



## **ROLE OF EXPERT NOVICE STUDIES IN EDUCATIONAL RESEARCH**

**Blessytha Kamarudheen. K**

*Asst Professor, Aligarh Muslim University Centre, Malappuram, Kerala*

### **Abstract**

*Often in any domain we seek the help of Experts for better decision making and a systematic approach. But these 'Experts' are very few in number and this limited availability on other hand may lead to a stagnation in the decision making or problem solving. What can be done as a remedy here? If we are able to explore and transmit the so called 'Expert Knowledge' to the novices, to an extent these sorts of difficulties can be solved. It is here where Expert Novice studies can be thought as an alternative. Expert Novice studies involve natural contrasts between individuals at relatively high performance levels in a given domain (academic, discipline, profession or hobby) and individuals at a low performance level in that given domain. In the teaching learning scenario if such researches are implemented it could serve as a better solution for taking right decisions at right time. This paper throws light to Expert Novice studies as a research strategy and its role in educational research.*

#### **EXPERT NOVICE STUDIES: IMPLICATIONS IN TEACHING DOMAIN**

*Practice doesn't make perfect; perfect practice makes perfect!*

*- Vince Lombardi*



*Scholarly Research Journal's* is licensed Based on a work at [www.srjis.com](http://www.srjis.com)

Expertise is a relative term. But in every field we need the assistance of experts. What distinguishes these experts? There is considerable debate whether differences between expert and novices are due to innate talent or to quantity and quality of practice in a domain. Anyhow

experts are those who have acquired extensive knowledge that affects what they notice and how they organize, represent, and interpret information in their environment. This, in turn, affects their abilities to remember, reason, and solve problems.

Many thinkers have conducted studies to mark out how experts differ from novices. But simply finding out the differences cannot make sense unless the findings are curdled into productive measures. If we are able to explore and transmit the so called ‘Expert Knowledge’ to the novices, it can be productive. It is here where Expert Novice studies are found useful especially in education field.

### **What makes Experts Different from Novices**

According to Webster’s online dictionary an expert is someone “ having, involving, or displaying special skill or knowledge derived from training or experience.”

For a variety of reasons experts differ from novices.

- Experts notice features and meaningful patterns of information that are not noticed by novices.
- Experts have acquired a great deal of content knowledge that is organized in ways that reflect a deep understanding of their subject matter.
- Experts’ knowledge cannot be reduced to sets of isolated facts or propositions but, instead, reflects contexts of applicability: that is, the knowledge is “conditionalized” on a set of circumstances.
- Experts are able to flexibly retrieve important aspects of their knowledge with little attentional effort.

### **Expert Novice Studies**

Expert Novice studies involve natural contrasts between individuals at relatively high performance levels in a given domain (academic, discipline, profession or hobby) and individuals at a low performance level in that given domain. The word relatively is emphasized because expertise is a continuum rather than two discrete states and a given study usually just compares two points along the continuum.

Experts are faster than novice in typical cases. Expert novice studies have examined many different possible factors underlying this large performance difference including difference in memory ability ( how much of a problem is remembered) , facts/ chunks ( how many example situations are known), representations/ schemas ( what features of problems are perceived) and

procedures or strategies ( what solution methods are used). Expert Novice difference have been found for all those factors , although particular expert novice studies tend to focus on only a subset of these dimensions.

In expert- novice research, an expert is someone who has the knowledge required to perform a certain task, distinguishing him or her from a novice who is not able to perform that task. This task, however can still be a relatively simple one in the domain. On a domain level, expertise may also refer to the quantity and quality of experience in a domain, with different stages being distinguished on the route from novice to expert. Finally, expertise can be defined in terms of exceptional performance in a domain; expert performance research or expert – novice research investigates the consistently superior performance of individuals who excel at representative tasks within that domain.

### **Role of Expert Novice Research in Educational Research**

There are different approaches to the study of “expertise”( Ericson et al. 2006).A lot of research has been conducted on expert -novice differences in performance. The term expertise is often used in a relative sense in educational research or teaching domain. Such research has shown that experts excel mainly in their domain , are faster than novices at performing skills and that too error free, have superior short-term and long-term memory, and have deeper and more principled problem representations than novices, who tend to build superficial representations of a problem.

The goal of expert-novice research should not be just to describe differences in task performance between more and less skilled individuals, but to use this information to help less skilled individuals attain higher or even excellent levels of knowledge and skill. Thus less skilled students, teachers and administrators etc can be benefitted.

However when translating findings from expert- novice research to educational settings or teachin domain there are several challenges. Applying these principles requires more flexible, individually adaptive instruction. Also it is not an easy task to assess what an individual’s level of expertise is and what a challenging level of difficulty would be for him or her. Moreover the techniques used in such researches tend to be more time consuming .

**The role of expert-novice research in a nut shell can be stated as follows**

- They define the Educational End point
- Experts possess the ability to foresee things. They perform at superior levels by virtue of predicting the end points which on otherhand are defined through expert novice research.
- They define the Educational Start point
- Provide models of some form of education that was clearly successful.
- A fourth focus involves the importance of some expertise for learning in addition to performance
- Novice teachers can understand the problem dealing strategies of Expert teachers and apply it.

**Statistical Analytical techniques used in Expert Novice Research**

Although expertise is really a continuum rather than true categorical stage as the term ‘Expert Novice’ implies, expert novice studies tend to focus on extreme group comparisons. Thus the independent variable tends to be categorical. Dependent variable used in Expert Novice research can be quite diverse, ranging from simple quantitative performance measures such as protocol analysis. In case of simple performance matrices, basic univariate statistics such as ANOVA and t tests are commonly used. In the case of protocol analysis, statistical techniques relevant to analysis of frequencies are used (chi square test or other non parametric tests). Because Experts are often hard to find in large quantities, the minimum N assumption of many statistical tests are not met, and low N variation of those tests are required.

**Strengths and Weaknesses of Expert Novice Research**

**Strengths**

- It involves high external Validity at the cost of low internal Validity
- It is a sort of exploratory Research
- Confirmatory versus Exploratory research because expertise is a natural variable rather than an experimentally controlled one. It tends to be more exploratory.
- It has the advantage of providing many unexpected findings.
- **Weaknesses**
- Statistical power is often low because experts are hard to find and the statistical method is by necessity the lower powered, between subject method.

- There is also many confounded variables bundled with expertise because one cannot randomly assign participants to expertise.
- Slow to be analyzed and published
- It proves to be time consuming

### **Conclusion**

Thus Expert Novice Research is an excellent methodological tool that should work in conjunction with other techniques that have better statistical power and methodological control but perhaps lower external validity. If implemented effectively the findings of such researches can prove to be an effective way for leading the novices to experts without much lag of time.

### **REFERENCES**

- Alexander, P A (2003). The development of Expertise: The journey from acclimation to proficiency. *Educational Researcher*,32, 10-14
- Chi, M. t. h. (2006). Two approaches to the study of Experts' charecteristics. In K. A. Ericsson, N. Charness, P. Feltovich, & R. R. Hoffman (Eds), *The Cambridge Handbook of Expertise and experts' performance* ( pp. 21-30), Cambridge, U K: Cambridge University Press.