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An assessment of Digital Capability Training Programs among Higher Education Institutions in India

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An assessment of Digital Capability Training Programs among Higher Education Institutions in India.

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Abstract

The paper deals with the assessment of digital capability training programs among the top twenty universities in India as per NIRF ranking 2018. The study is an exploratory study which carried out to find out number of the training program, workshop or seminars conducted in universities in the preview of digital capability framework given by JISC (Joint Information systems committee). The result shows that Vellore University has conducted more training programs any than other universities.However, it is not enough to achieve the goal of digital capability in the universities as there are many manifestations to assess digital capability of an institution.Institutions should create a series of training programs and workshop for students, teachers, and staffs on the basis of JISC six elements.

Keywords: Digital capability, training programs, JISC framework,

1. Background

Digital capabilities are the "skills, knowledge, and understanding which helps us to live, learn and work in a digital society. They help us to use a variety of technologies, appropriately and effectively in different spaces, places, and situations.Not only do digital capabilities help to engage and communicate with other people in your personal life or whilst you learn, but they also help us to succeed in the world of work". ("What are Digital Capabilities?", 2018).

The word Capability refers to the measure of the ability of an entity (Department, Organization, Person, or System) to achieve its objectives, especially in relation to

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its overall mission.(“Digital capabilities”, 2018) The government of India has launched a very massive campaign, namely "Digital India" to empower Indian citizen digitally so that everyone in this country can have access to all services provided by government easily by building online infrastructure and by strengthening Internet connectivity. The government has also shown interest in online services in order to make India as a digital and cashless economy. In the current scenario, as being part of the electronic environment, we can clearly see that the functioning of all academic institutions has changed their way to satisfy the technologically motivated needs of different users. To promote digital literacy among citizens of India, especially for the rural population,the government launched Pradhan MantriGrameen Digital SaksharataAbhiyan scheme(PMGDISHA), under the scheme 60 million persons would be digitally literate by March 2019. To fulfill the objective of PMGDISHA, Government of India is going to spend aroundRs 2,351.38 crore. (“Pradhan MantriGrameen Digital SaksharataAbhiyan”, 2018).

All over the world, there have been lots of changes brought by rapid advancements in ICTs and such advancement has also affected every aspect of life in many ways. At a cultural, social, and economic level, changes caused by technological advancement have affected universities and their respective libraries. As it is said that "Survival of the fittest is the law of nature", similarly, there has been a rapid adaptive change in pedagogy, teaching-learning styles in higher education. In order to survive in the twenty-first century, universities should not be reluctant to introduce changes and innovations in their current setup as it is the need of the society.

The Ministry of Human Resource Development has organized an innovation and best practices conference on digital initiatives in Higher Education. A large number of schemes and initiatives have been taken up by MHRD in Higher Education, for example, SWAYAM (India's own MOOCs, SwayamPrabha, National Digital Library which contains 6.5 a million books, and the National Academic Depository). Even UGC has drafted new online education, regulation and they also framed rules regarding virtual learning environment (VLE). The very purpose of the conference is to bring together, share best practices and experiences mentioned above, all initiatives including initiatives of private institutions. The convention has launched various digital initiatives which are following

(i) **SWAYAM**: It stands for study Webs of Active Learning for Young Aspiring Minds.It is an indigenously developed online platform which offers different quality education courses which are free of cost available to students. It can be accessed online by anyone, at any time online, and anywhere. The very idea of MOOC is to deliver interactive learning content to a large number of people simultaneously. Consequently, the best quality education can be shared with everyone and it will bring equity as far as quality of education is concerned.("Massive Open Online Course",2018)

(ii) **SWAYAM-PRABHA:** It will provide high-quality educational content, developed by experts, through DTH (direct to home) television channels with an aim to bring uniformity in standards of education and it will be available 24x7 hours on TV. It will cover diverse disciplines of all levels of education in various languages. Interesting point is that it does not include any charge. It will telecast high-quality educational content. Every day, there will be new content of at least four hours which would be repeated 6 times a day so that they can watch and learn as per his convenience. ("swayamprabha", 2018)

(iii) **The National Digital Library (NDL):** It is an amazing initiative of MHRD which will bring all national and international digital libraries at one place. This project titled "Development of National Digital Library of India sanctioned to IIT, Kharagpur under NMEICT by MHRD". It would be a unique move towards building a national asset which will contain more than 72 lakh digital books. National Digital Library in India aims to collect, preserve and disseminate the entire intellectual output of our country and provide online access from school level to postgraduate level, which also includes technical education. ("National digital library",2018)

(iv) **The National Academic Depository:** It is mainly for authenticating all the certificates issued by institutions. It will also authenticate all sorts of the certificate according to the need of users. National Academic Depository (NAD) is an initiative of the Ministry of Human Resources Development, Govt. of India (MHRD) to facilitate digital issuance, access, and verification of Academic Awards issued by Academic Institutions. The NAD is a very unique, Innovative and Progressive initiative under "Digital India" theme which aims to achieve Digital

enablement of Education Records. Through NAD, the government of India wants to give a real touch to the vision of Digital Academic Certificates for its own citizen. This touches the lives of Indian youth and empowers them Digital, Online, Trusted, Verifiable Certificates which can be accessible in a secure manner at any time. NAD ensures us to avoid the use of physical paper certificates, which will overcome the problem of collection and maintenance of all kinds of hardcopy related academic. Finally, it will bring efficiency. ("National Academic Depository", 2018)

In order to create a business environment and promote entrepreneurship & innovation among people, the government of India has launched various schemes, program, and initiatives which are following.

(i) Stand-up India: This scheme pays emphasis on economic empowerment of the underprivileged section of our society and women as well. It will provide a loan to Scheduled Caste (SC), Schedule Tribe (ST), and women in the non-farm sector. As a result of which, all of them will be financially included in our society. (“Stand up India scheme”, 2018)

(ii) Start-up India: Start-up India is a flagship scheme which seeks to create a strong ecosystem for nurturing innovation and start-ups in the country to drive sustainable economic growth. Consequently, it will generate a large number of jobs. The basic idea behind this scheme is to encourage Indian youth to become job creator rather being a job seeker which is the need of the hour.(“Startup India initiative”, 2018)

(iii) Atal Innovation Mission(AIM): Atal Innovation Mission (AIM) including Self-Employment and Talent Utilization (SETU) is Government of India's endeavor to promote a culture of innovation and entrepreneurship. Its objective is to serve as a platform for the promotion of world-class Innovation Hubs, Grand Challenges, Start-up businesses, and other self-employment activities,particularly in technology driven areas.The Atal Innovation Mission shall have two core functions:

1. **Entrepreneurship promotion** through Self-Employment and Talent Utilization, wherein innovators would be supported and mentored to become successful entrepreneurs
2. **promotion:** to provide a platform where innovative ideas are generated

(i)Atal Tinkering Labs

(ii)Atal Incubation Centers
(iii)Scale-up support to Established Incubators ("The atal innovation mission", 2018)

To boost Digital India Flagship Scheme which comes under "Ministry of Electronics and Information Technology"? The Indian government has left no stone unturned. There are 23 mission mode project has been launched under Digital India Program. Some of them are given below.

(i) **Digi Locker**: The service was launched to store crucial documents like Voter ID Card, Pan Card, BPL Card, Driving License, education certificates, etc. in the cloud.("Digi Locker", 2018)

(ii) **MyGov.in**: The portal works as an online platform to engage citizens in governance through a "Discuss", "Do" and "Disseminate" approach.("The citizen-centric platform empowers people", 2018)

(iii) **E-Sign Framework**: This initiative would enable users to digitally sign a document online using Aadhaarauthentication.("eSign is an online electronic signature", 2018).

(iv) **Swachh Bharat Mission mobile app**: The application will enable organizations and citizens to access information regarding the cleanliness drive and achieve the goals of the mission. ("Swachh Bharat Mission is a mass movement for cleanliness", 2018)

(v) **National Scholarship Portal:** From submitting the application, verification, sanction, and disbursal to end beneficiary, everything related to government scholarships can be done on this single portal online.("National Scholarship Portal",2018)

(vi) **E-Hospital -Online RegistrationSystem**: Under this initiative enables people to avail services like online registration, payment of fees and appointment, online diagnostic reports, checking on the availability of blood online, etc. ("e-hospital a hospital Management system",2018)

(vii) **Digitize India Platform:** This initiative will involve the digitization of data and records on a large scale in the country to make easy and quick access to the possible("Digitize India Platform", 2018).

(viii) Bharat Net: Under this initiative, a high-speed digital highway will connect 2,50,000gramPanchayat of the country. This is the world's largest rural broadband project using optical fiber. ("Bharat net", 2018)

(ix) Next Generation Network -Launched by BSNL, this service will replace the 30- year old telephone exchanges to manage all types of services like voice, data, multimedia and other types of communication services. ("Next Generation Network", 2018)

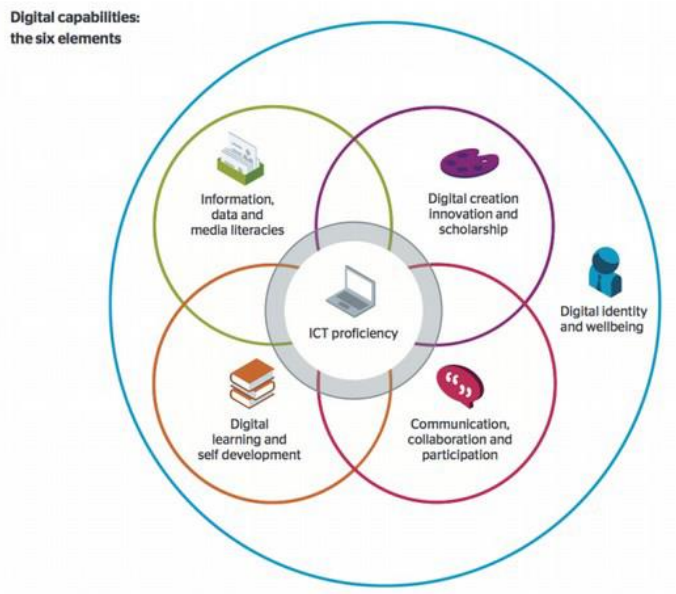
(x) Centre of Excellence on the Internet of Things (IoT) -In partnership with NASSCOM, Centre of Excellence will be established for rapid adoption of IoT technology and encourage a new growth strategy.("Centre of Excellence on Internet of Things", 2018)

Various Educational Institutes are developing a digital environment to provide better and global Education for their students. In the library context many library software (Koha, DSpace, SOULetc.) are used to make libraries digitally capable. It shows that digital capability is the very relevant concept in the present scenario. To develop a digital environment, it necessary to provide training programs for continuing professional development and support of an institution's staff to enhance their digital capabilities.

2. JISC Six elements of digital capabilities

This is a nationally recognized framework from JISC (Joint Information Systems Committee). JISC Digital Capabilities Six Elements are:

I. **ICT Proficiency**
II. **Information Media and data literacy**
III. **Digital Creation, Scholarship, and innovation**
IV. **Digital communication, collaboration, and participation**
V. **Digital learning and personal/professional development**
VI. **Digital Identity and wellbeing**



(Source: Digital Literacy tools for program design)

(I).ICT Proficiency

There is a concern that one should be able to use ICT-based devices, applications, software and services through their interfaces. Some of the interfaces are Mouse, keyboard, touch screen, voice control, screens, and microphones etc. One should be able to use basic productivity software, web browser and writing/presentation software. Apart from it, one should also know how to use digital capture devices such as a camera. At higher levels, it is very necessary to have knowledge of choosing, adapting and personalizing ICT applications and systems.

(II).Information Media and data literacy

Living in the age of information and the digitized world has opened up different dimensions of literacy for example information literacy, media literacy, and data literacy. Therefore, it is a matter of concern to be literate in all these dimensions. One should know how to find, analyze, organize and share digital information even how to open any content. One should also have knowledge of collating, managing, accessing and using digital data in a spreadsheet and other media as well. Life is very dynamic and unpredictable, so privacy and security matter a lot. Therefore, one should be too good at recording and using personal data and keep a check on that so others can't miss it. In addition to it, one should upgrade his/her knowledge related to the usage and benefits of legal, ethical and security guidelines when it comes to data collection and its use.

(III).Digital Creation, Scholarship, and innovation

It is the need of the hour to have the ability to develop and design new digital material, digital writing, digital imaging, and digital editing of images, video, and audio. One should have knowledge of collecting and analyzing research data via different digital methods. Apart from it, one should be capable of developing new practices through digital technology in any organizational settings including some special areas such as digital entrepreneurship.

(IV).Digital communication, collaboration, and participation

Technology changed the way of communication among people and one should have the ability to communicate effectively through different digital media and digital forums. An effective communicator should be able to follow different cultural, social and communicative norms. According to purpose and audience, communications have to be designed differently. Utmost care should be paid for having respect for each other in public life and maintaining privacy in private life.One should have the ability to work in any digital team and group through effective collaboration with the help of shared digital tools and media for shared objectives. Along with that, one should be able to produce shared materials and to work effectively beyond any cultural, social and linguistic boundaries. Digital services and forums should be utilized in participation, facilitation, and building digital networks. It will also enable them to participate in social and cultural life one should be able to display safe and ethical behavior when it comes to networking in order to create positive connections and build contacts.

(V). Digital learning and personal/professional development

Technology has the way of learning and paved the way of digital learning, but before we learn anything digitally one should be able to identify the opportunities then participate in. One should use digital resources for learning and teaching as well with the help of digital media. One should use digital tools to organize, plan and reflect on learning. By recording learning events/data will help us with self-analysis, reflection, and showcase achievement. One should be able to go for self-assessment and take part in other forms of digital assessment as well. Lastly, managing attention and motivation are the keys to learning in digital settings.

(VI). Digital Identity and wellbeing

It is a matter of concern that one should be able to develop a positive digital identity. After creating a positive digital identity it requires to manage digital reputation on

various platforms. In addition to it, one should be able to build and maintain a digital profile. Digital participation could be more meaningful by developing personal styles and inculcating values. One should be able to collate and curate personal materials across digital networks. It is very necessary to take care of our health, safety, and even relationship while maintaining a proper balance between work and life in digital settings. Personal data should be used in such a way that one can have benefits from it which will lead to positive well-being finally but it's not easy. One should also know how to handle digital stress and maintain a balance between the digital world and real-world interactions.(“Digital capabilities: the 6 elements defined”, 2018)

These elements are very important for Higher Education Institutions to define the exact meaning of digital capabilities and its facets.

3. Literature reviewed

Most of the studies associated with digital capability have tried to explore the present status of digital capability in higher educational institutions. A successful training program and assessment program require a great deal of preparation and planning. The assessors must spend a considerable amount of time articulating competencies and assessment criteria, developing assessment procedures, creating and distributing training materials and criteria for librarians, informing their librarians about the assessment plan and the reasoning behind it and devising a logical action plan. (Kawakami and Swartz,2003). Both academics and the managing authorities of HEIs need to look at the limitations and possibilities for *Praxis* introduced by e-learning. This is only possible under an institutional arrangement that respects the capacity for human agency. (Martins and Nunes, 2016). Deborah and Geoff describe the benefits of digitization in his studies, they said If the assessment is completed digitally (online). It is easier to broadcast the requirement, to adjust rubrics as evidence indicates a need for revision and deliver feedback to the candidate as quickly as possible. (Geofflrvine H., 2003). Han and others conducted a case study about risk assessment of digital library information security. The use of digital information tools in libraries and information centers demands technical competencies to successfully navigate through digital information. (Han et al,2016). Khan and Bhatti found Librarians require new skills to work effectively in this digital environment and to meet the challenges of digital librarianship. (Khan and Bhatti, 2017). Banwell analyzed The most effective approach to deep learning will require a different pedagogical approach. Academic staff may need to adopt a different "problem-solving" approach to the delivery of education. (Banwell et al. 2004). Nedungadi described e-literacy and digital literacy skill. In these studies he said e-literacy skills can

support digital inclusion and allow tribal communities to benefit from various schemes, while the health and social awareness aspects can help in safeguarding them from exploitation. However, attempts to bring Digital Literacy Skills education to remote and rural areas have encountered numerous challenges, including low literate learners, low internet bandwidth, lack of ICT facilities and intermittent electricity. (Nedungadi et al, 2018)

From the literature review, it has been drawn a clear understanding that digital capability assessment is a very important aspect for improvement of ICT proficiency, information literacy, digital innovation, and digital learning.

4. Objective

The present study deals with the following objectives to

(i) Apply the Digital Capability framework for measure digital capabilities of top twenty universities of India.
(ii) Identify current training programs, seminar, and workshop activities across the top twenty institutions.
(iii) To explore present status of digital capability in Higher Educational Institutions
(iv) Identify the initiatives taken by the government to improve the digital capabilities of the citizen.

5. Methodology

Exploratory findings reported in this article are based on a content analysis of information representing the training programs available during 2017-2018 on the websites of the top twenty universities. The databases of NIRF 2018 were consulted to get details, besides data was also sourced from various peer-reviewed journals, online resources such as organizational websites, class lectures, book chapters, and conference proceedings. This was intended to help develop theoretical arguments, practitioners' viewpoints, and empirical evidence to support future insights.

This article reports only on the nature and composition of five central universities in India based on a semi-quantitative analysis of web-based content materials. The study focused only on training programs and workshop conducted by twenty institutes in India; hence the findings cannot be generalized to the entire landscape of Indian education. Due to the web-dependent nature of this study, the academic

institutes which did not contain up-to-date content of training programs at the time of data collection may have been misrepresented.

6. Findings

Tables present a birds eye of quantitative data of workshop, seminar and conferences retrieved from Universities Websites. Some universities not updated the information about events.

(i) Vellore Institute of technology has conducted the highest number (41) of training programs and workshops in Comparison of other universities.VIT conducted various types of training programs related to digital capabilities. Some very important and relevant programs such as Workshop for "girls in ICT".In this workshop, institute trained the girl to make them digitally capable and giving them the confidence to pursue ICT studies and careers.

(ii) Savitribai Phule Pune University, Manipal Academy of Higher University, Bharathiar University, King George`s Medical University, Birla Institute of Technology & Science, University of Madras, Institute of Chemical Technology, and Punjab University website does not have information about event details related to digital capabilities.

(iii) Indian Institute of Science, Bangalore conducted Workshop on Brain, Computation, and Learning and other important programs.

(iv) Amrita Vishwa Vidyapeetham conducted the very useful workshop "Modern Artificial Intelligence (AI) and Natural Language Processing (NLP) Techniques for Cyber Security".

(v) Delhi University conducted basic and advanced programs related to digital capabilities. For example (i) Basic Computer concepts, MS-Words, Power-Point, Internet. (ii) Web Designing with HTML (iii) E-learning and digital learning.

(vi) Jawaharlal Nehru University conducted awareness for cashless payments the digital financial literacy and other important programs related to digital capabilities.

(vii) Banaras Hindu University conducted important Training Program on Tools for Scientific Documentation: LATEX, JabRef, DocEar, and other open source software. Aligarh Muslim University Conducted Workshop on Software Tool for Research Scholars. It also

conducts the International Conference on Knowledge Generation, Discovery and Networking.

(viii) Jadavapur University conducted a very important workshop "Working with Git, GitHub and Open Source Software Tool"

(ix) Jamia Millia Islamia conducted Lecture Series on Big Data and Surveillance. It also conducted Two Week Capacity Building Workshop on Media and Communication Studies.

(x) Calcutta University conducted "International Seminar on Digital Humanities and Digital Societies in the Contemporary World"

The complete details of training program given in Annexure 1.

Table 1: Mapping of various training programs/workshop related to digital capabilities with JISC Framework

Table 1 demonstrates that

1. Vellore University conducted highest training programs than other universities with respect to ICT proficiency, Information Media and data literacy, Digital Creation, Scholarship, and innovation, Digital communication, collaboration and participation, Digital learning and personal/professional development, Digital Identity And well being.
2. With respect to "Information media and data literacy" Vellore University has conducted six training and workshop program. DU and Jadavpur University and Amrita VishwaVidyaPitham conducted two training programs.
3. SavitribaiPhule Pune University, Manipal Academy of Higher University, Bharathiar University, King George`s Medical University, Birla Institute of Technology & Science, University of Madras and Institute of Chemical Technology have not conducted any training program on this digital capability element as per information available on the websites.
4. With respect to Digital creation, scholarship and innovation VIT, JNU, DU, CU, AVV, and BHU conducted one training program. Anna University, AMU and JMI have not conducted any programs related to this point.
5. With respect to digital communication, collaboration and participation highest training programs conducted at Vellore University. Second highest

no. training program conducts AVV. SPPU, AMU, Manipal University, BITS, MU and ICT have not conducted any training program on this Element.

6. With respect to digital learning and Professional development, VIT conducted the highest no. of the training program. After VIT, AVV has conducted the second highest no. of training programs. Anna University, Jadavpur University, DU, BHU, CU, and AMU have conducted one training programs or workshop each. IISc, JNU, HU, SPPU, Manipal University, BU, King Geo, BITS, University of Madras, ICT,PU, and JMI have not conducted any programs related to this point.
7. With respect to digital identity and wellbeing, JNU, DU, and BHU have conducted one training program. AMU and JMI have not conducted any Training program related to this point.

Table 1. **JISC Digital Capabilities Six Elements and mapping of various training programs /workshop related to digital capabilities with JISC framework.**

University	ICT Proficiency	Information Media and data literacy	Digital Creation, Scholarship, and innovation	Digital communication collaboration and participation	Digital learning and personal/professional development	Digital Identity And well being	Category Score	Total Score	Rank	Index (total score/6)
IISc	**√(1)**	**√(1)**	**√(1)**	**√(1)**			4	**4**	**6**	**0.66**
JNU	**√ (1)**	**-**	**√(1)**	**√(1)**		**√(1)**	**6**	**4**	**6**	**0.66**
BHU			**√(1)**	**√(1)**	**√(1)**	**√(1)**	**3**	**4**	**6**	**0.66**
DU	**√(2)**	**√(2)**	**√(1)**	**√(1)**	**√(1)**	**√(1)**	**6**	**8**	**3**	**1.33**
Anna Uni.				**√(1)**	**√(1)**		2	2	8	0.33
HU				**√(1)**			**1**	**1**	**9**	**0.16**
Jadavpur		**√(2)**	**√(1)**	**√(1)**	**√(1)**		**4**	**5**	**5**	**0.8**

										0
AVV	**√(2)**	**√(2)**	**√(2)**	**√(3)**	**√(2)**	**√(2)**	**6**	**13**	**2**	**2.16**
SPPU	**-**	**-**	**-**	**-**	**-**	**-**	**0**	**0**	**10**	**0**
AMU		**√(1)**			**√(1)**		2	2	8	0.33
Manipal	-	-	-	-	-	-	0	0	10	0
JMI	**√ (1)**	**√(1)**	-	**√(1)**	-	-	3	3	7	0.50
BU	**-**	**-**	-	**-**	-	-	0	0	10	0
CU			**√(2)**	**√(1)**	**√(1)**	**√(1)**	**3**	**5**	**4**	**0.83**
King Geo	**-**	**-**	-	**-**	-	-			10	0
VIT	**√(4)**	**√(6)**	**√(9)**	**√(7)**	**√(4)**	**√(6)**	**41**	**36**	**1**	**6**
BITS	**-**	**-**	-		-	-	0	0	10	0
Uni. Of Madras	**-**		-	**-**	-	-	0	0	10	0
ICT	**-**	**-**	-	**-**	-	-	0	0	10	0
PU	**-**	**-**	**√(1)**	**√(1)**	-	-	1	2	8	0.33

Note: IIsc = Indian Institute of science

JNU= Jawaharlal Nehru University

BHU=Banaras Hindu University

HU=University of Hyderabad

DU=Delhi University

AVV=Amrita Vishwa Vidyapeetham

SPPU= Savitribai Phule Pune University

AMU=Aligarh Muslim University

JMI=Jamia Millia Islamia

BU= Bharathiar University

CU=Calcutta University

King Geo=King George`s Medical University

VIT=Vellore Institute of Technology

BIT=Birla Institute of Technology & Science

MU=University of Madras

ICT=Institute of Chemical Technology

PU=Punjab University

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7. Discussion and conclusion

We can see the important training and workshop conducted by various institutions. Workshop for “girls in ICT”, e-learning and digital learning, digital financial literacy, big data, and a workshop on media and communication studies emphasized digital competence. In table 1, Mapping of various training programs/workshop related to digital capabilities with JISC Framework. Vellore Institute of technology has been conducted the highest training program with the JISC framework. VIT has been also highest indexed and got Rank one also.

This study shows that the Higher Education institutions need more initiative, concern with JISC six Elements related to digital capability. In this direction, Vellore University organized more basic and advanced training programs and workshops in comparison with other institutions. However, it is not enough to achieve the goal of digital capability in the universities. Institutions can be digitally capable when it is organized training program and workshop systems to focus JISC (Joint Information Systems Committee) six element of digital capabilities. Institutions should create a series of training programs and workshop for students, teachers, and staffs on the basis of JISC six elements.

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Annexure 1.

Training programs, Workshop, seminars related to digital capabilities of top 20 universities.	
Indian Institute of science	**1. Workshop on Brain, Computation, and Learning.** **2. Computational Science Symposium** **3. Getting Published in the Digital Age: An author workshop** **4. GIAN Course on "Sampling for Signal Reconstruction vs Numerical Integration: Theory and Practice"**
Jawaharlal Nehru University	1. **Global Initiative of Academic Networks (GIAN)** **(i) Course Name: Cloud Data Center Service Provisioning: Theoretical and Practical Approaches**

	Course **(ii) Can magnetic Microsystems/nonmagnetic enable powering of an internet of things?** 2. **Digital Financial Literacy** (i) **Digital Financial Literacy Campaign** **3. Training Workshop on Responsible Ph.D.: RRI and Ph.D. Research Projects** **4. National and International Medical Mobility, Networks and Markets.** **5. M&CEC is organizing a workshop on "Data analysis using SPSS"** **6. University is launching Video Conferencing System.**
Banaras Hindu University	**1. Hands-on Training Program on 'C and MATLAB'** **2. Training Program on Tools for Scientific Documentation: LATEX, JabRef, DocEar, and other open source software.** **3. Workshop on Statistical Computing with R**
Anna University	-
University of Hyderabad	**1. Organized a Workshop on "Open Educational Resources (OERs) and Online Courses (OCs): Preparation and Development**
Jadavpur University	**1. Computer Vision: Concepts, Trends, and Applications** **2. Two-day Workshop entitled "IoT and Data Mining** **3. InternationalSeminaron Rejuvenating Public Library Services through Digital Reference Sources** **4. Working with Git, GitHub, and Open Source Software Tools**
Delhi University	**1. BASICCOMPUTERCONCEPTS,MS-WORD,POWER-POINT, INTERNET &E-MAIL**

	2. **SPSS-(StatisticalPackageforSocialSciences**) 3. **WebDesigningwithHTML&DreamweaverCS5** 4. **DatabaseManagementthroughMS-ACCESS** 5. **AdvancedEXCEL** 6. **C#.NetProgramming** 7. **PHPandMySQL** 8. **IntroductiontoMatlab** 9. **E-learning and Digital Learning (IDC)**
Amrita VishwaVidyaPitham	1. **Hands-on Workshop on Pharmacokinetic Data Analysis using Phoenix Winnonlin** 2. **Modern Artificial Intelligence (AI) and Natural Language Processing (NLP) Techniques for Cyber Security** 3. **Deep Learning & NLP for Computational Chemistry, Biology & Nanomaterials** 4. **Hands-on Workshop on A Practical Approach toInformation Security & Foundational Risk Management** 5. **MSP for AI & DS 2018 Workshop: Modern Signal Processing for AI and Data Science** 6. **Seminar on Data Analytics** 7. **Stabiliz Energy - Workshop on ICT Enabled Distribution Grid** 8. **Workshop on PLC and dSPACE** 9. **Workshop on Practical Exposure to Linux OS** 10. **Workshop on Smart Grids Concepts & Technologies in IoT Applications** 11. **Workshop on Statistical Techniques in Data Analytics** 12. **Workshop on Technical Writing & Research Methodology**
SavitribaiPhule Pune University	-
Aligarh Muslim University	1. **Workshop on "Software Tool for Research Scholars" organized by Computer Centre** 2. **Fourth International Conference on Multimedia, Signal Processing and Communication Technologies (IMPACT - 2017**) 3. **DSA-I sponsored One Day Workshop on Emerging Wireless Technologies** 4. **International Conference on Knowledge Generation, Discovery and Networking (KGDAN 2017)**
Manipal Academy of Higher University	-

JamiaMilliaIslamia	**1. 2nd International Conference of Asian Libraries jointly organized by Zakir Hussain Library & Asian Library Association.** **2. Author Workshop on Getting Published in the Digital Age.** **3. Lecture Series on "Big Data and Surveillance: Who is Watching and Whom"** **4. Two Week Capacity Building Workshop on Media and Communication Studies.**
Bharathiar University	**-**
Calcutta University	**1. International Seminar on Digital Humanities and Digital Societies in the Contemporary World** **2. INFLIBNET REGIONAL TRAINING PROGRAMME ON LIBRARY AUTOMATION.** **3. National Seminar on Libraries in the Changing World with Changing Societal Priorities**
King George`s Medical University	-
Vellore Institute of Technology	**1. 3rd conclave on Big Data analytics** **2. Embedded C programming** **3. ANDROID Application Development for Beginner** **4. Raspberry Pi Programming for Beginners** **5. One day National Workshop** **6. Two days National Workshop 3D Scanning 3D Printing** **7. One day National Workshop on TELEX** **8. 8th International Conference on Soft Computing for Problem Solving – socProS 2018** **9. Digital Health Design Hackathon** **10. International Virtual conference on Recent trends, Challenges in image Analysis & Information Security** **11. National Seminar on Digitisation ofHigher Education for Quality Enhancement of Teaching - Learning and Research: Challenges and Opportunities.** **12. Three days national workshop onSTATISTICS FOR DATA**

	ANALYSIS AND STRUCTURAL EQUATION MODELING (SEM) USING SPSS AMOS. **13. Workshop on LaTeX for Technical Writing** ***14. One day value-added program on* "Advances in Information and Communicationtechnologies for Engineers" AICTE-2018.** ***15.* Internet of things- Arduino** **16. *One day National Workshop on* "Algorithms and Applications of Digital Signal Processing: Hands-On Training using MATLAB** **17. One day workshop on "Machine Learning and streaming Big Data Analytics** **18. One Day National WorkshopOn BIG DATA ANALYTICS.** **19. Value Added Course on "Programming in C and C++.** **20. One Day Workshop on DevOps Automation.** **21. Summer Training Program on "Embedded Wireless Application Development using ARM Microcontroller.** **22. A Workshop on "Data- the ELIXIR of Technology.** **23. International Virtual Conference on Data Science- A Future of digital transformation.** **24. Digital Security Summit 2017** **25. Digital System Design with FPGA** **26. Workshop for "girls in ICT".** **27. IBM Cloud Platform Application Development for the Internet of Things** **28. National Workshop on BIG DATA ANALYTICS** **29. Conventional to Digital - A Shift in BankingNational Conference By Department of Commerce, SSL.** **30. One Day National Workshop On ETHICAL HACKING AND CYBER SECURITY** **31. One Day Seminar on Recent Research Trends in Signal, Speech, Image and Video Processing** **32. One Day Workshop on Realization of OFDM for Wireless Communications Using Matlab** **33. One day workshop on "working with the multi-cloud"** **34. IEEE IAS Workshop on Smart Health Monitoring** **35. Three days National workshop on advanced industrial Automation training.** **36. Two day National Symposium On Digital Transformation in the Indian Industry.** **37. Two days workshop of Photoshop for Engineers.** **38. Value-added program on "data structure using OOP"** **39. Value Added Program(VAP) On Programming "C"** **40. One day workshop on information security.** **41. Workshop on Software Defined Networks- tools & Demo.**

Birla Institute of Technology & Science	-
University of Madras	-
Institute of Chemical Technology	-
Panjab University	**1. Digital Revolution in Business:Convergence& Integration**