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EDITORIAL

Dear Readers,

The teaching-learning process is the core of all academic activities. Without this process, any institution cannot reach its optimal level. It includes the attributes associated with identifying learning needs, framing strategies to attain development, and fulfilling institutional goals. By applying innovative practices, a teacher could get a better result. Institutions should be a place where innovative practices emerge and are discussed with their peer members. Today Science is contributing to bringing drastic changes in our day-to-day life. One of the papers presented by Sinu Raichy Alex has woven scientific ideas from the lenses of human experiences. The paper has come up with a new approach to promoting visual literacy through thinking maps in Biology Subjects. Thinking maps help in the effective teaching-learning process and make biological concepts more meaningful and relevant. The results indicate that instruction using the package on thinking maps is more effective in enhancing visual literacy among secondary school students than the traditional activity method.

Dr. Sudhir Kumar studied the risk behaviour and aspiration level of secondary school students. The study shows that goal determination is directly associated with aspiration level. Many students frame a goal that is beyond their approach and capacity. Parents also approve of this kind of behaviour of their child. In such a situation, while a student is not mature to take any wise decision, they commit suicide or give up their desire to attain the goal. The study found that there is a difference in the risk behaviour of the students with respect to their low, average, and high aspiration levels. Ishfaq Majid and Dr. Y. Vijaya Lakshmi did a literature review about the factors that determine the readiness of students towards E-learning. They found that technological readiness, attitudinal readiness, basic internet skills, and motivation are the major factors.

Creativity can be defined as an idea to construct novel and original things. Linguistic Creativity is the form of creativity where a person elicits imagination, generates ideas, shows divergent thinking, and so on. Dr. M. Singh and A. Singh have constructed and validated a Linguistic Creativity Test. The authors have established the content and construct validity of the test. This test can be used by language teachers to facilitate creative thinking among students. A paper entitled “Awareness about virtual learning among prospective teachers” written by Sajith Lal mentions the utility of virtual learning. The investigator used a normative survey method for the study. The result shows that there is a significant difference in virtual learning awareness among male and female prospective teachers. Female prospective teachers are more aware of virtual learning than male prospective teachers. A significant difference was seen among prospective teachers with respect to their subject. The prospective teachers who were having art as a subject are more aware of virtual learning than the teachers who had science subjects. Advancement in technology tremendously opens the door to information where education is not unaffected by its application.

Raj Laxmi, a research scholar has shown an idea on competency in ICT among secondary school teachers in relation to gender and locality. A descriptive survey method has been used by the researcher. The study can help to circulate awareness regarding communication technology among secondary school teachers. The study by Jini Jacob attempted to find the effectiveness of an instructional package based on Toon graphics on reading comprehension in English among primary school students. The experimental method was used in the study. The result revealed that instructional package is significantly effective in enhancing reading comprehension in English among primary school students. Dr. C. Maria Ugin Joseph, in his paper, studied on life skills of prospective

teachers. Today in the changing world of performing tasks, multiple skills are required to make us competent to resolve challenges that belong to society. The finding of the study shows that there is no significant difference in the life skills of prospective teachers regarding their stream and habitation. Nikki Kumari has authored a paper on awareness of AIDS among prospective teachers. A survey method has been used for the study. Data was collected through the quantitative method. No significant difference was found in the awareness regarding AIDS among prospective B.Ed. teachers with respect to their gender and area. A paper by Anila & Dr. Sam V. Daniel on the “impact of stress on academic achievement of upper primary school students of employed mothers” revealed that academic stress affects the mental health of a student. Students who are stressed require proper care and emotional support from their parents, especially mothers. In their paper, the investigators examined the level of academic stress among upper primary school students of employed mothers. The study revealed that female students have more academic stress than male upper primary school students of employed mothers and it was also found that urban students have more academic stress than rural students. The result indicates that academic stress affects the academic achievement of the learners.

The present issue of JRE includes various dimensions of teaching-learning of academic institutions and are innovative in nature. Hope this issue will help you to cultivate good reading habit.

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Development of Thinking Maps for Promoting Visual Literacy in Biology Among Secondary School Students

Abstract

In the present study, the investigator made an attempt to find out the effectiveness thinking maps for promoting visual literacy in biology among secondary school students. The study was conducted on 77 students of standard IX standard in Alappuzha district. Experimental method was selected for the study and the design used was Quasi- Experimental design with pre-test post-test two Group design. The data collected were analysed and interpreted using appropriate descriptive and inferential statistical techniques. The study revealed that the instruction using thinking maps are significantly for promoting visual literacy in biology among secondary school students

Keywords: Thinking Maps, Visual Literacy, Biology

Introduction

The imparting of education today involves a complex amalgamation of factors including traditional and modern techniques. The logistics and rigmarole of education are constantly changing and the student's role now a days are not only passive receptors of knowledge but have to engage critically and creatively in learning for the transformation of themselves and the society. The teaching learning must be acclimatized and be reflected in the modes of teaching and the delivery of education be in accordance with its constantly evolving moves and needs. The

styles of teaching and the way education is delivered must adapt to the teaching and learning process and reflect the movement and needs of the learning process, which are always changing.

We are living in an epoch of brisk changes and science is playing a leading part in bringing about these changes. Science has provided the spring board for all the progress in our world and man has been able to conquer time and distance with its help. It has enabled man to probe into the vast spaces beyond the sky. At present, science dominates every field of our activities. It has improved the conditions and quality of living and has saved mankind from excessive toil and boredom. Thus, from the cradle to the grave, scientific discoveries and inventions have inextricably woven themselves into the fabric of human existence.

The fact that science has taken every phase of education with in its fold cannot be ignored. The importance of Science teaching has increased radically. This is particularly important for India where Science education is receiving fresh thinking and far-reaching dimensions. It has been noted that the frequency and variety of science graphics in science textbooks have experienced an increase in recent years. It is known that text that accompanies visual provides very little direction for understanding the ideas or process from the graphics. Studies have shown that 19% of graphics were not accompanied by captions or labels. These are important aspects since they complement and elaborate ideas conveyed in the visuals. Around 39% were accompanied by labels that were useless to the learners (Slough et al., 2010). Moreover, studies have demonstrated that more than half of the questions set in a science evaluation consisted of graphical illustrations. So, it is important for students to be visually literate in science to be able to encode and decode the visual representations.

Need and Significance of the Study

Visual Literacy is the ability to understand and use images for thinking and communication. The concept was first identified by John Debes in the 1960s (Moore & Dwyer, 1994). According to Piaget (1951), the foundations of visual literacy are laid down during the sensory

motor phase of early childhood (0-2 years old), as the child develops mental imagery and the abilities of memory and reflection. In a similar way, Visual Literacy requires that the person can not only identify the images, but also examine the relationships between elements of the image and understand what the images mean – the message that they are trying to convey. Biology is the most visual of the sciences and has a long history of the use of imagery for defining and linking concepts in living system. When creating images, the visually literate person has to be able to see the image through another person's eyes, in order to be sure that the message is accurately conveyed.

The importance and superiority of visual impressions and their interpretation over other sensory channels of information are referred to as visual literary. Visual literary appears to have special benefits not only for those with limited verbal skills but also equally useful for verbally competent and articulate students. The various components of educational technology such as still picture drawings, graphics, displays, demonstrations are all tolls and channels of visual literacy.

For promoting Visual Literacy there were several strategies that are aimed to provoke thinking, attract attention, enhance absorption and improve the mental abilities of learners, including strategy of thinking maps, which is defined as the tool of effective thinking with high-efficiency represent optical content, and innovative model for information content. Thinking Maps represent mental map followed by the learner during practicing education process and thinking as it sets a starting and finishing points and develops learner's learning and monitor performance. It also identifies the points to be strengthened and weaknesses to be improved in order to achieve the desired goals of the education process, as it provides organized knowledge which helps the learner to understand the relations and interdependence between concepts and to simplify the abstract concepts. Thinking Maps can be stretched and adjusted during the process of explanation, those parts of the map can be expanded to help the student to concentrate, to exchange information, to participate with the teacher more positively, in addition to the discovery of the thoughts process which are behind the maps,

where the advantage can come to the fullest extent of the classroom. It has eight visual learning tools, each one of it establishes basic thinking operations in the brain which focuses on the cognitive and skills basis such as comparison, contrast, relay, classification, cause, effect, description and analogies.

Thinking Maps are visual representations of knowledge. They enable students to think their way through new information and process ideas. The Maps provide a 'shared visual language for learning'. The use of Thinking Maps enables students to engage in the complex thinking required for academic tasks. Creative and critical thinking can be scaffolded by utilising these learning tools. Their adoption enables students to tackle the abstract ideas they encounter in the curriculum. Thinking Maps can be used across each grade and content area to construct the problem-solving, comprehension, critical thinking, and communication skills needed for success in every academic domain. Each of the eight individual Maps relates to a single thinking process: defining, describing, comparing or contrasting, sequencing, deconstructing, categorising, identifying cause and effect, and establishing relationships between things.

It is presumed that the study of this type will be useful in collecting necessary data for promoting Visual Literacy in Biology which may help curriculum planners, teachers and students to develop suitable strategies for making teaching learning process more effective, interesting and meaningful. This research will provide a new insight for curriculum makers to use thinking maps in text book instead of giving mere diagrams for explaining complex and abstract concepts in biology. It will also motivate the students and teachers to use more thinking maps in teaching learning process and evaluation.

Objectives

1. To test the effectiveness of Thinking Maps in promoting Visual Literacy among IX standard students.
2. To test the effectiveness of Thinking Maps in promoting Visual Literacy among IX standard students for the subsamples based on gender.

Hypotheses

1. Thinking Maps are effective in promoting Visual Literacy among IX standard students.
2. Thinking Maps are effective in promoting Visual Literacy among IX standard students for the sub samples based on gender.

Method

The present study is intended for the Development of Thinking Maps for Promoting Visual Literacy in Biology Among Secondary School Students. So Experimental method was adopted for the study. For the study the design selected was Pre-test Post-test non-equivalent group design.

Population of the Study

In this study the population consists of all the students studying in secondary school level in Kerala.

Sample of the Study

Sample consists of 77 students studying in secondary schools.

Variables

Independent variables - Instruction using Thinking Maps and instruction using Activity Method.

Dependent variable - Visual Literacy in Biology.

The Tools and Materials Used for the Study

1. Instructional package based on Thinking Maps for promoting Visual Literacy in Biology among secondary school students.
2. Lesson transcripts based on Activity Oriented Method.
3. Visual Literacy test in Biology.

Statistical Techniques

The statistical techniques used for the present study were Mean, Median, Mode, Standard Deviation, t-test, ANOVA and ANCOVA

Analysis and Interpretation

Table 1 : Test of significance of difference between means of pre-test and post-test scores of Visual Literacy in Biology of the experimental group

Assessment	Number of students	Mean	Standard deviation	C.R.	Level of significance
Pre test	40	8.2	2.61	24.65	p<0.01
Post test	40	16.85	2.86		

The table shows that the critical ratio obtained is 24.65 which is greater than table value significant at 0.01 level. Hence it can be interpreted that the post test score is significantly higher than that of the pre-test score for experimental group.

Table 2: Test of significance of difference between means of post test scores of control group and experimental group

Group	Number	Mean	Standard deviation	C.R.	Level of significance
Control group	37	12.03	2.55	7.82	0.01
Experimental group	40	16.85	2.86		

The table shows that the critical ratio obtained is 7.82 which is greater than table value significant at 0.01 level. Hence it can be interpreted post test scores of experimental group is significantly higher than that of post-test score of control group.

Table 3: Analysis of Variance of pre-test and post-test scores of experimental group and control group

Source of variation	df	SSx	SSy	MSx	MSy
Among means	1	5.28	447.1	5.28	447.1
Within groups	75	522.51	568.07	6.97	7.57
Total	76	527.79	1015.17		

$F_x = 0.76$ ($p > 0.05$)

$F_y = 59.03$ ($p < 0.01$)

The obtained F_x and F_y were tested for significance. The obtained F_x is 0.76 ($p > 0.05$) which is less than that of table value for df (1, 75) at 0.05 level. Hence it can be interpreted that the mean value of pre-test scores of the experimental and control group did not differ significantly.

The obtained F_y 59.03 ($p < 0.01$) which is greater than that of table value for df 1, 75 at 0.01 level. Hence it can be interpreted that the mean value of post test scores of the experimental and control group differ significantly. So, it can be interpreted that the two groups differ significantly after intervention.

The final y scores were adjusted for difference in initial x scores. For that SS has been adjusted for any variability in y and $SS_{y.x}$ and F ratio $F_{y.x}$ were calculated

Table 4 : Analysis of Co-Variance of pre-test and post-test scores of experimental group and control group

Source of variation	df	SSx	SSy	SSxy	SSy.x	MSy.x	SDy.x
Among means	1	5.28	447.1	48.61	375.99	375.99	
Within groups	74	522.51	568.07	376.52	296.75	4.01	2
Total	75	527.79	1015.17	425.13	672.73		

$F_{y.x} = 93.76$ ($p < 0.01$)

From the table F , for $df = 1, 74$

Table value of F significant at 0.05 level = 2.29

Table value of F significant at 0.01 level = 6.85

The obtained $F_{y.x}$ ratio is 93.76 ($p < 0.01$) which is greater than the table value significant at 0.01 level . Hence it can be interpreted that that the two final means which depend upon the experimental and control variables differ significantly after they have been adjusted for initial difference on x .

Table 5 : Analysis of Co-Variance of pre-test and post-test scores of experimental group and control group (sub sample boys)

Source of variation	df	SSx	SSy	SSxy	SSy.x	MSy.x	SDy.x
Among means	1	5.62	295.15	40.71	236.95	236.95	
Within groups	35	275.23	279.61	189.39	149.28	4.27	2.07
Total	36	280.84	574.76	230.11	386.23		

$F_{y.x} = 55.55$ ($p < 0.01$)

The obtained $F_{y.x}$ ratio is 55.55 ($p < 0.01$) which is greater than the table value significant at 0.01 level. Hence it can be interpreted that that the two final means which depend upon the experimental and control variables differ significantly after they have been adjusted for initial difference on x .

Table 6: Analysis of Co-Variance of pre-test and post-test scores of experimental group and control group (sub sample girls)

Source of variation	df	SSx	SSy	SSxy	SSy.x	MSy.x	SDy.x
Among means	1	0.32	156.72	7.1	146.02	146.02	
Within groups	36	233.37	272.36	175.67	140.12	3.89	1.97
Total	37	233.69	429.08	182.77	286.13		

$$F_{y.x} = 37.52 (p < 0.01)$$

The obtained $F_{y.x}$ ratio is 37.52 ($p < 0.01$) which is greater than the table value significant at 0.01 level. Hence it can be interpreted that that the two final means which depend upon the experimental and control variables differ significantly after they have been adjusted for initial difference on x.

Findings

1. Comparison of the pre- test and post-test mean scores of Visual Literacy in Biology of experimental group.

From the Comparison of the Pre- test and Post-test scores of the Experimental group with respect to Visual Literacy in Biology, it was found that the computed t value is 24.65 which is greater than the table value significant at 0.01 level.

2. Comparison of the post-test mean scores of Visual Literacy in Biology of experimental group and Control group

From the Comparison of the Post-test scores of the Experimental group and Control group with respect to Visual Literacy in Biology, it was found that the computed t value is 7.82 which is greater than the table value significant at 0.01 level.

3. Comparison of pre-test and post-test scores of experimental group and control group Analysis of covariance shows that the obtained F_{yx} ratio is 93.76 ($p < 0.01$) which is greater than the table value significant at 0.01 level . Hence it can be interpreted that that the two final means which depend upon the experimental and control variables differ significantly after they have been adjusted for initial difference on x.

4. From 1,2 and 3 it is clear that the instruction using the package on thinking maps is more effective in enhancing visual literacy among secondary schools than the traditional activity method.
5. Analysis shows that the instruction using the package on thinking maps is more effective in enhancing visual literacy among secondary schools than the traditional activity method irrespective of gender

Conclusion

It is concluded that instructional material based on Thinking Maps is more effective when compared to existing method. The investigator hopes that, in the light of the results of the study the teachers will make use of Thinking Maps in teaching learning process. It is recommended for in service programmes, Seminars and Workshops must be conducted to give awareness about such innovative methods .Over crowded classroom is a problem to implement such innovative methods in classrooms. Hence it is also recommended teacher pupil ratio has to be reduced at secondary school classes for the successful implementation of such programs.

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डॉ. सुधीर कुमार (स०प्रा०,बी०एड० विभाग)
महाराणा प्रताप राजकीय स्नातकोत्तर महाविद्यालय
हरदोई, (उ०प्रा०)

उच्च माध्यमिक स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार व आकांक्षा स्तर का अध्ययन

सारांश

प्रस्तुत शोध में उच्च माध्यमिक स्तर के विद्यालयों के विद्यार्थियों के जोखिमपूर्ण व्यवहार का अध्ययन निम्न आकांक्षा स्तर, औसत आकांक्षा स्तर व उच्च आकांक्षा स्तर के सन्दर्भ में किया गया है। अध्ययन में न्यादर्श के रूप में जनपद मैनपुरी के 600 विद्यार्थियों को सम्मिलित किया गया है। विद्यार्थियों के जोखिमपूर्ण व्यवहार को ज्ञात करने हेतु डॉ. वीरेन्द्र सिन्हा व डॉ. प्रेमनाथ अरोरा (1982) द्वारा निर्मित जोखिमपूर्ण व्यवहार प्रश्नावली (RTQ) तथा आकांक्षा स्तर को ज्ञात करने हेतु डॉ. महेश भार्गव एवं प्रोफेसर एम.ए. शाह द्वारा निर्मित “आकांक्षा स्तर का मापन (LOA)” का उपयोग किया गया है। प्राप्तांकों का विश्लेषण मध्यमान, मानक विचलन, क्रान्तिक अनुपात व एनोवा की मदद से किया गया है। अध्ययन में पाया गया कि निम्न आकांक्षा स्तर, औसत आकांक्षा स्तर व उच्च आकांक्षा स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार में अन्तर है और यह भी पाया गया कि निम्न आकांक्षा स्तर, औसत आकांक्षा स्तर व उच्च आकांक्षा स्तर का विद्यार्थियों के जोखिम पूर्ण व्यवहार पर सार्थक प्रभाव पड़ता है।

मूल शब्द - जोखिमपूर्ण व्यवहार, आकांक्षा स्तर, सामाजिक-आर्थिक स्तर, लिंग

प्रस्तावना :- मानव इतिहास को यदि हम देखते हैं, तो पाते हैं कि प्राचीन मानव का अस्तित्व ही जोखिम पर टिका हुआ था। प्रागैतिहासिक काल में मनुष्य कष्टपूर्ण एवं छोटा जीवन व्यतीत करते थे क्योंकि भोजन और आश्रय की तलाश में उन्हें हमेशा जोखिम उठाना पड़ता था। उस समय जीवन में जानवरों के द्वारा मारे जाने, खराब मौसम

का भय बना रहता था। कभी-कभी तो भोजन न प्राप्त होने के कारण वो भूख से ही मर जाते थे। पानी के जहाज का आविष्कार हो जाने से मानव के लिये जोखिम एक नया स्रोत बन गया। अब जहाजों से यात्रा, लूटमार, जहाजों के डूबने का जोखिम होने लगा। जहाज के द्वारा विदेशों में व्यापार भी होने लगा। लोग जहाज से ही दूर-दूर तक जाते थे और मार्ग में पड़ने वाले जोखिमों का सामना करते थे। पिछली कुछ शताब्दियों में वित्तीय साधनों, बाजारों के आगमन व व्यापार में लाभ और आर्थिक विकास की चाहत ने मानव को और भी जोखिम लेने के लिये प्रेरित किया। जोखिम पूर्ण व्यवहार एक मनोवैज्ञानिक चर है जो कि सामाजिक चरों से प्रभावित होता है जैसे उम्र, लिंग, वैवाहिक स्थिति, सामाजिक-आर्थिक स्तर, माता-पिता का समर्थन, व्यक्तित्व के गुण, मूल्य, स्वभाव, उपलब्धि प्रेरणा, आकांक्षा स्तर आदि। प्रत्येक व्यक्ति अपने लिए कुछ न कुछ लक्ष्य निर्धारित करता है जिन्हें वह प्राप्त करना चाहता है या प्राप्त करने की लालसा रखता है, यह आवश्यक नहीं होता है व्यक्ति जिस आकांक्षा स्तर का निर्धारण करता है वह उन्हें प्राप्त ही कर ले, वह असफल भी हो सकता है। लक्ष्यों का निर्धारण कई प्रयोगों के द्वारा होता है। इन प्रयोगों में आकांक्षा स्तर एक महत्वपूर्ण सम्प्रत्यय है जो लक्ष्य को निर्धारित करता है। जो कि व्यक्ति की पहुँच के अन्तर्गत होता है। व्यक्ति सदैव उच्च लक्ष्य निर्धारित करता है इसलिए वह लक्ष्य को प्राप्त करने में कभी-कभी असफल हो जाता है। **जेम्स ड्रेवर (1956) के अनुसार** “आकांक्षा स्तर का अर्थ है एक व्यक्ति की अपने अनुभवों के द्वारा सफलता तथा असफलता की प्राप्ति।” किशोरावस्था में बालकों का आकांक्षा स्तर अत्यन्त उच्च स्तर पर होता है जिसमें वह एक नायक या कार्य को अपना आदर्श बना लेते हैं और उसे पाने के लिए, उस जैसा बनने की कोशिश करते हैं। उसी प्रकार अभिभावकों की उससे कुछ आकांक्षायें एवं आशाएँ होती हैं। इसके सन्दर्भ में व्यक्ति अक्सर विभिन्न प्रकार के निर्णय लेता है और इसी निर्णय लेने की प्रक्रिया में जोखिमपूर्ण व्यवहार शामिल होता है। अपरिपक्व विद्यार्थी निर्णय लेने में चूक जाते हैं जिसके परिणाम आत्महत्या, घर से भाग जाना, विद्रोह करना आदि के रूप में प्राप्त होते हैं। *Roeser, K. A. (2013)* ने किशोरों के जोखिमपूर्ण व्यवहार में व्यक्तिगत तथा सामाजिक कारकों का अध्ययन किया। अध्ययन के निष्कर्ष में लिंग का प्रभाव जोखिमपूर्ण व्यवहार पर पाया गया । *Malik, U. & Yogesh, (2014)* ने उच्च माध्यमिक विद्यालयों के विद्यार्थियों के मध्य

जोखिमपूर्ण व्यवहार का आत्मविश्वास पर प्रभाव का अध्ययन किया। अध्ययन के निष्कर्षों में पाया गया कि छात्रों के आत्मविश्वास का उनके जोखिमपूर्ण व्यवहार पर प्रभाव पड़ता है, परन्तु छात्रों के जोखिमपूर्ण व्यवहार पर उनके आत्मविश्वास का कोई प्रभाव नहीं पड़ता है। *Siti, M. M. N. & Haslinda, A. (2014)* ने किशोरों के भौगोलिक चर एवं जोखिम पूर्ण व्यवहार के साथ सम्बन्ध का अध्ययन किया। इन्होंने भौगोलिक स्थिति का जोखिम पूर्ण व्यवहार के साथ सार्थक सम्बन्ध पाया गया। *Venkateswarlu, N.(2016)* ने उच्च माध्यामिक स्तर के विद्यार्थियों में आकांक्षा स्तर का अध्ययन किया व पाया कि छात्र एवं छात्राओं के आकांक्षा स्तर में कोई अन्तर नहीं है साथ ही क्षेत्र की ओर से अध्ययन करने पर पाया गया कि नगरीय छात्रों का आकांक्षा स्तर ग्रामीण छात्रों के आकांक्षा स्तर की तुलना में उच्च है। *Kumar, S. & Gupta, M. (2014)* ने अध्ययन के निष्कर्षों में पाया गया कि गैर सरकारी विद्यालयों के छात्रों का आकांक्षा स्तर सरकारी विद्यालयों की अपेक्षा अच्छा था तथा क्षेत्र के सन्दर्भ में अध्ययन करने में पाया गया कि शहरी विद्यार्थियों तथा ग्रामीण विद्यार्थियों का आकांक्षा स्तर समान है। *Pathak, S. N. (2014)* ने कॉलेज के विद्यार्थियों के आकांक्षा स्तर तथा उपलब्धि अभिप्रेरणा का अध्ययन किया और पाया गया कि छात्र तथा छात्राओं के आकांक्षा स्तर में सार्थक अन्तर है तथा यह भी पाया गया कि ग्रामीण विद्यार्थी तथा नगरीय विद्यार्थियों के आकांक्षा स्तर में सार्थक अन्तर है। *Rajesh V. R. & Chandrasekaran, V. (2014)* ने हाईस्कूल के विद्यार्थियों की शैक्षिक आकांक्षा का अध्ययन किया और पाया कि लिंग, निवास स्थान तथा परिवार के प्रकार के आधार पर शैक्षिक आकांक्षा स्तर में सार्थक अन्तर है। *Kalaivari, M. & Rajesswari V. (2015)* ने कोडाईकनाल में बेथोनिया फाउण्डेशन के बच्चों के भावात्मक बुद्धि तथा आकांक्षा स्तर पर एक एकल अध्ययन किया और पाया गया कि उच्च भावात्मक बुद्धि के बच्चों में उच्च आकांक्षा स्तर है। *Sahar, J. (2015)* ने स्नातक स्तर के छात्रों के आकांक्षा स्तर तथा आत्म प्रभावकारिता का अध्ययन किया और पाया कि आकांक्षा स्तर तथा आत्म प्रभावकारिता के मध्य निम्न धनात्मक सम्बन्ध है। *Abdelrazak, O. H. G. (2016)* ने नजरान विश्वविद्यालय के विद्यार्थियों के आकांक्षा स्तर का अभिप्रेरणा पर पड़ने वाले प्रभाव का अध्ययन किया और पाया गया कि आकांक्षा स्तर तथा अभिप्रेरणा में सार्थक सह सम्बन्ध है।

उपरोक्त शोध साहित्य के अध्ययन से प्राप्त निष्कर्षों के आधार पर कहा जा सकता है कि बालक के विकास में आकांक्षा स्तर व जोखिमपूर्ण व्यवहार की महत्वपूर्ण भूमिका होती है। आकांक्षा स्तर व जोखिमपूर्ण व्यवहार के द्वारा ही निर्धारित होता है कि विद्यार्थी का विकास उसके जीवन की विभिन्न परिस्थितियों में किस प्रकार होगा। प्रस्तुत अध्ययन के द्वारा विद्यार्थियों के आकांक्षा स्तर की स्थिति ज्ञात की गयी है तथा यह भी ज्ञात किया गया है कि निम्न आकांक्षा स्तर, औसत आकांक्षा स्तर व उच्च आकांक्षा स्तर का उनके जोखिमपूर्ण व्यवहार पर क्या प्रभाव पड़ रहा है।

शोध प्रश्न :

- उच्च माध्यमिक स्तर के विद्यार्थियों का आकांक्षा का स्तर क्या है?
- उच्च माध्यमिक स्तर के विद्यार्थियों में विभिन्न आकांक्षा स्तरों पर जोखिम पूर्ण व्यवहार की स्थिति क्या है?
- उच्च माध्यमिक स्तर के विद्यार्थियों के विभिन्न आकांक्षा स्तरों का उनके जोखिम पूर्ण व्यवहार पर क्या प्रभाव पड़ता है?

अध्ययन के उद्देश्य :

1. उच्च माध्यमिक स्तर के विद्यार्थियों के आकांक्षा स्तर का अध्ययन कर उनके जोखिम पूर्ण व्यवहार की स्थिति ज्ञात करना।
2. उच्च माध्यमिक स्तर के विद्यार्थियों के उच्च आकांक्षा स्तर, औसत आकांक्षा स्तर व निम्न आकांक्षा स्तर का उनके जोखिम पूर्ण व्यवहार पर पड़ने वाले प्रभाव का अध्ययन करना।

परिकल्पना :

1. उच्च माध्यमिक स्तर के विद्यार्थियों के उच्च आकांक्षा स्तर, औसत आकांक्षा स्तर व निम्न आकांक्षा स्तर के आधार पर उनके जोखिमपूर्ण व्यवहार में कोई सार्थक अन्तर नहीं है।

परिसीमांकन :

प्रस्तुत शोध अध्ययन केवल उत्तर प्रदेश के जनपद मैनपुरी तक सीमित है तथा इस शोध अध्ययन में केवल उत्तर प्रदेश माध्यमिक शिक्षा परिषद्, इलाहाबाद (उ.प्र.) एवं केन्द्रीय माध्यमिक शिक्षा परिषद् नई दिल्ली द्वारा मान्यता प्राप्त कक्षा 11 व 12 के विद्यार्थियों को ही सम्मिलित किया गया है।

शोध विधि :

प्रस्तुत शोध अध्ययन में वर्णनात्मक शोध की सर्वेक्षण विधि का प्रयोग किया गया है।

समष्टि :

जनपद मैनपुरी के माध्यमिक स्तर के समस्त विद्यार्थी इस अध्ययन की समष्टि है।

प्रतिदर्श एवं प्रतिदर्श चयन विधि :

अध्ययन हेतु 600 उच्च माध्यमिक स्तर के विद्यार्थी प्रतिदर्श के रूप में हैं जिसमें 300 छात्र व 300 छात्रायें सम्मिलित हैं। प्रस्तुत शोध कार्य के लिये शोधकर्ता द्वारा उत्तर प्रदेश के जनपद मैनपुरी की 5 तहसीलों (करहल, भोगाँव, घिरोर, किशनी तथा मैनपुरी) में से साधारण यादृच्छीकृत प्रतिदर्शन विधि का प्रयोग कर तीन तहसीलों करहल, भोगाँव तथा मैनपुरी का चयन किया गया है, तत्पश्चात् इन तहसीलों के उच्च माध्यमिक विद्यालयों में से साधारण यादृच्छीकृत प्रतिदर्शन विधि का प्रयोग कर 10 विद्यालयों चयन किया गया है। तत्पश्चात् स्तरित यादृच्छीकृत प्रतिदर्शन विधि का प्रयोग कर 600 विद्यार्थियों का चयन प्रतिदर्श के रूप में किया गया है।

शोध उपकरण :

उच्च माध्यमिक स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार को ज्ञात करने हेतु डॉ. वीरेन्द्र सिन्हा व डॉ. प्रेमनाथ अरोरा (1982) द्वारा निर्मित “जोखिमपूर्ण व्यवहार प्रश्नावली (RTQ)” तथा आकांक्षा स्तरों को निर्धारित करने हेतु डॉ. महेश भार्गव एवं प्रोफेसर एम.ए. शाह (1975) द्वारा निर्मित “आकांक्षा स्तर का मापन (LOA)” का उपयोग किया गया है।

सांख्यिकीय तकनीक :

उपकरण से प्राप्त प्राप्तांकों को विभिन्न तालिकाओं में व्यवस्थित कर उनका विश्लेषण, MS office excel की सहायता से मध्यमान, मानक विचलन, क्रान्तिक अनुपात व एनोवा की गणना कर व्याख्या की गयी है।

प्रदत्तों का विश्लेषण एवं परिणामों की व्याख्या :

विश्लेषण -1 : अध्ययन के प्रथम उद्देश्य “उच्च माध्यमिक स्तर के विद्यार्थियों के आकांक्षा स्तर का अध्ययन कर उनको जोखिमपूर्ण व्यवहार की स्थिति ज्ञात करना” के अन्तर्गत परिकल्पित परिकल्पना H_0 , “उच्च माध्यमिक स्तर के विद्यार्थियों के उच्च आकांक्षा स्तर, औसत आकांक्षा स्तर व निम्न आकांक्षा स्तर पर उनका जोखिमपूर्ण व्यवहार समान है।” का सत्यापन मध्यमान के आधार पर किया गया है, तालिका संख्या-1 में आकांक्षा स्तर मापनी पर कुल 600 विद्यार्थियों में से उच्च आकांक्षा स्तर वाले विद्यार्थियों की संख्या 121 व उनके जोखिमपूर्ण व्यवहार का मध्यमान 162.19, औसत आकांक्षा स्तर वाले विद्यार्थियों की संख्या 381 व उनके जोखिमपूर्ण व्यवहार का मध्यमान 144.02 व निम्न आकांक्षा स्तर वाले विद्यार्थियों की संख्या 98 व उनके जोखिम पूर्ण व्यवहार का मध्यमान 127.75 है। परिणाम से प्राप्त उच्च आकांक्षा स्तर, औसत आकांक्षा स्तर व निम्न आकांक्षा स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार के मध्यमान का मान इंगित करता है कि उच्च माध्यमिक स्तर के विद्यालयों के सभी विद्यार्थियों का जोखिमपूर्ण व्यवहार समान नहीं है क्योंकि विद्यार्थियों के उच्च आकांक्षा स्तर, औसत आकांक्षा स्तर व निम्न आकांक्षा स्तर के विद्यार्थियों के जोखिमपूर्ण में महत्वपूर्ण अन्तर व्याप्त है।

तालिका संख्या-1

उच्च, औसत व निम्न आकांक्षा स्तर रखने वाले उच्च माध्यमिक स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार का मध्यमान

विद्यार्थियों का आकांक्षा स्तर	विद्यार्थियों की संख्या	विद्यार्थियों के जोखिमपूर्ण व्यवहार का मध्यमान
उच्च	121	162.19
औसत	381	144.02
निम्न	98	127.75

परिणाम की विवेचना :- उपरोक्त परिणाम इंगित करते हैं उच्च माध्यमिक स्तर के विद्यालयों के सभी विद्यार्थियों का जोखिमपूर्ण व्यवहार समान नहीं है और आकांक्षा स्तर के अनुसार जोखिमपूर्ण व्यवहार में बदलाव हो रहा है इसके मुख्य कारण विद्यार्थियों की संस्कृति, सामाजिक मूल्य, ग्रामीण परिवार, विभिन्न प्रकार की धार्मिक पृष्ठभूमि, अभिप्रेरणा स्तर, आकांक्षा स्तर तथा व्यक्तित्व में विभिन्नता इत्यादि रहे हैं।

विश्लेषण -2 अध्ययन के द्वितीय उद्देश्य . “उच्च माध्यमिक स्तर के विद्यार्थियों के उच्च आकांक्षा स्तर, औसत आकांक्षा स्तर व निम्न आकांक्षा स्तर का उनके जोखिमपूर्ण व्यवहार पर पड़ने वाले प्रभाव का अध्ययन करना।” के अन्तर्गत परिकल्पना **Ho**, “उच्च माध्यमिक स्तर के विद्यार्थियों के उच्च आकांक्षा स्तर, औसत आकांक्षा स्तर व निम्न आकांक्षा स्तर के आधार पर उनके जोखिम पूर्ण व्यवहार में कोई सार्थक अन्तर नहीं है।” का निरूपण किया गया है। इस परिकल्पना **Ho**, के सत्यापन हेतु 600 विद्यार्थियों से प्राप्त आँकड़ों के आधार पर 121 विद्यार्थियों का आकांक्षा स्तर उच्च, 381 विद्यार्थियों का आकांक्षा स्तर औसत व 98 विद्यार्थियों का आकांक्षा स्तर निम्न है, जिसके आधार पर जोखिमपूर्ण व्यवहार का विश्लेषण **एफ (F) परीक्षण** की मदद से किया गया है, विश्लेषण से प्राप्त परिणामों को तालिका संख्या-2 में प्रदर्शित किया गया है-

तालिका संख्या-2

उच्च, औसत व निम्न आकांक्षा स्तर रखने वाले उच्च माध्यमिक स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार पर प्राप्त 'F' मान

Source of Variation	SS	Df	MS	F
Between Groups	65335.07	2	32667.54	.01 सार्थकता स्तर पर सार्थक
Within Groups	259000.60	597	433.84	
Total	324335.70	599		

*0.01 सार्थकता स्तर पर 'F' का सारणी मान = 4.62

परिणाम की व्याख्या :- उपरोक्त तालिका संख्या-2 में उच्च, औसत व निम्न आकांक्षा स्तर रखने वाले उच्च माध्यमिक स्तर के विद्यालयों के विद्यार्थियों के जोखिमपूर्ण व्यवहार का मध्यमान क्रमशः 162.19, 144.02 व 127.74 है तथा प्राप्त 'F' का मान 75.299 है यह प्राप्त मान .01 सार्थकता स्तर पर सारणी मान से अधिक

है, अतः प्राप्त 'F' का मान सार्थक है। परिणाम से प्राप्त 'F' का मान इंगित करता है कि उच्च, औसत व निम्न आकांक्षा स्तर रखने वाले उच्च माध्यमिक स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार में महत्वपूर्ण अन्तर व्याप्त है, क्योंकि प्राप्त 'F' का मान सार्थक पाया गया है अतः परिकल्पना **H₀** अस्वीकार की जाती है। परिणाम में विभिन्न आकांक्षा स्तरों के विद्यार्थियों के जोखिमपूर्ण व्यवहार में अन्तर सार्थक है। जिससे पता चलता है कि उच्च माध्यमिक स्तर के विद्यार्थियों के आकांक्षा स्तर का उनके जोखिमपूर्ण व्यवहार पर सार्थक प्रभाव पड़ता है।

उक्त परिणाम से मात्र यह पता चला है उच्च माध्यमिक स्तर के विद्यालयों के विद्यार्थियों के आकांक्षा स्तर का उनके जोखिमपूर्ण व्यवहार पर सार्थक प्रभाव पड़ता है किन्तु आकांक्षा के तीन स्तरों में से किस स्तर के आधार पर जोखिमपूर्ण व्यवहार में अन्तर सार्थक है तथा किस स्तर के आधार पर सार्थक नहीं है अतः शोधकर्ता ने और गहन अध्ययन करने हेतु उक्त परिणाम के अर्न्तगत निम्नलिखित उद्देश्य का पुनः निर्माण किया और यह जानने का प्रयास किया कि किस आकांक्षा स्तर का जोखिमपूर्ण व्यवहार पर सार्थक प्रभाव पड़ रहा है -

उद्देश्य -

- 2 (A) उच्च व औसत आकांक्षा स्तर रखने वाले उच्च माध्यमिक स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार का अध्ययन करना।
- 2 (B) उच्च व निम्न आकांक्षा स्तर रखने वाले उच्च माध्यमिक स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार का अध्ययन करना।
- 2 (C) औसत व निम्न आकांक्षा स्तर रखने वाले उच्च माध्यमिक स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार का अध्ययन करना।

परिकल्पनाएँ - उपरोक्त शोध उद्देश्यों की पूर्ति हेतु निम्न परिकल्पनाओं का निरूपण किया गया-

- 2 (A) उच्च व औसत आकांक्षा स्तर रखने वाले उच्च माध्यमिक स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार में सार्थक अन्तर है।
- 2 (B) उच्च व निम्न आकांक्षा स्तर रखने वाले उच्च माध्यमिक स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार में सार्थक अन्तर है।

2 (C) औसत व निम्न आकांक्षा स्तर रखने वाले उच्च माध्यमिक स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार में सार्थक अन्तर है।

विश्लेषण -3 :- अध्ययन के उद्देश्य संख्या 2(A) “उच्च व औसत आकांक्षा स्तर रखने वाले उच्च माध्यमिक स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार का अध्ययन करना।” के अन्तर्गत परिकल्पित परिकल्पना $H_1(A)$ “उच्च व औसत आकांक्षा स्तर रखने वाले उच्च माध्यमिक स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार में सार्थक अन्तर है।” का सत्यापन क्रान्तिक अनुपात (CR) के आधार पर किया गया है, तालिका संख्या-2(A) में आकांक्षा स्तर मापनी पर प्राप्त 121 उच्च आकांक्षा स्तर एवं 381 औसत आकांक्षा स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार का मध्यमान क्रमशः 162.19 व 144.02, मानक विचलन क्रमशः 18.72 व 17.90 तथा क्रान्तिक अनुपात (CR) का मान स्वतंत्रता स्तर 500 पर मान 9.62 है, यह प्राप्त मान .01 सार्थकता स्तर पर सारणी मान से अधिक है अतः क्रान्तिक अनुपात (CR) का मान सार्थक है। अतः उच्च व औसत आकांक्षा स्तर वाले विद्यार्थियों के जोखिमपूर्ण व्यवहार में अन्तर सार्थक है, दोनों चरों में अन्तर सार्थक होने के कारण परिकल्पना “उच्च व औसत आकांक्षा स्तर रखने वाले उच्च माध्यमिक स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार में सार्थक अन्तर है” को स्वीकृत किया जाता है।

तालिका संख्या 2 (A)

उच्च व औसत आकांक्षा स्तर रखने वाले उच्च माध्यमिक स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार पर प्राप्त क्रान्तिक अनुपात (CR) मान

आकांक्षा स्तर	विद्यार्थियों की संख्या	जोखिमपूर्ण व्यवहार का मध्यमान	जोखिमपूर्ण व्यवहार का मानक विचलन	df	'CR' मान	.01 सार्थकता पर निष्कर्ष
उच्च	121	162.19	18.72	500	9.62	सार्थक
औसत	381	144.02	17.90			

*0.01 सार्थकता स्तर पर 'CR' का सारणी मान = 2.58

परिणाम की विवेचना :- उपरोक्त परिकल्पना के सत्यापन के पश्चात् परिणाम इंगित करते हैं कि उच्च तथा औसत आकांक्षा स्तर रखने वाले विद्यार्थियों के जोखिमपूर्ण व्यवहार में सार्थक अन्तर व्याप्त है। उच्च आकांक्षा स्तर रखने वाले विद्यार्थियों का जोखिमपूर्ण व्यवहार, औसत आकांक्षा स्तर रखने वाले विद्यार्थियों के जोखिमपूर्ण व्यवहार से अधिक है। जो कि प्रेरणा का स्तर, आकांक्षा स्तर, तार्किक चिन्तन, स्वास्थ्य, सामान्य जानकारी, आत्म मूल्यांकन व आत्म प्रदर्शन, आत्म उन्नति का प्रभाव, नेतृत्व क्षमता का प्रभाव, बौद्धिक स्तर, सामाजिक गतिविधियों की समझ, कार्यक्षमता का होना, उपलब्धि, विकास व प्रदर्शन के लिये प्रयासरत रहना, मित्र समूह, अत्यधिक पाने की चाह, स्वतन्त्रता, प्रतिस्पर्धात्मक प्रवृत्ति, जीवन शैली, शिक्षा व व्यवसाय के प्रति चिन्ता इत्यादि पर निर्भर करता है।

विश्लेषण -4 :- अध्ययन के उद्देश्य संख्या 2(B) “उच्च व निम्न आकांक्षा स्तर रखने वाले उच्च माध्यमिक स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार का अध्ययन करना।” के अन्तर्गत परिकल्पित परिकल्पना H_{0} , “उच्च व निम्न आकांक्षा स्तर रखने वाले उच्च माध्यमिक स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार में सार्थक अन्तर है।” का सत्यापन क्रान्तिक अनुपात (CR) के आधार पर किया गया है, तालिका संख्या-2(B) में आकांक्षा स्तर मापनी पर प्राप्त 121 उच्च आकांक्षा स्तर एवं 98 निम्न आकांक्षा स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार का मध्यमान क्रमशः 162.19 व 127.75, मानक विचलन क्रमशः 18.72 व 31.31 तथा क्रान्तिक अनुपात (CR) का मान स्वतंत्रता स्तर 217 पर मान 10.08 है, यह प्राप्त मान .01 सार्थकता स्तर पर सारणी मान से अधिक है अतः क्रान्तिक अनुपात (CR) का मान सार्थक है। अतः उच्च व निम्न आकांक्षा स्तर वाले विद्यार्थियों के जोखिमपूर्ण व्यवहार में अन्तर सार्थक है, दोनों चरों में अन्तर सार्थक होने के कारण परिकल्पना “उच्च व निम्न आकांक्षा स्तर रखने वाले उच्च माध्यमिक स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार में सार्थक अन्तर है” को स्वीकृत किया जाता है।

तालिका संख्या 2(B)

उच्च व निम्न आकांक्षा स्तर रखने वाले उच्च माध्यमिक स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार पर प्राप्त क्रान्तिक अनुपात (CR) मान

आकांक्षा स्तर	विद्यार्थियों की संख्या	जोखिमपूर्ण व्यवहार का मध्यमान	जोखिमपूर्ण व्यवहार का मानक विचलन	df	'CR' मान	.01 सार्थकता पर निष्कर्ष
उच्च	121	162.19	18.72	217	10.08	सार्थक
निम्न	98	127.75	31.31			

*0.01 सार्थकता स्तर पर 'CR' का सारणी मान = 2.58

परिणाम की विवेचना :- उपरोक्त परिकल्पना के सत्यापन के पश्चात् परिणाम इंगित करते हैं कि उच्च तथा निम्न आकांक्षा स्तर रखने वाले विद्यार्थियों के जोखिमपूर्ण व्यवहार में सार्थक अन्तर व्याप्त है। उच्च आकांक्षा स्तर रखने वाले विद्यार्थियों का जोखिमपूर्ण व्यवहार, निम्न आकांक्षा स्तर रखने वाले विद्यार्थियों के जोखिमपूर्ण व्यवहार से अधिक है। जो कि प्रेरणा का स्तर, आकांक्षा स्तर, सामाजिक गतिविधियों की समझ, कार्यक्षमता का होना, उपलब्धि, विकास व प्रदर्शन के लिये प्रयासरत रहना, मित्र समूह, अत्यधिक पाने की चाह, स्वतन्त्रता, प्रतिस्पर्धात्मक प्रवृत्ति, जीवन शैली, शिक्षा व व्यवसाय के प्रति चिन्ता इत्यादि पर निर्भर करता है।

विश्लेषण -5 :- अध्ययन के उद्देश्य संख्या 2(C) “औसत व निम्न आकांक्षा स्तर रखने वाले उच्च माध्यमिक स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार का अध्ययन करना” के अन्तर्गत परिकल्पित परिकल्पना H_{30} “औसत व निम्न आकांक्षा स्तर रखने वाले उच्च माध्यमिक स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार में सार्थक अन्तर है।” का सत्यापन क्रान्तिक अनुपात (CR) के आधार पर किया गया है, तालिका संख्या-2(C) में आकांक्षा स्तर मापनी पर प्राप्त 381 औसत आकांक्षा स्तर एवं 98 निम्न आकांक्षा स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार का मध्यमान क्रमशः 144.02 व 127.75, मानक विचलन क्रमशः 17.90 व 31.31 तथा क्रान्तिक अनुपात (CR) का मान स्वतंत्रता स्तर 477 पर मान 6.74 है, यह प्राप्त मान .01

सार्थकता स्तर पर सारणी मान से अधिक है अतः क्रान्तिक अनुपात (CR) का मान सार्थक है। अतः औसत व निम्न आकांक्षा स्तर वाले विद्यार्थियों के जोखिमपूर्ण व्यवहार में अन्तर सार्थक है, दोनों चरों में अन्तर सार्थक होने के कारण परिकल्पना औसत व निम्न आकांक्षा स्तर रखने वाले उच्च माध्यमिक स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार में सार्थक अन्तर है” को स्वीकृत किया जाता है।

तालिका संख्या - 2(C)

औसत व निम्न आकांक्षा स्तर रखने वाले उच्च माध्यमिक स्तर के विद्यार्थियों के जोखिमपूर्ण व्यवहार पर प्राप्त क्रान्तिक अनुपात (CR) मान

आकांक्षा स्तर	विद्यार्थियों की संख्या	जोखिमपूर्ण व्यवहार का मध्यमान	जोखिमपूर्ण व्यवहार का मानक विचलन	df	'CR' मान	.01 सार्थकता पर निष्कर्ष
औसत	381	144.02	17.90	477	6.74	सार्थक
निम्न	98	127.75	31.31			

*0.01 सार्थकता स्तर पर 'CR' का सारणी मान = 2.58

परिणाम की विवेचना :- उपरोक्त परिकल्पना के सत्यापन के पश्चात् परिणाम इंगित करते हैं कि उच्च तथा औसत आकांक्षा स्तर रखने वाले विद्यार्थियों के जोखिमपूर्ण व्यवहार में सार्थक अन्तर व्याप्त है। उच्च आकांक्षा स्तर रखने वाले विद्यार्थियों का जोखिमपूर्ण व्यवहार, औसत आकांक्षा स्तर रखने वाले विद्यार्थियों के जोखिमपूर्ण व्यवहार से अधिक है। जो कि प्रेरणा का स्तर, आकांक्षा स्तर, तार्किक चिन्तन, स्वास्थ्य, सामान्य जानकारी, उपलब्धि, विकास व प्रदर्शन के लिये प्रयासरत रहना, मित्र समूह, अत्यधिक पाने की चाह, स्वतन्त्रता, प्रतिस्पर्धात्मक प्रवृत्ति, जीवन शैली, शिक्षा व व्यवसाय के प्रति चिन्ता इत्यादि पर निर्भर करता है।

निष्कर्ष - उपरोक्त शोध में पाया गया कि प्राप्त उच्च आकांक्षा स्तर, औसत आकांक्षा स्तर व निम्न आकांक्षा स्तर के सभी विद्यार्थियों का जोखिमपूर्ण व्यवहार समान नहीं है उच्च आकांक्षा स्तर रखने वाले विद्यार्थियों का जोखिमपूर्ण व्यवहार, औसत व निम्न आकांक्षा स्तर रखने वाले विद्यार्थियों के जोखिमपूर्ण व्यवहार से अधिक है। औसत

आकांक्षा स्तर वाले विद्यार्थियों का जोखिमपूर्ण व्यवहार, उच्च आकांक्षा स्तर रखने वाले विद्यार्थियों के जोखिमपूर्ण व्यवहार से कम तथा निम्न आकांक्षा स्तर रखने वाले विद्यार्थियों के जोखिमपूर्ण व्यवहार से अधिक है। निम्न आकांक्षा स्तर रखने वाले विद्यार्थियों का जोखिमपूर्ण व्यवहार उच्च व औसत आकांक्षा स्तर रखने वाले विद्यार्थियों के जोखिमपूर्ण व्यवहार से कम है। इस प्रकार उच्च आकांक्षा स्तर रखने वाले विद्यार्थियों का जोखिमपूर्ण व्यवहार सर्वाधिक, औसत आकांक्षा स्तर रखने वाले विद्यार्थियों का उससे कम तथा निम्न आकांक्षा स्तर रखने वाले विद्यार्थियों का जोखिमपूर्ण व्यवहार सबसे कम है अतः आकांक्षा स्तर के तीनों स्तरों का विद्यार्थियों के जोखिमपूर्ण व्यवहार पर सार्थक प्रभाव पड़ रहा है। प्रस्तुत शोध अध्ययन शिक्षा के क्षेत्र में उच्च माध्यमिक स्तर के विद्यार्थियों के जोखिम पूर्ण व्यवहार के लिए आकांक्षा स्तर के महत्व को दर्शाता है।

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Factors to Measure E-learning Readiness Among Students

Abstract

This present study reports about the factors that determine the readiness of students towards E-learning. Through a small-scale literature review, efforts were made to identify the key factors that determine the readiness of students towards E-learning. The researcher used technique of content analysis for reviewing the literature. The literature was collected from various databases like Google Scholar, Research Gate, Academia, ERIC and various publication house websites like Sage, Taylor and Francis, Wiley, and Emerald. The findings of the review of literature suggest that the factors and its components that determine the ELR among students are diversified. However, "Technological Readiness, attitudinal Readiness, Basic Internet Skills and Motivation" are the factors that have been largely used by the researchers to determine ELR of Students.

Keywords: *E-learning, E-learning Readiness (ELR), E-learning Readiness Factors, Higher Education (HE)*

Introduction

Education is considered to be a light that shows the right direction for mankind to rise. The aim of education is not just to make students literate, but it also develops various life skills among students and makes them self-sufficient (Kalaivani, 2014). Education is considered as a tool which helps in overcoming the problems of societal change. Education is undergoing through a complete process of transformation,

particularly with regard to delivery and pedagogies (Pingle, 2011). The Indian Higher Education(HE) system is considered as one of the largest system of HE in the world. Since Independence, India's HE sector has seen a remarkable increase in the number of Colleges and Universities (Sheikh, 2017). Today, there is a continuous increase in the number of enrolments in HE institutions (HEI's). It is believed that the student enrolment in HE saw an increase of 11.4% between 2015-2020. The total number of enrolment in HE was witnesses as 3.85 crore in 2019-2020 as compared to 3.74 crore in 2018-2019 which indicates an increase of 11.36 lakh (3.04 %) (Sharma, 2021). Further, in future there might be more and more students who will be approaching HE institutions in the country for the purpose of getting quality education. As far as National Education Policy (NEP) is concerned, one of the main goal of the policy is to have gross enrolment ratio (GER) of atleast 50% in HE by 2035. As the current GER is standing at just 26.3 %, and for doubling it in the next 15 years will need extensive planning, great reforms and a sustainable implementation (Bhattacharjee, 2019). Due to the continuous increase in enrollment, the problem of better quality in HE has been a great concern for all who are directly or indirectly associated with the academic and education system (Singh, 2016). The students in India who want to have access to HE face innumerable challenges concerning infrastructure, language, physical barriers and socio-economic condition (Bhattacharya & Sharma, 2007). The availability of good and high-quality infrastructure provides various opportunities for facilitating better instruction. It improves the student's outcome and at the same time reduces the dropout rates. The development of Information and Communication Technology (ICT) has improved the practices of every sphere of human endeavor like business, governance and education (Pegu, 2014). The implementation and the utilization of ICT in education has a positive impact on teaching, learning and research (Habib, 2017; Amin, 2013; Shamim & Raihan, 2015). The development of ICT and the utilization of internet as a new practice of teaching and learning has brought lot of changes in the traditional process of teaching and learning. It has created lot of choices for today's education and E-learning is one among them. For addressing the challenges of today's HE, E-learning is considered a proper solution which gives highest priority in solving these issues

(Lakshmi, et al., 2020). Today, the educational institution in the world have recognized E-learning as a powerful instrument which has the ability to transform knowledge, skills, and performance of people (Henry, 2001). E-learning is seen as a solution in developing countries to meet the rising demand for HE (Ngampornchai & Adams, 2016). It also enhances the quality of HE by increasing the students' interest, motivation, and engagement (Pavel, 2015). E-learning is utilized as a web-based technology which is used to provide activities like simulations in classroom-based teaching and learning (Thaufeega, 2016).

Defining E-learning

E-learning is using electronic media, information, and communication technologies (ICT) and educational technology in education. E-learning is defined as a “new version of learning which is applied to via the Internet technologies and involves the educational activities which do not require the presence of the teacher and learner at the same time and place” (Nehru, 2013). The term “E-learning” has been taken from Anglo-Saxon literature (Pavel et.al. 2015; Rao et al., 2018; Linus, 2019). It encompasses not only virtual learning bet web-based learning as well (Pingle, 2011; Mckimm et al. 2003; Wolfe & Cedillos 2015). E-learning comprises of usage the internet and various other communication technologies that help in producing learning materials, teaching learners, and managing the courses in an organization (Fry, 2001). E-learning is being considered as the best medium for providing quality education and training. It enhances the learning of students by making the delivery system two way instead of one-way. E-learning is considered as the future of learning where the focus will be both on the requirements of the individuals and the content delivered (Furaydi, 2013). E-learning covers a range of processes, applications and learning methods (Rossi, 2009). It provides a collaborative platform to the students to share their thoughts and views and also have discussions for clarifications on the content. E-learning is an approach of providing guidance and delivering information to students. It is a type of education where the medium of instruction is computer technology (Pingle, 2011). Several universities have designed courses that can be accessed using laptop, desktops, or other smart devices. These courses are developed in such a way that the students need not to be physically

in the classroom but can access them from any place convenient to them at any time and in any pace. The success of E-learning approach depends on the readiness of stakeholders to accept it, and this gives birth to another concept i.e., E-learning Readiness(ELR). Thus, accepting and implementing E-learning can be better when individuals have readiness towards it.

E-learning Readiness (ELR)

ELR is necessary to make sure that the users are competent in using the technology-based E-learning in the best possible way (Hashim & Tasir). The Assessment of ELR facilitates an organization to design the strategies for E-learning and to execute its ICT goals successfully (Kaur & Abas, 2004). Applying E-learning in the educational institution, it helps the universities and schools to assist their learners in enhancing their learning opportunities (The & Usagawa, 2018). ELR may be defined as the level of readiness of students, academic staff and institutions towards E-learning technologies (Hashim & Tasir, 2014). Bowles (2014) in a related study defines ELR as the assessment of Readiness of an institution to adopt and implement E-learning. For assessing the readiness towards E-learning, there are some factors that are being used to measure the ELR. While considering E-learning as a feasible option to deliver instructions and training, these factors should be taken seriously (Eslaminejad, 2010). To determine the ELR of a university, academic staff members as well as learners should be considered first. Assessment of ELR includes the ability of learners to adjust to technological advancement, collaborative training, and synchronous and asynchronous self-paced training. The readiness among learner's need to be resolved before the educational institutions introduce E-learning as it requires that the learners make use of the internet, work together with their peers, and discuss with their trainer for support (Alessi & Trollip, 2001). The learners should be ready with respect to adopting to the responsibility of a self-driven mode of training, react to the challenges that are posed by technology, and more importantly there is requirement to be disciplined to learn alone and to react to online instructions. It is essential that that the learners and teachers must be "e-ready" so that a proper strategy could be planned which is based on the need of learners and teachers. The assessment of ELR becomes mandatory when any educational institution plans to implement E-learning.

Methodology

In the present study, the researchers have tried to do an in-depth study about the factors that determine ELR among students. The study is a small literature review where the researcher explored the related literature by visiting various database like “Google Scholar, ERIC, JStor, Researchgate and Academia” and various publication house websites like “Sage, Taylor and Francis, Wiley, and Emerald”. The researchers searched the keyword “E-learning Readiness among Students” on these above-mentioned websites. The researcher reviewed 15 studies for the current study through the technique of content analysis. Moreover, the researchers selected only those studies, which were carried out between the year 2010 to 2020.

Discussion

The review of the literature revealed that the research in the field of ELR is continuously going on. The table 1 shows the results of the researches that were related to the measuring the readiness for E-learning in HEI.

Table 1: Studies on ELR of Students along with factors of FLR

Researcher	Title of the Paper	Factors
Widyanti et al. (2020)	“E-learning readiness and perceived learning workload among students in an Indonesian university”	“Computer/Internet self-efficacy, Self-directed learning, Learner control, Motivation, Online communication self-efficacy”
Hadining et al. (2019)	“An Investigation of Student Perspective for E-learning Readiness Measurement”	“People Readiness, Self-development Readiness, Technology Readiness, and Innovation Readiness”
Obi et al. (2018)	“E-learning Readiness from Perspectives of Medical Students: A Survey in Nigeria”	“Basic ICT skills, Technology, Content readiness, Culture readiness, Attitude”

Coopasami et al. (2017)	“E-learning readiness amongst nursing students at the Durban University of Technology”	“Psychological, Equipment and Technological readiness”
Caliskan et al. (2017)	“University Students' Readiness for E-learning”	“Computer Self-Efficacy, Internet Self-Efficacy, Online Communication Self-Efficacy, Self-Learning, Learner Control and Motivation for E-learning”
Yilmaz (2017)	“Exploring the role of E-learning readiness on student satisfaction and motivation in flipped classroom”	“Computer self-efficacy, internet self-efficacy, online communication self-efficacy, self-directed learning, learner control and motivation towards E-learning, Satisfaction and Motivated Strategies”
Naresh et al. (2016)	“A Study on the Relationship Between Demographic Factor and e-Learning Readiness among Students in Higher Education”	“Technology, Group learning, Meticulous and Disciplined explorer”
Contreras & Hilles (2015)	“Assessment in E-learning Environment Readiness of Teaching Staff, Administrators, 8and Students of Faculty of Nursing-Benghazi University”	“Technology, Attitude”

Rahim et al. (2014)	“Assessing Students Readiness Towards E-learning”	“Basic Internet skills, access to technology and attitude”
Doculan (2014)	“E-learning Readiness of the Ifugao State University”	“Technology Skills, Basic Computer Skills, Internet Skills, Software Application, Study Habits, Abilities, Motivation, Time Management”
Ünal et al. (2014)	“Students Readiness for E-Learning: An Assessment on Hacettepe University Department of Information Management”	“Technology, self-confidence, acceptance level and training level”
Okinda (2014)	“KTTC's E-learning Readiness Survey”	“Technology, Content, Culture and Organization Industry”
Liaw & Huang (2011)	“A study of investigating learners' attitudes toward E-learning”	“Technology and Attitude”
Tubaishat & Lansari (2011)	“Are Students Ready to Adopt E-learning? A Preliminary E-readiness Study of a University in the Gulf Region”	“Technology, Infrastructure, Internet usage, and general understanding of E-learning and culture”
Ali (2010)	“Measuring Students E-Readiness for E-learning at Egyptian Faculties of Tourism and Hotels”	“Technical and Learning Skills, Time management behaviors”

Table 2: Frequency of ELR factors as used by researchers

Factors	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th	11 th	12 th	13 th	14 th	15 th		
Technological	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
Psychological				1													1
Equipment				1													1
Attitude			1				1	1			1						4
Learning Skill													1				1
People Readiness		1															1
Self-development Readiness, Group learning, Meticulous and Disciplined explorer		1														1	2
Innovation Readiness		1															1
Basic Internet skills			1						1	1							3
Self-Learning, Learner Control					1												1
Motivation	1				1	1			1								4
Infrastructure													1				1
Culture			1							1		1					3
Study Habits and Satisfaction									1								1
Content readiness			1							1							2
Organization Industry and Self confidence										1				1			2
Online communication	1				1												2
Number of factors	3	4	5	3	4	2	2	2	4	5	2	3	2	2	2		

Table 2 provides an overview of the frequency of the factors that have been used by investigators to measure ELR among students. From the above table it can be analyzed that Technological Readiness, attitudinal Readiness, Basic Internet Skills and Motivation are factors that have been used largely by the researchers while identifying the ELR among students.

Factor Wise Analysis

I) Technological

Technological readiness is considered as an important factor for determining ELR. As per table 1.2, the factor has been used by 13 studies for measuring ELR among students. Coopasami et al. (2017) used Technological readiness to measure whether the students possess the technical skills for E-learning. The researcher modified the ELR scale developed by Chapnick to measure the ELR among students. The study was carried out in two phases i.e. pre-assessment phase and post-assessment phase. Contreras & Hilles (2014) used Technology as a factor for measuring ELR on a sample of 67 students. The researchers used Mercado (2008) ELR Assessment survey where technological readiness is a factor for measuring ELR. Ali (2010) developed a three-dimensional scale to measure ELR of students. The researcher used technology as a factor for measuring ELR on a sample of 62 students. The researcher aimed at measuring the technical and computer skills among students. Hadining et al. (2019) used ELR model developed by Aydin and Tasci (2005) to measure ELR among students on a sample of 100 students. Technological readiness was used as a factor for measuring ELR. Liaw and Huang (2011) conducted a study on 191 male and 233 university students to measure their readiness towards E-learning. The researchers developed a questionnaire which consisted of technology as a factor measuring ELR. The developed scale was 7-point likert scale. Ünal et al. (2014) developed a five-point likert scale consisting of 39 items to measure ELR of students. The researcher used technology as a factor for measuring ELR of 311 students. Naresh et al. (2016)

developed a questionnaire to measure ELR of 84 male and 46 female students. The researcher used technology as a factor for measuring the ELR. Tubaishat & Lansari (2011) used technology as a factor for determining ELR among 67 students. The researcher developed self-made questionnaire to measure ELR. Doculan (2014) employed a questionnaire on students to measure ELR. The research instrument included Technology as a factor for measuring ELR on 1672 students. Obi et. al. (2018) developed a semi-structured questionnaire to measure ELR of medical students in Nigeria. The researcher used technical skill and access to technology as components for the ELR scale. Okinda (2014) developed five point likert with technology as a factor for measuring ELR among students. The study was carried out on 591 regular and 1019 holiday students. Rahim et. al. (2014) developed structured questionnaire to measure ELR among students. The researcher used technology as a factor for measuring ELR among students on a sample of 110 students. The focus was laid on basic ICT skills and access to technology.

II) Psychological and Attitudinal Readiness

The psychological readiness plays an important role in E-learning implementation. As far as the table 1.2 is concerned, psychological readiness was used by 1 study and Attitudinal Readiness was used by 04 studies as a factor for measuring the ELR of students. Coopasami et al. (2017) used psychological readiness to measure ELR among students. The researcher studied the perception of students towards E-learning by modifying the ELR scale developed by Chapnick to measure the ELR among students. The study was carried out in two phases i.e. pre-assessment phase and post-assessment phase. Contreras & Hilles (2014) used Attitude as a factor to measure ELR of students. Through attitude, the researcher studies the students “abilities, motivations and time management” on a sample of 67 students. Liaw and Huang (2011) conducted a study on 191 male and 233 university students to measure their readiness towards E-learning. The researchers developed a questionnaire which

consisted of attitude as a factor for measuring ELR. The developed scale was 7-point likert scale. Rahim et al. (2014) developed structured questionnaire to measure ELR among students. The researcher used attitudinal readiness as factor for measuring ELR among students on a sample of 110 students. Obi et al. (2018) developed a semi-structured questionnaire to measure ELR of medical students in Nigeria. The researcher used attitude as factor for measuring the ELR.

III) Equipment Readiness, Learning Skill and Time Management Behaviour

The Table 1.2 reveals that the factor Equipment was used by 1 study to determine the ELR among students. Coopasami et al. (2017) used Equipment readiness to measure whether the students have ownership of technological tool like laptop, personal computer etc. The researcher modified the ELR scale developed by Chapnick to measure the ELR among students. The study was carried out in two phases i.e. pre-assessment phase and post-assessment phase. Ali (2010) developed a three-dimensional scale to measure ELR of students. The researcher used “Time management behaviour and Learning Skills” as a factor for measuring ELR on a sample of 62 students. The researcher aimed at measuring the technical and computer skills among students

IV) People Readiness, Self-development Readiness and Innovation Readiness

Regarding the factors like “People Readiness, Self-development Readiness and Innovation Readiness”, as per table 1.2, the factors were used by 01 study to measure ELR among students. Hadining et al. (2019) used ELR model developed by Aydin and Tasci (2005) to measure ELR among students on a sample of 100 students. People Readiness, Self-development Readiness and Innovation Readiness were used as factors for measuring ELR among students.

V) Basic Internet skills, Basic ICT Skill, Access to technology, Basic Computer Skills, Internet Skills

Rahim et. al. (2014) used Basic Internet skills and access to technology towards E-learning as factors for measuring the ELR among students. The researchers used a structured questionnaire on a sample of 110 students. Obi et al. (2018) used Basic ICT skills for determining ELR among students. The sample of the study consisted of 284 medical students. The researchers used a semi-structured questionnaire for the collection of data. Doculan (2014) employed a questionnaire on students to measure ELR. The research instrument included Basic Computer Skills, Internet Skills as factors for measuring ELR on 1672 students.

VI) Computer Self-Efficacy, Internet Self-Efficacy, Online Communication Self-Efficacy, Learner Control

Caliskan et. al. (2017) used Computer Self-Efficacy, Internet Self-Efficacy, Online Communication Self-Efficacy, Self-Learning, Learner Control and Motivation as factors for measuring ELR among university students. The sample of the study consisted of 160 students. Yilmaz (2017) used Computer self-efficacy, internet self-efficacy, online communication self-efficacy, self-directed learning, learner control motivation towards E-learning, Satisfaction and Motivated Strategies as factors for determining ELR among students. The study was conducted on a sample of 236 undergraduate students. Widyanti et al. (2020) used Computer/Internet self-efficacy, Self-directed learning, Learner control, Online communication self-efficacy as factors for ELR. The researchers used a questionnaire on a sample of 51 University students.

VII) infrastructure, Internet usage, Culture and Motivation

Tubaishat & Lansari (2011) used infrastructure, Internet usage, and culture for measuring ELR among University Student. The researchers developed a questionnaire and used on a sample of 67 students. Obi et al. (2018) developed a semi-structured questionnaire to measure ELR of medical students in Nigeria. The researcher used Cultural readiness for measuring ERL on a

sample of 284 medical students. Doculan (2014) employed a questionnaire on students to measure ELR. The research instrument included Motivation as a factor for measuring ELR on 1672 students. Okinda (2014) developed five point likert with Culture as a factor for measuring ELR among students. The study was carried out on 591 regular and 1019 holiday students. Widyanti et al. (2020) used motivation as factors for ELR. The researchers used a questionnaire on a sample of 51 University students.

VIII) Study Habits and Organization Industry and Content Readiness

Doculan (2014) employed a questionnaire on students to measure ELR. The research instrument included study habits as a factor for measuring ELR on 1672 students. Okinda (2013) content and Organization Industry as factors for ELR among students. The researcher used five point likert scale on a sample of 1,610. Obi et al. (2018) used Content readiness for measuring ELR on a sample of 284 medical students.

Conclusion

On the base on a small-scale review of literature on ELR among students where the studies carried out between year 2010 and 2020 were reviewed, the researchers found that all the studies that were selected for the literature review were having a separate section on knowing the demographic information of the students. The studies analyzed Technological, Psychological, Equipment, Attitude, Learning Skill, Time management behaviours, People Readiness, Self-development Readiness, Innovation Readiness, Basic Internet skills, access to technology, Self-Learning, Learner Control, Motivation, Infrastructure, Culture, Study Habits and Satisfaction, Content readiness, Organization Industry, Online communication, Self-Directed Learning and. Self-Competence. The findings of literature review suggest that the factors and its components that determine the ELR among students are diversified. However, Technological Readiness, attitudinal Readiness, Basic Internet Skills and Motivation are the factors that have been largely used by the researchers to determine ELR among Students.

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Linguistic Creativity Test: Construction and its Validation

Abstract

The present study was undertaken to construct and validate a Linguistic Creativity Test for measuring imaginative abilities, generation of ideas, and divergent thinking of class IX learners in the area of language learning. A preliminary draft of the test was prepared by framing items after reviewing related literature. Since the nature of the test items was open-ended and had no fixed answers, qualitative item analysis was carried out to establish the validity of the test. The test was given to subject experts for analyzing the content and ascertaining its content validity and construct validity. Thus, the final form of the test consists of eighteen items/activities.

Keywords: *Linguistic creativity, divergent thinking, content validity, construct validity*

Introduction

Creativity in a language is characterized as an aspect or ability possessed by an individual to produce indefinite sentences. Chomsky (1966) defined linguistic creativity as a person's cognitive structure to produce and comprehend original and unheard utterances infinitely which is not influenced by an external stimulus (as cited in D'Agostino, 1984). Language can potentially be creative by using different literary and non-literary sources to elicit imagination, idea generation, and divergent thinking. Language tasks that are more learner-centred and involve open-ended elements tend to foster creative thinking among

section, items relating to the construction of stories based on proverbs, moral values, situations, adventure, and suggesting titles for the story were included. In the poetic-diction section, items relating to composing poems on certain themes were included. In the dialogue writing section, items relating to the situational conversation and creative expansion of ideas were included. In the descriptive style section, items relating to essay writing, article writing, and a letter to the editor on significant social issues were included. Lastly, in the vocabulary section items relating to figures of speech, finding similarities and differences between concepts, and synonyms were included. Altogether, twenty-four items/activities were framed in the initial draft based on five dimensions.

Validation of the Test

Since the nature of the test items was open-ended and sought divergent responses, qualitative item analysis was done to establish the validity of the Linguistic Creativity Test. The selection of items for the final form of the test was done based on the judgment ability of subject experts from various colleges and universities in India. The test items were validated in terms of content validity and construct validity. The items framed were rigorously analyzed for finding out to what extent they conform to the principles of creative thinking and the nature of content optimized for the ninth standard. The experts' views concerning the test items in relation to the mentioned criteria were the following.

- i. Firstly, every test item sought novel, imaginative, and divergent responses. The items did not have a fixed response.
- ii. Secondly, each test item framed was according to the prescribed syllabus of English learning of class IX and suited learners' age, maturity, and intelligence level.

The Final Form of the Test

In the final form of the Linguistic Creativity Test, eighteen items were selected and six items were eliminated on the basis of valuable suggestions given by the subject experts. The items were discarded considering the lengthiness of the test; time duration to complete the test; repetition of activities. As per the experts' views, the final test was holistic in approach as the retained items offered the learners novel

language learners. Providing learners with new and unpredictable situations and activities such as plot construction, role play, and simulations emphasize the deliberate use of functional language, thus facilitating the ability to make creative connections (Richards, 2013). Linguistic creativity is essentially a trait of all human beings where they are engaged in re-creating and re-interpreting novel situations. It is a multi-dimensional trait manifested in all domains of language (lexis, grammar, text, sentence patterns) to make communication effective (Zawada, 2009). Onsmann (1982) opines that creativity in language may be described as creating new meanings through the application of figurative language. Fluency, flexibility, originality, and elaboration are the traditional metrics and form the main constituents of creativity through which creative expression could be assessed. The construction of the Linguistic Creativity Test intends to measure the creative performance of class IX students in the area of language learning.

Objectives of the Study

The objectives of the study are as follows:

- i. To construct a Linguistic Creativity Test for measuring the creative abilities of class IX students in the field of language.
- ii. To validate Linguistic Creativity Test.

Method

For the construction and validation of Linguistic Creativity Test, certain steps were followed which are given below.

Preparation of Items

In order to measure the creativity of learners in language learning, relevant books, research papers, and research articles were consulted for preparing test items that were open-ended in nature. The items were prepared keeping in mind the objectives of the test and the target group. The test included five dimensions that decided the nature of the items to be prepared. The items were nothing, but interesting activities which sought imagination, thinking ability, and original ideas from the learners. Each test item was given a specific time limit to be followed by the learners. The five dimensions are plot-building, poetic diction, dialogue writing, descriptive style, and vocabulary. In the plot-building

situations to respond which in turn explored their thinking capacity, creativity, and imaginative abilities.

Scoring and Interpretation of the Test

As there was no fixed response for the open-ended items of the test, the procedure of scoring was different from the fixed-answer type test. Every item was scored for four components of creativity, i.e. fluency, flexibility, originality, and elaboration. The scoring procedure of the Verbal Test of Creative Thinking by Baqer Mehdi was followed for scoring the items in terms of fluency, flexibility, and originality. Items were also scored in terms of elaboration, keeping in view the concept given by Guilford.

- i. **Fluency:** Fluency refers to producing novel and unrepeated ideas which are relevant in each situation or problem. Emphasis is laid on the number of valid responses produced (Morgues, Shah, Saliani, and Barbot, 2017). For scoring every item for the factor of fluency, relevant and unrepeated responses were counted and entered as fluency scores.
- ii. **Flexibility:** Flexibility refers to an individual's ability to produce ideas that differ in thought trends or approaches. Emphasis is laid on generating responses of different categories or themes (Runco, 1986).
- iii. **Originality:** Originality refers to the ability of an individual to produce unique and uncommon ideas by going beyond commonly accepted solutions (Guilford, 1973). The originality score of every item depended on the statistical uncommonness of responses.

Scoring Procedure of Originality

A response given by number of respondents (in percentage)	Originality Score
A response given by 1% of respondent	5
A response given by 2% of respondents	4
A response given by 3% of respondents	3
A response given by 4% of respondents	2
A response given by 5% of respondents	1

- iv. Elaboration: Elaboration refers to providing rich details and filling in the gaps while working on an idea or approach (Guilford, 1973). For scoring every item for the factor of elaboration, a response with complete description and explanation of ideas was given maximum marks.

Conclusion

The study was done to construct and validate Linguistic Creativity Test for measuring imaginative abilities, generation of ideas and divergent thinking of class IX students in the area of language learning. The test was found to be valid in terms of content validity and construct validity. The test can be used by language teachers in classroom setting to assess language development and facilitate creative thinking. It can also be useful for teacher educators and researchers interested in exploring thinking capacity and creative potentialities of learners in language learning.

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Awareness About Virtual Learning Among Prospective Teachers

Abstract

The present study aims to study the awareness about virtual learning among prospective teachers. The investigator adopted normative survey method. A sample of 400 prospective teachers were selected from four B.Ed. colleges from Kanyakumari district. Virtual Learning Awareness Scale was used as the tool. 't' test was used as a statistical technique. The result showed that there is a significant difference in the Virtual Learning awareness among male and female prospective teachers and there was also found significant difference in awareness regarding virtual learning on the basis of their subjects (Science & Arts). The result also revealed that there is no significant difference in the Virtual Learning among Urban and Rural prospective teachers. The study contributes to understand the awareness regarding virtual learning among prospective teachers.

Key words: Virtual Learning, Prospective Teachers, Awareness

Introduction

Online learning makes human life more comfortable and it leads to the treasure of information is available at the click of a mouse on the internet. Online learning is used to refer Virtual learning, web-based training and Cyber learning and Virtual learning. Virtual Learning is a method of receiving academic instruction in courses through a

computer- based internet connected learning environment. Virtual learning may be offered at a supervised school facility during the day as a scheduled class or through self-scheduled learning where pupils have some control over the time, location, and pace of their education. Virtual learning includes, but is not limited to, online learning and computer-based learning, where the delivery of instruction may incorporate a combination of software, technology and the internet.

Objectives

1. To find the significant difference in Awareness about Virtual Learning among prospective teachers with respect to,
 - a) Gender
 - b) Locale
 - c) Subject

Hypotheses

1. There is no significant difference in Awareness about Virtual Learning among prospective teachers with respect to gender
2. There is no significant difference in Awareness about Virtual Learning among prospective teachers with respect to locale
3. There is no significant difference in Awareness about Virtual Learning among prospective teachers with respect to the subject

Methodology

The investigator used normative survey method and simple random sampling technique to select the sample. The sample consisted of 400 prospective teachers from Kanyakumari district. Virtual Learning Awareness scale was used for collecting data from the sample and the statistical techniques such as and percentage and t test was used.

Testing of Hypotheses

Hypothesis 1

There is no significant difference in the Awareness about Virtual Learning among prospective teachers with respect to Gender.

Table1

Mean, Standard Deviation and t Value of Awareness about Virtual Learning among Prospective Teachers with respect to Gender

Variable		Gender	N	Mean	S.D	Calculated t value	Remark at 0.05 level
Virtual Learning Awareness		Male	34	16.88	3.50	4.09	S
		Female	366	19.49	4.15		

From the Table 1, it is observed that the computed t value is 4.09 which is higher than the theoretical value 1.96 at 0.05 level. So it is significant at 0.05 level. Hence the null hypothesis, “There is no significant difference in the Virtual Learning Awareness of prospective teachers with respect to gender”, is rejected.

Hypothesis 2

There is no significant difference in Awareness about Virtual Learning among prospective teachers with respect to Locale.

Table 2

Mean, Standard Deviation and t Value of Awareness on Virtual Learning among Prospective Teachers with respect to Locale

variable	Locale	N	Mean	S.D	Calculated t value	Remark at 0.05 level
Virtual Learning Awareness	Rural	200	19.23	4.583	0.22	NS
	Urban	200	19.32	3.691		

From the Table 2, it is observed that the computed t value is 0.22 which is lower than the theoretical value 1.96 at 0.05 level. So it is not significant at 0.05 level. Therefore the null hypothesis, “There is no significant difference in the Awareness on Virtual Learning among of prospective teachers with respect to locale, is accepted.

Hypothesis 3

There is no significant difference in Awareness about Virtual Learning among prospective teachers with respect to Subject

Table 3

Mean, Standard Deviation and t Value of Awareness on Virtual Learning among Prospective Teachers with respect to Subject.

variable	Subject	N	Mean	S.D	Calculated t value	Remark at 0.05 level
Virtual Learning Awareness	Arts	215	19.19	4.165	15.288	S
	Science	185	12.81	4.158		

From the Table 3, it is observed that the computed t value is 15.288 which is higher than the theoretical value 1.96 at 0.05 level. So it is significant at 0.05 level. Hence the null hypothesis, “There is no significant difference in the, Awareness on, Virtual Learning among of prospective teachers with respect to subject”, is rejected.

Conclusion

The Present study revealed that there is a significant difference in Virtual Learning awareness among Prospective teachers with respect to Gender and subject. Female Prospective teachers have more awareness of virtual learning than Male Prospective teachers. The result also shows that prospective teachers who are having art as a subject are more aware about virtual learning rather than those who are having science as a subject

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Competency in ICT Among Secondary School Teachers in Relation to Gender and Locality

Abstract

The study examined the Competency in ICT among secondary school teachers in relation to their gender and locality. Descriptive survey method was used by the investigator. A sample of 300 secondary school teachers working in urban and rural schools of Patna district was selected through stratified random sampling. The researchers used a self-constructed tool on ICT Competency of secondary school teachers. The data collected were then analysed using statistical techniques like mean, standard deviation and t-test to compare the ICT Competency of male – female and urban - rural secondary school teachers. The results indicated that there is no significant difference in the ICT Competency of secondary school teachers on the basis of gender and location of the school.

Keywords: ICT, secondary school teachers, competency, gender, locality of school

Introduction

Education is the first and best key area for ICT applications. ICT is a catalyst in bringing change in the teaching styles and learning approaches. Teachers are a vital link in the field of education. Teachers acts as a medium between the students and the technology. It is necessary for teachers to prepare and update all facts to be presented in subjects. The use of ICT in teaching learning can make the subject an

enjoyable event for all students. It is important for teachers to try to improve ICT knowledge and skills through the National Education Technology Standards for teachers recommended by National Society for Technology in Education. Teachers use ICT to enhance their productivity and professional practice. Therefore, the teachers should serve as role models to talk about the legal and ethical practices related to technology use. ICT includes technological tools and resources which are engaged to communicate, circulate, and manage information. ICT can be seen as instructional tools and devices used by educators and students to transfer and acquire knowledge respectively both outside and within the traditional classroom setting. When teachers are digitally literate and trained to use ICT, they promote higher order thinking skills, offer unique and creative ways for students to communicate their understandings and leave them more equipped to deal with the constant technological change in society and the workplace.

Review of Related Literature

A large number of studies show that teachers' ICT competency is a significant predictor of their attitude towards ICT. **Olalube (2006)** concluded that there are significant differences in effectiveness between professionally trained teachers and untrained teachers in their ICT instructional material utilization competencies. **Rosenfeld & Martinez Pons (2005)** found in their study that competence in the use of technology in the classroom proved to be a direct function of the degree of technology utilization. **Youngman & Harrison (1998)** carried out in a study that sought to develop ICT competence and confidence in the use of ICT with portable computers. Approximately, 300 teachers in 30 Secondary School were provided with a multimedia portable computer together with internet subscription, core software and a number of CDROM titles. The most significant benefit to pupils was indirect, the teachers gained expertise in the use of tools for creating and high-quality classroom materials and improved access to resources, thereby improving the performance of the students.

Need of the Study

Every field of human activities uses ICT to carry out their daily routines. The field of education is not left out. ICT has indeed changed the way things were formally done in education, be it teaching, learning or research. The knowledge of these ICT skills are very essential because they can appeal to learners' visual and auditory senses if used effectively. ICT can enhance teaching and learning process by increasing students' motivation if used effectively by competent teachers. ICT resources such as computers, PCS, laptops, OHP, internet, interactive whiteboards, cell phones, videos, games, music players should be used in the classroom for effective instructional delivery. Schools are provided with computers for teaching and learning, teachers need to be competent in the use of the skills which can be used for effective teaching. Such skills are PPT, doubling, recording of sounds and playing of recorded sounds. Interactive whiteboard promotes interaction and communication in class helps in the presentation of a new culture, enhance speaking abilities and provide audio visual learning materials. Teachers need to have the knowledge and skills to use the computer, access internet, email etc. and integrate technology in the classroom.

Objectives

1. To find whether there is any significant difference in the ICT Competency of male and female secondary school teachers.
2. To find whether there is any significant difference in the ICT Competency of rural and urban secondary school teachers.

Null Hypotheses

1. There is no significant difference in the mean scores of male and female secondary school teachers in their ICT Competency.
2. There is no significant difference in the mean scores of rural and urban secondary school teachers in their ICT Competency.

Methodology of the Study

Descriptive survey method was adopted for the study. The investigators attempted to find out the difference in the ICT competency of secondary school teachers of Patna. Self-constructed questionnaire was used to collect the data.

Population of the Study

All secondary school teachers teaching in Secondary Schools located in Patna are taken as the population of the study.

Sample

There are 23 blocks in the Patna district, Bihar. Of these blocks, 5 were randomly selected. Random sampling method was applied for selecting the sample of schools and stratified random sampling method was used for selecting teachers as samples. The present study was conducted on a sample of 300 secondary school teachers teaching in 30 secondary schools from urban and rural area.

Tools for Data Collection

Self-constructed Competency in ICT questionnaire was used for the data collection.

Statistical Techniques used in this Study

The researchers used mean, SD and t-test to analyse data.

Delimitation of the Study

This research was confined to 300 secondary school teachers.

Results and Discussion

The statement of the problem is concerned with two independent variables which are gender, locality. The competency in ICT scale was achieved on selected sample teachers and t test value was completed to measure the teacher effectiveness of the secondary school teachers in relation to their gender, and locality. The analysis of information is offered as per the hypothesis.

Null Hypothesis 1: There is no significant difference in the mean scores of male and female secondary school teachers in their ICT competency.

Table – 4.1

Variable	N	Mean	S.D	df	t test	Sign
Male teachers	140	93.84	27.71	298	1.757	NS
Female teachers	160	89.17	15.90			

Table value of df 298 at 0.05 level = 1.962

It can be observed from the table 4.1 that mean and S.D. values for the Competency in ICT of male are 93.84 and 27.71 respectively and that the mean and S.D. values of the Competency in ICT of female are 89.17 and 15.90 respectively. The calculated 't' value is 1.757 and it is less than the table value 1.962 at 0.05 level of significance. Therefore, the hypothesis is **not rejected**. There is no significant difference in the ICT Competency of male and female secondary school teachers.

Null Hypothesis II: There is no significant difference in the mean scores of rural and urban secondary school teachers in their ICT competency.

Table – 4.2

Location	N	Mean	S.D.	't' value	Level of Significance
Rural teachers	130	88.44	16.60	1.42	NS
Urban teachers	170	89.86	16.72		

Table value of df 298 at 0.05 level = 1.962

Interpretation:

It can be observed from the table 4.2 that mean and S.D. values for the Competency in ICT of rural are 88.44 and 16.60 respectively and that of the Competency in ICT of urban are 89.86 and 16.72 respectively. The calculated value of 't' is 1.42 which is less than the table value 1.962 at .05 level of significance. Thus, the hypothesis, which states that there is a significant difference in the ICT Competency of rural and urban secondary school teachers, is **not rejected**. Thus, it can be said that there is no significant difference in the ICT competency of secondary school teachers on the basis of location.

Findings of the Study

The findings obtained from researcher study are as follows:

- No significant difference has been found in the competency in ICT of male and female secondary school teachers. However, on the basis of the mean, it can be said that the male teachers have more knowledge and competency in ICT than the female teachers.
- No significant difference has been found in the competency in ICT of rural and urban secondary school teachers. The urban teachers on the basis of the mean can be said to have higher competency in ICT compared to the rural secondary school teachers..

Educational Implication

Findings of this study will encourage and promote to the head of institutions for improving the information & communication technology awareness of the teachers. Parents should also take advantage of the result obtained from research and inform their children about the use of technical education, increase ones understanding of information and communication technology and get more information in this regard and so that the children can benefit more.

Conclusion

The study reveals that there is no significant difference in the ICT competency of secondary school teachers on the basis of gender and location. The teachers possessed adequate ICT competencies. The knowledge of ICT usage improves the human capacity in every field of human in endeavors, including business, transaction, industrial corporation, educational programs and life in general. The educational institutions in order to enhance their academic quality, need to increase the quality of competency in ICT of teachers with the help of proper digital workshops and frequent in-service trainings.

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Effectiveness of Toon Graphics Technique on Reading Comprehension in English Among Primary School Students

Abstract

In the present study, the investigator made an attempt to find out the Effectiveness of an Instructional package based on Toon graphics on reading comprehension in English among primary school students. The study was conducted on 71 students of standard VII of Pope Pious XI Higher Secondary School Kattanam in Alappuzha district. Experimental method was selected for the study and the design used was Quasi- Experimental design with pre-test post-test two Group design. The data collected were analyzed and interpreted using appropriate descriptive and inferential statistical techniques. The study revealed the Instructional Package is significantly effective in Enhancing reading comprehension in English among primary school students.

Keywords: *Toon graphics technique, Reading Comprehension, Effectiveness, Primary School students.*

Introduction

Language is the expression of human personality in words, whether written or spoken. It is not only a knowledge subject rather it is a skill subject. One acquires language just as he learns painting or music through continual practice. Persistent practice is the basis of one's mastery of the language. Among the language in the world, English occupies a protuberant role and it is the official language of many countries in the world. It occupies a unique status in the administrative, education and social setup of every country. Moreover, it is the most widely used language for communication.

All over the world there is much hype and cry about the teaching of English language. In the recent years, the modern ELT specialists globally recommends the use of innovative techniques and materials for the teaching of English language instead of outmoded methods which kills the allure of teaching and learning of this global language.

The research in language acquisition has been rich and productive during the past twenty years. Linguistics and educators working together (Krashen and Terrel, in1983) have discovered effective ways to support students in their acquisition of new languages and content knowledge. It is vital that classroom teachers should understand the implications of the language acquisition research so they can provide the scaffolding necessary for their students to be efficacious in the classroom.

Noam Chomsky says people would like to think that there's somebody up there who knows what he's doing. Since we don't participate, we don't control and we don't even think about questions of vital importance. We hope somebody is paying attention who has some competence.

Krashen and Terrel (1983) also pointed out the need for English language learners to be allowed to move into verbal production of the new language at a comfortable rate. Students must hear and understand messages in the target language and build a listening vocabulary before being expected to produce spoken language. This does not mean that the English language learners should be uninvolved in the classroom activities, but that the activities should be structured so that English language learners can participate at a level of comfort. Questions asked should be answerable at first with gestures, nods or others physical responses. This language acquisition stage is called the silent or pre-production period, and it is a vital start to language acquisition.

The role of classroom environment in supporting children's language acquisition cannot be overlooked. Meaningful exposure to language is not enough but openings to language interaction is a must. Swain (1993) proposes that classroom where children work together to solve problems and do projects supports their language development in several ways. It gives them authentic reasons to communicate and

Speaking, Reading, and Listening skills are constantly being overlooked in many ESL classrooms. The effect of this is that learners are not able to express themselves in the language. However, for a practical efficiency to be ensured in learners of English, it is pertinent that more attention is given to teaching language skills in ESL classrooms.

Children who are not able to acquire reading comprehension in primary class have to face various learning problems in higher classes. Toon graphics is a technique that helps children to acquire reading comprehension. Reading comics can foster vocabulary acquisitions. Once reluctant readers can fully understand text, their confidence gradually grows, and this in turn triggers additional reading. Toon graphics are capable of helping students acquire reading skills. They effectively motivate them to read more and apply themselves until they fully understand the text.

Toon Graphics develop and reinforce reading skills like inferencing, demonstrate punctuation and grammar rules, and explain figurative language. Throughout the book, the reader constantly needs to figure out the relationship between the text and images.

It is presumed that a study of this type would be useful in collecting necessary data about Toon Graphics technique which may help curriculum planners, educators and teaching community to develop suitable strategies for making teaching learning process more effective, interesting and meaningful.

Objective of the Study

- To test the effectiveness of Toon graphic Technique on reading comprehension among VII standard students for the whole sample

Hypothesis

- Toon graphic Technique is effective for enhancing reading comprehension among VII standard students for the whole sample

support in refining their language. It also provides students with the insight that their verbal communication is not always understood by others. This realization helps to move the child from receptive, semantic processing (listening to understand) to expressive, systematic processing (formation of words and sentences to communicate). If children are left to simply listen and observe without the opportunity or necessity to communicate, they remain in the reproductive stage for an extended period of time. The teacher should encourage interaction

Toon books and graphic novels help readers advance their comprehension skills. Reading Toon books and graphic novels, as well as writing/ creating comic books can help to create an enjoyable learning environment and active engagement, especially for “children with reading problems or deficiencies because they view it as recreational reading rather than academic reading” and because comics offer a visual element for comprehending the text.

Need and Significance of the Study

English is mandate everywhere because people have recognized that knowledge of English can lead to a better career, higher income and offers more opportunities.

English allows ideas and innovations and cross-pollination of ideas around the world and offer us a new kind of cosmopolitan single arcade in knowledge and ideas. To prepare the children of our nation to be the future Entrepreneurs, Doctors, Scientists, Engineers etc., we need to craft a situation encouraging multi lingual learning from an early age. In doing so, we align ourselves, our children and our future generation for growth and success, security and ultimately, prosperity.

A student can only be said to have good communication skills and effective interpersonal skills when the four skills like listening, speaking, reading and writing seamlessly blend together. But unfortunately the focus in the Indian classrooms is more on writing. Reading as a language skill is very important, but is also greatly neglected. Students rarely focus on reading. If the students can read and understand a text, half the work is done.

Method and Design

The present study is intended to find out the effectiveness of Toon Graphics technique on reading comprehension in primary school students. So experimental method is adopted for the study. For the experiment, the design selected was pre-test post-test nonequivalent group design.

Sample Selected

The investigator selected a sample of 71 primary school students from state school following state syllabus, through random sampling method of which 37 students as Experimental group and 34 as Control group.

Variables of the Study

In the present study, independent variables are

- a) Independent variable- Instruction using Toon Graphics technique
And
- b) Instruction using prevailing activity method.

The dependent variable is

- a) Reading comprehension in English

Tools and Materials Used for the Study

The most important tools and materials used for the study are

- 1) Instructional package based on Toon Graphics for promoting reading comprehension in English.
- 2) Reading comprehension test.

Statistical Technique Used

In the present study in order to find out the Effectiveness of the TOON GRAPHICS technique on reading comprehension in English among primary school students, t-test is done using pre-test post-test scores. The classroom intact groups maybe similar, but they are nonequivalent groups. Since the experiment is conducted using classroom intact groups, Analysis of Variance (ANOVA) and Analysis of Covariance (ANCOVA) is applied for analyzing the final scores.

Procedure Adopted for the Study

For the present study the investigator selected two divisions of grade VII students from a state school. Out of the two division, one division is considered as control group and the other is experimental group. Before starting the experiment, the previous reading comprehension ability of the students were found out. The experimental group was taught using TOON GRAPHICS technique and control group was taught using Activity Oriented Method. After this, the Reading Comprehension test in English were given as post- test.

Analysis and Interpretation

Table-1

Test of significance of difference between means of pre-test and post-test scores of experimental group

Assessment	Number of students	Mean	Standard deviation	C.R.	Level of significance
Pre test	37	8.92	2.79	13.29	p<0.01
Post test	37	17.84	2.98		

The Table 1 shows that the critical ratio obtained is 13.29 which is greater than table value significant at 0.01 level. Hence it can be interpreted that the post test score is significantly higher than that of the pre-test score for experimental group.

Table-2

Test of significance of difference between means of post test scores of control group and experimental group

Group	Number	Mean	Standard deviation	C.R.	Level of significance
Control group	34	13	2.98	6.83	0.01
Experimental group	37	17.84	2.98		

The Table 2 shows that the critical ratio obtained is 6.83 which is greater than table value significant at 0.01 level. Hence it can be interpreted that the post-test score of experimental group is significantly higher than that of the post-test score for control group.

Table-3

Test of significance of difference between means of gain scores of control group and experimental group

Group	Number	Mean	Standard deviation	C.R.	Level of significance
Control group	34	4.41	1.06	16.19	0.01
Experimental group	37	8.92	1.28		

The Table 3 shows that the gain score of experimental group is significantly (at 0.01 level) higher for experimental group.

Table-4

Analysis of Variance of pre-test and post-test scores of experimental group and control group.

Source of variation	df	SSx	SSy	MSx	MSy
Among means	1	1.94	414.69	1.94	414.69
Within groups	69	522.99	631.03	7.58	
Total	70	524.93	1045.72		

$F_x = 0.26 (p > 0.05)$

$F_y = 45.34 (p < 0.01)$

The obtained F_x and F_y were tested for significance. The obtained F_x is 0.26 which is less than that of table value for df 1/69 at 0.05 level . Hence it can be interpreted that the mean value of pre-test scores of the experimental and control group did not differ significantly.

The obtained F_y is 45.34 which is greater than that of table value for df 1/69 at 0.01 level . Hence it can be interpreted that the mean value of post test scores of the experimental and control group differ significantly. So it can be interpreted that the two groups differ significantly after intervention.

The final y scores were adjusted for difference in initial x scores. For that SS has been adjusted for any variability in y and $SS_{y \cdot x}$ and F ratio $F_{y \cdot x}$ were calculated. The summary of Analysis of Covariance is given in table 5 .

Table - 5
Analysis of Co-Variance of pre-test and post-test scores of experimental group and control group

Source of variation	df	SS _x	SS _y	SS _{xy}	SS _{y.x}	MS _{y.x}	SD _{y.x}
Among means	1	1.94	414.69	28.35	358.15	358.15	1.21
Within groups	68	522.99	631.03	527.51	98.95	1.46	
Total	69	524.93	1045.72	555.86	457.11		

$F_{y \cdot x} = 246.12$ ($p < 0.01$)

From the table F , for $df = 1/68$

Table value of F significant at 0.05 level = 2.29

Table value of significant at 0.01 level = 6.85

The obtained $F_{y \cdot x}$ ratio is 246.12 ($p < 0.01$) which is greater than the table value significant at 0.01 level . Hence it can be interpreted that that the two final means which depend upon the experimental and control variables differ significantly after they have been adjusted for initial difference on x.

The adjusted means of post test scores of students in the experimental and control group were calculated and tested for significance difference if any. The details are given in table 6

Table-6
Adjusted means of post-test scores of experimental group and control group

Group	Number of Students	Mean of pre test	Mean of post test	Adjusted post-test mean
Control	34	8.59	13	13.17
Experimental	37	8.92	17.84	17.67
General means		8.75	15.42	

$GM_x = 8.75$

SED between adjusted means = 0.29

Calculated t value = 15.51 ($p < 0.01$)

Adjusted post- test mean scores of experimental and control groups were tested for significant difference if any. The calculated t value is 15.51 ($p < 0.01$) which is greater than the table value for df 1/68 (6.85). So it is evident that the reading comprehension in English for experimental group is significantly higher than that of control group. So the instructional package is effective in enhancing reading comprehension in English of primary school students.

Major Findings of the Study

The analysis of the data led the investigator to the following major findings.

1. Comparison of pre-test and post-test mean scores of Reading comprehension in English of experimental group.

Analysis of pre-test and post-test scores of experimental group with respect to Reading comprehension in English, it was found that the computed t value is 13.29 which is greater than the table value significant at 0.01 level. The mean score of experimental group is 17.84. Hence it can be interpreted that the post-test score is significantly higher than that of pre-test score of experimental group. Thus the experimental group taught using instructional package based on Toon Graphics Technique is more effective in enhancing reading comprehension than the control group taught using activity oriented method.

3. Comparison of post-test mean scores of reading comprehension in English of experimental and control group.

Analysis of post-test scores of experimental group and control group with respect to reading comprehension in English, it was found that the computed t-value is 15.51 which is greater than the table value for df 1/68. All these values are significant at 0.01 level. The mean score of experimental group is 17.84 was greater than that of control group 13. Hence the performance of the experimental group is significantly higher than that of control group after intervention and it can be interpreted that there is significant difference between post-test mean scores of experimental and

control group. It is evident that instructional package based on Toon Graphics technique is more effective than that of existing activity oriented method.

Conclusion of the Study

Analysis revealed that Toon graphics helps the students to enhance their reading comprehension in English. Instructional package on Toon graphics has a lot of practical difficulties in adopting it as a method in classrooms. Hence efforts should be taken to make it feasible in classrooms especially in primary classrooms.

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A Study on Life Skills of Prospective Teachers

Abstract

After passing a long history of mankind, today we are living in the third millennium where one has to learn different skills for living a healthy and competitive life. With regard to teachers and prospective teachers, today we need to possess multiple skills to meet the demands of the world. NPE-2020 suggests for multi-disciplinary approach in studies and a teacher to be a multi-disciplinarian. Teacher trainees are expected to learn various skills and use them in their daily life for a healthy atmosphere in any educational institution and at home. In different levels of a teacher's life, these skills will help in maintaining proper balance between their work and leisure, happy life, better contribution to society, healthy and participatory interaction in school and social life. Keeping all these significant points in mind, the investigator took up this study to find out the life skills of prospective teachers. The study was conducted in Kallakurichi, one of the educational districts of Tamil Nadu and survey method was deployed. In the present study to assess the life skills of prospective teachers, the investigator used Life Skills Scale developed by Dr. Chandra Kumari and Ms. Ayushi. The investigator found in this study that B.Ed Science and Arts stream students do not differ significantly in life skills and Urban and rural students do not differ significantly in life skills. The findings of present study may be useful for the researchers, academicians and stakeholders.

Key words: Prospective Teachers, Life Skills, Kallakurichi District, Tamilnadu

Introduction

Ever since humans began to exist on this earth, various forms of life of people also began to exist such as social life, religious life, political life, economic life and the like. People began to manipulate everything surrounded by them for a better living. In the process of advancement in human life, people also started using various skills for the satisfaction of life. After passing a long history of mankind, today we are living in the third millennium where one has to learn different skills for living a healthy and competitive life. With regard to teachers and prospective teachers, today we need to possess multiple skills to meet the demands of the world. NPE-2020 suggests for multi-disciplinary approach in studies and a teacher to be a multi-disciplinarian. Teacher trainees are expected to learn various skills and use them in their daily life for a healthy atmosphere in any educational institution and at home.

Life Skills

There are various definitions bringing out the meaning of life skills in different dimensions. However, when we analyze various definitions, there are some common ideas that are repeatedly reinforced such as group of psychological competencies, interpersonal skills, ability to cope with problems, creative and critical thinking and so on.

WHO defines, “life skill education is the ability for adaptive and positive behavior that enables individual to deal effectively with the demands and challenges of everyday life”. It identified ten core set of skills. They are

- Self-Awareness
- Empathy
- Interpersonal Communication
- Interpersonal Relationship
- Decision Making
- Problem Solving
- Critical Thinking
- Creative Thinking
- Coping with emotion
- Coping with stress

Review of Related Literature

Rani, Sonu & Neeraj (2020) conducted a study on life skill which refers to the set of skills that enable us to effectively handle issues commonly encountered in daily life. The aim of study was to see the life skills (all dimension of life skills) among senior secondary students. The sample of study was selected randomly 100 students studying in government and private schools in Sonepat District. After data analysis it was found that there was significance difference between boys and girls students on level of life skills. Female students have mean more than male students of all dimension of life skill i.e decision making, problem solving, Empathy, Self Awareness, Communication Skill, Interpersonal Relationship, Coping with Emotions, Coping with Stress, Creative Thinking and Critical Thinking.

Vinay Kumar Cherukuri and Grace Indira (2020) investigated on the life skills among Prospective Teachers. The study aimed to investigate the 10 life skills these are decision making, empathy, interpersonal relationship, coping with emotions, critical thinking, creative thinking, self -awareness, effective communication, coping with stress, problem solving. The final result of the study revealed that the 66 % of the prospective teachers have average level of Life Skills, 18% of the prospective teachers have low level of Life Skills. Only 16 % of the prospective teachers have high level of Life Skills. Variables like gender, area didn't play any significant role their Life Skills.

Jayachithra (2020) conducted a study on Awareness on Life Skills among Prospective Teachers. The result revealed regarding the knowledge of prospective teachers with Life skills, 9% are excellent, 21.5% are good, 27% are fair, 23% have basic knowledge, 19.5% have poor knowledge. The study revealed that most of the teachers still have poor awareness on Life skills. So it is important for teacher education courses to have Life skills in the curriculum.

Smitha and Mary Vineetha Thomas (2018) conducted a study on awareness of Life Skills among Post Graduate Students. The study aimed on assessing the life skills awareness among post graduates with respect to some of the demographic variables. In the present descriptive

and quantitative study, total 100 students were selected in which 50 male students (25 Arts and 25 Science) and 50 female students (25 Arts and 25 Science) were identified from various departments of Central University of Kerala, Kasaragod. The study revealed that there is no significant difference in life skills awareness of post graduates with respect to gender, age, family type, subjects or streams, and marital status.

Sarika Chauhan (2016) conducted a study on Effectiveness of a Life Skills Programme on teacher trainees. The findings of the study revealed that there was a significant difference between the male and the female pre-service teachers life skills. Life Skills Programme was found more effective for male teachers' trainees than female teacher trainees. There was no significant difference in life skills between the urban and the rural teacher trainees. Life Skills programme had shown similar and equal effect for urban as well as rural teacher trainees on both measurement. Life Skills programme was proved equally effective for arts teacher trainees having arts discipline and teacher trainees having science discipline after the intervention: Life Skills programme.

Need of the Study

Developing life skills during the training period of prospective teachers will help in enhancing positive behavior and psycho-social skills. It helps them to remove gender bias, superstition and other social evils. In different levels of a teacher's life, these skills will help in maintaining proper balance between their work and leisure, happy life, better contribution to society, healthy and participatory interaction in school and social life. Keeping all these significant points in mind, the investigator took up this study to find out the life skills of prospective teachers.

Objectives of the Study

The study was undertaken having the following objectives in mind.

- To find if there is any significant difference between
 - Science and Arts stream trainee students in their life skills
 - Urban and rural trainee students in their life skills

Hypotheses

- Science and Arts stream students do not differ significantly in their life skills.
- Urban and rural students do not differ significantly in life skills.

Method

The study was conducted in Kallakurichi, one of the educational districts of Tamil Nadu and survey method was deployed. The sample was divided into different categories on the basis of stream of study and locality.

Sample

Covering the entire population is not possible for the present study. The current academic batch of B.Ed students (2022-23) were selected and 100 samples were considered for the present study.

Tool Used

In the present study to assess the life skills of prospective teachers, the investigator used Life Skills Scale developed by Chandra Kumari and Ayushi (2019).

Statistical Techniques

For analyzing data, mean, standard deviation and 't' test were used in the present study..

Analyses of Data

Table 1: Mean, SD, t-value based on Stream of Study

Stream of Study	Number	Mean	SD	t-value	Significant Level
Arts	48	180.83	18.01	0.5169	Not Significant
Science	52	179.05	16.39		

From the analysis of scores of Table-1, it is found that mean score of Arts and Science Stream students is somewhat similar. The calculated t-value 0.5169 is not significant at 0.05 level. Hence, Science and Arts stream students do not differ significantly in life skills.

Table 2: Mean, SD, t-value based on Locality

Locality	Number	Mean	SD	t-value	Significant Level
Rural	62	178.35	17.73	0.33	Not Significant
Urban	38	179.53	16.73		

From the analysis of scores of Table-2, it is found that mean score of rural students is somewhat similar to that of urban students. The calculated t-value 0.7420 is not significant at 0.05 level. Hence, urban and rural students do not differ significantly in life skills.

Findings of the Study

- Science and Arts stream students do not differ significantly in life skills.
- Urban and rural students do not differ significantly in life skills.

Educational Implications of the Study

Life Skills education focuses on fundamentally self-discipline and goal orientation, aptitude, dedication, sincerity and so on. The investigator found in this study that B.Ed. Science and Arts stream students do not differ significantly in life skills and Urban and rural students do not differ significantly in life skills.

Conclusion

Quantitative analysis with large number of samples will always bring out a better result and easy to generalize the findings. However, this study is short research with limited number of sample of hundred students. The investigator was curious to undertake this study with B.Ed students of 2020-2022 as sample. The findings of present study may be useful for the researchers, academicians and stakeholders.

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बी० एड० प्रशिक्षणार्थियों का एड्स के प्रति जागरूकता: एक अध्ययन

सारांश

एड्स एक ऐसी जानलेवा बीमारी है जो मानवीय प्रतिरक्षी अपूर्णता पिषाणु (एचआईवी) संक्रमण के बाद होती है। एचआईवी संक्रमण के पश्चात मानवीय शरीर की प्रतिरोधक क्षमता घटने लगती है। एड्स का पूर्ण रूप से उपचार अभी तक संभव नहीं हो सका है। एड्स के प्रति जागरूकता ही इसका सबसे बड़ा बचाव है। एड्स की शिक्षा हर उम्र के लोगों को दी जानी चाहिए खासकर युवाओं को जो कि यौन रूप से काफी सक्रिय होते हैं। एचआईवी से बचने के कई तरीके हैं, जरूरत है इनके बारे में लोगों को जागरूक करने की, जिससे वे एचआईवी के खतरों से बच सकते हैं। समस्त जागरूकता अभियानों के बावजूद एड्स को आज भी सामाजिक कलंक के तौर पर देखा जाता है। घर-परिवार और समाज से लेकर कामकाज की जगहों तक एचआईवी एड्स से ग्रसित लोगों के साथ भेदभाव किया जाता है। हैरत और दुःख की बात तो यह है कि कई डॉक्टर्स भी एड्स पेशेंट्स के साथ भेदभाव करते हैं जिनके कंधे पर उनके देखभाल की जिम्मेदारी होती है। इस अध्ययन का उद्देश्य बी० एड० प्रशिक्षणार्थियों का एड्स के प्रति जागरूकता का पता लगाना है। इस अध्ययन हेतु सर्वेक्षण विधि का उपयोग किया गया है, जिसमें सम्बन्धित अध्ययन के लिए वैशाली के दस बी.एड. कॉलेजों के 600 छात्र-छात्राओं का चयन किया गया है। छात्र-छात्राओं के एड्स के प्रति जागरूकता को मापने के लिए स्वनिर्मित उपकरण का उपयोग किया गया है। इससे सम्बन्धित सभी परिकल्पनाओं का सांख्यिकी परीक्षण किया गया। लिंग, क्षेत्र एवं के आधार पर बी० एड० प्रशिक्षणार्थियों का एड्स के प्रति जागरूकता में कोई सार्थक अंतर नहीं पाया गया।

मूल शब्द :- एड्स, जागरूकता, प्रशिक्षणार्थी

प्रस्तावना

ह्युमन इम्युनोडेफिशिएंसी वायरस एचआईवी एक लेंटिवायरस रेट्रोवायरस परिवार का एक सदस्य है, जो अक्वायर्ड इम्युनोडेफिशिएंसी सिंड्रोम एड्स का कारण बनता है, जिसमें प्रतिरक्षा तंत्र विफल होने लगता है और इसके परिणामस्वरूप ऐसे अवसरवादी संक्रमण हो जाते हैं, जिनसे मृत्यु का खतरा होता है। एचआईवी का संक्रमण रक्त के अंतरण, वीर्य, योनिक-द्रव, स्खलन-पूर्व द्रव या माँ के दूध से होता है। मनुष्यों में होने वाले एचआईवी के बारे में व्याप्त परितोष एचआईवी के जोखिम में एक मुख्य भूमिका निभा सकता है। 1981 में इसकी खोज से लेकर 2006 तक, एड्स 25 मिलियन से अधिक लोगों की जान ले चुका है।

एड्स के कारण

अगर एड्स के कारणों पर नजर डालें तो मानव शरीर में एचआईवी का वायरस फैलने का मुख्य कारण हालांकि असुरक्षित सेक्स तथा अधिक पार्टनरों के साथ शारीरिक संबंध बनाना ही है लेकिन कई बार कुछ अन्य कारण भी एचआईवी संक्रमण के लिए जिम्मेदार होते हैं। शारीरिक संबंधों द्वारा 70-80 फीसदी, संक्रमित इंजेक्शन या सुईयों द्वारा 5-10 फीसदी, संक्रमित रक्त उत्पादों के आदान-प्रदान की प्रक्रिया के जरिये 3-5 फीसदी तथा गर्भवती माँ के जरिये बच्चे को 5-10 फीसदी तक एचआईवी संक्रमण की संभावना रहती है।

भारत में एड्स

भारत में एचआईवी का पहला मामला 1986 में सामने आया। इसके पश्चात यह पूरे देश भर में तेजी से फैल गया एवं जल्द-ही इसके 135 और मामले सामने आये जिसमें 14 एड्स के मामले थे। यहाँ एचआईवी/एड्स के ज्यादातर मामले यौनकर्मियों में पाए गए हैं। इस दिशा में सरकार ने पहला कदम यह उठाया कि अलग-अलग जगहों पर जाँच केन्द्रों की स्थापना की गई। इन केन्द्रों का कार्य जाँच करने के साथ-साथ ब्लड बैंकों की क्रियाविधियों का संचालन करना था। बाद में उसी वर्ष देश में एड्स संबंधी आँकड़ों के विश्लेषण, रक्त जाँच संबंधी विवरणों एवं स्वास्थ्य शिक्षा कार्यक्रमों में समन्वय के उद्देश्य से राष्ट्रीय एड्स नियंत्रण कार्यक्रम की शुरुआत की गई।

एड्स शिक्षा

एचआईवी पीडितों की बढ़ती संख्या को देखते हुए लोगों को एड्स के बारे में शिक्षित करना बहुत जरूरी हो गया है। हर साल एचआईवी के 40,000 नए मामलों सामने आ रहे हैं। एड्स के प्रति जागरूकता ही इसका सबसे बड़ा बचाव है। एड्स की शिक्षा हर उम्र के लोगों को दी जानी चाहिए खासकर युवाओं को जो कि यौन रूप से काफी सक्रिय होते हैं। एचआईवी से बचने के कई तरीके हैं, जरूरत है इनके बारे में लोगों को जागरूक करने की, जिससे वे एचआईवी के खतरों से बच सकते हैं। आंकड़ों के मुताबिक 33 मिलियन लोग एचआईवी के संक्रमण के साथ जी रहे हैं।

अध्ययन का महत्व

एड्स कैसे फैलता है, इस बात को लेकर कई भ्रांतियाँ हैं, जिसका निदान एड्स की शिक्षा के जरिए ही किया जा सकता है। एड्स सिर्फ अनुरक्षित यौन संबंध से ही नहीं फैलता है। अस्पताल में काम करने वाले स्वास्थ्य कर्मियों में मरीजों को लगाए जाने वाले इंजेक्शन या कैंची जैसे उपकरणों से एड्स का संक्रमण फैलने का खतरा हो सकता है। इसलिए इन जगहों पर काम करने वाले लोग एड्स की शिक्षा से इसके खतरे से बच सकते हैं। इस अध्ययन का योगदान बी.एड. प्रशिक्षुओं का एड्स के प्रति जागरूकता स्तर को बढ़ाना है, जिसके अंतर्गत स्कूल में पढ़ने वाले छात्र एवं छात्रा लाभान्वित हो सकें। इस अध्ययन के परिणाम का लाभ राजनीतिज्ञ, योजना-अधिकारी, शोधकर्ता, शिक्षक तथा वे सभी लोगों को होगा। जो एड्स के रोकथाम में सहायक बन सकते हैं।

समस्या का कथन:

“बी०एड० प्रशिक्षणार्थियों का एड्स के प्रति जागरूकता एक अध्ययन”

अध्ययन के उद्देश्य

1. लिंग के आधार पर बी.एड. प्रशिक्षणार्थियों का एड्स के प्रति जागरूकता का अध्ययन करना।
2. क्षेत्र के आधार पर बी.एड. प्रशिक्षणार्थियों का एड्स के प्रति जागरूकता का अध्ययन करना।

परिकल्पनाएं

प्रस्तुत शोध के अंतर्गत निम्नलिखित शून्य परिकल्पनाएं निर्धारित की गई हैं—

1. लिंग के आधार पर बी.एड. प्रशिक्षणार्थियों का एड्स के प्रति जागरूकता में कोई सार्थक अंतर नहीं है।
2. क्षेत्र के आधार पर बी.एड. प्रशिक्षणार्थियों का एड्स के प्रति जागरूकता में कोई सार्थक अंतर नहीं है।

सम्बन्धित साहित्य की समीक्षा

रेड्डी एवं तिवारी (2017) द्वारा “रायपुर जिले के उच्चतर माध्यमिक स्तर के विद्यार्थियों की पर्यावरण जागरूकता का अध्ययन” किया गया। प्रस्तुत अध्ययन हेतु रायपुर जिले के 30 स्कूल का चयन किया गया है। जिसमें 15 शासकीय और 15 अशासकीय विद्यालय शामिल हैं। 15 शासकीय स्कूल के 20-25 विद्यार्थी 15 अशासकीय स्कूल के 20-25 विद्यार्थी 1000 विद्यार्थियों का चयन प्रतिदर्श के रूप में किया गया है। प्रस्तुत अध्ययन के आंकड़ों के संकलन के लिए प्रवीन कुमार झा द्वारा निर्मित मापनी का चयन किया गया है। प्राप्त प्रदत्तों के विश्र्लेषण के लिए टी परीक्षण का प्रयोग किया गया एवं निष्कर्ष में पाया गया कि उच्चतर माध्यमिक स्तर के शासकीय विद्यालय एवं निजी विद्यालय के छात्र-छात्रों के पर्यावरण जागरूकता के बीच अंतर नहीं पाया गया है। कृष्णाराव एवं शीतल (2015) द्वारा शिक्षा अधिकार अधिनियम 2009 के प्रति शिक्षकों की जागरूकता पर अध्ययन किया गया।

प्रस्तुत शोध विषय पर शोधकार्य करके निष्कर्ष में पाया कि महिला एवं पुरुष अध्यापकों की शिक्षा अधिनियम 2009 के प्रति जागरूकता में सार्थक अंतर है। इन्होंने अध्ययन में पाया कि निजी विद्यालयों के महिला तथा पुरुष अध्यापकों की इस अधिनियम के प्रति जागरूकता में सार्थक अंतर है। सरकारी विद्यालयों के महिला तथा पुरुष अध्यापकों में भी शिक्षा अधिनियम के प्रति जागरूकता में सार्थक अंतर है।

श्रीवास्तव एवं शाहू (2015) द्वारा उच्चतर माध्यमिक स्तर के विद्यार्थियों की पर्यावरण जागरूकता का अध्ययन किया गया। प्रस्तुत अध्ययन में पर्यावरण जागरूकता मापने के लिये डॉ॰ प्रवीण कुमार झा द्वारा निर्मित व प्रमाणित उपकरण का उपयोग किया गया है। प्रस्तुत अध्ययन हेतु दुर्ग जिले के उच्चतर माध्यमिक स्तर में अध्ययनरत

ग्रामीण एवं शहरी परिवेश के कुल 200 विद्यार्थियों (5 ग्रामीण शासकीय विद्यालयों से, 100 विद्यार्थियों एवं 5 शहरी शासकीय विद्यालयों से 100 विद्यार्थियों) का चयन किया गया है। चयनित विद्यार्थियों पर पर्यावरण जागरूकता के परीक्षण का प्रशासन करने उनके प्राप्तांक ज्ञात किये गये। परिकल्पनाओं के सत्यापन हेतु द्विदिश प्रसरण विश्लेषण विधि का प्रयोग किया गया। ग्रामीण एवं शहरी शासकीय आर्थियों के पर्यावरण जागरूकता में सार्थक अंतर पाया गया।

अध्ययन का क्षेत्र

प्रस्तुत शोध वैशाली (बिहार) में प्रायोजित किया गया है। इस शोध में समष्टि के रूप में वैशाली के बी.एड. कॉलेज के प्रशिक्षणार्थियों का चयन किया गया है।

जनसंख्या या समष्टि

इस अध्ययन में वैशाली के बी.एड. कॉलेजों के प्रशिक्षणार्थियों को शामिल किया गया है।

प्रतिदर्श

प्रतिदर्श के रूप में केवल 10 बी.एड. कॉलेजों से 600 प्रशिक्षणार्थियों को शामिल किया गया है।

प्रदत्त विश्लेषण

परिकल्पनाओं का परीक्षण

नल-परिकल्पना-1

लिंग के आधार पर बी.एड. प्रशिक्षणार्थियों का एड्स के प्रति जागरूकता में कोई सार्थक अंतर नहीं है।

तालिका 1.1

लिंग के आधार पर बी.एड. प्रशिक्षणार्थियों का एड्स के प्रति जागरूकता का टी मूल्य

लिंग	संख्या	माध्य	मानक-विचलन	टी-मूल्य	अभियुक्ति
छात्र	370	16.041	3.06	0.28	सार्थक
छात्रा	230	16.048	3.06		नहीं

(0.05 सार्थकता स्तर के आधार पर 'टी' मूल्य का मान 1.96 है।)

उपर्युक्त तालिका को देखने से स्पष्ट होता है कि शोधकात्री द्वारा प्राप्त मान 0.28 है जो मान्यकृत तालिका टी मान (1.96) से कम है। अतः नल परिकल्पना स्वीकृत की जाती है अर्थात् लिंग के आधार पर बी.एड. प्रशिक्षणार्थियों का एड्स के प्रति जागरूकता में कोई सार्थक अंतर नहीं है।

नल-परिकल्पना 2

क्षेत्र के आधार पर बी.एड. प्रशिक्षणार्थियों का एड्स के प्रति जागरूकता में कोई सार्थक अंतर नहीं है।

तालिका 1.2

क्षेत्र के आधार पर बी.एड. प्रशिक्षणार्थियों का एड्स के प्रति जागरूकता का टी मूल्य

क्षेत्र	संख्या	माध्य	मानक-विचलन	टी-मूल्य	अभियुक्ति
शहरी	399	16.032	3.063	0.256	सार्थक
ग्रामीण	201	16.032	3.065		नहीं

(0.05 सार्थकता स्तर के आधार पर 'टी' मूल्य का मान 1.96 है।)

उपर्युक्त तालिका को देखने से स्पष्ट होता है कि शोधकात्री द्वारा प्राप्त मान 0.256 है जो मान्यकृत तालिका टी मान (1.96) से कम है। अतः नल परिकल्पना स्वीकृत की जाती है अर्थात् क्षेत्र के आधार पर बी.एड. प्रशिक्षणार्थियों का एड्स के प्रति जागरूकता में कोई सार्थक अंतर नहीं है।

निष्कर्ष

यह अध्ययन बी.एड. प्रशिक्षणार्थियों का एड्स के प्रति जागरूकता से सम्बन्धित है। शोधार्थी ने अपने शोध से सम्बन्धित सांख्यिकी परीक्षणों के परिणाम एवं व्याख्या के आधार पर यह निष्कर्ष प्राप्त किया कि बी.एड. प्रशिक्षणार्थियों का एड्स के प्रति जागरूकता पर लिंग तथा क्षेत्र के आधार पर कोई सार्थक प्रभाव नहीं पड़ता है।

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Impact of Academic Stress on Academic Achievement of Upper Primary School Students of Employed Mothers

Abstract

Academic Stress affects the mental health of a student. Most of the students develop academic stress due to a large flow of information, the lack of systematic school work and dissatisfaction with life (Coccia & Darling 2016). To manage academic stress among students, one should understand that preventing academic stress is better than facing the consequences. Stressed students often require the care and emotional support from their parents, especially from their mothers. The stress experienced by employed mothers is reflected in their children's life as well. The present study examines the level of academic stress among upper primary school students of employed mothers. Normative survey method was employed. Using Stratified sampling method, a sample of 350 upper primary school students of employed mothers of Alappuzha and Pathanamthitta districts were selected for the study. The data was collected through self-constructed Academic Stress Scale. The researcher used t - test with a significance level of 0.01 to find the significant difference between means of scores of male and female and rural and urban students in their academic stress. The study revealed that female students of employed mothers have more academic stress than male students of employed mothers. The urban upper primary school students of employed mothers have more academic stress than rural upper primary school students of employed mothers. Analysis of variance was done to compare the differences among three groups obtained based on management of schools (Government, Aided and Unaided). The

students of Unaided of Upper Primary School of employed mothers have more academic stress than Government and Aided school students. No significant difference was found in the academic achievement of students who have employed mothers on the basis of gender, locality and management type.

Keywords: *Stress, Academic Stress, Academic Achievement, Upper Primary School Students and employed mothers.*

Introduction:

Academic Stress has negative impact on students. Excessive assignments, poor time management and social skills, peer competition etc. adds to the stress level of the students. A mild amount of academic stress is very useful and acts as a motivation for students but too much of academic stress can interfere with their daily lives. Mother's support helps the students to revive from academic stress. A recently conducted study has found that working mothers are 18 percent more stressed than others. Mothers who are employed full-time always have the guilt feeling that they are not giving enough time to their children. Managing the kids, taking care of the family and juggling the responsibilities of the home along with a career, work commitments and deadlines put a lot of pressure on the working mother. Many a times, due to pressure they are unable to pay attention to the problems faced by their children. This study tries to examine children's academic stress they experience due to the stress of employed mothers. The study also includes the analysis levels of child behaviour problems due to academic stress. Mothers are the primary influencer of children since the time they are born. She suffers from stress which she knowingly or unknowingly passes on to her children. The stress seen in children causes many issues with emotional and physical health.

Conceptual Framework: The number of working women in India has been increasing year by year. The increasing number of women in the work force has created number of problems to their children. Working mothers are often away from their families for long hours during the day and this brings emotional deprivation to the school age children. When the mother is gone for the majority of the day, the youngster typically feels lonely and unhappy. There are less

opportunities for social life and family recreation in homes where the mother works, and there is a higher likelihood that household chores will be neglected, put off, or transferred. Compared to children of nonworking mothers, children of such families are more expected to participate in domestic chores. They have been proven to be less well-adjusted. These youngsters frequently exhibit jittery and erratic work behaviours, which impairs their ability to transition to school. The mother's job has an impact on the younger children more than the older ones, and within the family, girls are more impacted than boys. (Hoffman, 1989) According to Bisht (2005) academic stress reflects subject's perception as well as his way of coping with academic events. It reflects subjective feelings of distress or interpersonal perceptual responses. According to Bisht, A.R. (1980) and Thakkar, A. (2018), the components of academic stress are: Academic Anxiety, Academic Frustration, Academic Pressure and Academic Conflict.

Rationale of the Study: Children of working parents do not see their parents again until around 6 or 7 p.m. They are known as "latch key" kids because their parents give them the keys to the house while they are still at work. These kids have had unpleasant encounters with latch keys. These kids are more likely to steal, vandalize, or abuse a sibling if they are not given boundaries and adequate supervision. Santrock's (2004) Academic stress is a major problem for Upper Primary School Students who are at the verge of their adolescence and struggling between academic stress and strain of adolescence. So, a study of the academic stress among Upper Primary School Students having employed mother is very essential.

Statement of the Problem: Academic Stress in relation with Academic Achievement among Upper Primary School Students of Employed Mothers.

Objectives of the Study: The following are the objectives of the Study:

1. To find the Academic Stress of Upper Primary School Students of employed mothers with respect to gender.
2. To find the Academic Achievement of Upper Primary School Students of employed mothers with respect to gender.

3. To find the Academic Stress of Upper Primary School Students of employed mothers with respect to locality of the school.
4. To find the Academic Achievement of Upper Primary School Students of employed mothers with respect to locality of the school.
5. To find the Academic Stress of Upper Primary School Students of employed mothers with respect to management of the school.
6. To find the Academic Achievement of Upper Primary School Students of employed mothers with respect to management of the school.

Hypotheses of the Study

The following are the Hypotheses of the Study:

1. There is no significant difference between male and female students of employed mothers on Academic Stress.
2. There is no significant difference between male and female students of employed mothers on Academic Achievement.
3. There is no significant difference between urban and rural students of employed mothers on Academic Stress.
4. There is no significant difference between urban and rural students of employed mothers on Academic Achievement.
5. There is no significant difference between Government, Aided and Unaided students of employed mothers on Academic Stress.
6. There is no significant difference between Government, Aided and Unaided students of employed mothers on Academic Achievement.

Methodology: The present study was a normative survey method which was intended to study the relation between academic stress and academic achievement of Upper Primary School Students having employed mothers. A sample of 350 Upper Primary School Students of employed mothers studying in various schools of Alappuzha and Pathanamthitta districts was selected using stratified sampling technique. To find the stress level, self-constructed Academic Stress Scale was administered by the researcher. To test the Academic achievement of the students, second terminal examination marks were collected from the school records, the raw scores obtained were converted to standard scores using *Z* score and *t* score.

Analysis and Interpretation of Data

1. The significance difference between mean scores of male and female students in their Academic Stress.

To test the significant difference between male and female upper secondary school students in their academic stress scores were calculated. The scores were obtained from 188 male and 162 female Upper Primary School Students having employed mothers. The mean and standard deviation for the variable academic stress were found and carefully tabulated in Table 1.

Table 1: Data and result of significance of difference between mean scores of males and female students in their academic stress.

Category	N	Mean	Std. Deviation	t – value	Significance
Female	162	108.51	9.5	3.89	S
Male	188	103.84	12.84		

From Table 1, it was observed the mean of male and female students were found to be 103.84 and 108.51 respectively. The standard deviation of male and female students was found to be 12.84 and 9.50 respectively. The t was found to be 3.89. The calculated value was found to be more than the critical value of 2.58 at 1% level of significance. From Table 1, it is evident that the value of the calculated $t = 3.89$ is significant at 0.01 level. This indicates that there is a significant difference between male and female students in their scores on academic stress.

2. The significance of difference between mean scores of male and female students in their academic achievement.

To test the significant difference between male and female in their academic achievement, academic scores were taken from male and female students. The scores obtained from 188 male and 162 female Upper Primary School Students of employed mothers. The mean and standard deviation for the variable academic achievement were found and carefully tabulated in Table 2.

Table 2: *Data and result of test of significance of difference between mean scores of male and female students in their academic achievement.*

Category	N	Mean	Std. Deviation	t – value	Significance
Female	162	49.365	9.28	1.033	NS
Male	188	50.387	9.33		

(Level of significance 0.05)

From Table 2, it is observed that the mean of male and female students was found to be 50.387 and 49.365 respectively. The standard deviation of male and female students was found to be 9.33 and 9.28 respectively. The t is found to be 1.024 which is not significant at 0.01 level. It is evident that there is no significant difference between male and female in their academic achievement.

3. The significance of difference between mean scores of rural and urban Upper Primary School Students of employed mothers in their academic stress.

To test the significance of difference between rural and urban upper primary school students in their academic stress, scores were taken from rural and urban Upper Primary School Students of employed mothers. The scores were obtained from 139 rural and 211 urban school students. The mean and standard deviation for the variable academic stress were found and carefully tabulated in Table 3.

Table 3: *Data and result of significance of difference between mean scores of rural and urban students in their academic stress.*

Category	N	Mean	Std. Deviation	t – value	Significance
Rural	139	100.66	10.22	7.0298	S
Urban	211	109.30	11.71		

(Level of significance 0.01)

From the Table 3, it is observed that the mean of urban and rural students was found to be 109.30 and 100.66 respectively. The standard deviation of rural and urban students was found to be 10.22 and 11.71 respectively. The t was found to be 7.0298 which is significant at 0.01 level. It is evident that there is significant difference between rural and urban students in their academic stress.

4. The significance of difference between mean scores of rural and urban Upper Primary School Students of employed mothers in their Academic Achievement.

To test the significance of difference between rural and urban upper primary school students in their academic achievement scores were taken from rural and urban Upper Primary School Students of employed mothers. The scores obtained from 139 rural and 211 urban school students. The mean and standard deviation for the variable academic achievement were found and carefully tabulated in Table 4.

Table 4: *Data and result of significance of difference between mean scores of rural and urban students in their Academic Achievement.*

Category	N	Mean	Std. Deviation	t – value	Significance
Rural	139	49.87	9.380	0.344	NS
Urban	211	50.23	9.719		

(Level of significance 0.05)

From Table 4, it is observed that the mean of urban and rural students was found to be 50.23 and 49.87 respectively. The standard deviation of rural and urban students was found to be 9.380 and 9.719 respectively. The t was found to be 0.344 which is not significant at 0.05 level. It is evident that there is no significant difference between rural and urban students in their academic achievement.

5. Comparison of Government, Aided and Unaided Upper Primary School Students of employed mothers in their academic stress.

Analysis of variance [ANOVA] was done to compare the differences among three groups obtained based on management of schools [Government, Aided and Unaided]

To test the significance of difference among the means of government, aided and unaided Upper Primary School Students of employed mothers in their academic stress, 101 students from

government schools, 113 students from unaided schools and 136 students from aided Upper Primary School Students of employed mothers were taken. The data and result of comparison are presented in Table 5.

Table 5: Comparison of Government, Aided and Unaided Upper Primary School Students of employed mothers in their academic stress.

Source of Variation	SS	df	MS	F
Between Groups	6659.632	5	1331.926	11.342
Within Groups	40393.81	344	117.4239	
Total	47053.442	349		

(Level of significance 0.01)

It may be noted that the mean values for Government, Aided and Unaided students were 105.65, 101.37 and 111.75 respectively. The SD for Government, Aided and Unaided school students were found to be 12.11, 12.26 and 6.93 respectively. The result given in Table 5 shows that F ratio obtained was 11.342. The table value was 4.68 at 0.01 level. Since the obtained value is greater than the table value, the difference is statistically significant at 0.01. This shows that there exists a significant difference among Government, Aided and Unaided Upper Primary School Students having employed mothers in their academic stress.

6. Comparison of Government, Aided and Unaided Upper Primary School Students of employed mothers in their academic achievement.

To test the significance of difference among the means of government, aided and unaided Upper Primary School Students of employed mothers in their academic achievement, 101 students from government, 113 students from unaided and 136 students from aided Upper Primary School Students of employed mothers were taken. The data and results of comparison are presented in Table 6.

Table 6. *Comparison of Government, Aided and Unaided Upper Primary School Students Of employed mothers on the variable Academic Achievement.*

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>
Between Groups	0.254148	4	0.063537	0.000711
Within Groups	30816.27	345	89.32253	
Total	30816.5	3349		

(Level of significance - 0.05)

It may be noted that the mean values for Government, Aided and Unaided students were 50.00, 49.97 and 49.93 respectively. The SD for Government Aided and Unaided students were found to be 9.22, 9.73 and 9.20 respectively. The result given in Table 6. shows that F ratio obtained was 0.000711. The table value was 2.39 at 0.01 level. Since the obtained value is less than the table value, the difference is statistically not significant at 0.05. This shows that there exists no significant differences among Government, Aided and Unaided upper primary school students of employed mothers in their academic achievement.

Summary of Findings

1. The Hypothesis entitled “There is no significant difference between male and female students of employed mothers in their academic stress” is rejected.
2. The Hypothesis entitled “There is no significant difference between male and female students of employed mothers in their academic achievement” is not rejected.
3. The Hypothesis entitled “There is no significant difference between rural and urban students of employed mothers in their academic stress” is rejected.
4. The Hypothesis entitled “There is no significant difference between rural and urban students of employed mothers in their academic achievement” is not rejected.
5. The Hypothesis entitled “There is no significant difference between Government, Aided and Unaided students of employed mothers in their academic stress” is rejected.

6. The Hypothesis entitled “There is no significant difference between Government, Aided and Unaided students of employed mothers in their academic achievement” is not rejected.

Conclusion

Mothers when employed have dual responsibility as a home maker and a working employee. The intensity of responsibility creates a stress in them which in turn influence the mental health of children during their developing years. Acknowledging academic stress is not sufficient we should deal with the problem and find a solution for it. Continuous support from parents, peers and teachers will help students to cope with academic stress. This study aimed to find the academic stress and academic achievement of upper secondary school students of employed mothers with respect to gender, location and management of school. The study revealed that there is significant difference in the academic stress of upper secondary students who have employed mothers. No significant difference was found in the academic achievement of students who have employed mothers on the basis of gender, locality and management type.

Educational Implications

The present study shows that academic stress adversely affects children's academic performance. Every school should provide more physical activities /relaxation /breathing exercises to relieve students from stress or anxiety. Group work, interaction between students, leadership, speak without fear, initiative free talking all these factors enable the children to minimize their stress. Parents should avoid parental pressure for high grades and try to motivate and support their children. Teachers should give personal attention and remedial classes to those students who need it. Teachers should make learning more interesting, fun- filled and burden free. If the children face excessive academic stress, then parents should provide them professional help.

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