  o, t, f, s, s, e? (Answer is "n," as in nine—do you see the pattern?)
Dog is to wolf as cat is to _________________.
a. bear  b. tiger  c. kitten  d. butterfly

Name as many synonyms for the word "good" as you can think of in 1 minute.

Why is it better to pay someone for doing a job after the work is done?

8. ________________ involves using your mind in new and flexible ways and is not influenced by ____________, whereas ________________ involves using what you have already learned through experience.

**Explorations: Measuring Intelligence**

9. The earliest intelligence test was developed by Binet and Simon. The purpose of this test was to:

**NOTE:** This is probably the most important thing you can learn from this chapter. The original purpose of IQ tests (and the purpose for which they are most often used today) is to assess schoolchildren who are having problems in the classroom. The main purpose of these tests is not to measure intelligence (whatever that is) but rather to identify children who are in need of some type of special educational services. Much of the controversy these tests have created might have been avoided if we'd never called them "intelligence" tests in the first place, but rather "Predictors of School Success Tests" or PSST tests.

10. David Wechsler developed IQ tests for both children and adults. Both scales have two IQ scales, a ________________ scale and a ________________ scale.

11. On Wechsler's IQ tests, the verbal scale includes tasks such as:

12. These are most similar to which of Cattell and Horn's types of intelligence?

13. Wechsler's performance scale includes items such as:

14. Cattell and Horn would categorize these tasks as ________________ intelligence.

**NOTE:** The digit span test is on Wechsler's verbal IQ scale but it is a measure of fluid rather than crystallized intelligence. Why do we keep going on and on about digit span??? There must be some reason!!

15. If we graph the IQ scores of many people, the scores form a symmetrical, bell-shaped curve called a ________________ distribution.
16. Most people will score at or close to an IQ of 100, which means that they are of ___________________ intelligence.

17. (See the figure in the explorations box.) About 2/3 of people have IQs between _____ and -_____ . About 95% of people have IQs between _____ and _____.

18. Individuals with IQ scores below 70 are often identified as _________________________________.

**NOTE:** IQ tests are examples of standardized tests. Standardized tests are familiar to everyone who has been through the public school system. You have certainly had experience with standardized achievement tests or the Scholastic Achievement Test (SAT). Standardized tests have been tried out on a large sample of individuals (called the standardization sample) so that the test makers have a lot of information about how well most people do on the items. (If you took the SAT you were part of the standardization sample when you answered items that were experimental questions and were not used to calculate your own test score. These items may be used on later versions of the test.) In addition, the standardization process includes an evaluation of the quality of the test. Tests are evaluated in terms of two things: their reliability and their validity. These terms are probably familiar to you, although they are easily confused. The reliability of a test refers to how consistent or stable the test scores are. If you take an IQ test on Monday and your IQ is 112 but on Wednesday your IQ is 80, then that test is not reliable. In addition to being reliable, tests should also be valid. Validity refers to whether a test measures what it claims to measure. Reliability and validity are independent of each other. A test can be highly reliable but not necessarily valid. IQ tests and most standardized tests are highly reliable across short periods of time. If you give a group of people a test and then re-assess them a few weeks later, the correlation between the first and second test will be very high. What about over the long term? Can we predict IQ in infancy? How early can we get an accurate assessment of a person's IQ? These questions also relate to the reliability of the test.

19. Validity refers to:

20. Reliability refers to:

21. Think back to chapter 1. How can we use correlations to determine the reliability and validity of tests? Use the following questions to discover the answer.
   a) If you give 100 people an IQ test and then give them the same test again two years later and the correlation between their first test and their second test is +.97, is that test reliable? _______________________
   b) Does it predict at Time 1 how they will score at Time 2? _______________________
   c) If the test-retest correlation was +.03, would the test be reliable? _______________________
   d) Why or why not?
22. Look back to question 9. What is the purpose of an IQ test?

23. If an IQ test is valid, then it should measure (or predict) what?

24. If there was a correlation of +.02 between IQ scores and academic performance (grades in school), would the test be valid? ____________________ Why or why not?

25. If the correlation of between IQ scores and grades in school is +.70, would the test be valid? ____________________ Why or why not?

The Infant

26. The most widely used measure of infant intellectual growth is called:

27. Developmental Quotient (DQ) scores are useful for:

28. Let's consider how well can we predict a child's later IQ by looking at their infant IQ scores (DQ). Refer back to concepts discussed in chapter 2—If infant IQ scores were highly correlated with later IQ, that would be evidence supporting a __________ view of development.
   a) continuity   b) discontinuity   c) nature   d) nurture

29. If infant IQ was not correlated with later IQ, this would be evidence supporting a __________ view of development.
   a) continuous   b) discontinuous   c) nature   d) nurture

30. How well does the Bayley Scale DQ predict later IQ scores? Why is the correlation not higher and what does this say about the validity of the Bayley?

31. What can we measure in infancy that does predict IQ later in childhood?
32. _____________________________ refers to the speed with which an infant loses interest in a repeatedly presented stimulus.

33. _____________________________ refers to an infant's tendency to prefer a novel stimulus to a familiar one.

34. The correlation between these measures and childhood IQ is about ________.

35. A "smart" infant would be characterized as one who:

**Critical Thinking Question:** If your sister complained that her new baby was always fussy and needed to be entertained with something new all the time, what would you tell her?

**The Child**

36. By age 4, a child's IQ shows a test-retest correlation of _________ with her/his IQ at age 12. The (greater, lower) the age of the child and the (longer, shorter) the length of time between tests, the higher the test-retest correlation will be.

37. IQ does seem to be a stable (highly reliable) trait if (a) an individual is around school age and (b) you are looking at large groups of people. Individuals, however, can show large changes in IQ as they get older. Children whose scores fluctuate the most:

38. What factor(s) can lead to increases in IQ as children get older?

39. What factor(s) can lead to decreases in IQ as children get older?

40. What are some of the long-term benefits of Head Start programs?
The Adolescent

41. The brain growth spurt that occurs in early adolescence may underlie several cognitive advances, including:

42. Given the definition of validity, how could you assess whether an IQ is valid? What is the purpose of the IQ test? Be careful—refer back to earlier questions. If an IQ test is valid, it should predict ____________________________.

43. What is the correlation between IQ and grades in school? _________ Does IQ do a good job of predicting school performance? _________

44. What is the correlation between IQ and number of years of education? _________

45. How well do IQ scores predict college grades? _____________________ Why is this?

The Adult

IQ and Occupational Success

46. What is the relationship between IQ and occupations held by adults?

47. What do these correlations tell us about the validity of the IQ test?

Changes in IQ with Age

48. Describe developmental changes in IQ from cross-sectional studies.

49. Remember chapter 1 and the pros and cons of cross-sectional studies. How do these relate to cross-sectional studies of IQ?
50. Describe developmental changes in IQ from longitudinal studies. How does aging effect performance and verbal IQ differently?

51. Werner Schaie's study of the effects of aging on intellectual performance is an example of the __________________ research design. Remember Chapter 1: Describe this design.

52. Summarize Schaie's study on aging:

(a) with respect to cohort effects v. age effects.

(b) with respect to crystallized v. fluid intelligence.

(c) with respect to different types of tasks.

53. How typical is intellectual decline in old age?

54. Below is a list of tasks. Indicate which you think that an elderly person would have MORE or LESS trouble with, based on your knowledge of Schaie’s research.

_____ Programming a new model VCR to tape a program while you're away on vacation.
_____ Recalling events that led up the US involvement in World War II.
_____ Remembering who played the starring roles in Academy Award winning films.
_____ Figuring out how to disable the alarm system you accidentally set off before the police arrive
_____ Defining words like "obtuse" or "aggravate".
_____ Writing down as many words you can think of that start with "C" in 30 seconds.
_____ Remembering a 7-digit phone number that someone tells you long enough to dial it.
55. Terminal drop is:

56. What factor(s) are related to intellectual decline in old age?

57. What is a good general rule to follow in order to maintain intellectual functioning later in life?

58. How does plasticity of the nervous system relate to intellectual functioning later in life?

Applications: IQ Training for Aging Adults

59. In the Schaie and Willis training study, what groups were selected for training?

60. What skills did Schaie and Willis train? These skills represent (fluid, crystallized) intelligence.

61. What were their findings and what message should we take away from this study?

62. Identify the independent and dependent variables in the Schaie and Willis study.
IMPORTANT NOTE
The next chapter (10) covers language development, achievement motivation, and schooling. The material on achievement motivation and schooling is more relevant for this module than for the next module on language development. Therefore, we are adding that material to this module, and we will give you the specific page numbers so that you don’t have to skip around as much.

Learning Objectives for Achievement Motivation
(selected pages from Chapter 10)

- Be able to distinguish between internal and external attributions for success and failure. Also be able to distinguish between stable and unstable causes of success and failure.
- Be able to describe the differences between a mastery orientation and a learned helplessness orientation.
- Be able to describe age differences in attributions for success and failure. How do conceptions of ability change with age?
- Be able to describe differences between learning goals and performance goals, and the kinds of motivations and academic outcomes that go with each set of goals.
- Be able to discuss how parents and schools either facilitate or undermine academic achievement (how these two sources influence learning and performance goals).
- Be able to describe Elliott and Dweck’s (1988) study
- Be able to describe factors related to declining levels of achievement during the adolescent years.

SUPPLEMENTAL INFORMATION (not in text)

NOTE: Many researchers thought of achievement motivation as a personality trait that each person has to a greater or lesser degree. However, achievement motivation can be influenced by other factors, including environmental experiences, such as the value placed on achievement, expectations for success and attributions of success and failure. Weiner's attribution theory suggested that people attribute their success or failure to causes that are either internal (qualities of the individual) or external (environmental factors).

63. Individuals who assume that they are personally responsible for what happens to them would probably attribute their success or failure to ____________ causes.

64. Individuals who believe that their success or failure results from luck, fate or the actions of others would probably attribute their success or failure to ____________ causes.

65. Which of the following would be likely to be said by a person who focuses on internal causality? External causality? Label each as "E" or "I."

_____ a. "I'm terrible at psychology."
_____ b. "I should have studied for my PSYC 3206 exam instead of procrastinating."
_____ c. "This course just requires too much work. No one should have to work this hard."
_____ d. "That was lucky! That quiz didn't have any of the questions I skipped on it."
_____ e. "I have a lot of musical talent."
f. "Other students have more talent than I do but I practice a lot to make up for it."

g. "Music theory is the hardest class I've ever taken. They just expect too much of us."

h. "My teachers really like me and that's why I do so well in music."

i. "This class is so easy, I didn't even have to crack the book."

j. "I have a really good memory so I don't have to study very hard in most classes."

NOTE: Attributions of success or failure also differ along another dimension known as stable or unstable causes. Ability and task difficulty are examples of stable causes because they don't change over time. Luck and effort are examples of unstable causes because they can change. You can have better luck tomorrow or you might increase the amount of effort you put into an endeavor.

66. Which of the examples in question 10 reflect stable causes?

67. Which reflect unstable causes?

The Child (pp. 267-269)

Achievement Motivation

68. Carol Dweck has developed the ideas of internal/external and stable/unstable causality into a theory of achievement motivation. According to Dweck, high achievers tend to attribute their successes to ______________________ causes, such as _____________. Give some examples of these kinds of attributions.

69. High achievers tend to blame their failures on either ______________________ causes or ______________________ causes, such as _____________. Give some examples of these kinds of attributions.

70. Which of these failure attributions is more adaptive (which one can you control)?

71. Students with this more adaptive attributional style are referred to by Carol Dweck as having a _____________ orientation. How do these students behave in the face of a challenging academic situation?
72. Low achievers attribute their successes to either _______________ or ________________.

73. What effect does this orientation have on these students?

74. Low achievers attribute their failure to __________________________ causes, such as __________________________.

75. Dweck describes these students as having a __________________________ orientation. What effect does this orientation have on students' response to challenging situations?

76. **Critical Thinking Question.** Describe a situation in your life in which you may have demonstrated a mastery orientation.

77. **Critical Thinking Question.** Describe a situation in which you may have demonstrated a learned helplessness orientation.

**Age Differences**

78. Before age _____, children tend to be unrealistic optimists who think they can succeed on almost any task. With age, children’s perceptions of their academic abilities become ________________.

79. Compare children younger than age 7 with children age 7 and older on how they respond to repeated poor performance.

80. **Critical Thinking Question:** Relate the developmental changes described above to Piaget’s stages of cognitive development.
81. Why are younger children less susceptible to damaging self-perceptions?

82. Young children view ability as:

83. This view of ability tends to encourage children to develop _____________ goals. Describe what this term means.

84. Older children tend to perceive ability as:

85. Students who view ability this way tend to have _____________ goals. Describe what this term means.

86. These children are less concerned with learning new things to improve their ability than they are with:

87. What happens to students who focus on learning goals as they progress through school?

88. What happens to students who focus on performance goals?

89. Explain how this accounts for students who are underachievers (i.e., have high ability but low grades).
Parent Contributions

90. List what parents can do and what they should not do if they want to foster mastery orientation in their children.

NOTE: Another thing parents can do is be careful about how they praise children. Saying, "Look at these grades! You're so smart!" may not be a wise thing to do. Try something like, "Wow! You have really worked hard this marking period. Good job!" How do these different types of praise relate to Carol Dweck's learning goals and performance goals? Praising the effort means that if the child's grades slip, he can do something to improve. Praising his/her ability means that if the grades slip, he or she is "dumb."

School Contributions

91. List what schools can do to foster mastery orientation in their students and what they should not do.

92. Briefly describe Elliott and Dweck's experiment with elementary school children.

The Adolescent (pp. 274-277)

Declining Levels of Achievement

93. Describe the developmental changes in achievement motivation that occur during adolescence.
94. Explain how this change is influenced by:

a) Individual characteristics:

b) Family characteristics

c) Peer Pressures:

d) Poor Person/Environment Fit:

e) School characteristics:

**NOTE**: Questions for the module quiz end here. The material below is for the required achievement motivation assignment.

***Achievement Motivation Assignment***

You can earn up to 10 credits for completing this assignment by April 3.

Answers to the questions below need to be written up in essay format, typed, and turned in for approval.

Now that you have read and answered questions about the material on achievement motivation, you will complete an exercise in which you apply this information to your own achievement motivation scores. To complete this assignment, you must have turned in the survey that was made available before Spring Break and that was due by March 20. That survey contained the statements listed below. Notice that some of the questions correspond to learning goals and others correspond to performance goals – try to identify which questions fit with each kind of goal. In the survey, you were asked to mark whether you agreed or disagreed with each these statements. If a student agrees strongly with the following statements, would this reflect learning goals or performance goals? Label each statement as "L" or "P" (just answer here in your module – this is not part of the assignment to be handed in). The answers are in the module key.
a) I enjoy challenging school assignments.

b) It is important to me to get better grades than my classmates.

c) I persevere (continue to try) even when I am frustrated by a task.

d) I adapt well to challenging circumstances.

e) I work hard even when I don't like a class.

f) I like others to think I know a lot.

g) Sticking with a challenging task is rewarding.

h) It is important to me to always do better than others.

Researchers have found that there is a strong relationship between learning goals scores and academic performance (GPA), but less of a (and sometimes no) relationship between performance goals scores and academic performance. To help you to bring together some of the information from Chapter 10 and relate it to your personal life, we're providing you with the results of your survey and asking you to discuss the results in relation to achievement motivation research. Bear in mind that while these research findings are true for groups of people, they may not hold true for each individual. Your data are a function of how honestly and accurately you answered the questions. They may reveal something about you that you find useful or you may disagree with the results. This assignment gives you an opportunity to think about some issues that are important to many college students.

Go to our website and click on the SURVEY RESULTS link under module 9. You will see 3 columns of numbers. The first column is your Banner ID number.

- If your Banner ID number does not appear on this list, then you did not fill out the survey by the deadline, so you cannot complete this assignment for extra credits.

- If you did fill out a survey (and your Banner ID appears in the list) but no results are posted for your survey, this is because you skipped some questions on it so no score could be calculated. Do your best to answer the questions.

The second column is labeled L-goals and this is your learning goals score. Write your learning goals score in this blank: __________ If you agreed with statements like: "I prefer course material that really challenges me so I can learn new things", then you are likely to have a high learning goals orientation. The third column is marked P-goals and it is your performance goals score. Write your performance goals score in this blank: __________ People who endorse performance goals would be agreeing with statements such as, "I want to get better grades in this class than most of the other students." Keep in mind that these achievement motivation scales are not mutually exclusive. Some people may be motivated by both learning goals and performance goals, whereas other people may emphasize one over the other.

The median learning goals score is 3.80. This means that half of your classmates’ scores fell above this number and half fell below this number. The median performance goals score is 3.20.

(1) List your learning and performance goals scores. Is each score near the median, above the median, or below the median compared to your classmates? Compare your two scores? Which is higher? Are you primarily motivated by learning goals or by performance goals?
(2) What experiences in your life (family, peers, school) do you think have influenced you to adopt your predominant goals, i.e., learning or performance?

(3) In what ways have these goals (learning or performance) influenced your college performance and career goals, positively or negatively?

- For questions 2 & 3, give specific examples—don't give brief answers without much thought.
- Be sure to write in complete sentences, not bulleted lists.
- Your assignment must be turned in and ACCEPTED by Friday, April 3, and it must be TYPED.