



A STUDY ON COMPUTER SCIENCE EDUCATION IN KERALA STATE SECONDARY SCHOOLS UTILIZATION

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ABSTRACT

A long time science instructors in Kerala auxiliary schools trusted that the utilization of science contraption provided by Science Equipment Production unit (SEPU) would generously assist educators with providing understudies with proficient and compelling chances to learn science, items, and procedures. In any case, this has not enhanced students' exhibitions in examinations. Research discoveries from created nations have called attention to the capacities of PCs to enhance students' logical learning. This happens when understudies are educated to utilize PCs as devices for considering, making and adjust PCs to meet their own requirements, for example, understudies composed reenactments, science interfacing. PCs have now been accessible in Kerala auxiliary schools for more than ten years.

This article introduces the consequences of an examination that researched the utilization of PCs in educating and learning science in broad daylight optional schools in Kenya. The motivation behind the investigation was to see whether science educators utilize PCs to help enhance the nature of science training. Related writing for this investigation uncovered that instructing/learning science subjects with PC enhances understudies execution in examination. This examination depended on a spellbinding overview. The zone of study was Kisumu Municipality and the examination populace comprised of 22 head instructors, 1200 students and 44 science educators. Soaked examining was utilized to choose an example of 20 head instructors, while purposive testing was utilized to choose an example of 20 science educators. In the meantime, straightforward irregular inspecting was utilized to choose an example of 400 understudies. Information was gathered by utilization of poll, archive examination guide and perception plan. Information examination included utilization of spellbinding insights that included designs, rates and frequencies. The finding demonstrated that there was insufficient arrangement of PCs in optional schools. Not very many science instructors utilized PCs in educating/learning science. The investigation suggested that Head educators should buy more figures and give satisfactory offices, for example, PC research facility, and prepared labor.

Keywords: Science, PCs, instructing/learning, enhance science training

INTRODUCTION

Instructing and learning science subjects whether in created or creating nations requires the utilization of different showing helps/device. In many zones of science training, the utilization of innovation is very adequate and exceedingly prescribed to upgrade learning. Specialists have called attention to the capacities of PCs to enhance students' logical learning



and expressed that "PC based innovation gives science instructors access to a rich assortment of printed materials and realistic data. clarified that the utilization of PCs gives new instructional methodologies which the educator and understudies can utilize¹. This incorporates modern research center and reproduction devices².

However numerous science instructors timid far from fusing innovation into their educating and learning process in spite of the accessibility of PCs in the schools. called attention to that couple of instructors utilized PCs based advances for instructional purposes and seen that PCs are not will be not being coordinated into most instructional educational program. noticed that progressions in innovation have now made it conceivable to coordinate PCs into the educating of science. They focused on that the accentuation in instructing and learning should now be on furnishing students with the open doors for critical thinking.

This he accepted ought to incorporate helpful learning strategies which may not really require extra extraordinary preparing in the piece of the clients. He additionally expressed that PCs are presently to a greater extent a characteristic apparatus to use in instructing and learning on the grounds that a wide assortment of programming is accessible.³ This furnishes understudies with encounters to cooperate to tackle complex issues. Accepts likewise that when the PC is coordinated into the educational programs, understudies will have the capacity to consolidate a few unique sorts of PC applications to investigate an issue in a specific field. So the customary technique for educator focused guidance utilized by most instructors will change. The understudies will learn by doing which is the foundation of all science learning. The understudies will likewise figure out how to investigate subjects in science and make important learning encounters for themselves.⁴

SCIENCE TEACHERS ROLE IN THE USE OF COMPUTERS

At the point when the PC is coordinated into the classroom the job of the educator changes from that of the data supplier to that of a facilitator of learning. For instance to coordinate innovation into educating and learning science successfully, Heinich et al. recommend an exceptionally straightforward joining approach for instance. As per him the educator could give understudies a task to set up a give an account of environment. A gathering of understudies would utilize a PC database to scan for assets to use in aggregating the report. They could likewise send electronic messages to individuals in different spots asking for significant data. What's more, the understudies could utilize an information base program to store and deal with their data.⁵

Look into, they could utilize a word processor and hyper media program to set up a composed record. Finally the understudies would utilize a projector to show their discoveries to whatever remains of the class. In this kind of PC coordination into learning science, underline that the instructor must give chance to students to finish their work and learn viably. In the event that this technique is to be successful, the instructor needs to design ahead of time to incorporate the PC



into educating and learning, get ready great learning condition for the understudies, and work in a joint effort with the understudies amid the examination time frame. After the introduction the instructor could compose for a science test session for all understudies or give assist task.⁶

In another example, did a near report to assess the adequacy of CAI on the Science accomplishment of American understudies following two distinctive instructing strategies. The appraisal secured four branches of knowledge, general science, material science, science and science. The members were drawn from urban, rural and rustic auxiliary schools. The example incorporated a sum of 2343 understudies. The motivation behind the investigation was build up the distinctions that existed between the scholastic accomplishment levels of science understudies who utilized PC helped guidance, and the individuals who utilized customary ways to deal with learn science, general science, science and material science.

The trial aggregate that utilized deliberately planned customary guidance enhanced with CAI acquired essentially better scholastic accomplishment contrasted with the control bunch that embraced a regular educating approach.⁷ Additionally result demonstrated that CAI was more successful among science understudies living in urban territories pursued by those in rural and those from rustic regions had the most minimal test score. Taking everything into account, claimed for more research to set up whether CAI could be more successful or ineffectual among gatherings of understudies or inside certain scholarly territories in order to help viable utilization of CAI in science subjects.⁷

Also, led an exploratory examination to research the elements that affected instructors and understudies to utilize microcomputers based Laboratory innovation in science exercises. The members were drawn from an autonomous secondary school situated in a Metropolitan city in Brisbane Australia. The example of the examination comprised of 12 guys and 9 females (15-16years) contemplating science as a feature of a general science course in year eight, nine and ten. The specialist utilized two sorts of trials that included the utilization of MBL and secured points, for example, boyle's law, weight volume relationship in gases, and weight temperature relationship in gases.⁸ These researchers utilized video chronicles, copying and up close and personal meetings to gather information.

Toward the finish of the test the information were broke down and the outcomes indicated blended reactions. In any case, the subject educator bolstered the utilization of MBL to learn science however was not prepared to change her strategies for instructing science. She had confidence in an educator focused methodology and was not happy with student focused methodology that s PC based.

Be that as it may, for the coordination of PC to be viable, the analyst must have the capacity to utilize the innovation. When the educator is alright with innovation, the understudies will likewise utilize the PC since they will have seen the instructor utilizing it in instructing them. The experience of the instructor is additionally an imperative factor to consider. In this trial the



educator was not prepared in PC applications and did not see the innovation as potential medium to enhance student's logical learning. In this manner, for any important figuring out how to occur in a creative endeavor like the utilization of MBL, the job and experience of the educator should be analyzed painstakingly. The execution of PCs in instruction can't be powerful if educators are not prepared for utilizing the innovation.⁹

EFFECTIVE UTILIZATION OF TECHNOLOGY

In spite of the fact that PCs have been broadly perceived as a potential device for educating and learning science subjects, the compelling usage of the program is required if understudies and instructors are to profit. Feel that what have been missing are instructional strategies that exploit the PC and draw in understudies in cutting edge mindset. The instructive estimation of PC programs relies upon numerous elements comparatively to conventional guidance. A portion of these elements include: the substance of the program, its pertinence, the teacher's capacity to utilize and direct the understudies, student's possess capacity and enthusiasm to learn, and the distinction application strategies utilized by the instructors.¹⁰

report a few techniques to be followed in which the teacher's job is just to control the understudies, set up the learning condition and participate in the program with the understudies. They featured particular qualities joined to successful methods for utilizing a PC recreated research center that includes preliminary exercises with respect to the instructor, pre-instructional reenactments and post instructional reproduction.¹¹

As indicated, PC recreations are utilized to show understudies numerous points in science subjects, on the grounds that the psychological and physical smoothness required the utilization reproduction that connects with understudies in learning. include that recreation is regularly used to animate students's enthusiasm for a point with the end goal to advance dynamic learning of critical thinking and the investigation procedure.

All things considered, PC recreation has been utilized in science instruction to show understudies cardio-vascular course, fire, warmth, speed and power. All these require cautious arranging and arrangement by the educator ahead of time. Viable utilization of PC recreation relies on the instructors creativity in applying as a powerful influence for the materials those parts of their student's encounter that make the program critical and noteworthy to them.

prescribe that when the educator intends to utilize PC reproductions the understudies should initially take in the substance of the exercise. They recommend that the instructor needs to utilize proper customary showing strategies, for example, addressing to display the fundamental vital data to the understudies. At that point the PC reproduction is utilized either to enhance the substance or to strengthen what the instructor has educated. The researcher likewise trusted that a proper PC recreation could be the primary wellspring of data and comprehension for understudies.¹²



METHODOLOGY

The Research design

The investigation utilized expressive overview plan. Expressive review centers around deciding the status of a characterized populace concerning certain factors. Its essential favorable position is that the analyst can assemble a lot of information in a brief timeframe. All things considered, a spellbinding study configuration was viewed as proper for this investigation in light of the fact that the examination concentrated on the utilization of PCs to enhance science instruction in auxiliary schools. The illustrative study incorporated both subjective and quantitative strategies for information accumulation and examination. The poll, exercise perception, talk with timetable were basically used to get reactions from members. The exploration went for giving precise data and attributes that are perceptible in science educating in auxiliary schools in Kisumu region.

Study location

The examination was done in Kisumu Municipality. It is one of the regions in Nyanza region, Kenya. Officially, the district falls in Kisumu County. The Municipality has 13 areas and is situated on the eastern shores of Lake Victoria. It outskirts Vihiga and Nandi regions toward the north, Nyando area toward the east, kadibo division toward the southeast and Maseno division toward the west. Kisumu region has 28 open auxiliary schools in Kisumu west.

The locale has in the ongoing past enhanced in execution in the KCSE examination. The schools have likewise genuinely enhanced in physical offices subsidized generally through the voting demographic improvement support (CDF).

Study Population

The investigation populace comprised of 24 open auxiliary schools. It included 1680 concentrated on 28 auxiliary schools in the district. It comprised of 1680 frame four understudies, 44 science educators, and 24 head instructors in all general society optional schools in Kisumu district.

Test and inspecting methods

Basic arbitrary examining technique was utilized to choose an example of 400 understudies from the aggregate of 1412 understudies speaking to 28% of the investigation populace. Soaked inspecting was utilized to choose the standards of the 20 schools and 20 Science instructors. Soaked examining is a non-likelihood inspecting strategy in which every one of the individuals from the focused on populace are chosen since they are excessively few, making it impossible to make an example of them. Basic arbitrary examining was utilized to choose 20 frame three science understudies from each school that had PCs.



Information Collection Procedure

The analyst by and by visited all the example schools and controlled the survey, and directed the meetings. Rectification and elucidation were made amid the connection with members as need emerge. The specialist likewise watched the exercises being instructed utilizing the exercise perception manage.

Information examination

Information for the investigation was gotten from surveys and meetings and perception reactions. Information gathered utilizing polls were broke down utilizing expressive insights. Reactions from the surveys were counted and changed over into rates. Information gathered from meetings were translated and sorted out into subjects, classifications and sub-classifications as they developed amid the investigation. The reactions were counted and changed over to rates. Notwithstanding, the data acquired from perception were sorted out and displayed subjectively. The general finding of the investigation was introduced subjectively and quantitatively.

RESEARCH

The primary goal of the investigation was to see if science instructors were coordinating PCs into subject point zones, for example, science The discoveries demonstrated that the vast majority of them had not incorporated PCs into their general educating and learning process, yet one of them reacted that on the off chance that I am utilizing PCs amid science class, I may make reference to the point then the understudies take a gander at it in the PC at their very own time. A portion of the interviewees detailed additionally that they advise understudies about the projects containing data pertinent to a subject like science then the understudies look the data in the PC to find out about it. Still another instructor detailed that "I utilize the PC to reexamine and abridge what I have educated by demonstrating a few abilities in various science subjects like Biology, Physics and Chemistry. Be that as it may, in the wake of outlining the discoveries, the outcomes demonstrated that 25% of the science educators utilized PC as a major aspect of the fundamental exercise held in the PC lab.¹³

20% incorporated PC into a few points and this structures some portion of the exercise introduction. About 30% incorporated the PC to present the subjects by utilizing enabling the understudies to PC look for data identified with theme to be examined first before meeting the understudies. Alternate members 10% demonstrated that they utilize the PC to outline what they have educated while 40% of had not coordinated PCs into instructing and learning science subjects.

These discovering bolster the prior investigation by Liu, who noticed that coordinating PCs into the classroom needs to take educators individual and expert requirements into thought. The vast majority of the educators met had not been presented enough to PCs and were not ready to incorporate the innovation into instructing and learning science. Another investigation



demonstrated that full reconciliation of PCs into the instructive framework was a separation objective except if instructors are prepared, equipped and will utilize PCs in educating and learning customary subjects. likewise trusted that the teachers' utilization of PCs could change enormously relying upon the teachers' encounters, information and convictions.¹⁴

Advantages of utilizing PC in instructing and learning science

70% of the instructors trusted that the utilization of PCs increments students' logical learning of science subjects. In any case, 10% didn't know, while 20% of the educators noticed that with utilization of the Internet, students get to data on various subjects from different libraries or information bases. A male science instructor from country addressed yes... ..it increments students' information of how for instance malignant growth spread in the body, when understudies take a gander at how the cells move around. It gives them a reasonable comprehension of the subject. This encourages them to accomplish more research and increment their insight into science subjects they learn in class. A comparable report in Kenya demonstrated that the student's treatment aggregate took in the idea and techniques in material science superior to anything their partners in the control gathering. revealed comparable discoveries.¹⁵

Persuading understudies to learn troublesome science points

half of the interviewees detailed that PC exceptionally inspire understudies to learn. A science instructor from urban school noticed that understudies are anxious to learn with PC and are anxious to learn new thoughts. It provokes them to scan for the data on different logical things. The outcomes underpins empowered the utilization of innovation to propel students and noticed that understudies who are inherently roused will buckle down and take in more in view of their own enthusiasm for the materials. For instance, one instructor from rural school revealed that the utilization of PCs have extremely expanded my understudies want to learn. They are ordinarily exceptionally spurred and this empowers them to learn and comprehend troublesome science points. An instructor of science likewise announced that because of utilizing PC my understudies enhanced in Biology in light of the fact that the PC gives striking data that fuses visual guides. An investigation on the utilization of PCs to learn Physics bolsters the discoveries since the examination demonstrated huge enhancement in understudies learning.¹⁶

Expanding understudies' thoughtfulness regarding learn

85% of the educators expressed that the utilization of PCs help to build understudies' regard for learn science. One educator from urban school noticed that „in human life systems the graphs are so nitty gritty and well attracted to draw in the consideration of the understudies, Another one said yes ... in Physics we show hardware, this empowers understudies to do reasonable tests including power without essentially setting off to the ordinary lab... ..it supplement the current Physics educational modules. Still another educator remarked... .. you find in science... ..particularly in Physics there are programs firmly identified with man-made reasoning which



shapes the premise of software engineering. Notwithstanding, a couple of them 15% noticed that instructors must be with the understudies for them to be mindful to learn generally a few understudies will talk or examining and not focusing.¹⁷

Educator preparing in the utilization of PC

Out of the 20 interviewees 95% affirmed that they had gotten some sort of preparing in PC proficiency courses. In the meantime they additionally announced that the preparation was for a brief period which did exclude figuring out how to utilize PCs in instructing and learning conventional subjects.¹⁸ There was thusly the requirement for holding the educators to utilize PCs in showing diverse subjects in optional schools. The discoveries on this issue not very many 55% had not gone to any in-benefit courses.¹⁸ An examination discovered that a lot of educators had not gone to any in administration preparing on customary subjects. It is critical that all instructors ought to be re-prepared in any educational programs advancement. Such staff advancement courses contribute a lot to teacher's proficient improvement. Re-preparing program for educators likewise empowers them to increase down to earth thoughts regarding utilizing PCs in the classroom. Instructors ought to likewise be prepared in the structure of bundles to improve it for understudies.¹⁹

CONCLUSION

This examination was directed to see whether science instructors utilize PCs in educating/learning. The target of the investigation was to give proof that science instructors incorporated PCs into educating and learning science. The discoveries shown that a lot of science instructor had not integrated computers into teaching and learning science subjects. However, the majority of them valued the use of computers in learning science and inform students to look for relevant science topics as they carry out computer literacy study.

The study further established that students learn science subjects. A male biology teacher from rural school reported that computer increases student's knowledge of how cancer spread in the body. Despite the value of using computers in science education the study established that very few teachers were trained in computer skills. The study recommends that science teachers should be trained on the skills required to integrate science subjects into the teaching of science subjects.

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