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DIGITAL TECHNOLOGY ON EDUCATION

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ABSTRACT

Traditionally education is focused on sources, for example, schools, Teachers and print media. The students arrived at the data sources by enlisting with schools, Teachers and libraries. Before the advanced period, data was not open by most of individuals, and even those got to couldn't acquire current data as for the present setting. The cutting edge society needs to know the data as it occurs and when it occurs, and the world is moving from a data society to an information society. Along these lines training is given the most elevated need and intellectual prowess is turning into the most significant resource of an association. Advances in computerized innovation have opened up numerous roads of learning. Innovation has made data open/transmittable from anyplace and by all gatherings of individuals. Training has arrived at most pieces of the world and ICT has become a basic piece of human life. This paper depicts the procedure of age, creation and obtaining of information through the innovation. The utilization of ICT to oversee and sort out unequivocal information is featured. The paper additionally portrays how innovation is utilized to access and apply such information. The paper relates how these innovations have been utilized in education and its effect as a rule.

1. Introduction

Traditional education

In Sri Lankan setting, formal training was traditionally fixated on schools and pirivenas at town level while non-formal education was focused in libraries at focal places as papers and books. Teachers conveyed the conventional training

either following a reading material or notes arranged utilizing books and their encounters. The students enlisted and visited the spots that offered proper education. The libraries offered strengthening perusing material to improve their learning just as reference offices.

An educator must be accomplished and proficient to have the option to instruct others. Additionally they need to obtain the aptitudes of holding understudy's consideration and convey content in a successful manner. In this manner educating is a significant calling and individuals regarded them as they guided and helped the students to be valuable residents of the nation. Because of the regard earned by the general public showing was one of the social help exercises. Additionally most exercises individuals at that point used to do were focused at town level and instructing too was done at towns where little populaces used to live.

With develop of modern and business urban communities individuals have moved out of towns to these urban areas for different types of work. At the point when the populace expanded the interest for adapting additionally[1]–[3] goes up and along these lines the conventional schools or pirivenas couldn't adapt to the interest. In this manner new schools must be made and existing schools must be extended, and new Teachers were required to convey training. To satisfy the need unpracticed, under qualified and under prepared faculty were utilized and subsequently the calling has transformed from a social support of a business. Business is represented by compensation and when it is bring down the able individuals will in general look for other work offering higher compensations. Past governments utilized this part as a business creation area in this manner contributing towards the crumbling of the segment. Electronic and Digital Era- Electronic time started with the utilization of remote electronic correspondence more than 100 years prior. Transmitting broadcast messages and the radio are among the significant uses of this innovation. The messages were gone through the air, imperceptibly, on radio waves. From that point forward the innovation use has moved from radio, to accounts, to motion pictures, to TV, to PCs, to CDs, CD ROMs and the Internet.

This innovation was exceptionally valuable to pass on moment pressing messages and well as to cause individuals to know current nearby and universal news. This has become a casual however successful type of education.

The change of simple signs to advance developed another innovation that was fit for killing transmission mistakes and playing out a similar assignment some productively. Computerized innovation has been around for more than 50 years with the wide utilization of the innovation for PCs and other electronic hardware. Since mid-1960s instructors and PC researcher started utilizing PCs for educating purposes. At first it was utilized as perusing and composing content to give directions of how to utilize the PC because of its low-level association with clients and later to take care of some tedious issues. Anyway with the creation of moderate microcomputers and the mix of content, illustrations and shading there was a fast spread of PCs in business, instructive foundations and homes.

PCs originally came to Sri Lanka in the late 1960's and around a similar time registering was acquainted with the educational plan of University of Colombo. Finding out about PCs developed from seeing how PC functions, to programming it to perform explicit assignments, to utilization of it to perform every day exercises.

PCs likewise developed from control of content and numbers to cooperation through content, designs, voice and pointing gadgets. The capacity to organize numerous PCs to share data and assets was another progression forward. With every one of these advances there has been a consistent and sensational reduction in cost of a PC. Alongside these courseware and better joining of content, illustrations and shading showed up making education material progressively successful[3]–[5].

Graphical force and utilization of mouse on a standard with console had the most effect regarding drawing in laypeople to utilize PCs. The development of the Internet from a little gathering of scholastics and government authorities trading printed material into an overall asset, with a large number of individuals utilizing it for assorted exercises, for example, shopping, banking, investigating, discussions, trading and sharing data, access to computerized libraries and obviously e-learning have just had an effect to the general public. This has and will change all that all do.

2. Supporting Technologies And Applications

There are various innovation parts accessible to assembled information the executives systems. Neighborhood, Internet and Intranets are the spines. They give straightforward rapid exchange of information among individuals and applications. Web applications fabricated utilizing programming and devices permit shared insightful access to information. Suitable access and validation layers guarantee the security part of such systems. Information and record bases go about as the vaults to create the information.

Organization of Explicit Knowledge:

Organization and overseeing unequivocal information incorporates age, creation or obtaining of information. Such exercises could be performed through instruments, for example, RDBMS and EDMS.

RDBMS- One of the most normally utilized apparatuses to oversee data is a social database the board system (RDBMS). RDBMS have been utilized by IT applications to oversee operational information. A similar innovation is presently been utilized for information the board. RDBMS generally oversaw content and crude information types, for example, numbers and date. Information must be spoken to utilizing past the conventional information types, for example, character strings and numbers. In this way different types of portrayals, for example, pictures and recordings are required.

Interactive media databases have immersed to oversee such information. Operational information of instructive administration system are overseen utilizing this innovation. Understudy enrollment information, assessment results and their exhibitions are recorded utilizing understudy data systems. In Sri Lanka utilization of such systems is limited to a bunch and they also don't

completely abuse the offices on offer. As a rule just barely any promotion sell exercises including a bunch of representatives are performed utilizing innovation. Absence of competent and eagerness representatives at operational level have hampered the utilization of data systems for day by day exercises. Additionally the powerlessness to take fundamental activities at the administration level has contributed towards this fallback[6]–[8].

EDMS- Electronic Document Management System (EDMS) is a quickly creating innovation and is considered as the answer for associations that needs an approach to deal with the data proficiently. EDMS applications center on the control of electronic reports all through as long as they can remember cycle, from creation to possible chronicling. Its capacities incorporate report creation, stockpiling and recovery, the board, rendition control, work process and different conveyance positions.

EDMS permits dealing with the documentation of a whole procedure. Concerning training this assignment is accomplished through an upgraded and increasingly powerful procedure called e-learning. Albeit some association in Sri Lanka utilizes systems for their everyday exercises, most are not taking a gander at these conceivable outcomes. While considering instructive foundations in Sri Lanka the utilization of e-learning has been around throughout the previous two years. The BIT outer degree program of University of Colombo School of Computing (UCSC) has permitted private organizations to open their understudies to e-learning.

Media for Explicit Knowledge:

Explicit information could be spoken to utilizing various media. Content, designs, liveliness, sound and video are the media to speak to them. Dissimilar to the customary media in types of books data put away carefully can be saved with no types of twisting and they can be gotten too effectively and rapidly from any piece of the world.

Text- Text is one of the best segments of speaking to information. The words exemplified as content, pass on a ground-breaking message and this has been generally utilized in written by hand and print media. Most information and data is spoken to thereby. It is difficult to pass on an unambiguous message without content. To pass on a message adequately the message ought to be explicit, distinct, concrete and exact. Determination of appropriate text styles and size is significant for intelligibility and stylish impacts. Learning is concerned, summed up content is utilized to recognize the significant focuses and point by point depictions are for clarifications and resulting valuable perusing.

Graphics- Text and illustrations are the fundamental segments of interactive media systems. Content without designs will neglect to hold individual's consideration just as long haul maintenance. Bitmaps (paint) designs and vector (draw) illustrations are two essential types of still designs. Each type has its own attributes and fulfills various requirements. Bitmaps stores the illustrations as observed on screen while vector designs stores the guidelines of how the designs is made.

Shading is a significant segment of an image. Anyway while delivering illustrations hues ought to be picked cautiously to guarantee viable and satisfying showcases. Natural eye respond to light power and to the three hues red, green and blue. Like on account of textual styles and sizes of content, the decision of shading creation has prompt stylish effect.

Animation- adds effect on an introduction. Dissimilar to content and designs these are dynamic time based media. The visual effect of movement is to bridle the learning procedure. Activities as a rule take structures like moving an item over the screen, client controlled development of an article, bitmap flipping and full liveliness documents. Composing devices are utilized to make such articles.

Sound- All types of verbal correspondence utilize sound. Innovation has been utilized to transmit sound over the universe. Instructor's voice has been the essential concentration in conveying information. Sound could be spoken to utilizing PCs, and MIDI (Musical Instrument Digital Interface) and computerized sound are the two essential document types utilized in mixed media systems. A mixed media system requires the utilization of discourse, music or extraordinary audio cues. At the point when utilized for education, discourse ought to be short, sensible and coordinated with other media. It ought to be utilized as a corresponding to content[7]–[9].

Video- consumes the most plate space and data transfer capacity when utilized over the system. Consequently video can be incorporated with other media just through utilization of altered divided video cuts each passing on a particular message.

Accessing Explicit Knowledge:

RDBMS and EDMS deal with the express information. They are gotten to utilizing different advances, for example, Internet, Intranet, Search Engines and work process apparatuses.

Internet- Internet gives a financially savvy worldwide system spine. It interfaces clients from anyplace, as long as they approach the web. This has permitted clients to have data on their PCs and make them accessible for other people. Such PCs should be devoted for that reason as clients will be looking for data at changed occasions. These locales are called sites and they are associated with the web on 7x24. This innovation expects to give unhindered access to data. An instructive organization will distribute all data pertinent to general society through their sites. This innovation has made data available as it occurs and individuals get to them whenever they need to do as such.

Intranet- Intranet is utilized distinctly inside an association, along these lines confine access to data from outside the association. The fitting safety efforts (for example firewalls) executes such prerequisites. These sites permit representatives and approved clients to get to data while shielding the equivalent from others. This innovation is utilized to share private data inside an association. Instructors and directors could screen the general status of an understudy and consequently take fitting activities instantly. Instructors can likewise make their learning material and activities accessible through them.

Some E-learning systems runs on these systems with login accounts made for its clients.

Search Engines- Search Engines are exceptionally compelling integral assets that permit content based data recovery. Online web search tools convey various kinds of route systems. Meta looking, various leveled looking, trait looking and substance looking are among them. This office is presently generally utilized by most clients of the Internet[10]–[13]. This has helped scientists, Teachers and understudies to arrive at the necessary data and gain the information.

Workflow- Tools permit records and different types of data to be directed among people and applications as per predefined forms. Work process apparatuses permit setting up the work process condition as far as clients, kinds of data, forms, timing imperatives and options. These instruments are utilized in certain associations, yet not yet abused by the education division. Instructors could utilize these apparatuses to viably speak with their understudies. People see E-learning systems bit by bit joining a portion of these attributes.

Using Explicit Knowledge:

The unequivocal information that was gotten to ought to have the option to utilize adequately. For this it is important to guarantee that the data assembled is introduced in a valuable way. Instruments, for example, Decision Support Systems (DSS), information mining and information warehousing are accessible for such purposes. These apparatuses are simply lying around for use by most clients and education part is no special case.

Decision Support System (DSS) - DSS are programming items that change operational information into helpful data, for example, factual models and pattern investigation for utilized by the administration for dynamic. They sum up inside and outer information into diagrams, outlines and basic reports.

Data Mining- Data mining is a procedure to find new information from existing databases. Here, advanced information looking through methods and measurable calculations are utilized to find examples and connections in huge amounts of information.

Data Warehousing- Many associations have a few databases existing inside their association. An information distribution center endeavors to bind together every one of these databases. The innovation totals the information from various databases and cleans the information during the time spent endeavoring to expand the amount of the information. Compelling information mining could then be performed. The paper in portrayed one such an endeavor as for the education division in Sri Lanka.

Sharing Knowledge:

Knowledge sharing is done among a system of individuals. Correspondence among individuals should be possible through paper mail, fax and phone. Anyway these strategies are coordinated and less powerful across land limits. IT gives increasingly compelling arrangements using email, video conferencing, virtual gathering, and record coordinated effort. Consolidated utilization of information sharing strategies will permit contacting them past

land limits and performing organizations and administrations all the more adequately.

E-mail- E-mail permits sharing information non-concurrently. An individual could impart information to a network by making an impression on a gathering of individuals. Dissemination list dispense with the requirement for everybody to recollect the names of the network and furthermore guarantee everybody gets the message. Making understudy gatherings, Teachers and well as understudies share information and this is rehearsed somewhat in Sri Lanka too. At UCSC people use dissemination records to speak with present and past understudies.

Video Conferencing- Telephone permitted voice correspondence among removed staff. This has developed not exclusively to see a live video of the individual yet in addition to interface with various individuals. Despite the fact that the innovation is exorbitant it is been utilized for planned gatherings including individuals globally. Colleges having grounds spread over a bigger land areas have their workforce[1], [3], [4] conferences through such innovation. This spares travel time of person. In the event that the time spared and it is utilized successfully the association and society will profit over the long haul.

A few colleges utilize this innovation for instructing also. Understudies pose inquiries by presenting them on the educator utilizing the innovation. Such systems require every understudy to have their individual PC with the capacity get and communicate with the system. People saw utilization of such innovation at the Multimedia University in Malaysia. In spite of the fact that the office to utilize video conferencing is accessible among colleges, for example, Colombo, Moratuwa, Peradeniya and Ruhuna it is yet to be utilized on customary premise. Notwithstanding, numerous occasions including these colleges and well as some nearby and abroad foundations have just utilized this office. Video conferencing offices are likewise accessible in different places, for example, removed learning community.

Virtual Meeting- Virtual gatherings permit individuals from various areas interface with one another to direct gatherings and offer information as though everybody were in a similar room. Applications, for example, introduction designs, spreadsheets and word handling can be partaken progressively. Such exercises are being utilized in Sri Lanka and its degree shifts among clients.

Stock trade has reached past Colombo because of utilization of innovation and the equivalent is required for training. People see numerous understudies from Galle, Kandy, Kegalle, Kurunegala, Ratnapura areas coming to Colombo on regular schedule looking for good education. Such needs could be diminished if comparable offices could be made accessible in these areas. Great asset faculty are hesitant to go out of Colombo because of the long travel hours. In any case if through Vishwa Grame Kendra venture access to innovation is made accessible individuals from Colombo could contact them remotely and nation will profit over the long haul. Authorities from open administrations including education, travel to Colombo for ordinary gatherings.

Arranged sorted out virtual gatherings could spare time and exertion of these individuals. Instructive Institutions made to convey information still can't seem to embrace innovation for this reason. Colleges, specialized education habitats should utilize them on standard premise. In created nations PCs has become an everyday device like a radio and a TV. Anyway creating nations, for example, Sri Lanka are route behind so as to give the necessary innovation, as the foundation doesn't bolster a reasonable arrangement past the city of Colombo.

Document Collaboration- Document joint effort lets colleagues' work along with numerous different members with reports or data progressively. Everybody can oversee and utilize data progressively.

Reports in digitized structure can be transmitted to a remote spot in the specific structure and duplicated any number of times. Computerized data prompts enormous sparing of space, time and upkeep, while giving simple access, stockpiling, the executives and recovery of data. Odds of non-accessibility, losing or losing of reports is uncommon and records that fall under this classification are available significantly after numerous long periods of separation.

The individuals who use innovation have had the option to diminish their printing and postal expense significantly. At UCSC people no longer post notification and application structures to our outer understudies. They get to/download them whenever they need[5], [7].

3. Changes Taken Placed

Availability of huge measure of data on the web has given access to a wide range of learning material. The educator's talk notes are not, at this point the essential focal point of a learning procedure, and the instructor's job and the understudy's learning procedure is evolving.

Paradigm Shift:

Paradigm moves in this day and age have distinguished the Machine/Industrial time being supplanted by Technology/Information period. Also creation process has moved from Products to Knowledge, Workplace has moved from Physical to Virtual and its center has changed from Worker to Customer.

As far as education this implies people ought to make Knowledge that is available essentially with the emphasis on the understudy. Virtual access is accomplished through Internet/Intranets. Strategies, for example, email, web sees, conversation discussions and video conferencing permit an understudy to get to data without visiting the physical area of conveyance. A run of the mill intelligent e-learning system will have these attributes and consequently exhibits the change in perspective.

Classroom Level:

Use of innovation at homeroom level was impractical until the Teachers conveyance systems were supported with innovation. Initially conveyance system was through verbal correspondence and afterward through the presentation of composed media, for example, chalkboards. Later through overhead projectors Teachers had the option to do the writing ahead of time and task them legitimately. Utilization of overhead transparencies permitted

them to reuse composed material yet without improving them. With the creation of projection through a PC, an instructor can without much of a stretch update his material too. A similar material can likewise be printed and the understudies can get it without replicating them. This innovation has now advanced not exclusively to extend content, yet additionally movements, video cuts and so on. Subsequently the Teachers are currently furnished with instruments to instruct viably. Table 1 summarizes these options.

Table 1: Classroom Facilities.

Method	Teacher	Student
Verbal explanations	Dictate	Listen and copy
Writing during class	Blackboard / whiteboard & Chalk / Pen	Copy notes
Pre-written transparencies	Overhead Projector	Copy notes
Pre-prepared slides	Multimedia projector & computer	Printed material
e-learning	Provide learning material	Learn through participation

Teacher's Role- In the cutting edge worldwide taking in condition instructor's job shifts from "distributor of data" to "facilitator of learning" as he has just to control the dynamic understudies who are engaged with utilizing the e-learning material. Homerooms have been completely outfitted with lasting interactive media projectors and PCs and the facilitator needs to get to the e-learning system through the Intranet. Teachers ought not to control the learning procedure just as they ought to permit understudies to perform collective work and settle on certain choices all alone.

The progressions that are occurring in educating and learning were examined in with the guide of two contextual investigations. The key advancements and practices of e-learning at University of Western Sydney were featured there and it was contrasted and the exercises of the outside degrees program at UCSC.

Student's Role- Some study halls are outfitted with PC access to all understudies. In such cases understudies intuitively partake in the learning procedure. Presently the understudy's emphasis is absolutely on the learning procedure than on duplicating note as the learning material can be gotten to at a future time. Instructors ought to guarantee that information and abilities are not

introduced to understudies legitimately, however are developed by them in light of data and learning assignments.

Teachers need to consider how these learning encounters could be urging to understudies who are playing out this kind of mental work. Therefore understudy who used to learn realities and abilities by retaining the substance introduced by Teachers and media assets should move towards making individual information by following up on content gave by instructors, media assets, and individual encounters. The attention ought to be on securing higher request abilities like critical thinking and basic reasoning.

Curriculum Characteristics- In request to change the educator's and understudy's job the educational plan likewise should be overhauled. Conventional educational plan would concentrate on divided information and disciplinary partition. But at this point people should concentrate on multidisciplinary topics as group of people yet to come will require the capacity to travel through a few distinct employments. In this way foundation of fundamental proficiency and concentrating vigorously on work explicit abilities is futile, as one needs to change employments or oversee numerous occupations without anyone else. Along these lines it is critical to stress on deduction aptitudes, information joining and application. Profundity of understanding will be required than breath of information.

Assessments- With changes to the learning procedure the evaluation strategies ought to likewise change. Rather than estimating an understudy on certainty information and discrete aptitudes, evaluations should concentrate on utilization of information. This will permit testing of critical thinking aptitudes of an understudy. Understudies ought to likewise be offered assignments to exhibit comprehension and innovativeness.

Language Barriers:

Most Sri Lankan student's first language isn't English. Subsequently some think that its troublesome handle the ideas through perusing. Consequently there is a requirement for strengthening material in local dialects. This could be bolstered through Unicode. Picking up figuring has now been presented at schools too. At present it is focused on just at cutting edge level understudies. Anyway with time this office ought to be accessible for understudies at the normal level like in the western nations.

Society:

Using PCs for open administrations is progressively wide spreading. Despite the fact that these advantages are as of now delighted in by a little portion of the populace the accessibility will urge others to join and appreciate the advantages of innovation.

For instance, a few banks have moved towards giving the greater part of their administrations through the web. This incorporates dealing with their records, putting in standing requests and settlement of bills. This permits the client to make a virtual visit to his bank at whenever he wish and acquire the necessary help. Different administrations, for example, pulling back money, keeping checks and so on should be possible through the teller machines which are likewise available at whenever.

Remote neighborhood permit clients to get to shared data without searching for a spot to connect their workstations. This innovation is being made accessible in some open spots and associations. Instructive focuses, for example, Universities and Libraries ought to have such offices, as group of people yet to come will convey versatile hardware to get to offices. Data clients currently convey their workstations, PDA, advanced mobile phones, CDs, thumb drives with them for quick and exact access to their everyday material. An open library is an information place. To offer types of assistance through innovation it ought to permit individuals to see accessible books, however ought to likewise permit survey of substance pages and modified works. On account of research papers the office to download papers, diaries and theory is given. Client should likewise have an office to communicate with the administrator, recommend obtainments, connect with distributors, and get changes on extraordinary books, late charges and assortment of books held.

Infrastructure Facilities:

Teachers face with the issue of value when they consider acquainting innovation with learn. To build up a nation and furnish everyone equivalent offices is unimaginable with the current free education system and the strategy execution processors. Attempting to take care of the value issue and present innovation at study hall level will bring about the nation moving in reverse contrasted with others just as empower relocation as individuals are continually searching for better learning chances and expectations for everyday comforts.

Each understudy must have PC access to effectively execute above thoughts. Along these lines understudy to PC proportion must increment. It is suggested that all education organizations must have PCs with a base proportion of 1:5 with those showing figuring with a base proportion of 1:3. All Teachers must be furnished with boundless PC get to so they could set up their instructive material.

Word preparing is the most habitually revealed application. The most much of the time referenced classifications of utilization are word preparing, Internet research, and CD-ROM look into. In this manner the level of schools with Internet get to should be raised and at last all clients ought to approach the Internet. Lower Internet data transfer capacity and high use cost is a bottleneck. The training system has been creating graduates with no presentation to PCs. At the point when these alumni take encouraging assignments they are not prepared to utilize innovation for training. Innovation and instructive changes must be finished mulling over these.

4. Conclusion

Over the most recent five years PCs have been acquainted with most instructive foundations despite the fact that its proportion to an understudy is exceptionally high. By making the teachers mindful of the accessible innovation and some taking activities to actualize them, a few types of changes may happen. Whatever Sri Lanka do with deference innovation prerequisites the world will be overflowed with data and a few people will utilize them successfully. They would be the individuals who have built up their aptitudes

to the degree of discovering issue applicable data and deciphering and applying them in taking care of issues.

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