

Role of Information Technology in Distance Education

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Abstract – *There is a crucial part of data specialized particularly data and correspondence advancements in separation instruction during this extreme time of the world COVID-19. It is satisfying the prerequisites of the huge size of students which is preposterous by utilizing customary strategy for instructing. This innovation has different tried apparatuses and advancements to meet the prerequisites of understudies. Its instruments are useful in all periods of the learning cycle like affirmation stage, learning stage, assessment stage just as the accreditation stage. It makes the usage of every one of these stages smooth and advantageous. Anyway because of various kinds of prerequisites in the open and separation learning, there are a few difficulties to be taken in the execution of devices accessible in the field of data innovation. This paper presents issues identified with the product, equipment and organization administrations. It likewise presents security issues identified with credibility, accessibility, secrecy and access control techniques for online administrations.*

Keywords – *Distance Education, Information and Communication Technology, Security, Access Control, Confidentiality, Network Services*

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1. INTRODUCTION:

One of the principle issue with the separation training is that the number is students is enormous and they are far off to the organization. So it gets hard for understudy to go to the organization consistently to get backing and administrations. Thus it additionally turns out to be hard for the establishment to offer types of assistance and backing to understudies at various periods of learning because of predetermined number of labor just as distant area of understudy. So the part of data innovation devices turns out to be exceptionally basic for both understudies just as establishment.

The term data and correspondence innovation can be characterized as an assortment of advancements identified with give usage of far off administrations. So it very well may be utilized in offering help and administrations to the far off understudies of separation learning. During the affirmation stage it tends to be utilized to give course subtleties, different expense structure, enlistment just as confirmation system to understudies. Essentially during the learning stage it very well may be utilized to give office of talks utilizing video conferencing, online courses, mixed media introductions, sound and video programs and so forth. Also, during assessment stage it very well may be utilized to give assessment plan, inner evaluation, outer appraisal, online assessment, valuation, revaluation and result distribution. So also during the accreditation stage

these devices can be utilized for endorsement printing just as giving assembly plan.

If there should be an occurrence of conventional learning framework, understudies can cooperate with one another up close and personal. However, if there should arise an occurrence of separation instruction this sort of communication is unimaginable. So while actualizing instruments of data advances for separation training, the association cycle between understudies ought to be made simple and smooth so the information sharing among understudies should be possible in helpful manner.

2. DISTANCE EDUCATION INFRASTRUCTURE IN INFORMATION TECHNOLOGY:

Separation training framework requires data innovations foundation to offer various types of assistance easily at various degrees of a student life cycle. It incorporates the processing framework, the organization foundation, different programming, the Internet

Administration Provider (ISP), a decent transfer speed, the arrangement structure and the security framework.

2.1. The organization framework:

The University or organization, that gives training in separation mode requires an organized organization at all its branches like central command, the territorial and study focuses interconnected each other through so that all understudy related administrations can be gotten to easily by all branches, understudies and other staff. The organization will incorporate different organization segments that are utilized at entryway and different pieces of the organized organization. The standard organization parts, for example, the organization switches, the switch, the link (optical fiber), Wireless availability (Wifi) ought to likewise be utilized.

2.2. Fundamental registering foundation:

The figuring framework incorporate different PC equipment, for example, servers(web workers, information base workers, ftp workers, mail workers, reinforcement workers just as application workers) to have distinctive understudy learning and backing administrations. It likewise incorporates PCs (PC, work area, note pad, tablets) to get to and use administrations.

2.3. Framework and application programming foundation:

The application and framework programming is needed to create programming for various understudy learning and backing offices that are required at various periods of understudy learning life cycle. The product is the fundamental part in separation instruction by which different help administrations will be given to students in huge scope. The current Web innovations backing to create online programming for different administrations that can be gotten to anyplace and any time. Different web innovations can be classified as LAMP(Linux, Apache, MySQL and PHP) and WAMP(Windows, Apache, MySQL and PHP). Part of learning the board systems(LMS) are accessible in the market. MOODLE is one of the most famous LMS. LMS is a finished programming framework that covers various periods of an understudy learning life cycle.

2.4. Function of web access provider (ISP):

Web data transmission is the essential necessity to get to online understudy learning and backing administrations. The measure of transmission capacity required for getting to these administrations is straightforwardly relative to the quantity of clients, who access the administrations. It is one of the boundaries to get to an assistance effectively with no time. The openness of a help relies upon the accessibility of web data transmission held for a specific organization, where administration is facilitated. The web access supplier is an

organization who gives web transmission capacity. In India,

2.5. The security concerns:

Security framework is predominantly needed to ensure the individual and workers PCs, application and framework programming and the information that are being utilized in an organization, where understudy learning and backing administrations are made accessible in separation instruction framework. Security foundation improve the security of the entire framework and are planned to check security assaults. The entryway PC of frameworks ought to be ensured with security gadgets. The ordinarily utilized security gadgets are the firewall, interruption anticipation system(IPS), interruption location system(IDS), the antivirus programming and other related frameworks. Security for an assistance ought to be guaranteed by ensuring its organization framework where administration is running, its framework space on which the administration is facilitated and the application itself. Each security gadget ought to be designed appropriately with access controls.

2.6. The arrangement report:

Strategy records are utilized to cover different approaches that are to be authorized in an organization where understudy learning and backing administrations are made accessible in a separation instruction framework. The strategies are ordered to conduct approaches, operational arrangements, admittance to assets, for example, framework, administration and organization, security arrangements, control arrangements and authoritative approaches. The arrangement record is kept up dependent on need and deed of the establishment. The approach record is a lot of supportive in setting up the data innovation framework appropriately and to execute access control component.

3. DATA INFRASTRUCTURE TECHNOLOGY CHALLENGING ISSUES:

Data advancements is assuming a prime part in supporting various administrations in separation training in huge scope and at the same time there are a few issues and difficulties in setting up and utilizing its framework. Different issues and difficulties have been talked about underneath:

3.1. Application programming similarity:

Instruments of data innovation are changing much oftentimes, however it is exceptionally troublesome each an ideal opportunity to create application programming for various administrations utilizing these innovation. New

innovation has consistently adaptable highlights that are required in separation instruction framework to fulfill the needs of understudies in enormous scope, however it is actually a provoking assignment to pick flawless programming and equipment that have similarity with existing arrangement of utilizations. Application similarity regarding equipment and programming can be accomplished by putting stage free devices.

3.2. Versatility issues:

Separation instruction is more adaptable training framework as contrasted and customary instruction framework. Because of this, the quantity of conceded understudy is enormous and at same time desires from understudy is likewise exceptionally high. As understudy are more in scale just as distant to the organization, the greater part of the exercises are being performed distantly utilizing on the web administrations gave by the establishment. Since, the understudies and their exercises are expanding exceptionally quick, an ideal opportunity to time, so it is a provoking issue to keep up consistently adaptable assets as far as memory, cycles and exchanges. This issue can be tended to by adjusting the heap at framework level, network level, administration level and information capacity level.

3.3. Information support:

Because of progress in the idea of information base innovation, it has gotten hard to guarantee information similarity. On the off chance that the old information design is contradictory with new data set arrangement, it turns out to be hard to access and use information through programming applications. Information similarity issue can be settled by empowering information relocation measure in different stages occasionally so the information stays viable with new information base innovation for use.

3.4. Web data transmission allotment:

Web data transmission dynamic allotment to a specific help is a difficult assignment. An assistance can be gotten to appropriately just with the great web transmission capacity. Since assignment of web data transmission to a particular help is straightforwardly corresponding to the volume of utilization of that administration, there is consistently a need of legitimate allotment of web transfer speed time to time to that administration. This issue can be settled by presenting transfer speed the board and burden adjusting framework to guarantee accessibility of an assistance. Since online administrations are required part in separation instruction, it is a great idea to have more than one specialist organization so the accessibility of an assistance can be guaranteed constantly.

3.5. Strategy refreshes:

Because of adaptable nature of separation training, there will be customary changes in confirmation measures, assessment framework and learning technique just as arrangements related in like manner. Since there is a regular change in embraced arrangements, it turns into a troublesome undertaking to keep up the strategies refreshed without fail. In any case if strategy change has not been done in time, it might prompt numerous other operational issues. This circumstance can be handled by embracing dynamic arrangement updation and authorization approach in separation training framework.

3.6. Organization network:

In separation instruction framework, understudies are distant to the organization and getting administrations through one of its branches like base camp, territorial or study focuses is a troublesome undertaking. It is a troublesome errand to have appropriate organization availability among different branches to give and access benefits because of a few reasons. This issue can be tackled by keeping up committed organization availability among different branches in type of intranet by utilizing the idea of VPN (Virtual Private Network).

3.7. Emotionally supportive network:

In separation instruction framework, understudies are away from the foundation from numerous points of view and need different help administrations to play out their exercises. Since separation training is an adaptable framework, the operational arrangements should be changed routinely and is hard to give refreshed help benefits in time because of different reasons. This issue can be fixed by including all related work force at the hour of beginning of a movement so its effect can be examined.

3.8. HR the board:

Since data innovation is changing habitually occasionally thus it turns out to be troublesome assignment to have talented labor acquainted with change in innovation. It is too hard to even think about having such labor in government associations. This issue can be tackled by presenting preparing projects and guiding meetings every once in a while and furthermore to give workshops on late innovation occasionally.

4. DISTANCE EDUCATION SECURITY CONCERNS:

In separation instruction framework, a few internet learning and backing administrations are accessible to its understudies. Since use of

administrations is expanding as often as possible, so at the same time programmers are assuming an indispensable part to deny the administration to understudies. So security instrument gets fundamental to shield the assets from assailants and furthermore to ensure the touchy data.

Programmers by and large take advantage of different security disadvantages in an organization administration, facilitating framework and endeavor the weakness to get to the framework. Following is the rundown of different security worries through which an assault can assume a job:

- Lack of arrangement of worker
- Bugs in programming parts
- Lack of organization security framework
- Passwords which can be effortlessly speculated
- Incorrect programming of use programming
- Lack of operational control
- Social designing

Security of information or administration or framework can be guaranteed by ensuring the touchy assets at organization, framework and the application/administration spaces. A portion of the security boundaries are confirmation, classification, accessibility, access control, uprightness and non-disavowal.

Infringement in any of the boundary may prompt a break in security. Coming up next is the rundown of a portion of the arrangements to be confined and executed for safe separation working of data innovation framework in open separation instruction framework:

- Application programming strategy
- Hosting security strategy
- Network security strategy
- Content administration strategy
- Data reinforcement strategy
- Encryption strategy
- DBMS security
- Hardware security strategy
- Password stockpiling strategy
- Web worker log document strategy

- Audit and information recuperation strategy

CONCLUSION

It is actually obvious that the data innovation devices are assuming significant part in the usage of separation instruction framework and yet there exists parcel of difficulties and issues that must be tended to for smooth working of various online help and administrations to be given to the understudies. This paper examines all the necessary data innovation foundation to be gained by an organization associated with directing separation training. It additionally talks about various difficulties and issues in utilizing and setting up of data innovation devices if there should be an occurrence of separation instruction framework. Any foundation keen on giving separation instruction framework or presently giving separation training framework should deal with these apparatuses just as should avoid potential risk with an appropriate activity plan as depicted in this paper.

REFERENCES

- [1] Sangay Jamtsho (2005). 'Challenges of ICT use for distance learning support in Bhutan, ICDE International conference', New Delhi.
- [2] Bernadette Robinson (2008). 'Using distance education and ICT to improve access, equity and the quality in rural teachers' professional development in western China', International Review of Research in Open and Distance Learning, Volume 9, Number 1, China.
- [3] A. Murali M Rao (2010). 'Digital Library Security: A Layered Approach', Proceedings of International Conference on Digital Libraries (ICDL 2010), Volume 2, New Delhi, pp. 1167-1171.
- [4] A. Murali M Rao (2009). 'Web-enabled User Support Services System in Distance Learning', Proceedings of International Conference on Interaction Sciences: Information Technology, Culture and Human (ICIS 2009), The ACM International Conference Proceeding, Vol. I, ISBN 978-1-60558-710-3, Seoul, Korea, pp. 86-90.
- [5] Bates, A. (2000). Teaching, Learning and the Impact of Multimedia Technologies. Educause Review. September – October.
- [6] Boaz, M. (1999). Effective Methods of Communication and Student Collaboration. In Teaching at a Distance: A Handbook for Instructors. League for

Innovations in the Community College,
Archipelago Productions, CA.

- [7] Beaudoin, M. F. (1990). The Instructor's Changing Role in Distance Education. The American Journal of Distance Education, 4 (2), pp. 21-29
- [8] Dolence, M. G. & Norris, D. m. (1995). Transforming Higher Education: A Vision for Learning in the 21st Century. Society for College and University Planning.
- [9] Garrison, D. R. (1997). Computer Conferencing; the Post Industrial Age of Distance Education. Open Learning 12 (20, pp. 3-11.
- [10] Harry, K (ed) (1999). Higher Education through Open and Distance Learning. London: Routledge
- [11] Keegan, D. (1996). Foundations of Distance Education (3rd ed.) London: Routledge.
- [12] World Bank (2000). Higher Education in Developing Countries. Peril and Promise. Washington D.C.: The World Bank.

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