

JAT04 Intelligence II

Reading

A) Skimming for main ideas

Skim through the text and find the paragraph (1-7) in which each of the following appears. Write the number of the paragraph in the blanks.

- ___ (a) data about IQ scores gathered using a cross-sectional method
- ___ (b) an example to show why the best answer to questions about IQ and age is “It depends”
- ___ (c) a definition of the longitudinal method of gathering data
- ___ (d) a discussion about the usefulness of giving IQ test to young children
- ___ (e) definitions of fluid intelligence and crystallized intelligence
- ___ (f) a comparison of the IQ scores of young children with their adult IQ scores

Age differences and IQ

- 1 You know a great deal more than you did when you were 12 years old. You knew more when you were 12 than you did when you were 10. Certainly what we know generally increases with age, but what we ‘know’ is not a direct measure of intelligence.
- 2 One interesting question is whether the IQ scores of young children can predict their IQ scores at ages 14 or 40 or 80. As it happens, the measured IQs of individuals much younger than 7 do not correlate very well with later IQ scores. We cannot put too much importance on IQs earned by 4-year-olds as predictors of adult intellectual abilities.
- 3 This does not mean that the testing of young children is without purpose. Determining the intellectual abilities of young children is often very useful, particularly if there is some concern about retardation or if there is some thought that the child may be exceptionally gifted. The resulting scores may not predict adult intelligence well, but they do serve as a guide to assess the development of a child compared to other children. Even taken as a rough guide or indicator, knowing as early as possible that there may be some intellectual problem with a youngster is useful information.
- 4 What about intellectual changes throughout one’s whole life span? Does intelligence increase with age? Perhaps you can anticipate the answer: yes, no, and it depends. Much of the data that we have on age differences in IQ scores have been gathered using a cross-sectional method. That is, IQ tests are given at roughly the same time to a large number of subjects of different ages. When that is done, the results seem to indicate that overall, global IQ peaks in the early 20years, stays rather stable for about 20 years and then declines sharply.
- 5 A different approach to the same question would be to test the same individuals over a long period of time. This is the longitudinal method. When

this technique is used, things don't look quite the same, usually showing IQ scores rising until the mid-50s and then very gradually declining.

- 6 So we have qualified “yes” and “no” as answers to our questions about age and IQ so far. Probably the best answer is “It depends”. Some studies of cognitive abilities seem to demonstrate that we should ask about specific intellectual skills, because they do not all decline at the same rate, and some do not decline at all. For example, tests of vocabulary often show no drop in scores with increasing age whatsoever, while tests of verbal fluency often show steep declines beginning at the age 30.
- 7 Another “It depends” answer comes to the surface when we consider the distinction between what is called *fluid intelligence* and *crystallized intelligence*. It appears that fluid intelligence – abilities that relate to speed, adaptation, flexibility, and abstract reasoning – includes the sorts of skills that show the greatest decline with age. On the other hand, crystallized intelligence – abilities that depend on acquired knowledge, accumulated experiences, and general information – includes the sorts of skills that remain quite constant or even increase throughout one's lifetime.

B) Reading for detail

Discuss the answers to the following questions:

1. What is the youngest age at which you can test a child's IQ and closely predict the child's adult IQ?
2. Does intelligence decrease with age? The author's answer to this question is “yes”, “no” and “it depends”. Explain why each of these answers is possible.
3. What are the differences between collecting cross-sectional data and collecting data longitudinally?
4. Explain what the author means by fluid and crystallised intelligence.

C) Building vocabulary

1. In the text above, highlight the words that may be used to describe changes in numerical data over time, e.g. *drop*
2. The words *gradually*, *sharply*, *steadily*, *steeply* and *suddenly* are often found accompanying verbs describing changes. Do they describe fast or slow movement?

D) Turning written text into a graphic

Make graphs to illustrate the changes in test scores described in the text, i.e. how global IQ scores change with age when gathered using a cross-sectional method / longitudinal method, how crystallised / fluid IQ changes with age and how test scores of vocabulary / verbal fluency change with age.

(adapted from Seal, B. *Academic Encounters. Human Behaviour*. CUP 1998.)