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Quasi-experimental study to assess the effectivenss of structured teaching programme on knowledge regarding use and importance of e-learning among adolescent students in selected schools of district Kangra, Himachal Pradesh

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Abstract

Adolescents are at a crucial stage of learning where digital engagement plays a significant role in academic development. E-learning, with its flexibility and accessibility, has become an essential educational tool. However, many students lack adequate knowledge about its use and importance, limiting their ability to benefit fully. This study aims to assess the effectiveness of a structured teaching programme in enhancing adolescents' knowledge about e-learning.

Methodology: A quantitative research approach and quasi-experimental research design were used for this study. Non-probability purposive sampling technique was employed to select 60 adolescent students from selected schools in District Kangra, Himachal Pradesh. Data was collected using selected socio-demographic variables and a self-structured knowledge questionnaire. The data were analyzed using descriptive and inferential statistics.

Results: Findings revealed that the structured teaching programme significantly improved knowledge regarding the use and importance of e-learning. The mean pre-test knowledge score was 12.03, while the mean post-test score increased to 19.52. The calculated "t" value was 33.096, which was statistically significant at <0.001 level. This indicates that the post-test knowledge scores were considerably higher than the pre-test scores, proving the effectiveness of the intervention.

Conclusion: The study concludes that the structured teaching programme was effective in enhancing knowledge among adolescent students regarding the use and importance of e-learning. The notable gain in post-test scores confirms its value as an educational strategy to bridge knowledge gaps and encourage informed digital learning practices.

Keywords: Structured teaching programme, e-learning, adolescent students, knowledge assessment, quasi-experimental study

Introduction

Adolescence is often seen as the most delicate and important phase in human development. The World Health Organization defines adolescence as the period between 10 and 19 years of age. This stage is usually broken into three parts: early adolescence (10-14 years), middle adolescence (15-17 years), and late adolescence (18-19 years). It is a time of major physical, emotional, and mental changes, often triggered by puberty. Teenagers begin to form their identity, seek independence, and become more socially aware during this phase, which makes it a time filled with both opportunities for growth and possible risks.

As technology keeps moving it plays an essential role in the education system and cannot be separated from the learning process. The rapid advancement of e-learning has been largely driven by the widespread availability of internet access, allowing students to make significant academic progress. As education becomes increasingly technology-driven, it is important for students to develop strong digital skills. In response to current challenges, educators have taken proactive steps to ensure continuity of learning by creating both online and offline educational materials, becoming familiar with video conferencing tools to engage with students, and initiating sessions that support students' mental and social well-being at the beginning and end of the school day.

Electronic learning, often referred to as E-learning, is one of the earliest applications of web-based technology in education. It is defined as the delivery of instruction entirely through the Internet and digital tools. This method involves the use of computers and software programs to support learning and was originally developed for working adults who were unable to pursue full-time education. Over time, e-learning has expanded to serve a wide range of learners, including full-time, part-time, distance education students, and traditional classroom students.

However, the digital divide presents a serious barrier to the full realization of this potential. As per the 2022 report by UNESCO, around 2.6 billion people still lack internet access globally, with 1.8 billion living in rural areas. Moreover, a significant percentage of schools remain

offline-60% of primary, 50% of lower secondary, and 33% of upper secondary schools lack internet connectivity. These disparities hinder equal access and limit the effectiveness of e-learning platforms in underserved regions.

E-learning, as a widely adopted educational approach, encompasses various formats tailored to different learning needs. When it comes to timing, e-learning can be synchronous, where teachers and students interact live through video calls or virtual classes, or asynchronous, where students learn on their own time by watching videos or reading materials. Asynchronous learning is often more flexible, affordable, and easier to manage than live (synchronous) classes.

E-learning also emerged as an essential solution during the COVID-19 pandemic, reinforcing its value as a flexible and accessible mode of education. With the global closure of schools, nearly 1.95 billion children across approximately 195 countries were unable to attend physical classrooms. This situation triggered a rapid expansion of e-learning, which involves the use of internet-based technologies to deliver educational content and improve learning outcomes. Grounded in internet and communication technologies, e-learning is now recognized as a practical and sustainable alternative to conventional classroom instruction. The pandemic significantly increased global reliance on digital learning platforms, as students were required to attend virtual classes from home to ensure the continuation of formal education.

E-learning in India, has witnessed substantial growth, especially through government-supported platforms such as SWAYAM, DIKSHA, and PM eVidya, along with private initiatives like BYJU'S and Vedantu. More than 8.5 crore students accessed digital learning resources through these platforms. The Indian e-learning industry is expected to cross ₹360 billion by 2025. These platforms cater to diverse linguistic and regional needs, helping bridge educational gaps across socio-economic strata.

In District Kangra, Himachal Pradesh, many adolescents have mobile phones but mostly use them for entertainment. Awareness about e-learning platforms is low, and students often lack digital literacy and proper guidance. This gap is wider in rural and hilly areas where formal training on digital tools is missing. As a result, available resources are underused, limiting learning opportunities and increasing the rural-urban divide.

Objectives

1. To assess the pre-test knowledge score regarding the use and importance of e-learning among adolescent students in selected schools of District Kangra, Himachal Pradesh.
2. To assess the post-test knowledge score regarding the use and importance of e-learning among adolescent students in selected schools of District Kangra, Himachal Pradesh.
3. To compare the pre-test and post-test knowledge scores regarding the use and importance of e-learning among adolescent students in selected schools of District Kangra, Himachal Pradesh.
4. To find out the association between post-test knowledge scores regarding the use and importance of e-learning among adolescent students with their selected socio-demographic variables in selected schools of District Kangra, Himachal Pradesh.

Operational Definitions: Operational definition of important terms used by the researcher to carry out his research work is stated below:

1. **Assess:** In the present study, assess refers to organize systematic variables usually in measurable terms and process of collecting information about pretest and post test knowledge of adolescents regarding use and importance of E-learning.
2. **Effectiveness:** In the present study, effectiveness refers to the significant gain in knowledge determined by significant difference in pretest and post test knowledge scores.
3. **Structured teaching program:** In the present study, structured teaching programme is systematically organized teaching program of 45minutes which is prepared by the investigator and validated by experts, containing information on E-learning to increase awareness and enhance knowledge of adolescent students.
4. **Use:** In the present study, use refers to the actual involvement and application of e-learning by adolescent students in their dayily learning practices.
5. **Knowledge:** In the present study, knowledge refers to the awareness and understanding of adolescent's students towards e-learning.
6. **E-learning:** In the present study**,** the researcher aimed to make adolescent students aware of e-learning. E-learning means learning through the internet using mobile phones or computers anytime and anywhere through apps like BYJU'S, Unacademy, YouTube, Zoom, Google Meet, and Google Classroom.
7. **Adolescent:** In the present study, adolescent refers to subject between the age group 10- 17 years in selected schools of District Kangra, Himachal Pradesh.

Materials and Methods

Research Approach: A quantitative research approach to be appropriate for the present study used to assess the effectiveness of structured teaching programme on knowledge of adolescent students.

Research Desigin: Quasi experimental "one group pre -test and post -test design "is used because it involves:

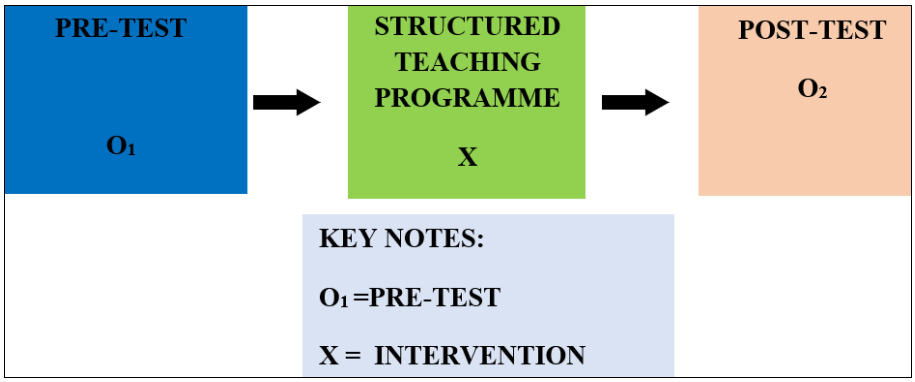

Fig 1: Quasi-experimental "One Group Pre-test and Post -Test Design"

Research Variables
Variables are qualities, properties or characteristics of person, things or situations that change or vary.

Independent Variable: In the present study the independent variable is structured teaching programme.

Dependent Variable: In the present study dependent variable is knowledge of adolescent students.

Selected Socio-Demographic Variables: In the present study, demographic variables was: Age (in years), gender, class, type of school, area of residence, family structure, family monthly income (in rupees), education of father, education of mother, occupation of father, occupation of mother, frequency of E-Learning usage, access to E-Learning devices if yes then specify the device used, internet connection used if yes specify the type used, and prior e-learning knowledge if yes specify the source, prior E-learning experience if yes specify its source.

Research Setting: The present study was conducted at selected schools of District Kangra, Himachal Pradesh.

Population: The population of present study was all the adolescent students.

Target Population: In the present study, the target population was adolescent students of age group 10-17 years.

Accessible Population: In the present study, the accessible population was adolescent students from the selected schools of District Kangra who are interested in my study and who fulfill the selection criteria.

Sample and Sampling Technique
Sample: A part or subset of population selected to participate in research study.

Adolescent Students
Sample Size: In the present study the sample size was 60 Adolescent students.

Sampling Technique: Non probability purposive sampling technique was used to select 60 adolescent students attending selected schools in District Kangra.

Criteria For Sample Collection
A. Inclusion Criteria: The study includes adolescent students who were:
- Between (10-17 years) age group
- Available at the time of study
- Willing to participate in the study

B. Exclusion Criteria: The study excludes adolescent students who were:
- Above 17 years
- Not available at the time of study
- Not willing to participate in the study

Selection and development of the tool: A tool is vehicle that could obtain data pertinent to the study and the same time adds to the body of general knowledge of the discipline. The tool was selected and developed according to the objective of the study, previous review of literature by referring books, journals, unpublished research studies, mass media and by discussion with guide and co-guide. The tool was refined and validated by subject experts and the guides. A self- structured knowledge questionnaire was used for assessing the knowledge among adolescent students.

Description of tool: Accomplish the objectives of the study; self structured knowledge questionnaire was used to assess the effectiveness of structured teaching programme on knowledge among adolescent students. It consisted of two parts:

Part 1: Selected Socio -Demographic Variables
The first part of tool consist of some items for obtaining an information about the selected background factor such as age of adolescent students (in years),gender, class, area of residence, type of family, monthly family income(in rupees),education of father, education of mother, occupation of father, occupation of mother, frequency of E-Learning usage, access to E-Learning devices, type of internet connection used for E-learning, parental involvement in E-learning activities, prior knowledge, if yes source of knowledge, prior experience, if yes source of experience.

PART- 2: It consists of Section A and B
Section -A (Self -Structured Knowledge Questionnaire)
It consists of a self -structured questionnaire which seeks facts and information regarding use and importance of E-Learning. It consists of 30 items of multiple-choice questions where total score is 30.

Section B (Structured Teaching Programme)
It consists of formulated structured teaching programme designed to provide awareness regarding use and importance of E-Learning.

Scoring Key
The self structured questionnaire consisted of 30 questions. In which the right answer was documented as correct one mark and wrong were documented as zero mark. The complete range was 0-30.

Knowledge score	Range	Percentage
Inadequate	0-10	≤ 33%
Moderate	11-20	34-66%
Adequate	21	≥ 70%

Content Validity
Content validity tool was established with expert opinion of various medical and nursing field.
To ensure content validity of the tool regarding relevance of item, the tool was submitted to 10 experts of different field of nursing. Experts are requested to judge items of tool for clarity, relevance, appropriateness, relatedness and meaningfulness for the purpose of the study and give their opinion and suggestions on the content, its coverage, and organization. There were almost100% agreements of the items in the questionnaire: however, there were few suggestions to modifying some of the socio demographic variables and statements and they were incorporated in final draft.

Language Validity
The English version of the tool was validated by a subject expert in English language to ensure clarity and grammatically accuracy. The Hindi translated version of the tool was validated by Hindi language expert to ensure linguistic accuracy and contextual relevance. As per the suggestions, the modifications were implemented.

Ethical Consideration
1. Written permission was obtained from Principal, Netaji Subhash College of Nursing, Palampur, Himachal Pradesh.
2. Ethical clearance was taken from the ethical and research committee of Netaji Subhash College of Nursing, Palampur, Himachal Pradesh.
3. Written permission was taken from the Principal of selected schools.
4. Written informed consent was taken from each study samples' confidentiality and anonymity of each sample were assured and maintained throughout the study.

Pilot Study: After obtaining the administrative approval, pre testing of structured questionnaire was done by administering it to 6 adolescent students at A.V.M. Sen. Sec. School Pahra, District Kangra in month of April. The subject chosen were similar in the characteristics to those of the population under study to check the items for clarity, relevance of items and nature of response. It was found that participants took 30 minutes to complete the structured questionnaire. The items of the structured questionnaire were clear and unambiguous.

Reliability of tool: Reliability of instrument is the degree of consistency or dependability with which an instrument measures the attribute for which it is designed to measure. Reliability is the extent to which a instrument consistently measure a concept, three types of reliability is stability, internal consistency and equivalence.
Reliability of tool was computed by applying Split -half method with Karl's Pearson Co-efficient of co-relation formula. The reliability of the self structured questionnaire was 0.85. Hence the tool was reliable.

Procedure of data collection: After obtaining formal administrative approval from Principal of selected schools i, e. Shivalik Radiance Senior Secondary School Panchrukhi, IVY Crescent Public School Banuri. Govt. Model Sen. Sec. School, Khera schools of District Kangra (H.P.) the final study was conducted from 10/04/2025 -10/05/2025.The aim of the study was to evaluate the effectiveness of structured teaching programme on knowledge regarding use and importance of E-Learning among adolescent students in selected schools of District Kangra, (H.P.). After obtaining permission from concerned authorities, the investigators develop rapport and take consent from adolescent students. Total 60samples were selected by non -probability purposive sampling technique. After getting consent from the sample who met the inclusion criteria.
1. **Pre-test:** On 1st day pre-test was administered to the adolescent students in the form of self-structured knowledge questionnaire.
2. Provided structured teaching programme to the study sample.
3. **Post-test:** Post test was conducted on the 7th day of pre-test with the same set of self-structured knowledge questionnaire.

The data were compiled and analysis was done by using descriptive and inferential statistics.

Data Analysis: The analysis was made based on the objectives and hypothesis. Both descriptive and inferential statistics were used for the data analysis such as:

Descriptive statistics
The statistical analysis includes frequency, percentage, mean, median and standard deviation.

Inferential statistics
- Paired t -test was used to find out the significant difference between pre-test and post-test.
- Chi square test was used to find out the association of post-test knowledge scores of adolescent students with their selected demographic variables. Probability p-value of less than 0.05 was considered as statistically significant. SPSS (Statistical Package for System) version -18 software was used for analysis of data.

Analysis and interpretation of data: Data was entered in master sheet, for tabulation and statistical processing in order to analyze and interpret using descriptive and inferential statistics methods. The result of analysis of data have been organized and presented under following sections:

Section-I

Description of selected socio - demographic variables of adolescent students: This table shows the finding related to Frequency and percentage distribution of adolescent students regarding use and importance of E-Learning.

Table 1: Frequency and Percentage Distribution of Adolescent Students According to Selected Socio-Demographic Variables and E-Learning Usage/Access/Prior Knowledge (N=60)

Sr. No.	Selected Socio-Demographic Vraiables	Options	(f)	(%)
1.	Age (in years)	10-12 years	18	30.0%
		13-14 years	14	23.3%
		15-16 years	19	31.7%
		17-18 years	9	15.0%
2.	Gender	Male	30	50.0%
		Female	30	50.0%
3.	Class	5-6	12	20.0%
		7-8	12	20.0%
		9-10	18	30.0%
		11-12	18	30.0%
4.	Type of school	Government School	20	33.3%
		Private School	40	66.7%
5.	Area of Residence	Urban area	10	16.7%
		Rural area	50	83.3%
6.	Family members	Single Parent family	0	0.0%
		Nuclear family	36	60.0%
		Extended family	7	11.7%
		Joint family	17	28.3%
7.	Monthly family income (in rupees)	Less than 20,000	4	6.7%
		20,001-30,000	3	5.0%
		30,001-40,000	18	30.0%
		40,001-50,000	35	58.3%
8.	Education of Father	No formal education	0	0.0%
		Primary education	4	11.7%
		Secondary education	11	18.3%
		Higher education	45	75.0%
9.	Education of Mother	No formal education	0	0.0%
		Primary education	7	11.7%
		Secondary education	20	33.3%
		Higher education	33	55.0%
10.	Occupation of Father	Farmer	4	6.7%
		Government service	12	20.0%
		Private job	36	60.0%
		Business	8	13.3%
11.	Occupation of Mother	Farmer	1	1.7%
		Government service	1	1.7%
		Private job	12	20.0%
		Homemaker	46	76.7%
12.	Frequency of E-learning usage	Daily	13	21.7%
		Once a week	5	8.3%
		Several times a week	6	10.0%
		Rarely or never	36	60.0%
13.	Access to E-learning devices	No	36	60.0%
		Yes	24	40.0%
13.(a)	If yes, then specify the device used: Smartphone	No	36	60.0%
		Yes	24	40.0%
	Laptop	No	60	100.0%
		Yes	0	0.0%
	Computer	No	60	100.0%
		Yes	0	0.0%
	Tablet	No	60	100.0%
		Yes	0	0.0%
14.	Internet connection used for e-learning	No	36	60.0%
		Yes	24	40.0%
14.(a)	If yes, then specify the type used: Wi-Fi	No	54	90.0%
		Yes	6	10.0%
	Mobile data	No	42	70.0%
		Yes	18	30.0%

	Broadband	No	60	100.0%
		Yes	0	0.0%
	Hotspot	No	60	100.0%
		Yes	0	0.0%
15.	Parental involvement in E-Learning activities	Regular monitoring and support	8	13.3%
		Occasional monitoring and support	7	11.7%
		Minimal Involvement	7	11.7%
		No involvement	38	63.3%
16.	Do you have prior knowledge of E-Learning	No	36	60.0%
		Yes	24	40.0%
16.(a)	If yes, then specify source: School	No	48	80.0%
		Yes	12	20.0%
	Internet	No	58	96.7%
		Yes	2	3.3%
	Social media	No	50	83.3%
		Yes	10	16.7%
	Friends or family members	No	60	100.0%
		Yes	0	0.0%
17.	Do you have prior experience with E- learning	No	36	60.0%
		Yes	24	40.0%
17.(a)	If yes, then specify source: Online classes	No	57	95.0%
		Yes	3	5.0%
	Mobile learning apps	No	43	71.7%
		Yes	17	28.3%
	Social media	No	56	93.3%
		Yes	4	6.7%
	Family guidance or support	No	60	100.0%
		Yes	0	0.0%

Section-II

Assess the pre-test knowledge score of adolescent students regarding use and importance of E-Learning

This section shows the findings related to frequency and percentage distribution of pre-test knowledge scores regarding use and importance of E-Learning among adolescent students. The majority of adolescent students i.e., 51.7% have inadequate knowledge, 48.3% of adolescent students have moderate knowledge and 0% of adolescent students have adequate knowledge during their pre-test.

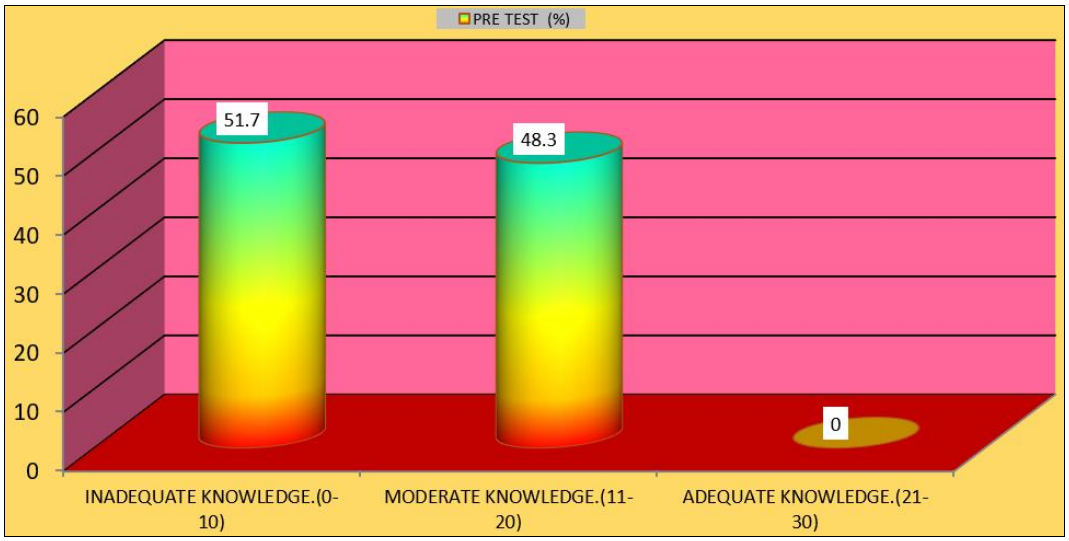

Fig 2: Criterion Measures (PRE)

Section-III

Assess the post-test knowledge score of adolescent students regarding use and importance of E-Learning

This section shows the findings related to frequency and percentage distribution of post-test knowledge scores regarding use and importance of E-Learning among adolescent students. The majority of adolescent students i.e., 56.7% have moderate knowledge, 43.3% of adolescent students have adequate knowledge through self structured knowledge questionnaire regarding use and importance of E-Learning among adolescent students.

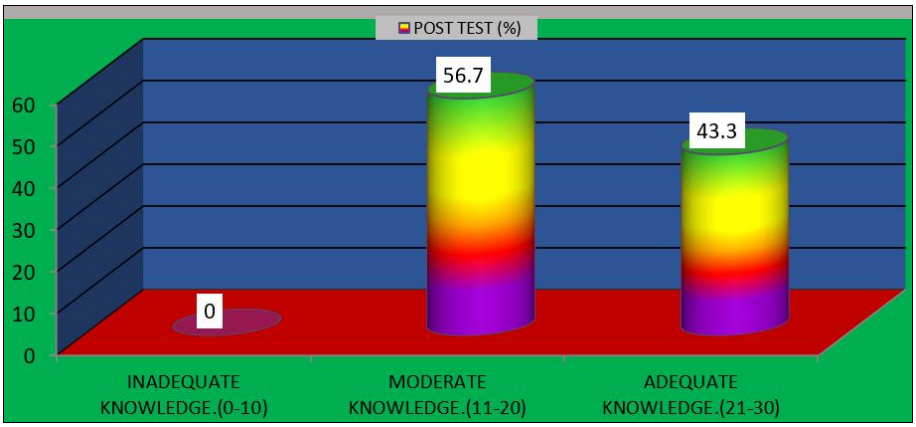

Fig 3: Criterion Measures (POST)

Section-IV

Comparison between pre-test and post-test knowledge score of adolescent students regarding use and importance of E-Learning

This section shows the findings related to comparison between frequency and percentage of pre-test and post-test knowledge scores regarding use and importance of E-Learning among adolescent students. This data depicts that in pre-test, adolescent students with inadequate knowledge have frequency score 31 and percentage of 51.7%, whereas, in post-test the frequency was 0 and percentage was also 0%. Among moderate knowledge adolescent students, the frequency was 29 and percentage was 48.3% in pre-test, where as in post-test frequency was 34 and percentage was 56.7%. Among adeqaute knowledge adolescent students, the frequency was 0 and percentage was also 0% in pre -test, where as in post-test frequency was 26 and percentage was 43.3%.

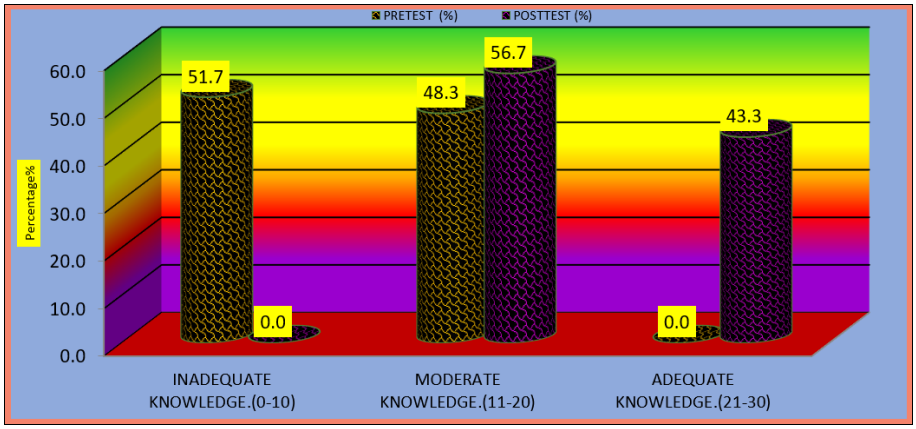

Fig 4: Criterion Measures

Section -V

Association between post -test knowledge scores with their selected demographic variables regarding use and importance of E-Learning among adolescent students

Table 2: Association Between Post-Test Knowledge Scores and Selected Socio-Demographic Variables and E-Learning Factors Among Adolescent Students (N=60)

Selected Socio-Demographic Variables	Adequate	Moderate	Inadequate	df	χ^2	P value
Age (in years)						
10-12	0	18	0	3	28.096*	0.000
13-14	5	9	0			
15-16	12	7	0			
17-18	9	0	0			
Gender						
Male	13	17	0	1	0.000N.S.	1.000
Female	13	17	0			
Class						
5-6	0	12	0	3	34.321*	0.000
7-8	1	11	0			
9-10	8	10	0			
11-12	17	1	0			

Type of school						
Government School	9	11	0	1	0.034$^{N.S.}$	0.854
Private School	17	23	0			
Area of Residence						
Urban	6	4	0	1	1.357$^{N.S.}$	0.244
Rural	20	30	0			
Family Members						
Single Parent family	0	0	0	2	1.031$^{N.S.}$	0.522
Nuclear family	15	21	0			
Extended family	2	5	0			
Joint family	9	8	0			
Monthly family income (in rupees)						
Less than 20,000	1	3	0	3	0.760$^{N.S.}$	0.859
20,001-30,000	1	2	0			
30,001-40,000	8	10	0			
40,001-50,000	16	18	19			
Education of father						
No formal education	0	0	0	2	0.969$^{N.S.}$	0.616
Primary education	1	3	0			
Secondary education	4	7	0			
Higher education	21	24	0			
Education of mother						
No formal education	0	0	0	3	3.759$^{N.S.}$	0.153
Primary education	1	3	0			
Secondary education	4	7	0			
Higher education	21	24	0			
Occupation of father						
Farmer	1	3	0	3	2.251$^{N.S.}$	0.522
Government service	4	8	0			
Private job	16	20	0			
Business	5	3	0			
Occupation of Mother						
Farmer	0	1	0	3	2.706$^{N.S.}$	0.439
Government service	0	1	0			
Private job7	7	5	0			
Homemaker	19	27	0			
Frequency of E-Learning usage						
Daily	13	0	0	3	45.543*	0.000
Once a week	4	1	0			
Several times a week	6	0	0			
Rarely or never	3	33	0			
Access to E-Learning devices						
No	3	33	0	1	44.898*	0.000
Yes	23	1	0			
If yes, then specify type of device used Smartphone						
No	3	33	0	1	44.898*	0.000
Yes	23	1	0			
Laptop						
No	26	34	0		N.A.	N.A.
Yes	0	0	0			
Computer						
No	26	34	0		N.A.	N.A.
Yes	0	0	0			
Tablet						
No	26	34	0		N.A.	N.A.
Yes	0	0	0			
Internet connection used for e-learning						
No	3	33	0	1	44.898*	0.000
Yes	23	1	0			
If yes, then specify the type used Wi-Fi						
No	20	34	0	1	8.718*	0.000
Yes	6	0	0			
Mobile Data						
No	9	33	0	1	27.356*	0.000
Yes	17	1	0			
Broadband						

No	26	34	0		N.A.	N.A.
Yes	0	0	0			
Hotspot						
No	26	34	0		N.A.	N.A.
Yes	0	0	0			
Parental involvement in E-Learning activities						
Regular monitoring and support	8	0	0	3	38.827*	0.000
Occasional monitoring and support	7	0	0			
Minimal involvement	6	1	0			
No involvement	5	33	0			
Do you have prior knowledge of E-Learning						
No	3	33	0	1	44.898*	0.000
Yes	23	1	0			
If yes, then specify source School						
No	15	33	0	1	14.270*	0.000
Yes	11	1	0			
Internet						
No	24	34	0	1	2.706N.S.	0.100
Yes	2	0	0			
Social Media						
No	16	34	0	1	15.692*	0.000
Yes	10	0	0			
Friends or family members						
No	26	34	0		N.A.	N.A.
Yes	0	0	0			
Do you have experience with E-Learning						
No	3	33	0	1	44.898*	0.000
Yes	23	1	0			
If yes, then specify source Online Classes						
No	24	33	0	1	0.700N.S.	0.403
Yes	2	1	0			
Mobile Learning apps						
No	9	34	0	1	31.020*	0.000
Yes	17	0	0			
Social Media						
No	22	34	0	1	5.604*	0.018
Yes	4	0	0			
Family guidance or support						
No	26	34	0		N.A.	N.A.
Yes	0	0	0			

*= Significant NS= Not significant

Data given in table shows the computed Chi-square of selected socio-demographic variables and the level of knowledge of adolescent students. The data revealed that there was no significant association of level of knowledge with selected socio -demographic variables i.e. gender, type of school, area of residence, family members, monthly family income (in rupees)education of father, education of mother, occupation of father, occupation of mother, access to E-Learning devices if yes then type of device used like laptop, computer and tablet, type of internet connection used at for E-Learning, if yes then type of internet connection used such as broadband, hotspot, do you have prior knowledge with E-Learning, if yes then source such as internet, friends or family, do you have prior experience with E-Learning, if yes then source such as online classes, family guidance or support. There was significant association of level of knowledge with selected demographic variables age, class, frequency of E-Learning usage, access to E-Learning devices, if yes then source through smartphone, internet connection used for E-Learning, if yes then type of connection used such as Wi-Fi, mobile data, parental involvement in E-Learning activities, do you have prior knowledge of E-Learning, if yes then source through school and social media and do you have prior experience with E-Learning, if yes then source through mobie learning apps and social media.

Conclusion

Adolescent students, being in their formative academic years, are increasingly exposed to digital modes of education such as E-learning. However, many of them lack adequate knowledge regarding the proper use and significance of E-learning platforms. This limited awareness can hinder their ability to benefit fully from online learning resources. Therefore, educating students through well-designed interventions can be an effective strategy to enhance their understanding and promote better utilization of e-learning tools in their academic journey. The findings of the present study revealed that a structured teaching programme significantly improved the knowledge of adolescent students regarding the use and importance of e-learning. Hence it was concluded that the use of structured teaching programme is an effective strategy for improving the knowledge regarding use and importance of E-Learning

among adolescent students.

Limitation

The study was limited to:

- The sample size was only 60 adolescent students.
- The data collection period was limited to one month.
- The study was conducted only in selected schools among adolescent students aged 10-17 years.
- The tool used for data collection was a closed-ended structured questionnaire.

Recommendations

Keeping in view of the present research study findings, the following recommendations have been made:

- A similar study can be replicated on a large-scale basis involving more schools and a larger adolescent sample.
- A true experimental study can be conducted to assess the effectiveness of structured teaching programme on e-learning knowledge among adolescents.
- A longitudinal study can be conducted to assess the long-term retention of knowledge regarding the use and importance of e-learning among adolescent students.
- A comparative study can be conducted to compare the effectiveness of structured teaching programme with other digital learning methods.
- A study can be conducted to assess the knowledge, attitude, and practices of teachers and parents regarding e-learning among adolescents.
- A study can be undertaken to evaluate the effectiveness of blended learning approaches in enhancing e-learning among adolescent students.
- A comparative study can be conducted between urban and rural adolescent students regarding their knowledge and use of e-learning.

Conflict of Interest

Not available.

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