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INDUCTING ONLINE RESOURCES INTO EDUCATION: A POLICY PROPOSAL BASED ON TEACHER EDUCATION CONDUCTED IN UNIVERSITIES OF KERALA

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Abstract

Internet and ICT have created revolutions in all fields of life. The new technologies have brought paradigm shift in teaching-learning process and in educational resources. E-education, ICT based education, online courses, online resources are catch words today. Apart from traditional printed resources such as books, periodicals and journals, learners are now fortunate to have large number of online educational resources accessible free of cost as well as by subscription. The digital shift has created billions of web pages, e-books, e-journals, full text databases, online lectures, videos, online games and virtual libraries. Compared to printed resources locked in libraries, online resources have many advantages such as its availability round the clock, throughout the year. Online resources overcome the limitations of printed resources in updating of its contents. Use of high quality online resources by academic community is a pointer to educational standards today. Government of India has many projects for imparting e-education throughout the nation. Also Government of Kerala is investing large amount of money for ICT enabled education. In the context of explosive growth of online resources and Government initiatives in e-education the paper explores the syllabi of teacher education in Kerala both at B.Ed. and M.Ed. programmes for finding out the prescription of online educational resources in the syllabi. The syllabi of teacher education degree programmes of Kerala University, Mahatma Gandhi University, Calicut University and Kannur University available in their respective web sites were examined in detail by the authors. The study concludes that the web resources prescribed for teacher education programmes in the Universities of Kerala are quite inadequate to maintain the standards of education. It is presumed that the syllabus makers did not pay sufficient attention to the digital shift in educational resources. Finally the authors propose a ten point policy for inducting online educational resources into teacher education.

Keywords*: Online education, e-education, Online educational resources, Education policy, e-education policy, Teacher education.*

INTRODUCTION

Internet brought revolutions in all sectors and education sector is significant among them. E-education represents the revolutionary changes brought in the teaching learning process by internet and the developments in Information Communication Technologies (ICT). Gail Terry Grimes and Claud Whitmyer(2009) defines the term "e-education" as application of internet technology to the delivery of e-learning experiences. They elaborate that e-education takes place in a variety of 'technology mediated learning spaces' such as smart class rooms, corporate training classes, audio and video conferences. They summarise e-education in the formula e-education = e-mail + e-

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meetings + e-expeditions + e- learning. Through e-mails learners can communicate with each other along with the Instructors. E-meetings include real time chats as well as discussion forums and conferences by which learning topics are further explored. The electronic meetings can be augmented with other tools such as electronic white boards, slide shows, video or audio clippings. E-expedition provides opportunity to participants for exploring the specific topics through virtual tours to information rich web sites from a centralised web site or portal created especially for the purpose or through direct visit to companies, laboratories or other environments which best illustrates the subject. E-expedition includes e-meetings such as real time chats, audio and video conferences, text based discussion which are also facilitated by the centralised web site created for e-learning. Thus e-learning means participants learn together in an environment enriched by technology. E-learning takes place through interaction between learners and instructors, learners with the learning content and by learners themselves. The software used for e-education, facilitates in-depth discussion between participants through various electronic means such as e-mails, chats, discussion forums, social media, audio and video conferencing.

Online Educational Resources

The astonishing development of World Wide Web created millions of websites and billions of web pages in which information is available in diverse forms such as text, sound records, videos, images, animations and multimedia. The online digital information transcends the limitations of traditional books and libraries and has created revolutions in content delivery in education teaching. The digital revolution has profound impact in academic libraries by which the term "books" have been developed into "information resources" or "information packages" comprising electronic and digital resources online and offline. Print resources are still the back bone of Indian libraries and Indian education, but access to online digital resources empower our education by providing round the clock, round the year access to resources. The digital world experiences information explosion or the explosive growth of online resources both free and subscription based. Most of the publishers in world-wide have switched over to online platforms while many publishers are still continuing to offer printed versions along with publishing in internet.

Quality of education

In the conventional education system the quality of education is essentially linked with quality of teachers. Use of quality resources by teachers and learners is the bed rock of quality education. Education has grown to such a level that increased attention of our academics and government are required on the online world comprising of e-books, e-journals, e-magazines, e-dissertations, bibliographic databases, full text databases, and useful web sites and portals.

Here, the role of academic libraries is to perpetually monitor the online explosion, and filter the quality resources, subscribe to it or link the resources from the library web site or portal if they are in open access. Many libraries provide webOPAC for exhibiting their resources to the world. In the digital era libraries also need to create web portals for linking to useful resources.

Major initiatives of Government of India on e-Education

E-education leading to knowledge economy is the objective of digital India policy of Government of India. Two conditions are essential for the internet connectivity, Infrastructure for the connectivity and high speed internet connectivity.

The major initiatives of e-education under digital India are outlined below.

BBNL (Bharat Broad Band Network Limited).

It is Special Purpose Vehicle under Government of India to digitally connect all Grama Panchayat and Villages by 2019.The Scheme is called BharatNet. Formerly it was National Optical Fibre Network (NOFL). The digital divide of rural and urban India is too large. The Rural India comprising 6,40,000 villages under 2,50,000 Grama Panchayaths. Voice and internet connectivity is abundant in Urban India which are mostly provided by private players but there is not even voice connectivity in 50,000 villages. Private players are not expanding their network to Rural India fearing ROI (Return of Investment).

IIT Mumbai did the planning for establishing broad band connectivity in all panchayaths in the country under two phases by laying optical fibre as far as possible, wireless communication technology and by satellite communication. The panchayath offices will have internet kiosks and will get basic services namely administration, education, health care, banking and agriculture. From panchayaths the connection shall be given to individual households. (Panchayaths or grama panchayaths are local Governments in India)

Digitise India Platform (DIP)

It is an initiative of India Government to create scanned images of all physical documents in different formats and languages and to extract data and make use it.

e-Granthalaya

It is the Library management software developed by National Informatics Centre (NIC). The application is useful for library automation and various online services. The Library catalogue can be published in internet as the software has in-built webOPAC capability. It is Unicode compliant so data entry in regional languages can be done.

e-Pathsala

E-pathsala developed by NCERT for showcasing and disseminating all e- text books, periodicals and other resources through web site and mobile platform. This is an attempt to bridge the digital divide and providing quality content to all.

Knowledge Management System

Digital India Programme envisions digitally empowered India leading to knowledge economy. For actualising the vision a knowledge management portal is created "to establish a culture where knowledge is captured, shared, created and reused". It provides a platform to leverage the transformation of data to knowledge.

Learning Management Systems (LMS)

LMS is a software application for delivery of administration and delivery of e-learning courses and training programmes. LMS is used as e-governance capacity building tool for providing training programmes for officers of Central, State and Union Territories.

National Knowledge Network (NKN)

NKN is aimed at establishing secure, reliable and multi-gigabit connectivity for all universities, research institutions and laboratories catering to inter-disciplinary and collaborative research-the paradigm shift in global research.

National Mission on Education through Information Communication Technology (NME-ICT)

It is a Centrally Sponsored Scheme under Ministry of Human Resources Development (MHRD). The scheme envisages leveraging ICT for teaching-learning process in Higher Education Institutions. The Scheme supports students, teachers and life-long learners.

OLABS

Online labs for school experiments provide ease and convenience for school students to conduct experiments over internet. Olabs is used as supplements to their physical labs. Students can reduce their expenses on conducting real time experiments, repeat them till thorough it and can bridge time and geographical distance.

Open Data

It is a platform for publishing data collected by various Ministries and Government Departments for public use. The data sets, documents, tools, services and applications are useful for research. The platform intends for transparency in governance.

Pradhanmanthri Gramin Digital Saksharatha Abhiyan

This scheme intends to bridge digital divide by making six crore villagers digitally literate by 2019. The scheme reaches to 40% of rural households and gives special attention to marginalised people like backward classes, SC/STs, minorities, differently abled people and women. (one crore =10 millions)

Sugamya Pustaklaya

It is the largest online library for the blind and print disabled established by Ministry of Social Justice, under Govt. of India in collaboration with Daisy forum of India and TCS Access.

SWAYAM

Swayam seeks to bridge digital divide for students who have been not touched by digital revolution so far. It gives an indigenously made platform which provides all courses taught in class rooms from 9th Standard to post graduation to any one any time.

Government of Kerala has decided to spend 1000 crores for ICT enabled education. It@School(now KITES) under Kerala Government is doing commendable works for spreading the reach of e-education.

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In the context of increasing role online resources and Government initiatives to support e-education, the teacher education syllabi of B.Ed. and M.Ed. programmes of universities in Kerala were studied for finding out whether the revised teacher education programmes in the State have responded to the growing importance of Online Educational Resources.

OBJECTIVES OF THE STUDY

1. To find out the extent of online resources prescribed in the syllabi of teacher education programmes both B.Ed. and M.Ed.
2. To rank the universities on the basis of the number of online resources prescribed in their syllabi.
3. To find out the subject wise variation in the in the syllabi with reference to online resources.

To answer these questions, the present syllabi (2015) of B.Ed. and M.Ed. courses of the universities in Kerala were examined by the authors and the findings are reported here. The universities whose B.Ed. and M.Ed. syllabi included in the study are University of Kerala (also called Kerala University), Mahatma Gandhi University, University of Calicut(also called Calicut University) and Kannur University. (*The Central University of Kerala at Kasaragod is offering B.Ed.Programme but its syllabus is not available online. Hence the University was excluded from the study*).

As per the Regulations (2014) of National Council of Teacher Education (NCTE), the statutory regulatory body of teacher education in India, all the universities in Kerala which offer teacher education programmes re-structured the B.Ed. and M.Ed. programmes from the earlier one year programme to two years (four semester) programmes in 2015 and the current B.Ed. and M.Ed. programmes are based on the curricula framed in 2015.

The following data is obtained when enumerating the recommended sources for University of Kerala's B.Ed. syllabus.

Note:- The B Ed syllabus of the university is not available by Google search. One has to visit the university web site directly for obtaining the syllabus. The syllabus is given as four pdf documents from semester 1 to semester 4).

Table 1. Number of Suggested Sources for Study for B.Ed. Programme, University of Kerala - Semester wise

Subjects	Semester-1		Semester-2		Semester-3		Semester-4	
	print	online	print	online	print	online	print	online
Core/Common								
Subjects	72	25	86	14	76	19	0	0
Optional Sub.								
Malayalam	36	11	37	11	43	28	0	0
English	30	18	11	79	10	13	0	0
Hindi	40	2	0	0	0	0	0	0
Sanskrit	46	0	0	0	0	0	0	0
Arabic	47	0	39	0	20	0	23	0
Tamil	24	0	0	0	0	0	0	0
Maths	37	0	31	3	15	0	16	11
Phy .science	27	0	17	8	9	0	0	0
Natu. Science	56	0	66	16	13	0	18	6
Soci. Science	76	17	65	30	58	13	0	0
Geography	66	16	50	26	27	7	0	0
Commerce	30	0	22	16	5	3	0	0
Home science	24	9	42	12	10	3	18	6
Total	611	98	466	215	286	86	75	23

Table 2. Cumulative Account of Recommended Sources for Study in all Semesters of B.Ed. Programme, University of Kerala

Subjects	Print sources	Online sources	Total sources	Percentage of online sources in total sources
Core courses	234	58	292	19.86
Malayalam	116	50	166	30.12
English	51	110	161	68.32
Hindi	40	2	42	0
Sanskrit	46	0	46	0
Arabic	129	0	129	0
Tamil	24	0	24	0
Maths	99	14	113	12.39
Phys. Sc.	53	8	61	13.11
Natu. Sc.	153	22	175	12.57
Soc. Sc	199	60	256	23.43
Geography	143	49	192	25.52
Commerce	57	19	76	25
Home Sc.	94	30	124	24.19
Total	1438	422	1860	22.69

On analysis of the tables given above, the following information can be extracted.

1. In the Syllabus for the B.Ed. programme total 1438 print sources are prescribed for study and 422 online sources are suggested for use**.** That is, the proportion of online sources prescribed for the entire programme is 22.69% of the total sources.
2. English programme prescribes highest number of online sources- 68 %
3. Malayalam programme is in second position which prescribes 30% online sources
4. The core courses prescribe 20 % online sources for the study.
5. Mathematics, Physical Science and Natural Science provide 13% online resources
6. Social Science, Geography, Commerce and Home Science provide 25 % online resources.

7. Hindi, Sanskrit, Arabic and Tamil provide no online sources in the syllabi.

Table 3. Recommended Information Sources for Study of B.Ed. Programme of Kannur University - Semester wise

Subjects	Semester-1		Semester-2		Semester-3		Semester-4	
	print	online	print	online	print	online	print	online
Core/Common Subjects	33	30	26	0	0	0	150	0
Optional Sub.								
Arabic	38	13	48	13	0	0	52	17
Commerce	24	0	54	0	0	0	24	0
English	11	9	41	11	0	0	11	11
Hindi	31	0	36	0	0	0	31	0
Kannada	17	0	24	0	0	0	5	0
Malayalam	147	7	53	7	47	7	47	7
Maths	18	0	45	0	10	0	18	0
Natu. Science	42	9	72	9	0	0	42	9
Phys. Science	11	0	32	0	10	0	6	0
Sanskrit	13	2	43	2	13	2	13	2
Social Science	25	9	55	9	0	0	26	8
Total	410	79	529	51	80	9	425	54

Table 4. Cumulative Account of Suggested Sources in all Semesters of B.Ed. Programme, Kannur University

Subjects	Print sources	Online sources	Total sources	Percentage of online sources in total sources
Core courses	209	30	239	12.55
Arabic	138	43	181	23.75
Commerce	102	0	102	0
English	63	31	94	32.97
Hindi	98	0	98	0
Kannada	46	0	46	0
Malayalam	294	28	322	8.69
Maths	91	0	91	0
Natu Sc	156	27	183	14.75
Physical Sc	59	0	59	0
Sanskrit	82	8	90	8.88
Social Sc	106	26	132	19.69
Total	1444	193	1637	11.79

The following information can be extracted from the tables 3 and 4 given above.

1. The syllabus for the B.Ed. programme of Kannur University provides a total of 1444 print sources for the studies and 193 online sources are suggested for use. That is, the proportion of online sources prescribed for the entire programme is 11.79 % of the total sources.
2. English programme prescribes highest number of online sources-33 %
3. Arabic programme is in second position which prescribes 24 % online sources.
4. The core courses prescribe 13 % web sources for the studies
5. Social Science provides 20 % of online resources
6. Commerce, Hindi, Kannada. Mathematics and Physical Science provide no online sources.

University of Calicut's B.Ed. syllabi provide only few numbers of online sources for studies accounting all the four semesters. The numbers are enumerated below.

Language across curriculum gives 4 online sources.

Commerce provides 5 web sources.

Mathematics provides 10 online sources.

Physics gives 8 online sources.

Sanskrit gives 2 web sites.

Management in School Education gives 1 web page.

Value education and Peace education suggest 1 web site.

Mahatma Gandhi University B. Ed. Programme also gives few online sources in the entire four semesters. They are listed below.

Assessment for learning (EDU-203) provides 4 web pages.

Commerce gives 6 web pages.

Malayalam provides 3 web pages.

Social Science gives 2 web pages.

M.Ed. Programmes

University of Kerala M.Ed. syllabus provides no references either books or online.

The number of references of web sites or online sources in the syllabus of Calicut University M. Ed. programme is cited in the box below.

Trends and issues in education provides 25 online sources/web sites

Methodology and pedagogy of elementary education gives 3 web pages. Environmental education gives 4 web sites.

Human Rights education provides 8 web sites.

Comparative education gives 11 web references

Kannur University M.Ed. programme provides only few online sources which are listed in the box below.

Advanced Educational Technology gives 17 web pages.

Higher Education provides 11 web pages.

> Environmental Education gives 4 web sites.

Mahatma Gandhi University gives few online references which are given in the box below.

> Teacher Education (EDU-905) provides 6 web sites.
>
> Economics of education gives 12 web pages.

Discussion

The analysis of the current syllabi of B.Ed. and M.Ed. programmes conducted in the universities of Kerala reveal that though, B.Ed. programme of University of Kerala provides overall 23 % online sources, many of the web sources are repeated. *That is, actual number of online sources suggested by the University for the teacher education programme is very small.*

Similarly, Kannur University suggests 12 % of online sources and avoiding the repetitions, the actual number of web sources prescribed is too small.

Other universities in the State provide a meagre number of online sources for the study of teacher education programmes. It is significant to note that the largest database on education, that is ERIC, was cited by Social Science Subject of Kannur University alone. Similarly INFLIBNET was cited by one subject (Social Science) alone. It is a general trend noticed that all of the disciplines except one(Social Science) restricted to their subject centric resources ignoring general resources like ERIC and INFLIBNET. In this context, the case of English subject of Kerala University B.Ed. programme needs special mentioning. English subject prescribes 68 % online sources out of the total references. Also the style in which the web sources are cited in the syllabus is a model for other subjects to emulate. An extract from the English syllabus is shown below.

Resource websites:

Bloom's Taxonomy: http://cft.vanderbilt.edu/guides-sub-pages/blooms-taxonomy/

Classroom Management: http://www.teachingideas.co.uk/more/management/contents.htm, http://www.educationworld.com/a_curr/curr155.shtml

Language skills: http://www.apsacssectt.edu.pk/download%20material/training%20deptt/workshop%20material/four_skills_of_language.pdf

Learning Support Centres in Higher Education (LSCHE): ttp://www.lsche.net/?page_id=608

Microteaching: https://uwaterloo.ca/centre-for-teaching-excellence/support-graduate-students/fundamentals-university-teaching/microteachingdetails

Pedagogical Content Knowledge: http://mkoehler.educ.msu.edu/tpack/pedagogical-content-knowledge-pck/

Resource Mapping: file:///C:/Users/Reliance/Downloads/ResourceMappingExampleWisconsin.pdf

Structure (function) words versus content words: http://homepage.ntlworld.com/vivian.c/Words/ContentStructure.htm

CONCLUSION

Information explosion is a reality in online resources. There are millions of web resources available free of cost and yet large number of resources are available on subscription. Course era and open educational resources are profoundly transforming the landscape of resources for learning. Government at the Centre and the State are committed to improving the IT infrastructure and developing policies for online education and for better governance. But the present study reflects that none of the State Universities have considered online resources available through internet as important learning resource. It is reasonable to state that the teacher education in the State has failed to comprehend the digital explosion and formulate policies to address the digital shift that has happened in education. It is rational to conclude that the course designers of teacher education programme in the Universities of Kerala are generally unaware of the digital shift or the quality resources available online. There is little evidence to suggest that the syllabus makers of the teacher education programme have taken pains to explore the online resources available and induct them into the syllabi. Under-utilisation of quality resources available online will degrade the educational standards.

Inducting Online Resources for Education- A policy proposal

1. NCTE (National Council for Teacher Education) has to constitute a committee for identifying the domain specific and general category online resources of quality for teacher education in the country.
2. Librarians who are experts in online resources shall be included in the search committee for internet resources.
3. NCTE has to a create a web portal which provides links to online resources identified by the committee.
4. INFLIBNET may be directed to subscribe the priced resources recommended by the committee.
5. Regular updating of the resources included in the portal should be ensured.
6. A modification in the examination pattern is suggested for including questions from the online resources.
7. Intensive training needs to be provided to teachers for utilisation of online resources for teaching and research.
8. College Libraries have to do marketing of online resources along with print resources.
9. College Librarians having equivalent teacher qualifications need to be given faculty status and teaching hours shall be allotted to them within the academic time table.
10. The teacher-librarians shall conduct Library orientation and instruction programmes based the syllabus prepared for that purpose with emphasis on online resources and information searching skills.

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