Emotional Intelligence
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Module No # 2
Lecture No # 07
Measurement of Intelligence

Well the issue of measurement of intelligence has been a great concern for psychologists however over the period of times a many scientific tools have been developed by psychologists to measure different human abilities. So let us examine what exactly those tests are first of all the first intelligence test was created by Binet and Simon using simple task to distinguish children who do well in school from those who would not.

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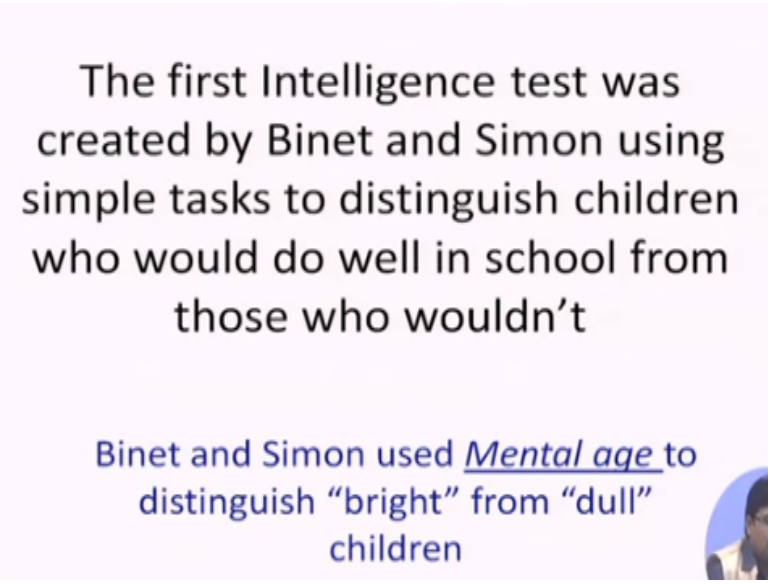

Binet and Simon use the concept mental is to distinguish the bright from the dull children's. So that was the starting point of measuring human abilities particular start measuring the intelligence level of students school going students.

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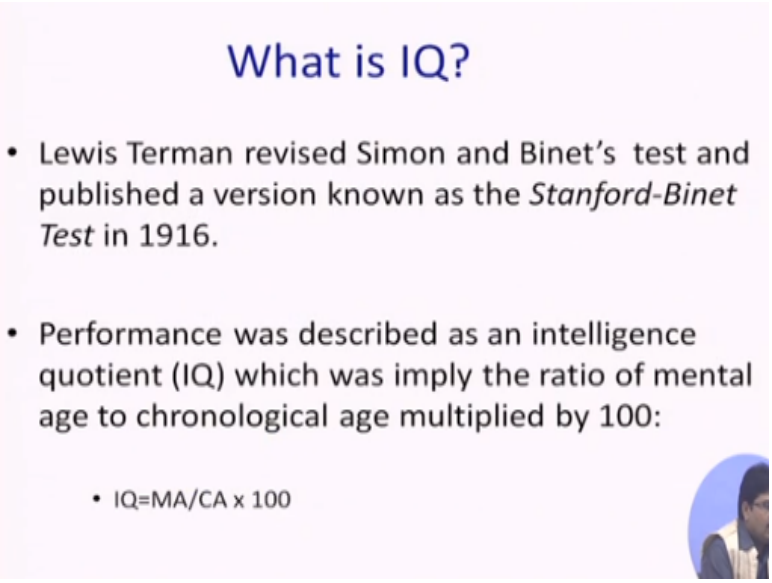

That is in fact the historical root of concept of IQ in the field of intelligence. Lewis Terman revised in the Simon Binet test and published a person known as the stanford's Binet test in the year nineteen Sixteen. However performance was described as an intelligence questioned which was implied the ratio of mental age to chronological age multiplied by hundred and the formula

is IQ = MA by CA into 10.0 To know more about that stand for Binet IQ test these are some of the features described here this test measure things that are necessary for school success.

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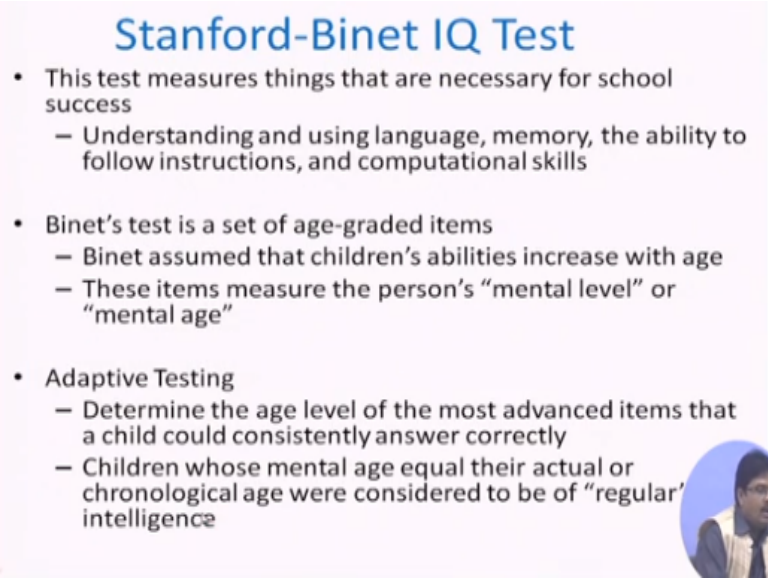

Understanding and using language memory the ability to follow instructions and computational skills these are some of the important requirements for student's success at school level. However Benit test is said to of age graded items Binet has assumed that children's abilities increase with age. So therefore this items measure the person's mental level what they call or what they mean the mental age.

The developed certain adoptive testing's what that determine the age level of the most advanced items that child could consistently answer correctly. So children whose mental age is equal to their actual or chronological age considered to be of regular intelligence.

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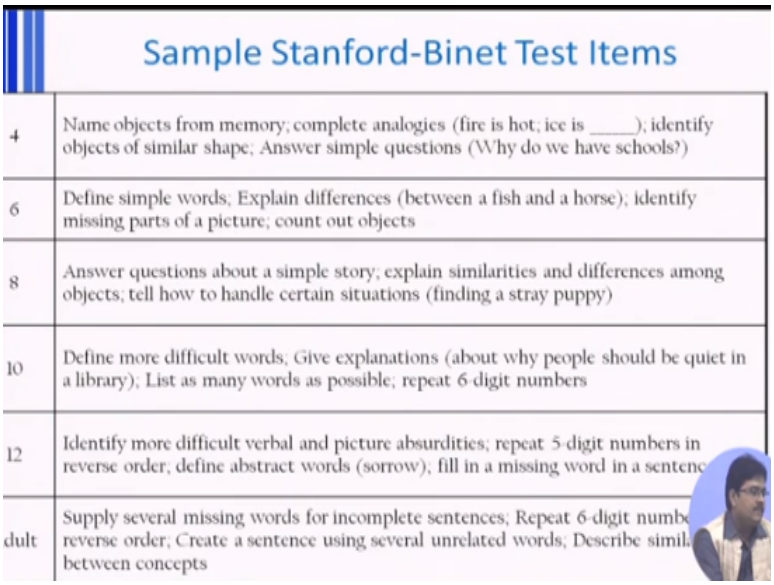

These are some of the same from Stanford-Benit test items. For example like name, items from memory like complete analogy like first is hot ice is dash, so what could be the answer ice is cold the simple answer is ice is cool this shows the how the child identify objects of similar shape. So answer simple questions why do we go to school or why do we have a school. So this also gives a reflection of child's analytical ability and then another sample item is called define simple words explain between fish and a horse.

So in order to know the analytical abilities the differential ability whether the person is able or child is able to distinguish between different objects living organism etc therefore the questions are designed in such a way to explore the critical appreciation of a particular object by the child say for examples what is the difference fish and a horse.

Identify missing parts of pictures suppose a picture is shown a cow picture is shown and two legs are missing now you ask is it a cow or what is missing in the picture. So that shows the analytical ability of the child then answer questions about simple story like explain similarities and differences among objects tell how to handle certain situations like finding a stray puppy.

In other items define more difficult words like give explanations about why people should be quiet in a library. When you are studying in a library why there is a board in front of you please

maintain silence. What is requirement of that then there could be some other examples like identify more difficult verbal and picture reliabilities absurdities like say repeat five digit number in reverse order.

Say for if I like a to make the backward conditioning in the proper order learn the way we calculate number in a series and 1,2,5 how quickly you can count from five to one. So identify more difficult and verbal pictures absurdities or lipid five digit numbers in reverse order define abstract words like sorrow. How do you describe sorrow? How do you define happiness?

So fill in a missing word in a sentence this are some of the examples but in case of adult supply several missing words for incomplete sentence just like repeat six digit number in a reverse order create a sentence using several unrelated words describe similarities between concepts.

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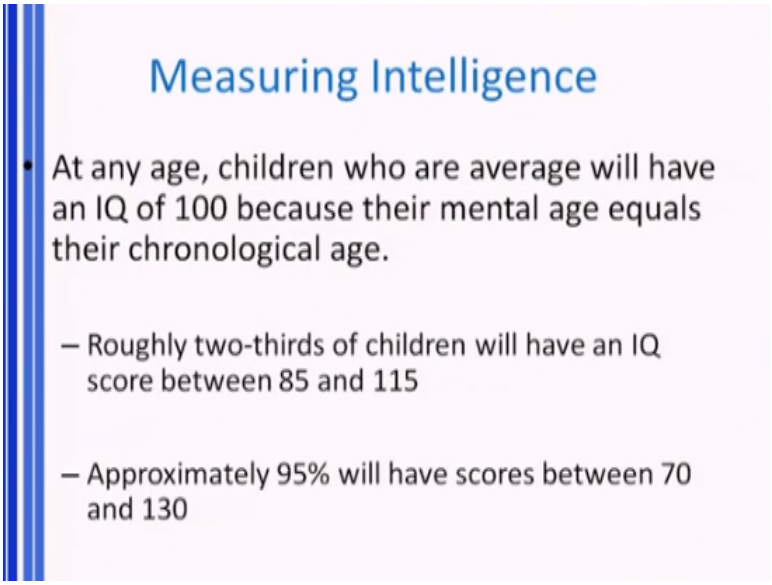

When you examine at any age children's who are average will have IQ of hundred because their mental age is equal to their chronological age. But roughly two third of the children will have an IQ score between eighty five to one one five. We have also seen that approximately ninety five percent will have scores between seventy to one thirty.

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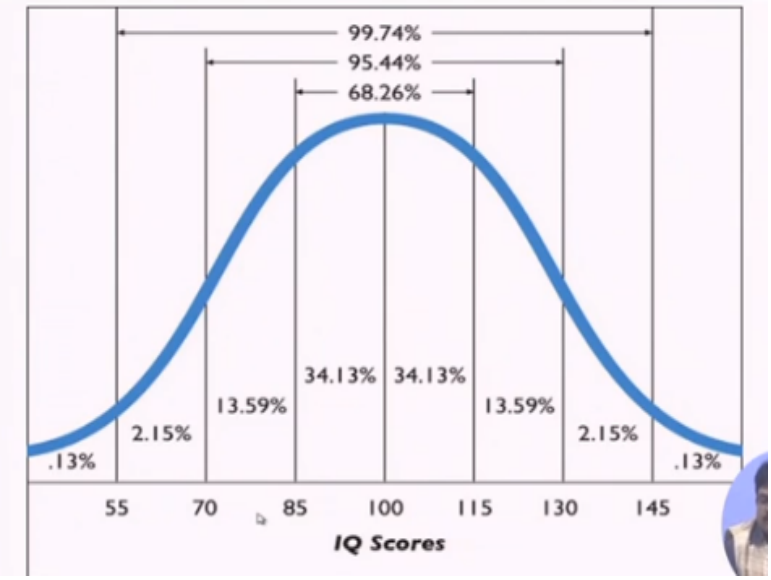

This shows the classifications of IQ score in normal distributions.

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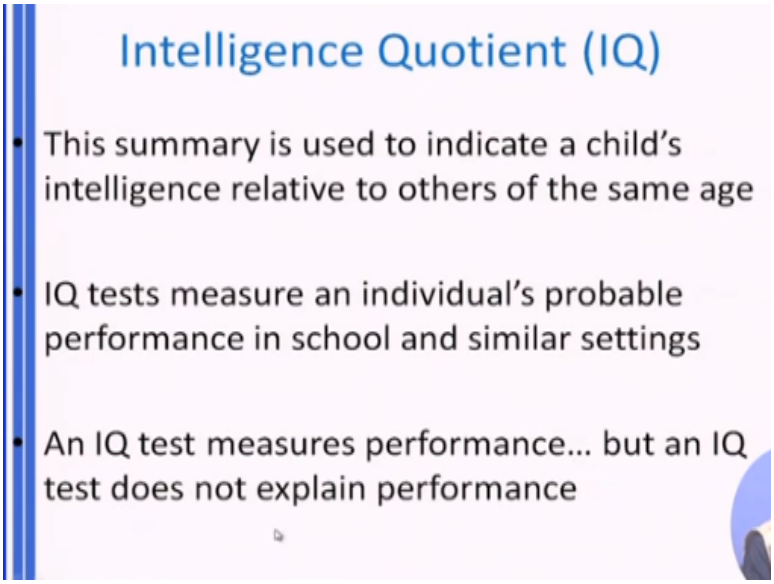

However the summary of the intelligence distribution used to indicate that child's intelligence relative to other of the same age.

IQ test measures and individuals probably performance in school and similar settings another outcome of the IQ question is that IQ test measures performance but an IQ test does not explain performance.

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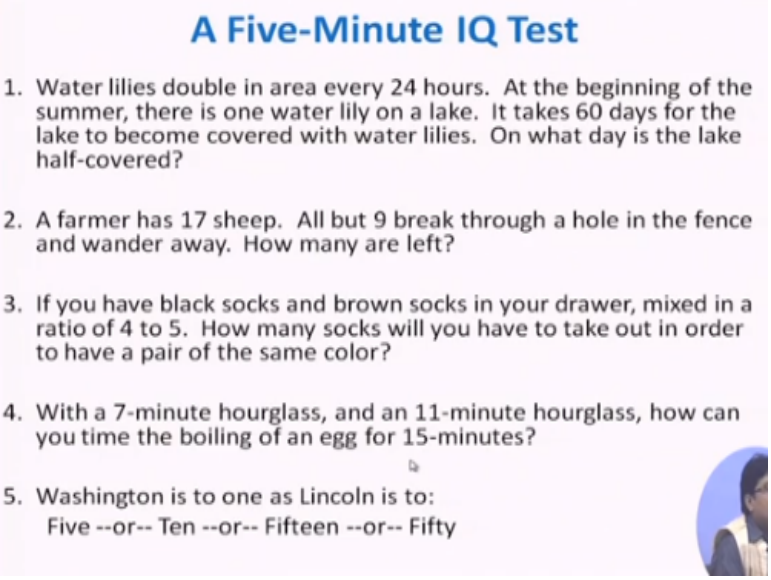

So therefore people look for some other test here is some IQ test items most of the IQ test items are best on reasoning. Say for examples like Water lilies doubles in area every 24 hours at beginning of the summer there is one way lily on the lake.

It takes sixty days for the lake to become covered with water lilies. On what day is the lake half-covered? So the second item is a farmer as seventeen sheep all but nine break through a hole in the fence and wonder away. How many are left? So this kind of questions put to the students so what could be the answer let us see what could be the answer.

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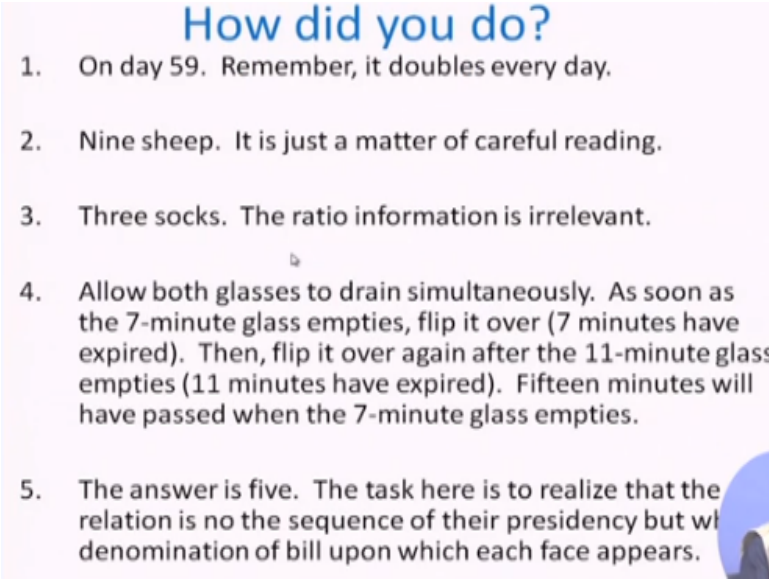

The answer is Nine sheep it just a matter of careful reading if you have black socks and brown socks in your dryer mix in a ratio of four to five. How many socks will you have to take out in order to have a pair of the same color? So the answer would be three socks because the ratio information is eleven.

Similarly if you go if you have within a seven minute hourglass and an eleven minute hourglass so how can you time the boiling of an egg for a fifteen minutes. Washington is to won as Lincoln is to dash maybe the possible answer could be five because the task here is to realize that the relations is known the sequence of their presidents but which denomination of will upon which each face appears.

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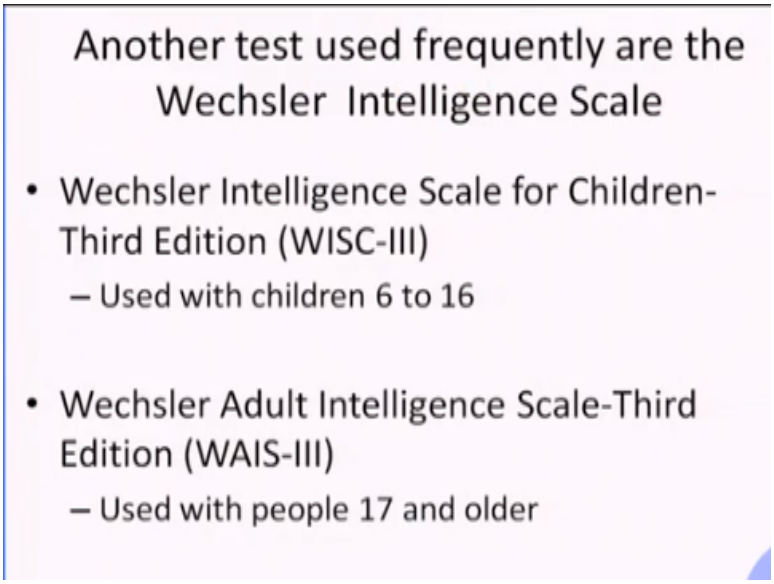

So this is how the IQ test are developed and IQ test are starters are measure in students. However other test also emerged with the passes of time and with the help of scientific research. David Wechslers came up with many intelligence tests such as Wechslers intelligence scale for children and later on Wechslers intelligence scale for adults.

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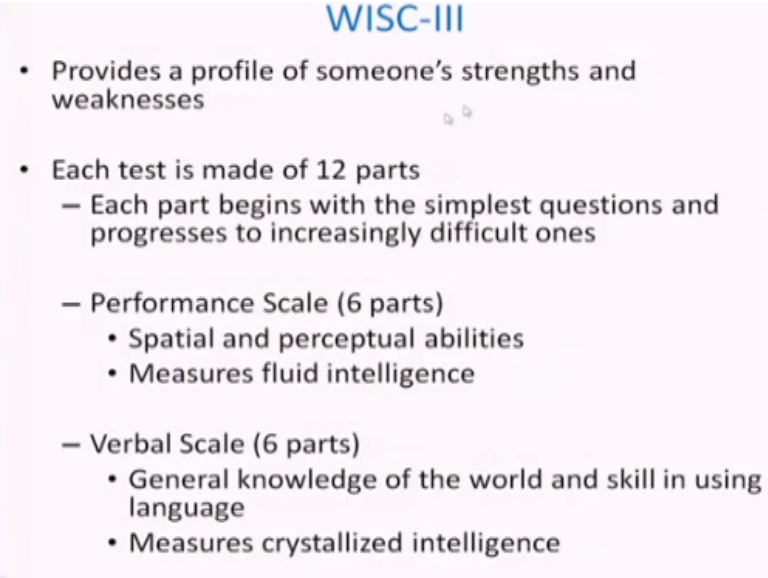

So he also developed WISC three that provides the profile of someone's strengths and weaknesses intelligence tests test are very useful no evaluating the intellectual profile of the students or college going students. Each test is made up of twelve parts each part begins with simplest questions and progress to increasingly difficult ones. It also consists of the bit of scale lies in that it consist both verbal as well as performance scales.

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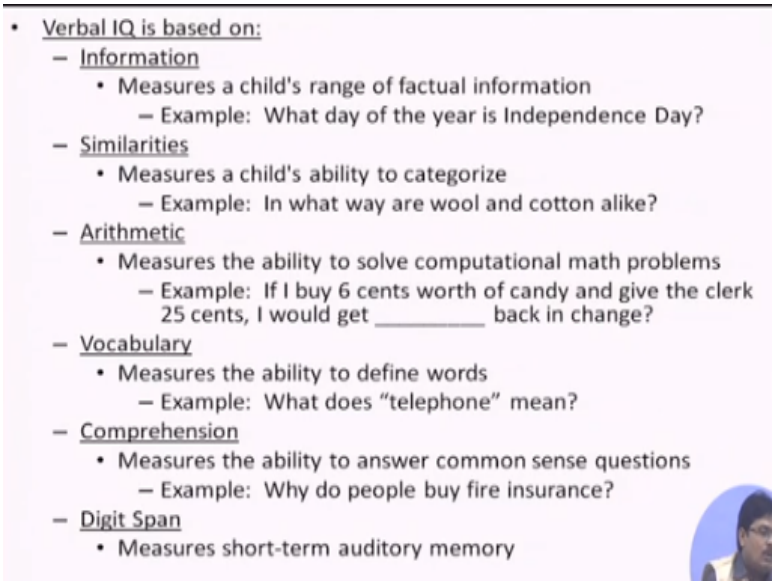

It measures both verbal and nonverbal intelligence so verbal IQ is based on information, similarities, arithmetic's, vocabulary, comprehension, digit span etc. The information portion consist of a measures a child range of factual information.

How much information is available with the child say for example what day of the year is Independence Day or say for examples why which we observes or do we observe second October right. So these are certain information's that are vital for measuring information abilities in terms of similarities it measures the child ability to categorize for example in what way are wool and cotton alike right.

Similarities and differences both on measure in what way table and chairs are different. So we measures they are categorizing the differences in terms of arithmetic ability is the ability to solve computational math problems for examples if I but six cents worth of candy and give the clerk twenty cents. I would get cash back in change so this is how we measure the computational ability of the students. But in terms of vocabulary which states that it's refer the ability to define words.

For example what does telephone mean? What does a pen mean? So this refers to the vocabulary aspects because the child is trying to explain what the object exactly what the world exactly stand for. In terms of comprehension we have seen that we are trying to measure the ability of a student in terms of common sense questions for example why do people buy fire insurance or why do people go for life insurance. So these are certain questions we try to how far the students are able to comprehend a particular problem and gives us bible answer.

The next one is digits span it measures the short term auditory memory to what extend we can remember and how much information we can store to what is it like you know earlier time we use to say we can maximum remember up to six plus minus one but now a days after this mobile years where you can easily remember more than ten digits. So even it is also so the digit span capability, is also expanding with environment changes and exposures.

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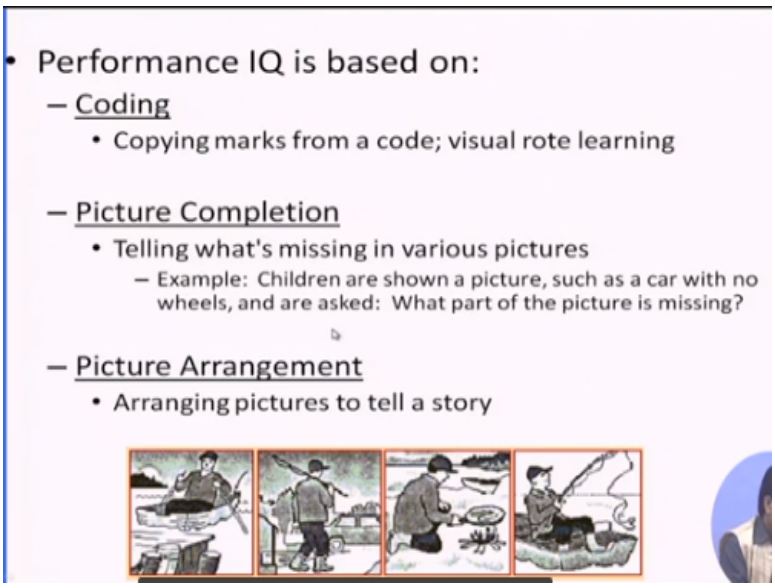

We have also seen that performance IQ is based on coding and decoding, picture completions, picture arrangements say for examples like copying a marks from a code and visual rote learning these are also we have seen in other test likes say for examples like coding and decoding.

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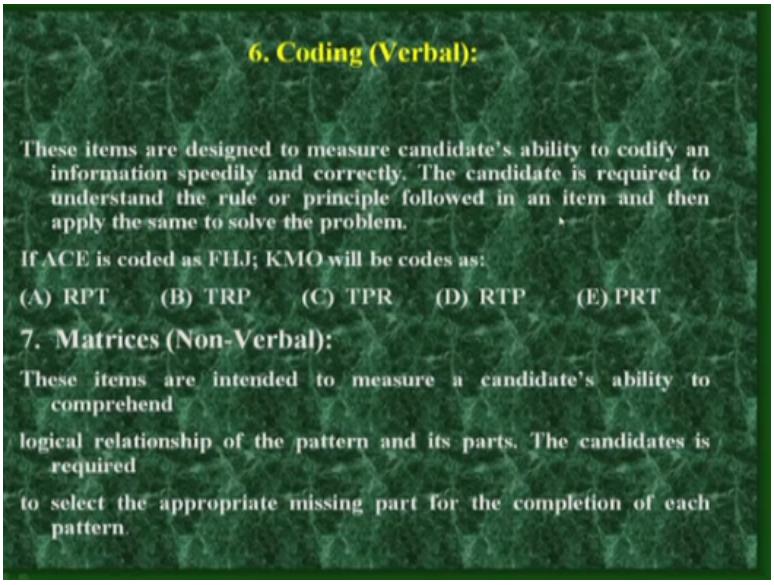

Say for examples here this is an example of the test of coding this items are designed to measure the candidates ability to codify and information speedily and correctly see the candidate is required to understand the rule of principles followed in an item then apply the same to solve the problems. If age is coded as FHJ then KMO will be coded as dash so here are the four of the choice five choices.

The candidate has to find out the answer similar kind of items is also given in the matrixes what you call nonverbal. These items are intended to measure a candidate ability to comprehend the logical relationship of the pattern and its parts the candidate is required to select the appropriate missing parts for the completion of its figure.

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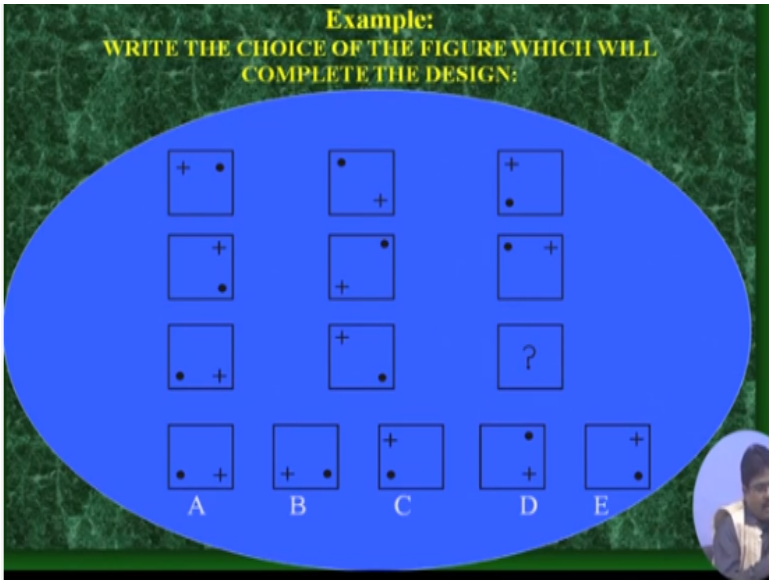

This is one of the example items so the candidate as to study whole patterns how it is changing and accordingly to find out a choice that would complete the design. Right similarly in also picture competition so the matrixes also one of the example of picture completion test we are telling what is missing in the various pictures of examples like the children's are shown a picture such as a car with no wheels and are horse what part of the picture is what part of the picture is missing.

So therefore these are certain ways to test the performance IQ another way is that the picture arrangement test. Arranging the picture to tell a story say for you show a sequence of so yes series of pictures not in a sequence order in non-sequential order and you ask the students to put in a proper sequence and develop a story around that. So that would probably help them to write a story from who is you can infer of you can judge the performance IQ of that particular group.

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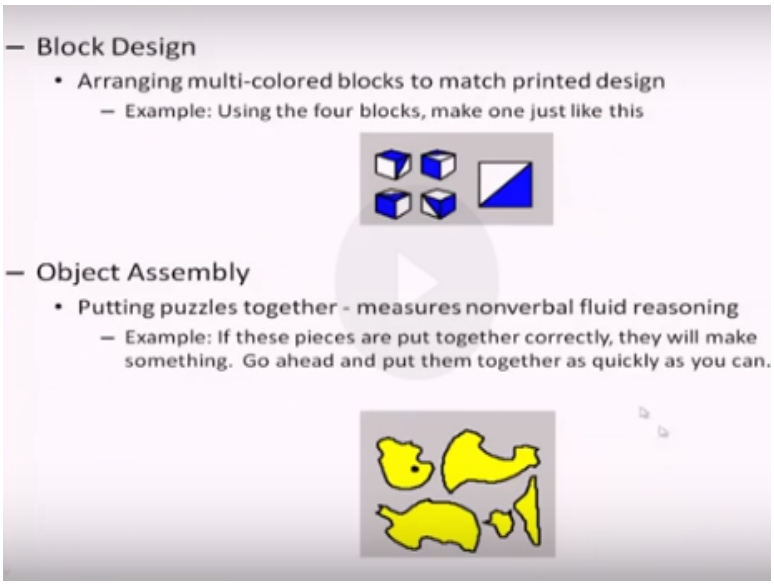

Another way is to measure their intelligence through block designs for examples arranging multicolor blocks to match the printer design. For example using the four blocks make one just like this sorry yeah the next is object assemble this is also a thought of like putting puzzles together like it measures nonverbal fluid reasoning. For examples if these pictures are put together correctly they will make something go ahead and put them together as quickly as you can.

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Well the Stanford Binet and the whisk three cannot be used to asses intend intelligence because the Bayley scale of infant development are often used for infant assessments.

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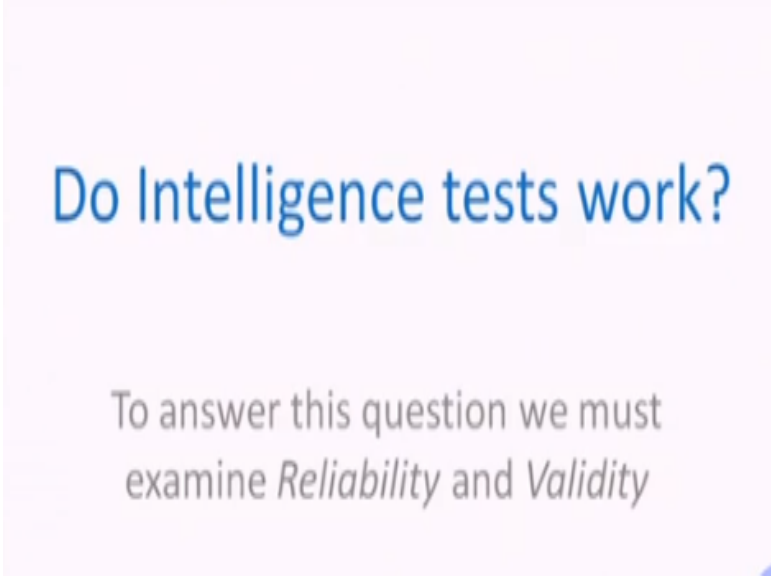

However certain this this different versions of whiskey and Wechslers they are different because they are applicable to different age levels and grade levels. So then do intelligence test to work to what extends we can make use of once test score or intelligence score. So to answer these questions we must examine the reliability and the validity of test. So what is that reliability and validity.

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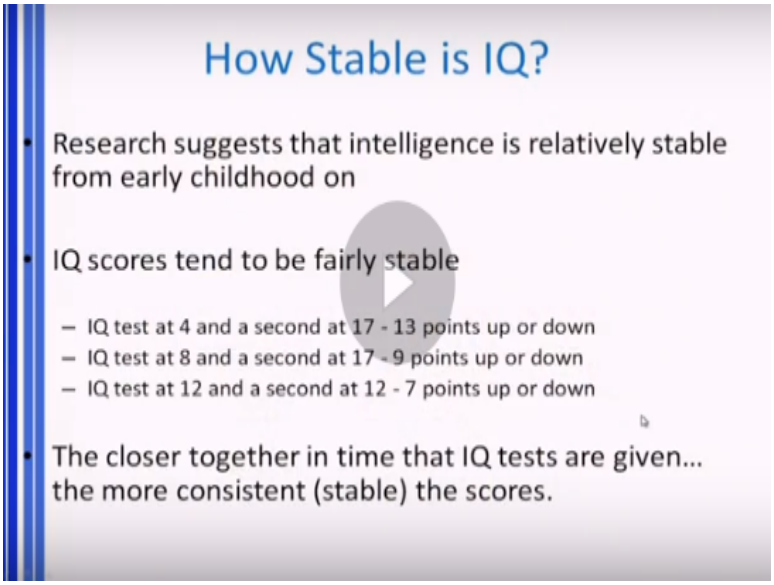

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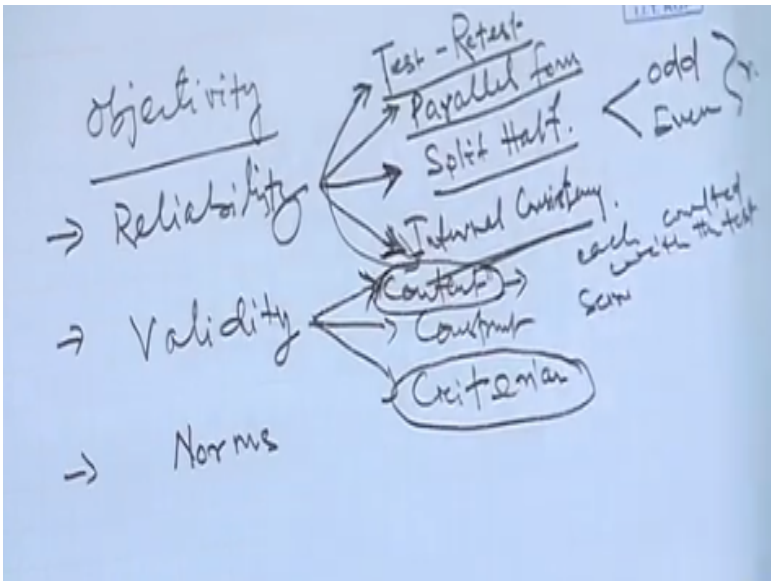

When you talk about objectivity of a test. So there are three important dimensions that we look into one is reliability, second is validity and the third is norms. So there are various types of you know ways or types of reliability or ways of calculating reliability.

One is called test retest method, second is called parallel forms, third is called split half and forth one is called internal consistency right. So there are different formulas available to measure this so anyone test in case of test retest measures. Suppose you have developed a test particular test and you are trying to calculate it test retest reliability the same test is repeated (()) (20:43) in two different occasions and the test reliability is are certain by calculating the correlation between the two forms of that the two occasions the two sets of scores.

And second is the parallel forms means two sets of parallel tests are developed and they are correlated with each other's. So in case of split half the test is divided into two half's odd and even numbers and then the correlation are calculated between these two sets of tests. But in case of internal consistency each item is correlated with the test scores with the test scores.

Once the reliability of the test is established then we go for calculating the validity. So there are various forms of validity say for like but majorly we look into three important domains like content validity, construct validity and criterion validity. The criterion validity is more important

and for intelligence types of tests and the content validity the content validity it's refers to that how well the contents have been included to measure a particular dimension of intelligence.

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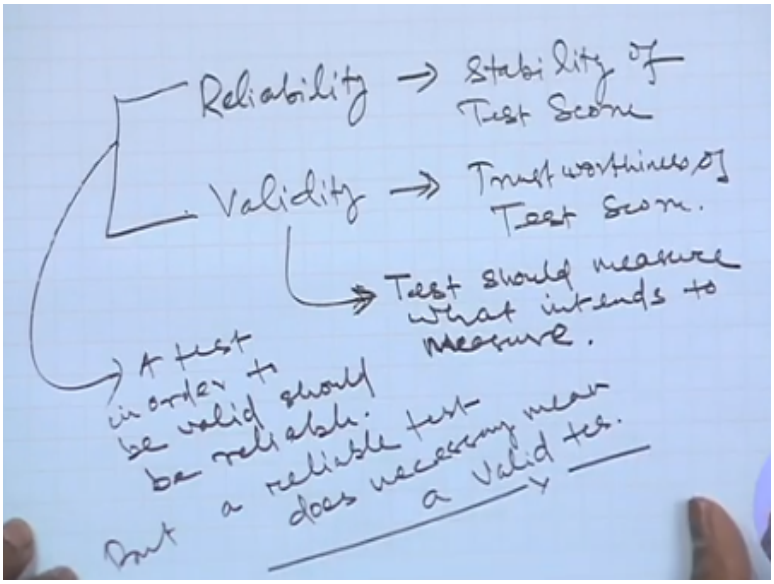

So valid is refers to sorry reliability refers to the stability of test score while the validity refers to the trustworthiness of test score. In others words you can say test should measure the test should measure what it intends to measure to make it more simpler that suppose you are you have developed a test score a test of political science the test item should measure political science not history.

So that is why many times in many places the candidates object's that most of the questions were out of syllabus. So what does it mean the test suffers from contend validity that means the test contents are not properly or not well covered in the test.

Many times it happens so therefore one has to be very careful about while developing a test and establishing its reliability and validity but is there any relationship between these two reliability and validity it is yes there are relations the only important relationship is that test in order to be valid in order to be valid should be reliable. But a reliable test does not necessarily mean a valid test why it is so?

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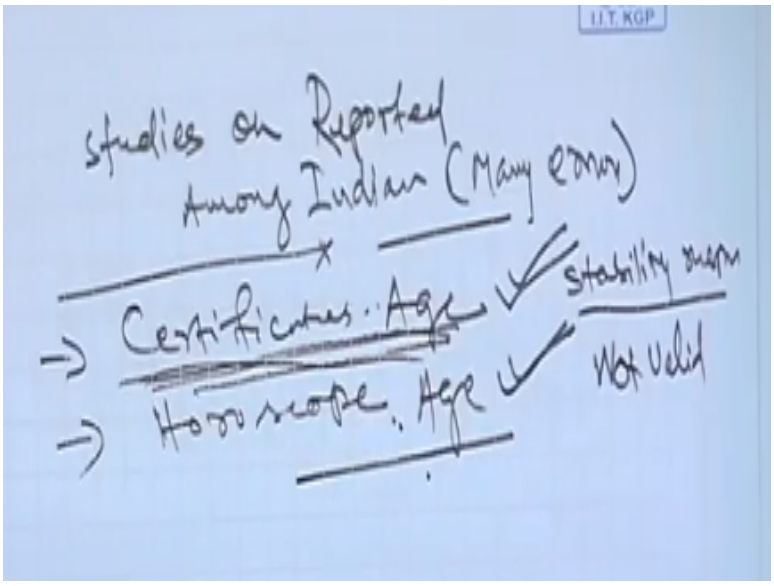

There it as reasons say for examples studies on reported aging's studies on reported aging's amount Indians is shows that many era's or huge era's how suppose if I ask your age all my students they respond the age that is mentioned as per their certificate age but when they celebrate their birthday the celebrate as per the horoscope age right.

But you ask them n number of time what is your age they will say this age nobody says suppose somebody stick to horoscope age then they also keep on saying horoscope age. But mostly people use their certificate age as reported aging but that is not actuals. If a person repeatedly saying the certificate age that is reliable because his consistent across time people and places,

So this is showing the stability of response so he is reliable but is not valid because that his not his valid age not valid right. So that is why a test in order to be valid needs to be reliable but a reliable test need not be a valid test. So therefore a test maker should be very careful while developing a test thank you. We will come back in a short while