International Journal of Computational Research and Development (IJCRD)
Impact Factor: 5.015, ISSN (Online): 2456 - 3137
(www.dvpublication.com) Volume 8, Issue 1, 2023

A STUDY ON EFFECTIVE UTILIZATION OF DEPARTMENT LAB FACILITY AMONG THE STUDENTS WITH SPECIAL REFERENCE TO DHANALAKHSMI SRINIVASAN ENGINEERING COLLEGE (AUTONOMOUS), PERAMBALUR

B. Sindhiya*, S. Nihila & S. Pavithra****

* Assistant Professor, Department of MBA, Dhanalakshmi Srinivasan Engineering College (Autonomous), Perambalur, Tamil Nadu

** II Year Student, Department of Management Studies, Dhanalakshmi Srinivasan Engineering College (Autonomous), Perambalur, Tamil Nadu

Cite This Article: B. Sindhiya, S. Nihila & S. Pavithra, "A Study on Effective Utilization of Department Lab Facility Among the Students With Special Reference to Dhanalakhsmi Srinivasan Engineering College (Autonomous), Perambalur", International Journal of Computational Research and Development, Volume 8, Issue 1, Page Number 56-60, 2023.

Abstract:

Laboratory is responsible for providing advice and information to scientists on health and safety, particularly on how to carry out risk assessments and on appropriate control measures. A laboratory is a facility that provides controlled conditions in which scientific or technological research, experiments, and measurement may be performed Laboratories used for scientific research take many forms because of the differing requirements of specialists in the various fields of science and engineering have apparatus for casting or refining metals or for testing their strength. A physics laboratory might contain a particle accelerator or vacuum chamber, while a metallurgy laboratory could.

Key Words: Pharmaceutical, Chemical. Medical Mechanical, Research& Development Computer.

Introduction:

A laboratory school or demonstration school is an elementary or secondary school operated in association with a university, college, or other teacher education institution and used for the training of future teachers, educational experimentation, educational research, and professional development. Many laboratory schools follow a model of experiential education based on the original Laboratory School run by John Dewey at the University of Chicago. Many laboratory schools are still in operation in the United States and around the globe. They are known by many names: laboratory schools, demonstration schools, campus schools, model schools, university affiliated schools, child development schools, etc., and most have a connection to a college or university.

It is affiliated with Khan Academy, a non-profit educational organization. The school's experimentation with abolishing grade levels was featured on Voice of America in 2016.A modern laboratory school does not need to do anything special with building construction, and is able to use a standard-design school as a laboratory school.

Statement of the Problem:

With the increasing need of Dhanalakshmi Srinivasan Engineering College to implement a learn system, and students Lab facility Practices will be done to determine how students impacts changes.

It has been observed that students are of the opinion that lab facility practices is of little or no significant effect on their academic performance, hence have taken it frivolous, some students who ought to take lab facility serious feels it's an opportunity for them to stay away from college. This mentality and other erroneous have made nonsense of the lab facility performance. As a result of the fore mentioned problems and many others, students have either lost interest in the subjects or have missed years in their course of study. Also students have either lost interest in the utilization of lab facility in motivating students' interest in learning Business Studies or have disregarded it.

Review of Literature:

Owoeyeand Yara (2011), Learning occurs through ones interaction with one's environment. In school, environment refers to the different facilities available to facilitate students learning outcome. Among the physical facilities such as land, building, library museum; laboratory facility is one of the most important and has been observed as a potent factor to quantitative learning.

Nahie (1999), Biological disciplines imply a significant responsibility for the protection and welfare of all living species. Any advances in medicine, dealing with environmental issues or biotechnology depend on an understanding of living organisms. As one of the core subjects in senior secondary schools in Nigeria, Biology is of great value in determining and shaping the future of the student and hence the teaching and learning of Biology at the senior secondary school level is of paramount importance.

National Association of Biology Teachers (2005),As a science subject, scientific inquiry is the primary process by which scientific knowledge is gained. One of the most effective vehicles by which the process of inquiry can be learnt is the laboratory where the student experiences first hand, the inquiry process. Thus, the study in a laboratory is an integral and essential part of a biology course.

Akpan (2006), Examined adequacy of laboratory facilities using frequency counts and percentages. The result revealed that 61.1% of the total respondents agreed that the laboratory facilities for the teaching of Chemistry were adequate in secondary schools, while 38.9% of the respondents agreed that laboratory facilities were not significantly adequate.

Cross River State Ministry of Education for Science Teachers Vacation Course (TVC) in (2008), At a workshop organized by the science teachers complained that laboratory facilities for teaching various science subjects were not adequate in secondary schools for the teaching and learning of the physical sciences. Secondary school laboratories should be furnished with adequate laboratory facilities for effective teaching and learning of sciences.

Hemba (2006), No course in science can be some practical work in it. The practical work is to be carried out by individual in a physical science laboratory. Most of the achievements of modern science are due to the application of the experimental method. At school stage practical work is even more important because of the fact that we 'learn by doing' scientific principles and applications are thus rendered more meaningful.

Scope of the Study:

- How to effectively handle the tools in the lab.
- They use the lab to enhance the study.
- Find out how to use the lab efficiently.
- Improve your knowledge and skill
- By use the lab it will help to application knowledge about the student.

Objectives of the Study:

- To analysis the all department lab facility
- To evaluate the available lab equipment and instruments in our college
- To analysis the student effectively utilise the lab period
- To analysis the lab safety measures.

Research Methodology:

Research is the process of systematic and in depth study or search of any particular topic, subject or area of investigation, backed by collection, compilation, Presentation and interpretation of relevant details or data. It is careful search or find out valuation facts, which would be useful for further application or utilization.

Research Design:

The researcher used Descriptive Research Design. Descriptive Research design means fact finding one. The Research used this research design to find out the fact of respondents attitude and opinion about student empowerment.

Sampling Design:

The Sampling type is Simple Random Sample which involves deliberating selection of particular units constituting a sample, which represents the universe, is used for conducting the study.

Sample Size:

Sample size denotes the number of sample selected for the study. They sample size for this study is fixed at 330 respondents.

Data Collection Method:

Data are the basic input to any decision making processing of data gives statistics of importance of study.

Sources of Data:

- Primary Data

Primary Data:

Primary Data were collected through Questionnaire. The data which are collected as fresh for the first time and happen to be original in character.

- Percentage Analysis
- Chi Square
- Correlation

Research Hypothesis:

Null Hypothesis (H0):

Null Hypothesis is formulated only to test whether there is any relationship between variables related to the problem being studied. Usually the null hypothesis usually is formed as a negative statement.

Alternate Hypothesis (H1):

Alternate Hypothesis (H1) is a statement, which is accepted after the null hypothesis is rejected based on the test result. The alternate hypothesis usually is formed as a positive statement.

Limitations of the Study:

- The presents study is limited to many aspects. Providing information about the knowledge and skills is the outcome various variables.

- Some of the information given by the respondents may be student's basis lab facilities.
- The Questions that are asked being personal, some of them hesitated to answer it.
- Analysis is done on the assumptions that respondents have given correct information through the questionnaires.

Data Analysis and Interpretation:

Lab Facilities Provided by the College

Lab Facilities	No. of Respondents	Percentage
Highly satisfied	69	21%
Satisfied	155	47%
Neutral	35	11%
Dissatisfied	45	14%
Highly Dissatisfied	26	7%
Total	330	100

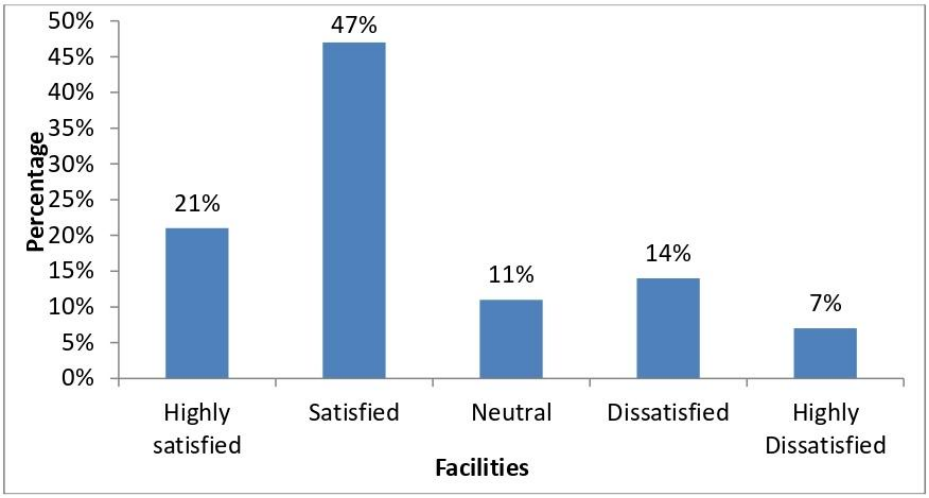
Source: Primary Data

Interpretation:

The above table shows that lab facilities provided by the college. Out of 100 respondents, 47 percent of the respondents are satisfied, 21 percent of the respondents are Highly Satisfied, 14 percent of the respondents are dissatisfied, 11 percent of the respondents are Neutral and 7 percent of the respondents are Highly Dissatisfied It is inferred that majority 47 percent of the respondents are satisfied.

Chart:

Lab Facilities Provided by the College:



Correlation:

The table shows the relationship between using age wise of the respondents and lab facilities provided by the college.

X	Y	X^2	Y^2	XY
123	69	15129	4761	8487
110	155	12100	24025	17050
75	35	5625	1225	2625
15	45	225	2025	675
7	26	49	676	182
$\sum x$ =330	$\sum y = 330$	$\sum x^2 = 33128$	$\sum y^2 = 32712$	$\sum xy = 29019$

$$r = \frac{\sum XY}{\sqrt{(\sum X^2)(\sum Y^2)}} = \frac{29019}{\sqrt{(33128)(32712)}} = \frac{29019}{32919.34} = 0.98$$

This is positive correlation. There is relationship between using age wise of the respondents and lab facilities provided by the college.

Inference:

There is high Positive Correlation between Current Lab facility Practices (X) and one of the Best Lab facilities Practices (Y).

Chi-Square Analysis:

To Compare the Lab facility Practices Understanding and Improving your Performance Position by using Chi-Square test

Null Hypothesis (H0):

There is no significant relation between the Understand by Lab facility.

Alternative Hypothesis (H1):

There is a significant relation between the Lab facility Practices will be improving your Performance.

Level of Significance a =0.05

Cross Tabulation for Lab facility Practices Understanding and Improving Your Performance

The Table Showing on Chi-Square:

The table shows analysis relationship between Equipment of lab and satisfied in lab session.

Null Hypothesis:

H0: There is no significance relationship between Equipment of lab and satisfied in lab session

Alternative Hypothesis:

H1: There is a significance relationship between Equipment of lab and satisfied in lab session

Particular	Highly Satisfied	Satisfied	Neutral	Dissatisfied	Highly Dissatisfied	Total
Highly Satisfied	5	35	14	11	1	66
Satisfied	8	60	25	19	2	114
Neutral	8	55	23	17	2	105
Dissatisfied	3	21	9	6	1	39
Highly Dissatisfied	0	3	1	1	0	6
Total	24	174	72	54	6	330

Particulars	Observed Frequency	Expected Frequency	$(Oi-Ei)^2$	$Oi-Ei^2/Ei$
$R_1 C_1$	5	5	0	0
R_1C_2	34	34.8	0.64	0.02
R_1C_3	14	14.4	0.16	0.01
R_1C_4	10	10.8	0.64	0.06
R_1C_5	1	1.2	0.04	0.03
R_2C_1	8	8	0	0
R_2C_2	60	60	0	0
R_2C_3	24	24.9	0.81	0.03
R_2C_4	18	18.7	0.49	0.03
R_2C_5	2	2	0	0
R_3C_1	7	7.6	0.36	0.05
R_3C_2	55	55	0	0
R_3C_3	22	22.9	0.81	0.04
R_3C_4	17	17	0	0
R_3C_5	1	1.9	0.81	0.04
R_4C_1	2	2.8	0.64	0.02
R_4C_2	20	20.6	0.94	0.05
R_4C_3	8	8.5	0.25	0.03
R_4C_4	6	6.4	0.16	0.03
R_4C_5	0	0	0	0
R_5C_1	0	0	0	0
R_5C_2	3	3	0	0
R_5C_3	1	1.3	0.09	0.07
R_5C_4	1	1	0	0
R_5C_5	0	0	0	0
			Calculated Value	0.51

Degree of Freedom = (r – 1) (c – 1)
= (5 – 1) (5 – 1)
= 4x4 = 16

Level of significance = 5%

Table value = 26.30

Calculated value = 0.51

Result:

Since the calculated value is less than the table value. So we accepted the null hypothesis. There is no significance relationship between Equipment of lab and satisfied in lab session

Suggestions:

- On the basis of obtained results of present research investigations following suggestions are important
- The effort should be made to improve the institutional environment in context to the academic quality related to teachers and students, facilities related to quality teaching and learning as well as for their basic needs in the campus.
- Students of education course are facing maximum amount of E, P and V problems therefore efforts should be made to identification and abolition of their problems during the course completion. Admission criteria, course duration, course curriculum and recruitment of teachers and as well as quality of teacher's training colleges are supposed to re-examined and redefined as per quality standards. Same process must be followed to improve the other problematic areas of further courses.
- Placement services should be provided to teacher's training colleges and medical colleges also.

Conclusion:

If laboratory safety is an unquestioned core value and operational priority for the institution, then safety will never be traded for research productivity. University policies and resource allocations have a strong impact on a department's ability and willingness to help provide for a strong, positive safety culture. If an institution or individual laboratory wants to develop and sustain a safe and successful research program, then it must consider the resources it has available for safety and explore research options and requirements accordingly.

Contribution and engagement by both principal investigators and by researchers through an open and on-going dialogue are critical to creating a strong, positive safety culture. Safety culture is more likely to be sustained when safety issues are discussed broadly and frequently as an integral part of the research training and development process. A research group with a strong, positive safety culture engages with environmental health and safety personnel collaboratively.

References:

1. American Chemical Society (ACS). 1993. Less Is Better: Laboratory Chemical Waste Management for Waste Reduction, 2nd Ed. Task Force on Laboratory Waste Management, Department of Government Relations and Science Policy. Washington, D.C.: ACS.
2. American Institute of Architects (AIA). 1993. The Architect's Handbook of Professional Practice, Vol. 2, 12th Ed. Washington, D.C.: AIA.
3. American Institute of Architects (AIA). 1999. Guidelines for Planning and Design of Biomedical Research Laboratory Facilities, Washington, D.C.: AIA.
4. Ashbrook, Peter C., and Malcolm M. Renfrew 1991. Safe Laboratories. New York: Lewis Publishers.
5. Baum, Janet S. 1995. "Renovate Your Lab." Chemical Health and Safety, May/June, 2:7–13.