

The role of tacit knowledge in expertise

Tacit knowledge is the kind of knowledge which is difficult to transfer to somebody else by means of verbalizing or writing. It is associated with implicit learning which is learning in an accidental manner. Expertise was earlier believed to be proportional to the time one puts in practice and experience. However now people believe that expertise till a particular level depends upon the time you put in, but beyond this point, further improvements appear to be unpredictable, and the number of years of work and leisure experience in a domain is a poor predictor of attained performance[1]. This is believed to be supported by the fact that when an expert sees a challenging problem it looks into its unconscious memory(acquired by implicit learning) to see if he can find a solution to that problem. So, the efficiency depends on how well are the relevant information stored in the working memory of the brain[2]. This illustrates that the difference between experts and less skilled people is not only on the quantitative difference in the relevant information but on the qualitative aspect of how well it is encoded and stored[1]. There have been experiments in which people were observed solving a complex problem. It was found that rationality and logic were largely independent of decision making and were often "replaced" by less than optimal heuristics [1]. Ellen Langer and her colleagues use the term "mindless" for human beings. They performed experiments in which they asked people to describe how they reached the conclusion, most of the description people gave didn't match their actions. Kahneman in his "Prospect theory" also tries to show that human action are illogical and irrational[3]. He argues this by giving people probabilistic situation to people and asking them to choose one. For eg. when students were given 30\$ for free and then asked that they can bet 9\$ and if they win they get 18\$ or else 0\$ and the probability of winning is 50%, In the second case they were given three options take 30\$ or take 21\$ with probability 50% and 39\$ with probability 50%. People in the first case were more interested in betting 9\$ while in the second case people preferred taking 30\$ [4]. Experts are also domain specific and knowledge is encoded around key domain-related concepts[2] and solution procedures that allow rapid and reliable retrieval whenever stored information is relevant. We can conclude that the conscious effort (analytic approaches) comes when they are unable to retrieve a solution or when they cross-check whether the solution is correct or not. The retrieval of information is largely implicit.

[1] Arthur S Reber "Implicit learning and Tacit knowledge, an essay on cognitive unconscious", 1996 Oxford University Press:1-21

[2] Anders Ericsson "Mitecs Article on expertise"
<https://cognet.mit.edu/library/erefs/mitecs/ericsson.html>

[3] www.princeton.edu/~kahneman/docs/Publications/prospect_theory.pdf

[4] <http://www.sjsu.edu/faculty/watkins/prospect.htm>