Impact of *e-education* in raising the standards and challenges to protect IP in Uttar Pradesh

Jayanti Srivastava  
Asst. Professor  
Amity University Uttar Pradesh  
Lucknow

Syed Zainul Haque  
Student, MBA (2014-16)  
Amity University Uttar Pradesh  
Lucknow

Abstract:

**Purpose** –
The particular paper analyses the dynamics of *e-education* and its far-reaching impact in the coming era of *all-schools-broadband*, free *wi-fi* and complete digitalisation. To attain higher level of socio-economic satisfaction the quality of education at primary, secondary and higher level must focus on the electronic ends and means. This is, therefore, the paper would focus on the importance of protecting the intellectual capital/property and the flow of circulation and distribution pertaining to content and material in order to minimize the degeneration of education standards.

**Design/Approach** –
A thorough study of the Education system in Uttar Pradesh and the on-going efforts to transform traditional education to *e-education*. Secondary data is the main source of information and exploration.

**Expected Findings** -

Intellectual Property leads to growth in creativity and innovation and *e-education* becomes the main driver of development. Educational institutions at all levels bear this duty to contribute in making everybody aware of the intricacies Intellectual Property rights *viz-a-vize-education*. The proposed study expects to come out with an assessment of the outreach and promotion programs.
in the area of digital education and relevance of course materials for online and distance learning programs for maximum users.

There are several verticals of *e-education* where benefits could be drawn upon while creating, protecting, enforcing and commercializing intellectual property. *E-literacy, e-commerce, e-business*, strengthening and expansion of digital infrastructure and transforming education into *e-education* may be some of the important ones that could provide the digital environment in utilizing intellectual property in the best way. It would also be explored that students brought up via system of *e-education* would definitely be ready to face the challenges of competitive world and be employable at the global level.

**Limitations** – The intellectual property acquired via electronic delivery of service/education is vulnerable.

**Practical implications** –
This study would help all educationists and policy makers to better understand while framing and introducing number of digital educational policies to attain the optimum goal of making India digitally educated.

**Originality/value** – This study is our original work.

**Keywords** – *e-education, digitalisation, Intellectual Property, education standard, e-commerce*

**Paper type** – ARTICLE

**INTRODUCTION**

The enactment of Right to Education Act has all the good intentions of providing free and compulsory education to children of India. The very basic essence of the Act is to make education a fundamental right of every child of India. In this journey somewhere the focus of quality has been compromised and rather it came out as if schooling could be witnessed but
where was the learning. And a new debate started which brought all educationists together to brainstorm about the theory of “schooling without learning”. It is now realized that perhaps soon we might need to introduce Right to Quality Education Act.

As a matter of fact if India has to compete on global standards the pattern of conventional education has to give way to non-conventional pedagogy of providing education. In order to achieve the objectives of imparting quality education the States have to incorporate the changes that could synchronize the Center’s policy of making India “Digital” in the field of Education too.

GOVERNMENT’S INITIATIVE TO INTRODUCE E-EDUCATION

Education sector can be the biggest driver in achieving our aim of becoming super power in this century. The launch of Make in India and Digital India campaign has all the more instilled the right confidence amongst the youth. The government who aims to build the platform for education sector has projected about it in the Digital India campaign and also its plans to introduce the Right to Broadband. This right enables the toddlers to have the access to the technology from the tender age.

The project e-kranti who has numbers of widespread plans also incorporates the e-education plan as one of its pillars. The plan aims to connect all schools connected with broadband and free wifi in all schools. Digital Literacy program with the help of MOOCs (Massive Online Open Courses) is one of the forms. The idea behind this aims to improve is to improve the quality of education with the help of technology. The government having one of its foremost agendum as implementation of e-education is a sign of enhanced vision for the country.

EDUCATION IN UTTAR PRADESH

When we look at the states such as Uttar Pradesh we need to understand that a lot of areas need to be worked upon before getting the plan to execute efficiently. The Uttar Pradesh government has yet to show its interest level to execute in such a diverse state. With the election round the corner in the state the parties would is expected to line up with the national agenda and put the
same in their manifesto. The central government plan has clearly laid down the road map but it becomes imperative for the state governments to align the infrastructural requirements with it.

Illiteracy in UP is widespread not only among older age groups, but it is also prevalent among the young population. A large number of children either do not enter primary school or drop out before completing the five year cycle. The enrolment figures indicate great disparity between rural and urban, boys and girls and children who are not exposed to education via audio, video and internet.

For the attainment of the goal of universal elementary education “Education for All Project” gets additional financial assistance of external agencies. It is also being realized that in spite of the instructions issued by the Government for the effective implementation of internet and installation of computers at school level the expected results are not coming. What is needed is a deep analysis and review of the entire system of supervision. This aspect cannot be ignored.

**E-LEARNING DEVELOPMENTS**

E-learning can raise the level of education, literacy, employability and economic development. The adoption of e-learning in all the spheres of society is relatively low at present. E-learning in India is more successful in the corporate segment where it is seen as a means of achieving business goals and motivating employees. The government of India has always considered the use of information and communication technologies as means of mass education. For example the use of satellite started in early 1970s and has transformed to its present state in a dedicated satellite for education (EDUSAT). India is progressed in information technology sector, the first online education enterprise with private initiative, when the National Institute of Information Technology (NIIT limited) started Netvarsity in 1996. However, the National Association of Software and Services companies (NASSCOM)’s Market Intelligence Service Reports that e-learning is in an infant stage.

The e-learning came into existence from National Task Force on Information Technology and Software Development constituted by the Prime Minister of India in 1998. In 1999 the Indira Gandhi National Open University (IGNOU) started Virtual Campus Initiatives (VCI) with two programs –
a) The Bachelor of Information Technology (BIT)

b) Advanced Diploma in Information Technology (ADIT) in collaboration with Edexel, UK and the Government of India, Ministry of Information Technology.

The Yashwantrao Chavan Maharashtra Open University (YCMOU) used e-learning for its Electronics Engineering Diploma Programme (EEDP) in 2002. Tamil Virtual University established in 2000, to provide Internet-based resources for the Tamil Communities living in different parts of the globe and others those who are interested in learning Tamil. Indian Institute of Management, Bangalore (IIM-B) used e-learning to supplement face-to-face teaching. The University Grants Commission (UGC) organized a dialogue on “Enhancing Higher Education through E-learning” in collaboration with the Common Wealth of Learning (COL) Vancouver from 17-19, November 2003 at New Delhi.

**IMPACT OF E-EDUCATION IN RAISING THE STANDARDS OF EDUCATION**

At the first instance it appears that E-learning can increase retention or achievement and there could be limited relationship between e-learning use and the end-point outcomes in the schools as a whole. However e-learning does appear to be having a noticeable impact on some intermediate learner outcomes and on some aspects of teaching practice.

The teaching tasks where e-learning can be introduced would be largely affected where it amounts to effective planning, preparation and sharing materials. I could also be more effective in meeting learners’ needs, tracking progress or being more efficient.

This could be more effective at presenting work, usage patterns and also that e-learning would help in reinforcing the knowledge and developing understanding. The learning skills can have various dimensions due to e-learning.

Impact of e-learning on teaching is bound to be effective with the most common impacts being on planning, preparation and sharing materials with lesser effects on aspects of the teaching-learning interface and the smallest impacts on administration or efficiency. Teachers would be
able to prepare for teaching, through researching and creating materials, more effectively as a result of e-learning. The presentment of information in front of the class and in making course materials available to students due to e-learning use would definitely develop students’ understanding.

E-education can track learners’ progress in a better and faster way and it can save time too.

The students’ motivation increases because of e-learning use and becomes more effective in working in collaboration with their peers either inside or outside the classroom.

Use of e-learning also has a positive impact on some aspects of students’ ability to independently manage their own learning. Independent working can be a result of e-learning and students may better able to work at their own pace, finish home-work and contact teachers with queries.

Learning and teaching experiences can have different dynamics altogether as a result of e-learning. The level of retention and achievement would also be high with effect of visual impact.

Overall, the positive and proactive approach in deciding the role of e-learning could readily identify opportunities for using e-learning and an expectation is raised that e-learning would be used in the majority of schools. E-education may be regarded as complementing other aspects of teaching practice tools in providing more congenial environment for teachers and students both.

The students learning outcomes is the basic aim of right to education offered to children and e-learning can work as a catalyst with higher attainment and helpful in making the teachers’ effort meet the set target of education policy.

**NEED TO PROTECT E-MATERIAL THROUGH INTELLECTUAL PROPERTY RIGHTS**

Some precautionary measures are necessary to protect the e-material from abusive use. The major challenge in publicizing/implementing e-education in UP is fight against the data theft and piracy. Some of the proposed initiatives to protect the intellectual capital may include;

- Protecting IP rights by making it mandatory for including trademarks and its availability on limited portals.
The curriculum which gets developed needs to be addressing a common curriculum which can also be used across the nation without downloading option and have full encryption to have it confidential.

All the materials must be copyrighted from the national copyright office before making it public.

IP insurance policy that should also be done.

Letting people know that the content is protected - Many people assume that material on websites can be used freely. Viewers can be reminded of IP rights.

Use trademarks with the trademark symbol ®, TM, SM or equivalent symbols. Also a copyright notice (the symbol © or the word “Copyright” or abbreviation “Copr.”; the name of the copyright owner; and the year in which the work was first published to alert the public that your copyright material is protected.

Another option is to use watermarks that embed copyright information into the digital content itself. For example, a music file might be watermarked by using a few bits of some music samples to encode ownership information.

A time stamp may also be used. This is a label attached to digital content that demonstrates what the state of the content was at a given time. Digital time stamping is useful because it is otherwise simple to modify both the body of a digital document and the dates associated with it that are maintained by the operating system (e.g., the creation date and modification date).

Controlling access and use of website content - Technological protection measures to limit access to the works published on websites only to those visitors who accept certain conditions upon the use of the works and/or have paid for such use.

THE TECHNIQUES FOR BETTER PROTECTION

- Online agreements are frequently used to grant visitors only a limited license to use content available on or through your website.
- Encryption - Typically, software products, phonograms and audiovisual works may include encryption to safeguard them from unlicensed use. When a customer downloads a content file, a special software contacts a clearinghouse to
arrangepayment, decrypts the file, and assigns an individual “key” - such as a password – to the customer for viewing or listening to the content.

- Access control or conditional access systems. In its simplest form, such systems check the identity of the user, the identities of the content files, and the privileges (reading, altering, executing, etc.) that each user has for each file. Electronic content may be accessed in numerous ways. For example, a document might be viewable but not printable.

CAUSES OF SECURITY THREATS/RISKS

Various sources predict that the search frequency related to academic databases and Google Scholar online learning faces various security threats/risks which mainly come from external intruders.

To mitigate these risks it is not easy to identify the risks or the protection measures. Security threats in online learning can be examined from two aspects: the user side and the management side. As far as the user side is concerned, emerging ICT applications and imprudent human behavior are the main causes that lead to security issues in online learning. Besides, of the security risks inherent in the Internet, the development of new learning technologies such as Web 2.0 and social media have allowed for many new security breaches and a much larger security impact (Adams & Blandford, 2003; He, 2012). The amount of malicious content and the number of cyber-attacks on these new Web applications is rapidly increasing in both frequency and sophistication.

Other scholars analyze security issues from the standpoint of the user. For example, Adams and Blandford (2003) argue that threats to online learning security are caused by two main reasons: 1) The security mechanisms used in online learning programs lack usability; and/or 2) security discipline is not user-centered and therefore can lead the user to overlook serious security risks. They point out that the need-to-know principle (restricting information only to those who need to know) coupled with the unwillingness of security departments to know their users can cause a low usability of security mechanisms. Due to the lack of usability, many online learning systems
do not provide users with adequate feedback or with the control rights that would allow them to protect their data (Adams & Blandford, 2003). Furthermore, poor user-centered design of security mechanisms and policy can contribute to insecurity and to users’ low motivation to seek security (Adams & Sasse, 1999).

Weippl and Ebner (2008) indicate that even though almost all institutions have firewalls and anti-virus software to protect their campus resources, they often fail to perform adequate information system security management. Unfortunately, content and technology are still the focuses of online learning (Srivastava & Sinha, 2013). We feel that more attention should be put on the security aspect of online learning. In fact, security is very important for online learning because lacking security in online learning will cause a number of serious problems. For example, as Adams and Blandford (2003) point out, any security risk in online learning can dramatically affect students’ perception of reliability and trustworthiness about learning via the Internet. As such, online learning will be less attractive and the development of online learning will be hindered. In addition, ICT applications make user authentication a big challenge for student assessment in online learning. When assessing students’ asigments, as Alwi and Fan (2010) argue, it is very hard to verify whether an assignment is completed and/or submitted by a valid student. If student assessment is not conducted correctly, the quality of online learning will be harmed greatly.

SECURITY PROTECTION MEASURES

The security protections have to be studied from the users’ side and management’s side as well. From the user side, protection motivation theory (PMT), a theory originally from social psychology, is introduced into the field of information system security. Based on this theory, information is perceived and evaluated, and then provides supports for users to take actions (Crossler, 2010). This theory explains the cognitive mediating process and coping modes when users encounter information sources. The PMT theory is helpful for understanding security protection measures adopted by online learning users.
From the management’s side, general deterrence theory (GDT), a theory from criminal justice, is adopted by information system security scholars to explain how security countermeasures can increase the perceptions of members in an organization regarding the severity and certainty of punishment for any misuse of information (Straub, 1990).

Security policies and mechanisms in online learning must support authentication, authorization, confidentiality, and accountability (Cardenas & Sanchez, 2005; Agulla, Rifon, Castro, & Mateo, 2008). Authentication refers to the validation of a person’s identity before the access is assigned. Authorization defines what rights and services a person can access after the authentication process is passed. Confidentiality means that some specific information or data cannot be disclosed to anyone who is not authorized. Whereas accountability refers to the methodology by which users’ resource consumption information is collected for billing, auditing, and capacity-planning purposes (Song, Lee, & Nam, 2013).

To mitigate security threats and risks in online learning it can be proposed that information security management (ISM) for online learning providers in order to build an effective security architecture that can fight existing and emerging information security threats. The ISM should include policies, process, procedures, organizational structures, and software and hardware functions, in order to enhance the execution of security measures.

Five points could be highlighted as follows;

1) Authentication and accountability
2) Access control
3) Protection of communications
4) Non-repudiation issues
5) Learning resource provider server protection.
The information security professionals improve their security knowledge and skills by using the Virtual Training Environment (VTE), a web-based knowledge library.

**CONCLUSION – TRANSFORMATION OF SCHOOLS INTO SUCCESSFUL SCHOOLS**

The firm resolution of Hon’ble Prime Minister to transform education system has to be supported by all States and its executives. Uniting like-minded people of indomitable spirit and conviction things in the field of education are bound to navigate in a positive direction. Uttar Pradesh has long witnessed apathetic community, bossy supervisory staff, burnt-out teachers, bored kids, low level of learning, high drop-out rate, poor enrolment of girls, children caught in the care of younger siblings and other house hold chores etc.

The changes what we are expecting with the change of changed generation now has to be dealt with a way which suits them the most. Digital way for Digital generation should be the motive to achieve the unachievable. The need is to change the way we look at the education system and plan non-conventional methods for future of children of India a whole. Our schools have to transform to successful schools. The infrastructure support for wi-fi, internet facility and providing computers must come from the states open heartedly. As it is the challenge of fighting the disparity between our own students of cities and rural is a herculean task. The city students are techno-savvy and on latest smartphones whereas the other side of students have not seen/used computers as yet. We must fight this out and make the coming generation to be ready to face the fast changing socio-economic scenario on a global platform.