Cross-cultural studies have been shown that the ways of approaching and execution of any cognitive task is different for all people at all times. The culture is the foremost issue which should be discussed in cross-cultural studies.

Culture - Segall defined a culture in term of independent variables such as custom and language. He believed that culture is a set of these independent variables. According to Cole and Scribnera, a culture has a distinct language, customs, habits, and modes of dress and distinct beliefs and philosophies. Triandis argued that dimension of cultural variation can be used in psychological theories and he called these variations in term of a cultural-syndrome. It tries to find out the dimension of culture, which makes the difference found and affect the ways of acquiring, storing and processing information in people.

Bovet believed that the cultural, physical and behavioral aspect can have effects on certain cognitive processing such as the dinner table can affect the concept of measurements.

In cross cultural studies there are many methodological challenges. Unlike to the normal psychological studies, in cross-cultural studies researchers cannot randomly assign the experimental condition. It is very hard to choose the conditions, which are equally difficult for two groups. Cultural practices are widely shared within culture so it is very hard to for person to evaluate their own culture.

**EXAMPLES OF STUDIES OF CROSS-CULTURAL COGNITION**

**CROSS-CULTURAL STUDIES OF PERCEPTION**

Perception is the interpretation of the sensory stimuli. People from different culture have difference in visualize things.

**Picture Perception**

Hudson demonstrated that different culture people see differently, he uses some cards which are different in depths of the cue presented to explain it. Participates are asked to describe what they have saw in the picture. Interestingly, participates those were attending school interpreted picture in three dimensionally whereas the other group of participates interpreted as a two dimensional picture. He explained it is happened because the schooling participates have habitual exposure of the picture.

Deregowski uses a task to make models from pictured depictions along with the Hudson task to consider whether the effect really exist or it was due to the some feature in Hudson. He found that 80% participate are failed to explain three dimension picture of Hudson task because they required more demanding response. According to the Cole and Scribner the contents of the picture may be influence the perception of that picture and the ways of perceiving it not necessary to have same in different culture.

Liddell used various color picture and scene of the African origin for explained cultural effect more. She found that the tendency for interpretation is decreased with the year of schooling. She explained this effect is possibly due to the elementary education system of the African, which emphasis not open ended lesion rather than descriptive or factual lesion.

Recently, Miyamoto et al used some photographs form 3 American and 3 Japanese cities. They asked to participate (both American and Japanese) to rating the photograph on the basis of dimensions, number of objects, and the degree of object organization. In result they found that Japanese photographs have more ambiguous objects. For explanation of this, they found that American were more sensitive to the focal objects whereas Japanese were to the background of the picture.

**Visual Illusions**

River used muler-liar illusion and the horizontal–vertical illusion on two different groups of people, one from Torres Straits and another group from southern India. His participates were more prone to horizontal–vertical illusion than the western participates, however, in muler-liar illusion they were less prone.

Segall, Campbell, and Herskovit collected date of above tasks on approximate 2000 people of 14 African and Philippine locations and the United States. They argue that people’s previous experience effect the
result of the illusion. People from carpenter environment were shown more susceptibility for muler-liar illusion, because they were more incorporated with geometric shape and straight lines. According to the Egon Brunswik, sometime people cue of past experience can be misleading and resulting in error as carpenters assume muler-liar illusion picture as a three dimensional image and resulting in error for it. Segall et al. argue that if the horizon landscapes is a part of people culture like desert or plain dwellers, are shown more susceptibility for horizontal–vertical illusion. That culture affects the way people interpret sensory information and they create some meaningful interpretations of form that have seen.

CROSS-CULTURAL STUDIES OF MEMORY-

Free Recall-

Cole et al. used 2 lists of nouns for administration the free recall task in Kpelle people of Liberia, Africa. One list of item could be categorized whereas another list’s item could not be categorized. They found a difference by the age in American people, however there is no difference by age in kpelle people. Additional to the being a different memory system in kpelle people, other explanations may be they did not understand the task or they were not interested in the task. Cole found a dramatically changes in performance if a cue of categorized item is provided to the kpelle participants. Recently, Gutchess argue that the categorization is more common in western culture as compare to eastern culture. Age-related cognitive limitations in terms of difficulty of reasoning that clustering also observed in Eastern cultural adult.

Visuospatial Memory:-

Kearins presented an array of object to the Australian Aboriginal children and adolescents for 30s then after object scrambled they reconstructed the arrays. As desert living requires spatial knowledge other than route knowledge in haunting or other food gathering activities, so they have good abilities of remember spatial relationships. In one other experiment Kearins presented 4 list of object to Aboriginal and white Australian children. Two of these lists were of natural object (rocks) and remaining two were the artificial object (knife). In result he found that aboriginal outperformed than the age matched white Australian. The possible explanation of this the Aboriginal children placed object steady and used visual strategy whereas White Australian children begun to reconstruct the phase and used verbal strategy, which was shown by their movement around the seats. Kearins gives idea by took data from different studies that culture can imposed the environment pressure to enhance cognitive abilities.

CROSS-CULTURAL STUDIES OF CATEGORIZATION-

Jerome Bruner believed that the classification of task is changed over the development. First we classified on general perceptual basis and later on the classified more deep. A old person would classify food item like carrot and tomato in one group and stick and ball in another but a young child may be classify then according to shape of the objects. Greenfield presented 10 objects to Wolof children in rural Senegal, West Africa, in which 4 were red, 4 were round and 4 were cloths. He observed that most of the children participates choose item on the basis of color; however the improvement of systematically chosen item was observed as a function of age. In one another study he presented 3 set of item to the schooled Wolof children, unschooled Wolof children and unschooled adult and asked to choose two most alike objects. He observed that the schooled children had powerful effect and they were less likely to choose on the basis of color. Sharp and Cole asked to Mayan people to re-sort the cards after sorting it before. They observed that ability to resorting is increased with the grades of schooling. Irwin and McLaughlin used other variables such as differed types of bowl (large or small) and different types of rice (polished or not polished) for shorting. They found that all participates were sort the rice more quickly than the cards. In contrast, American was more likely to sort on the basis of shape. In conclude the exposure of stimuli have greater effect on the sorting ability. The more familiar materials are helps in cognitive abilities and the cognitive processing is depending upon the instruction, context and the stimulus.

CROSS-CULTURAL STUDIES OF REASONING-

Reasoning is a drawing of conclusion based on the given information. A. R. Luria use some verbal logical argument (of some familiar principle) to examine how framer lives in Central Asia. The responses of these arguments depend on the schooling of the farmer or the backgrounds of them. Even some time they, mostly non literate farmer, refused to response and have their own premises. Participates are avoid to answer and by saying no experience of the particular situation which is define in syllogism. Many times they respond on the basis of knowledge rather than premise and some time they forgotten the actual premise and alter it with their own personal knowledge. Henle found that the tendency
refused to the response or omit the problem also was also present in United States.

Recently, Nisbett found that the cross cultural difference in reasoning is not always depending upon the schooling. In Korean people, the effort for reasoning is found more as compare with the American people. According to Nisbett, the possible explanation of cross cultural difference in reasoning is due to the consequence of the general cultural difference in analytic processing v/s holistic processing.

**CROSS-CULTURAL STUDIES OF COUNTING**

The arithmetic knowledge is very critical for many activities in all the culture. So cross cultural studies depends on the development of this type of knowledge. Rochel Gelman and Randy Gallistel found that even very young preschool children know the value of counting. They describes common principle for counting - (1) one to one principle (2) stable order principle (3) cardinal principle(4) abstraction principle(5) order-irrelevance principle. A child has some of these principles during the development.

According to the Geoffrey Saxe counting system have cross cultural variation. He studied Oksapmin people, and found that they have 27 body part counting system and there were no 10-base system. They use not only finger but also arm, shoulder, neck and head location in counting.

Chinese uses consistent 10 base systems, however English does not, because of 11 and 12 numbers are not defined in English as ten plus one rule. Therefore, Chinese preschool child learn counting earlier than English.

Recently, cross-cultural researches are focused on mental representation of the different number. People are concerning to find out whether the mental representation is cultural relative or universal.

**EFFECTS OF SCHOOLING AND LITERACY**

Many researchers believed that literacy have significant effects on the society. According to the Plato and Socrates language in written have promote logical and abstract thinking however oral does not. Goody and Watt argued that written allows permanency and that permanency allows carrying on some process.

According to Lev Vygotsky, cognitive processing of human is the result of his interaction with environment. The effect of culture on cognitive processed were studied In the Laboratory of Comparative Human Cognition. Culture arranges the occurrence of the problem and provide problem solving environment. Culture is responsible for frequency of the task, which give chance for practice of that task. The level of difficulty of the task in context is also depends on the cultural. It determines how memorization task is approached to the young children.

Luria performed some reasoning, perceptual and classification task and she found that literate participates responded more abstractly, whereas non literates responded more concrete and perceptually.

School has effects on cognition because it is differ from everyday context in many aspects. In school teacher asks question to the student for assessing knowledge rather than obtaining information. There student experience some abstract calculation. Child also experiences the motivation to complete the task.

Scribner and Cole believed that literacy and schooling are similar but not synonymous. They studied on the effect of schooling on literacy in Vai people, who developed their own script called Via script. Contrary to Luria, they found that unschooled literate did not produce cognitive effect as noticed by Luria. Schooling improves the abilities of verbal explanation and justification in the children. Scribner and Cole develop a framework of practice account of literacy and people use specific knowledge and technology in the activity with the help of practice.

Scribner and Cole summarized that the cognitive skill is a context based and culture provide the practice for it, therefore it strengthen.

**SITUATED COGNITION IN EVERYDAY SETTINGS**

Studies which were conducted in the workplace suggested that the cognition is affected by the cultural context right here at home. Sylvia Scribner worked in milk-producing plant and found a distinction in practical and theoretical thought; also she investigated job-on cognition or working intelligence. Scribner argued that the cognitive skills varies with the environment conditions.

Scribner worked on preloaded to know how they deal with mixed number solution. If there are 14 unit item and 12 unit item make a case then the number of item can be 1 (case)+ 2(unit) , however some preloaded use simple mixed number by using 10 unit in a case so the mixed number would be 1 +4. She found that the satisfy order of number in which less number moved. She found that the on the job training are required for cognitive flexibility. Practical problem solving required flexibility and different
approaches to solve the problem.

Lave et al. studied on around 25 grocery shoppers and found that people usually avoid the mental calculation during purchasing. Researcher found more accuracy in people arithmetic in store than the arithmetic in school. The possible explanation of this is the people outside the class use more flexible and creative ways to solve problem. Ceci and Roazzi also found same result on Brazilian street vendor children. He found 98 % accuracy in real life situation.

All the time, cognitive processes are not worked as same ways. Some fundamental processes may change in different time. Nisbett and Norenzayan argued that the cultural practice and the cognitive processes represent to each other. Cultural practices motivate certain kind of cognitive processes that maintains cultural practices.