Relationship Between Extent of Learning and ICT Module with VARK Compatibility

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ABSTRACT

The present study on the relationship between Extent of Learning and ICT Module with VARK Compatibility was conducted to identify the learning style preferences of adult learners. The size of the sample comprises of 150 respondents which are selected randomly from five adopted villages of KVK, Rudrur, in Nizamabad district. The findings revealed that extent of learning had significant positive relationship with VARK compatibility of ICT module, gender and age at 0.1 level of probability and at 0.5 levels with education and ICT usage, whereas no significant relation was found with occupation. Hence, it was concluded that irrespective of learning styles the learning through ICT modules occurred equally as the module has VARK learning compatibility. Gender, age, education and ICT usage contributes the extent of learning through ICT modules.

Keywords: Learning style, VARK-Visual, Read/write, and Kinesthetic, ICT module

INTRODUCTION

Most of the adult learners develop a preference for learning based on their childhood learning patterns. They engage themselves in systematic and sustained self–educating activities in order to gain new forms of knowledge, skills, attitudes or values. Fleming (2001) proposed VARK Model, a sensory model which is an extension of the neuro-linguistic model proposed by Eicher (1987). The acronym VARK stands for Visual (V), Aural (A), Read/Write (R), and Kinesthetic (K). He defined learning style as an individual's characteristics and preferred ways of gathering, organizing and thinking about information. VARK is in the category of instructional preference because it deals with perceptual modes. It is focused on different ways that individual take in and give out information. Individual learners have relative preferences along each one of the four perceptual modes, but can also learn in the other modes too. ICT modules

are those where the content upload in multimedia format by incorporating text and audio supported by appropriate images and animations to reach more number of users. ICT modules facilitate the learner's involvement as they can see the visuals and hear the text simultaneously. Thus multimedia module exactly supports VARK learning style, which is the most popular adult learning style. The present study was taken up to see the feasibility of the ICT modules developed on Health and Nutrition for pragmatic verification before uploading.

Kim and Gilman (2008) investigated the use of multimedia components such as visual text, spoken text and graphics in a web-based self-instruction program to increase learners' English vocabulary of school going children in Seoul, at Myung South Korea. Results revealed that participants learned better when they received visual text with graphics, spoken text and added instruction. Although the added multimedia components required

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spending more time on the instruction by learners, the extra time was not that significant. Based on the results it was concluded that an effective way to improve learning of English vocabulary is to offer graphics that illustrate what the vocabulary means.

Medhi *et al.* (2007) presented a research, leading towards an understanding of the optimal audio-visual representation for illustrating concepts for illiterate and semi-literate users of computers. A total of 200 illiterate subjects were presented 13 verities of health symptoms in one representation randomly selected among text, static drawings, static photographs, hand-drawn animations and video, each with and without voice annotation in order to find out how comprehensible these representation types were for an illiterate audience. The results revealed that voice annotation generally helps in speed of comprehension, but bimodal audio-visual information can be confusing for the target population. Richer information is not necessarily better understood the overall and the relative value of dynamic imagery (video and animation) versus static imagery (photo and drawings) and when both were mixed.

Blank *et al.* (2003) observed through a study on adapting multimedia for diverse student learning styles, that multimedia can accommodate diverse learning styles. The samples for the study were students with visual, auditory and combination of learning styles. A user interface which is independent of both book metaphors and familiar web browser was designed for the purpose of the study. It supplied sound and animation for sensory learners, while letting verbal learners disable sound or switch altogether to a JUST THE FACTS mode. Based on non-significant statistical scores of students on the assignment, they concluded that the multimedia provides equal advantage for all the learning styles.

Ellis (2001) used an animated multimedia module to study the improvement in learning due to the effectiveness of multimedia. He observed that a tutorial with animations produced a significant improvement in adult student's ability in application of knowledge when compared to their text -based counter-parts. He further stated that meaningful results can be obtained through multimedia, only when learning, learner, subject and multimedia are adequately defined. Animation did appear to foster a greater degree of learning at the application of knowledge level than a text -only tutorial.

METHODOLOGY

Exploratory research design was used for the present study, 150 sample was randomly selected from five villages *i.e*., Beerkur, Kistapur, Malkapur, Ranampally, Timmapur of KVK, Rudrur, Nizambaddistrict. Aquestionnaire was developed to gather the information from the sample. ICT modules with VARK compatibility were developed One way ANOVA, Correlation coefficient was used for statistical analysis to find out the relationship between Extent of Learning and ICT Module and VARK Compatibility.

Testing of hypothesis

Correlation between VARK compatibility and extent of learning of adult learners in five villages

Null hypothesis: There was no relation between ICT module with VARK compatibility and extent of learning of adult learners.

Empirical hypothesis: There was relation between ICT module with VARK compatibility and extent of learning of adult learners.

Difference between modals

Null hypothesis: There was no difference in learning among four types of learners

Empirical hypothesis: There was differences in learning among four types of learners

Correlation between general profile characteristics and extent of learning

Null hypothesis: There was no any relation between extent of learning and general profile characteristics of the respondents.

Empirical hypothesis: There was relation between extent of learning and general profile characteristics of the respondents.

RESULTS AND DISCUSSION

The adult learners were clientele from five adopted villages of KVK, Rudrur, Nizamabad district as part of

the studying learning style profile the general characters like Age, Gender, Education, Occupation and Nature of ICT usage were studied by collecting information through interview schedule.

Based on Erikson's (1950) categorization, the age of the respondents was categorized as Young Adult Learners in age of 20-39 years (YAL), Middle Adult Learners 40-64 years (MAL) and Older Adult Learners 65 and above years (OAL). The highest composition of youth is evident from 3/4th of clientele (76.66%) of KVK, Rudrur were under the YAL category. The composition of MAL and OAL was 15.33 per cent and 8 per cent respectively. The gender profile of the respondents includes 58.66 per cent male and 41.33 per cent female. It is interesting to note that 83 per cent of KVK clientele were educated and only 11.33 per cent had no education. Among the educated, highest composition was under graduation and above (45.33%), followed by intermediate whereas high school and upper primary education was found to be 14 per cent and 8.66 per cent respectively.

Occupation was considered as the type of work the clientele was engaged in either to earn livelihood or to acquire skill. Farming could be inferred as important livelihood from the data. Whether employed or self-employed the clientele were continuing with farming. This must be the reason, for their participation in KVK activities. Those who completed studies and preparing for competitive examinations to get employment, were considered as occupation aspirants, consists of 22 per cent of clientele group.

Whether rural or urban, the use of electronic gadgets has enlarged to a great extent with the advent of information and communication technology. Highest use of Television (88.66%) as ICT device, followed by mobile (78%) was evident from the data. Up to a considerable account (47.33%) the apps use was existing. Use of radio was less (18.66%) than, the use of internet (26.66%), newspaper (22.66) and books (21.33%). The relation between extent of learning and VARK compatibility of ICT modules and extent of learning with general profile characteristics were computed by the correlation coefficient 'r' values. The significant differences in the extent of learning among four learning styles were analyzed through one way analysis of variance. The findings were presented in the Table 1.

A positive significant relation existed between the variables at 0.5 per cent level of probability, in all the five digital lessons thus proving empirical hypothesis by rejecting Null hypothesis. It could be inferred that as VARK compatibility of ICT module increases, the extent of learning the concepts related to nutrition among adult learners' increases due to self-engagement of the learner as his or her learning style preference existed in it.

Sujatha (2016), explored the significant positive relationship existed between learning and learning style preferences compatibility of ICT module at 0.5 per cent level of probability. This result is empirically accepting learning style preferences qualities of ICT modules to upload.

Kim and Gilman (2008) also revealed those multimedia components such as visual text, spoken text and graphics in a web-based self-instruction program effective way to improve learning of English vocabulary to school going children.

Table 1: Correlation between ICT module with VARK compatibility and extent of learning among adult learners of five villages (n=150)

Digital lesson	Beerkur	Kistapur	Malkapur	Ranampally	Timmapur
Leafy vegetables	0.36*	0.23*	0.50*	0.42*	0.40*
Millets	0.42*	0.31*	0.15*	0.32*	0.17*
Anemia	0.30*	0.31*	0.25*	0.33*	0.41*
Diabetes	0.41*	0.11*	0.31*	0.50*	0.14*
Thyroidism	0.11*	0.31*	0.30*	0.38*	0.22*

*0.5 level of probability

Table 2: Analysis of variance in learning among four learning styles of the adult learners (n=150)

Source of Variation	SS	df	MS	F	P-value	F critical
Between Groups	10.21575	3	3.405251	0.265745	0.849995	2.667887
Within Groups	1832.396	143	12.81396			
Total	1842.612	146				

Medhi *et al.* (2007) presented optimal audio-visual representation for illustrating concepts for illiterate and semi-literate comprehensible these representation types were for an illiterate audience.

Ellis (2001) used an animated multimedia module to study the improvement in learning due to the effectiveness of multimedia. Animation did appear to foster a greater degree of learning at the application of knowledge level than a text -only tutorial. The learning attained by four types of respondents *i.e.* uni, bi, tri and multi modal learning styles were compared for their significant differences by using one way ANOVA.

As per the Table 2, there was no significant differences were found in learning among four different styles of learners. Hence, null hypothesis was accepted and rejected the empirical hypothesis. Irrespective of learning styles, learning through ICT modules occurred equally. This empirical evidence also endorses VARK compatibility of ICT module.

Sujatha (2016) there was no significant difference in knowledge acquisition between four different styles of learning. Hence null hypothesis was accepted and rejected empirical hypothesis. Irrespective of learning styles, learning through ICT modules occurred equally.

Gappi (2013) explored the student's preferred styles of learning and their academic achievement. Results showed that there was no significant effect of learning style preferences on the academic program of the students. The relationship between general profile characteristics and extent of learning was analyzed by computing 'r' values and presented in the following

According to data shown in the Table 3, the extent of learning had significant positive relationship with gender, age of the learners at 0.1 level of probability and education and ICT usage at 0.5 level of significance.

Table 3. Correlation between general profile characteristics and extent of learning (n=150)

General profile characteristic	r values
Gender	0.45**
Age	0.38**
Education	0.01*
Occupation	0.107
ICT Usage	0.01*

**0.1 level of probability, *0.5 level of probability

There was no significant relation was found in case of occupation. Hence empirical hypothesis was accepted in case of gender, age, education and ICT usage and rejected null hypothesis. It can be inferred that as age increases, education level increases, Usage of ICT increases the extent of learning also increases. Extent of learning is more among males than females.

Sujatha (2016), reveled the knowledge acquisition had a significant positive relation with age, occupation and ICT usage at 0.1 level of probability. Gender and education had no significant relation with knowledge acquisition. Hence empirical hypothesis was accepted in case of age, occupation, ICT and rejected null hypothesis.

CONCLUSION

It can be concluded by the present study that extent of learning is positively significantly related with VARK compatibility of ICT module at 0.5 per cent level of probability. This result is empirically accepting VARK qualities of ICT modules are important for consideration before uploading the modules. There was no significant difference in extent of learning between four different styles of learning among adult learners. Hence, it was concluded that irrespective of learning styles, the extent of learning through ICT modules occurred equally as the learning module has VARK compatibility. Extent of learning had significant positive relation with gender and

age at 0.1 level of probability and at 0.5 level with education and ICT usage. Hence it was concluded that gender, age, education and ICT usage contributes for extent of learning among adult learners through ICT modules. Hence it can be suggested that the ICT module developed for multi users should have VARK compatibility to increase the extent of learning among the adult learners. It is also important to consider the personal variables of the learners while developing the ICT modules.

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