International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Impact of Digitalization on Higher Education in Dakshina Kannada District: Benefits, Problems and Solutions

Manjula[1], Asha Kamath[2], Ashwini Kumari[3]

[1]Department of Statistics, S.D.M. Degree (Autonomous) College, Ujire 574240, India
[2]Department of Applied Statistics and Data Science, Manipal Academy of Higher Education, Udupi, India
[3]NITTE (Deemed to be University), Dept. of Mathematics, NMAM Institute of Technology, Nitte-574110, Karnataka, India

Abstract:

Purpose - The study intends to analyse the impact of digitalization on higher education in the Dakshina Kannada District, It mainly focuses on the advantages, problems, and solutions faced by students and institutions.

Design/methodology/approach - The analysis was carried out using both Primary and secondary data. Primary data was collected through the questionnaires in the Dakshina Kannada district of Karnataka. Secondary data were collected from print and online publications. Collected data were entered in SPSS and descriptive statistics were used for dataanalysis.

Findings – The research study revealed a number of obstacles to higher education's digitalization, including poor funding, inadequate digital facilities, unstable internet and power connections, cost of maintenance and a lack of digital literacy among instructors and students. Digitalization has still improved accessibility and convenience of education, especially during the COVID-19 pandemic. It was observed that the more than 50% of students reported feeling comfortable in digital classes and the majority of students agreed that digital classes were excellent.

Practical implications – The findings suggest the need for an increment in the funding for digital education in higher education institutions, as well as training for both faculty and students to improve their digital skills. Addressing these issues would help in effectively implementing digital education and improving the overall educational experience.

Originality/value – This study provides valuable insights into the state of digitalization in higher education in a specific region of India, highlighting the existing challenges and offeringrecommendations for improving digital education practices in the future.

Keywords: Digitalization, Higher Education Institutions, Technology, Interne Connection.

1. Introduction

The global COVID-19 epidemic has led to a transformation in the education sector as it adopts digitization in its domain. It was challenging to have interactive lessons, deliver materials to the students, and engage with them. However, this sector has no other choice thanto accept digitization. This

had made learning easier, convenient, & mind blowing. Nowadays, higher education is quite transparent and has expanded greatly in many different fields.Knowing in-depth information about current events in all relevant disciplines is one of the modern trends that influence our society. Employers in the market look out for talents that are very much creative in nature, agile in their performance and dynamically result oriented. The world has been made aware of the day-to-day changes in education as a result of the advancements in digitization and the expansion of available resources. Significant changeshave taken place in educational trends.Changes have to be accepted as the situation demands. Nowadays, with everything being digital, students can easily visit top universities and get study resources online for convenient access and reference. As a result of this Students' intelligence, capacity for critical thought, and output have all increased. At present students coming out of the institutions are absorbed by esteemed organizations who treat their human capital as assets. These human resources are expected to adapt, learn, update & upgrade themselves to any given situations. Due to recent developments in education, employers can now select candidates who are qualified for open positions and provide them with adequate
opportunity to advance their knowledge in a variety of sectors.

At present, India has been recognized as one of the fastest growing economies in the world. This development has been significantly aided, either directly or indirectly, by the digitalization of education. We can expect online courses in the future, where every aspect of the pedagogy will be taught using a unique technique. Method of learning & acquiring knowledge will change & students feel comfortable going over the recorded lectures at their place till they feelcomplete revision of the course. Every year, a large number of graduates from prestigious colleges emerge with the goal of joining reputable companies and establishing successful careers. Digital education is one of the most popular, innovative, and rigorous forms of education, where students can access material from any location at any time until they master it.

An industry across the globe wants vertical growth. To achieve this, they drastically look out for those talents who are having better accessto technology, willingness to learn & quickly adapt themselves with recent trends & information. Since there are so many learning-based apps available, most students use smartphones to access information and technology at more affordable prices. As per the report of internet worldstats.com, India is the second largest user of internet in the world afterChina. There is thirty percent internet penetration in India with
3.75 million people having access to internet in some form or other. Digitalization has improved the skills required for undertaking competitive jobs. Getting digitalized can make students smarter, provided they use it in the right pursuits to acquire more knowledge. Digitalization in education has taken place more than a decade ago in developed economies, but in India, due to technological gaps, it was much delayed.

1.1 Phases of digitization currently observed in higher education:

A time has come where every department has to think of digitalization and adapt the same.Resistance to change on digitalization will keep present education outdated; therefore, it has become evident to digitalize and transform present higher education. The following are the phases observed in digitalized education.

1. **Online courses**:

Online courses have been coming up with more and more demand because they are suitable for the working population and those who cannot afford to take up regular education. Online courses offer study

materials online; classes are conducted by videos made by subject experts from various streams. This helps the students to recollect the knowledge and also to go throughthe classes again and again in case he has missed out on any sessions due to some unavoidable

2. **Online exams**:

Nowadays, the majority of the institutions conduct tests online. Adopting a paperless exam format.students are provided with multiple choices & they can tick the answer of their choice, if they tick the correct answers, they will be getting marks for the same. Evaluation becomes easier as it is being done by the system itself & it is possible to get instant results.

3. **Online study materials**:

Study materials are provided online directly by the institutions. They can go through the same any time, and hence they carry the opportunity to gain better knowledge.

4. **Online videos**:

Online videos containing the live lectures delivered by eminent faculties of prestigiousinstitutions can be accessed. The same videos can be seen any number of times till a completeknowledge of that subject is obtained. Even numerical subjects containing problems can be seen and understood.

5. **Recorded lectures**:

Some of the institutions have their own in-house studio; these institutions request their faculty members to take up recorded lectures. Students have access to these lectures that have been recorded and can see them at their convenience. The recorded lectures are saved in a particularlink. The student can view the recorded version of the class if he continues to be absent and misses any of them.

6. **Virtual Classes**:

Virtual classes give anopportunity to the participants to communicate with one another. They can also interact with resource groups.

7. **TED Talks:**

TED talks or lectures are inspirational talks delivered by experts of various subjects. This will inspire students very much to the best possible extent.

Impact of online education was more felt when whole nation badly witnessed pandemic covid-19. This put a strong brake on traditional method of education and institutions were compelled to take online sessions to the students. However online classes had the following advantages:

1. Engaging classes were easier.
2. It can be taken from anywhere & at any time.
3. Study materials were sent through google classrooms for the benefit of students.
4. Attendance of students were monitored through google attendance monitoring tracker.

India is considered to be one of the fastest growing economies of the world. The human capital in India is occupying the second largest in the world after China. We have around close to sixty-five percent of our population with less than thirty-five years of age, with majority of our population being young age & proficient in technology. In the field of education & employment we have showna very good set of achievements, skillsets & capabilities along withrequired educational qualifications. This has helped very much indeveloping linkages with industries that are in a stronger look out for talented workforce. To develop capabilities of students who are youthsenriching their expertise in technological matters & getting digitalized as fast as possible has become very much evident. Digital transformation can come across withfollowing merits as far as young students and youths are concerned.

1. Enriching employability skills to meet market demands.

2. Improvement in job productivity.
3. Improving efficiency & competitiveness.
4. Better prospects.
5. Adaptability to get acclimatized with work climate & learn faster.

1.3 Challenges of transformation into digitalization:

when a change is about to come out in the existing system of education, it cannot be free from challenges, especially when it comes to rural areas and certain parts of urban areas. Though learning any course through the digital medium has myriad benefits to the students aswell as any kind of learners by its repeated access and ability to cover any part of the syllabusin the cases of absenteeism of candidates from the course due to any kind of unavoidable reasons, the challenges that are likely to meet in the present area are listed below:

1. Heavy dependence on internet and its limitations in rural areas due to signal & network problems.
2. Candidates' normal resistance to change from traditional methods to digital methods.
3. Teaching numerical and Mathematical subjects with different natured problems & providing solutions for each problem.
4. Willing to learn by clicking right link or by observing right videos because presently it is observed that most of them watch entertaining videos than educational videos. Educationalvideos are observed only in the eleventh hour with the fear of examination and not with the intention of learning things.
5. Empowering faculties to use digital classrooms.
6. Budget & expenses for installation of the same, due to managements fund constraints andcost cutting strategies applied in certain number of institutes.

Thus, we explore to identify what are the impact of digitalization and perception of students regarding digitalization in higher education.

Objectives:

The main objectives of this study are:

1. To assess the impact of digitalization on higher education imparted atgraduation level.
2. To explore the proportion of awareness on digitalization
3. To study the student's comfort and opinion regarding the digital class.
4. To understand the student's expectations from digitalization
5. To study the student's opinion regarding the digital class.

Literature review

Digitalization in higher education has been significantly accelerated by the COVID-19 pandemic. This has compelled institutions to adopt online learning platforms. Studies emphasize that digital platforms provide accessibility, flexibility, and convenience for students(Beatty & Ulasewicz, 2006). Furthermore, recorded lectures and online learning materials have made it simpler for students to revisit and revise topics at their convenience (Conrad & Donaldson, 2004). But the adoption of digital learning tools has challenges, particularly in regions with limited internet access and infrastructure, as noted by Kebritchi et al. (2017).

Prior research also highlights the need for both students and faculty to boost their digital literacy to maximize the benefits of online education (Xu & Ebojoh, 2007). Digitalization has transformed assessment methods, with online exams becoming more popular (Burns, 2013), and students generally

value the flexibility it offers. However, concerns remain about the impact of digital teaching methods in certain subjects, especially those requiring more interactions like science and mathematics (Kebritchi et al., 2017). The literature also indicates that the resistance to change from traditional learning methods, especially in rural areas, is dueto factors such as erratic internet access and inadequate digital tools (Xu & Ebojoh, 2007). Thus, digitalization has enormous potential; its success depends on overcoming infrastructuraland pedagogical challenges.

Methodology

Primary data was collected using questionnaire, interview & opinion methods, where pilot survey was conducted to check the efficiency of the questionnaire before conducting this study. Secondary data wascollected from websites, referred articles, Journals & periodicals etc. Primary data collected from the respondent was analysed and major findings were reported. Based on the observations & suggestions given by the respondent's recommendations for further improvements.

Data Analysis

The data is analysed from the responses given by the respondents. Datais collected from bothstudents of various streams of degree colleges ofchosen study area & faculties handling these courses from the longer periods. The summarized responses are as given below.

Data collected from students:

The distribution of students from various course are depicted in table below

Table 1: Course studying

Course	Number of students	Percentage (%)
B.A	14	20
B.Com	14	20
B.Sc.	14	20
BBA	14	20
BCA	14	20
Total	**70**	**100**

In order to collect data, the study concentrates on equality of proportion. From each stream 14students are chosen for the study.

Type of digital class used

Objective is to determine percentage of students who use different typeof digital class. Table 2: Type of digital class used

Type	Number of students	Percentage (%)
Videos	28	40
Recorded lectures	11	15.7143
PPT	31	44.2857
Total	**70**	**100**

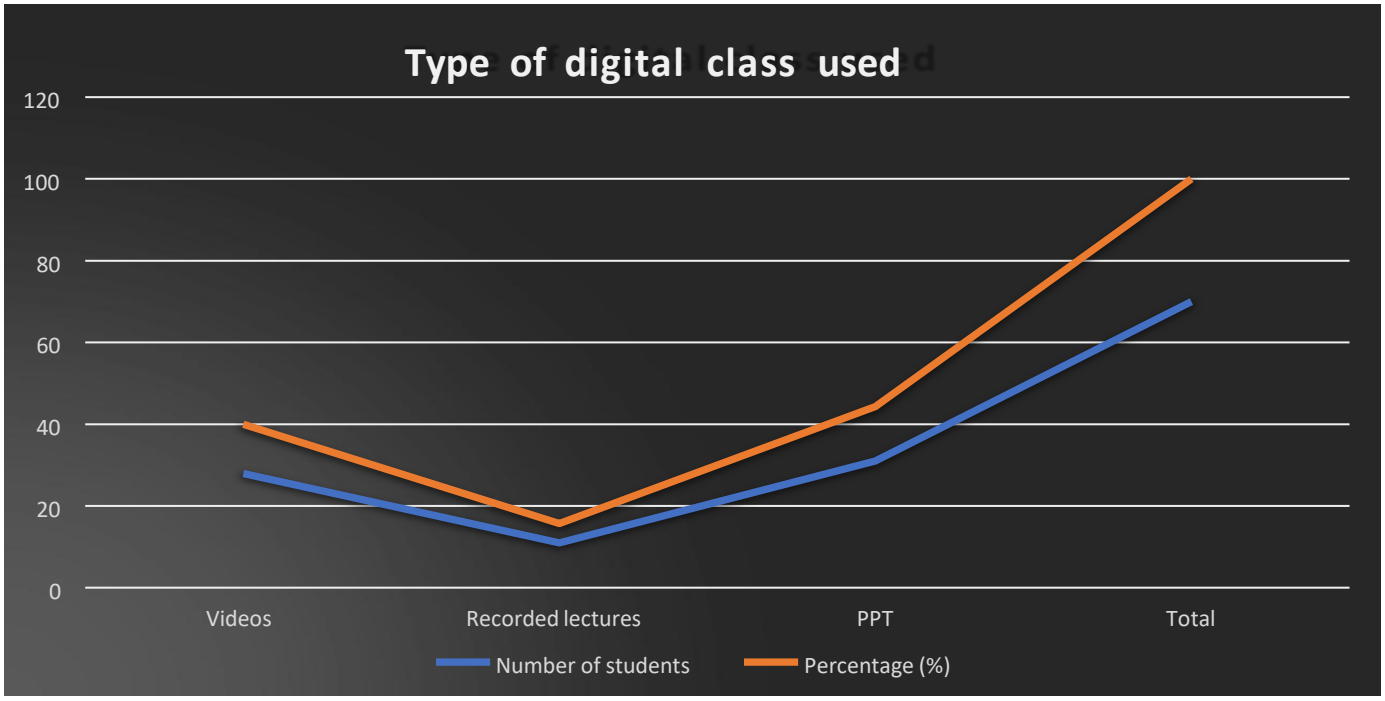

Figure 1: type of digital class used

From the above diagram, we observed that 40% of the classes are conducted by displaying videos, 15.71% by recorded lectures and rest 44.29% by using PPT classes**.**

Table 3: Awareness level on digitalization in higher education:

Awareness level	**Number of students**	**Percentage (%)**
Highly aware	28	40
Aware	23	32.8571
Not aware	19	27.1429
Total	**70**	**100**

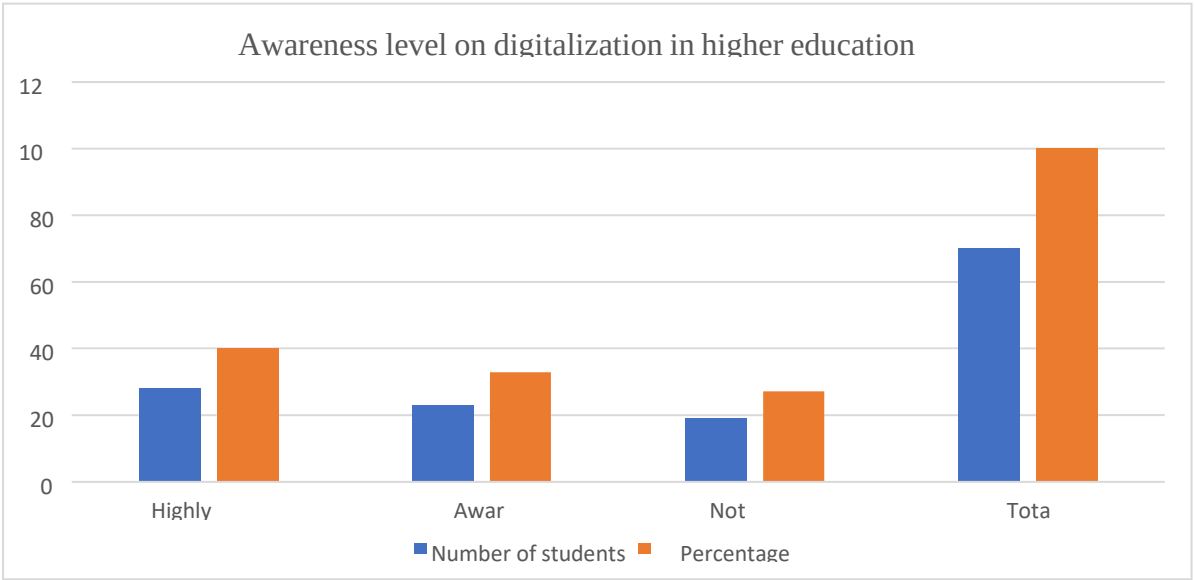

Figure 2: Awareness level on digitalization in higher education

The proportion of students who are aware of digitalization inhigher education ranges from0.3to 0.8

Table 4: Comfort level of students using digital classes

Comfort level	Number of students	Percentage (%)
Highly comfortable	43	61.4286
Comfortable	23	32.8571
Not comfortable	04	5.7143
Total	**70**	**100**

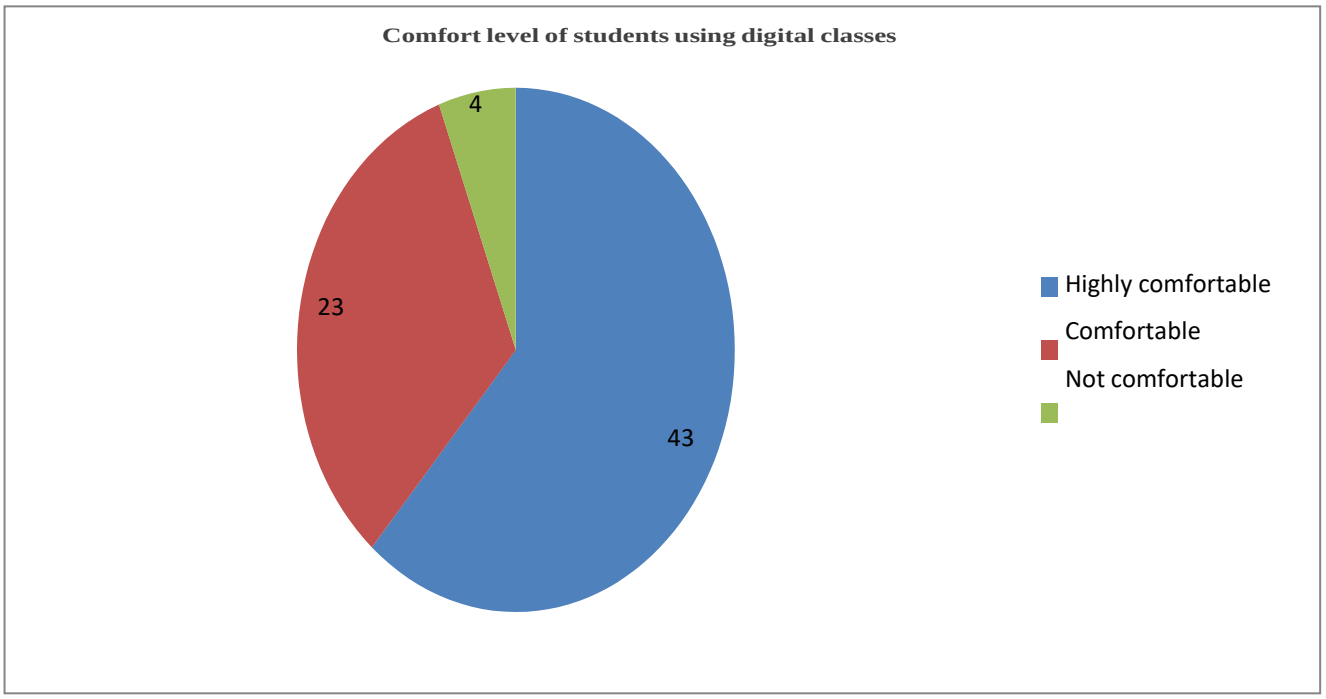

Figure 3: Comfort level of students using digital class

The proportion of students who find comfort using digital classes is more than 50%. Table 5: Students view on digital class

Opinion	Number of students	Percentage (%)
Excellent	19	27.1430
Good	38	54.2857
Average	13	18.5713
Total	**70**	**100**

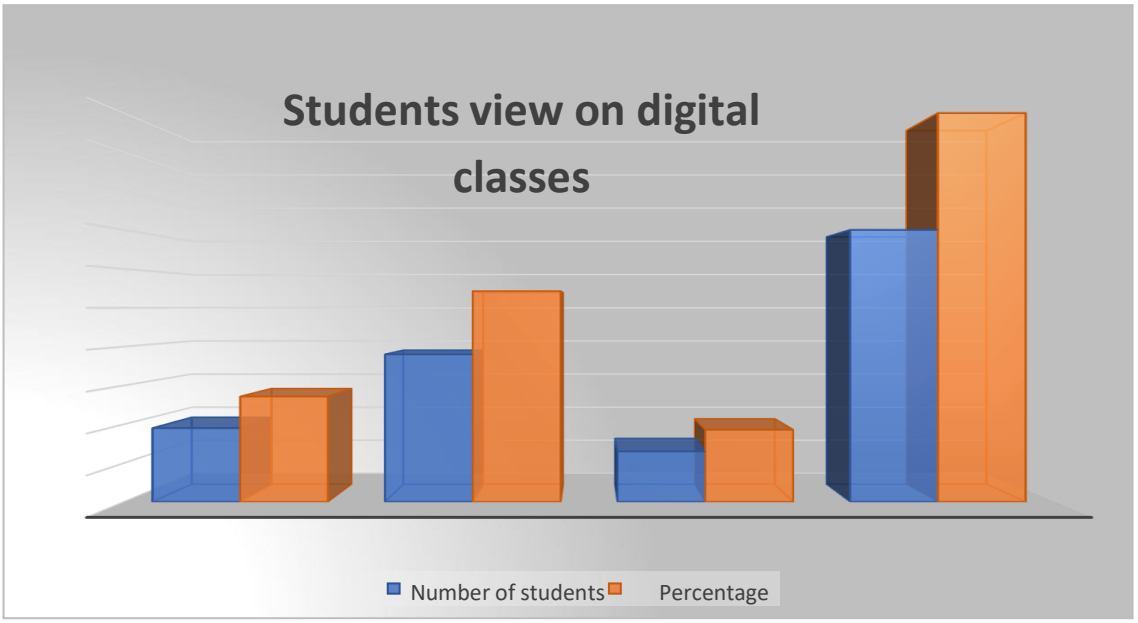

Figure 4: Students view on digital class

From the above diagram we observe that 27.1430% of the students view digital classes asexcellent, 54.2857% view it as good and 18.5713% have an average opinion on digital classes.

Students' expectation from digital class:

Objective is to determine the percentage of students' expectation fromdigital class. Table 6: Students expectation from digital class

Expectation	**Number of students**	**Percentage (%)**
Independent learning	13	18.5714
Revision	43	61.4286
Easy understanding	14	20
Total	**70**	**100**

From the above table, it is observed that, 18.57% of the students say that they expect independent learning, 61.43% feel thatthey can revise and recollect important topics of their syllabus and 20%say that it helps in easy understanding.

Faculties' opinion on learning apps

Objective is to determine the percentage of faculties' opinion onlearning appsTable 7: Faculties opinion on learning apps

Learning app	**Number of faculties**	**Percentage (%)**
Lack of recent additions	07	23.3333
Lack of coverage	06	20
Updating problems	11	36.6667
Unable to reach students' level	06	20
Total	**30**	**100**

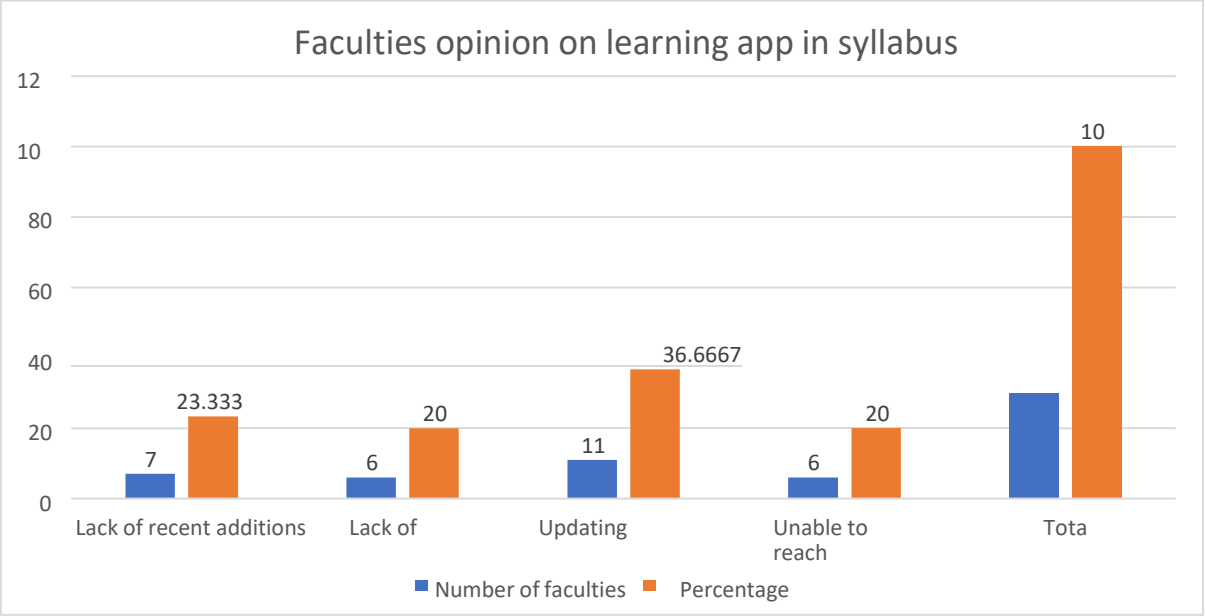

Figure 5: Faculties opinion on learning App in syllabus

From the above diagram, we observe that, 23.3333% of the faculty feel that there is a lack of recent additions in syllabus, 20% saythat there is a lack of coverage, 36.6667% have an opinion that there are problems regarding updating the app and 20% have an opinion thatthey are unableto reach students' level

Faculties' opinion on digital transformation of education

Table 7: Faculties opinion on digital transformation of education

Opinion	**Number of faculties**	**Percentage (%)**
Excellent	05	16.6667
Good	09	30
Average	12	40
Satisfactory	04	13.3333
Total	**30**	**100**

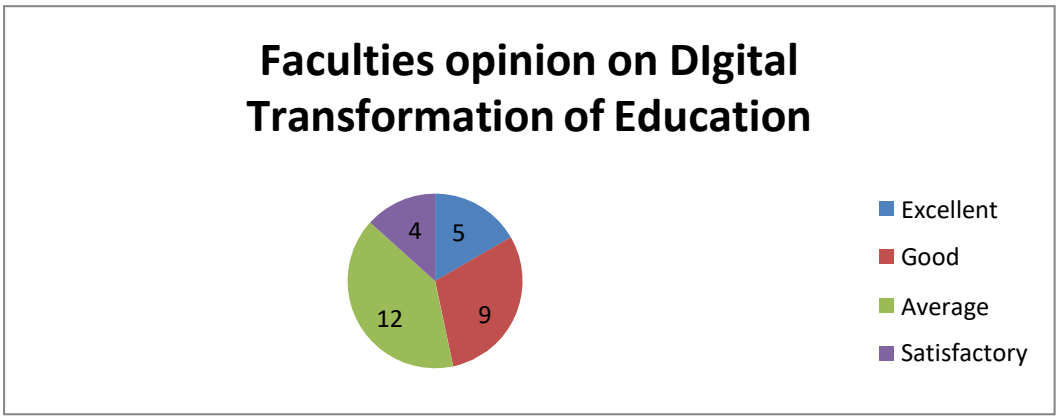

Figure 6: Faculties opinion on digital transformation of education

The number of faculties who have an average opinion on digital transformation of education is50%.

Faculties expectations from digitalization in education

Objective is to determine the percentage of faculties expectation from digitalization ineducation.

Table 8: Faculties expectation from digitalization in education

Expectation	Number of faculties	Percentage (%)
Institution Management support	17	56.6667
Time to update& upgrade	06	20
Privacy	07	23.3333
Total	**30**	**100**

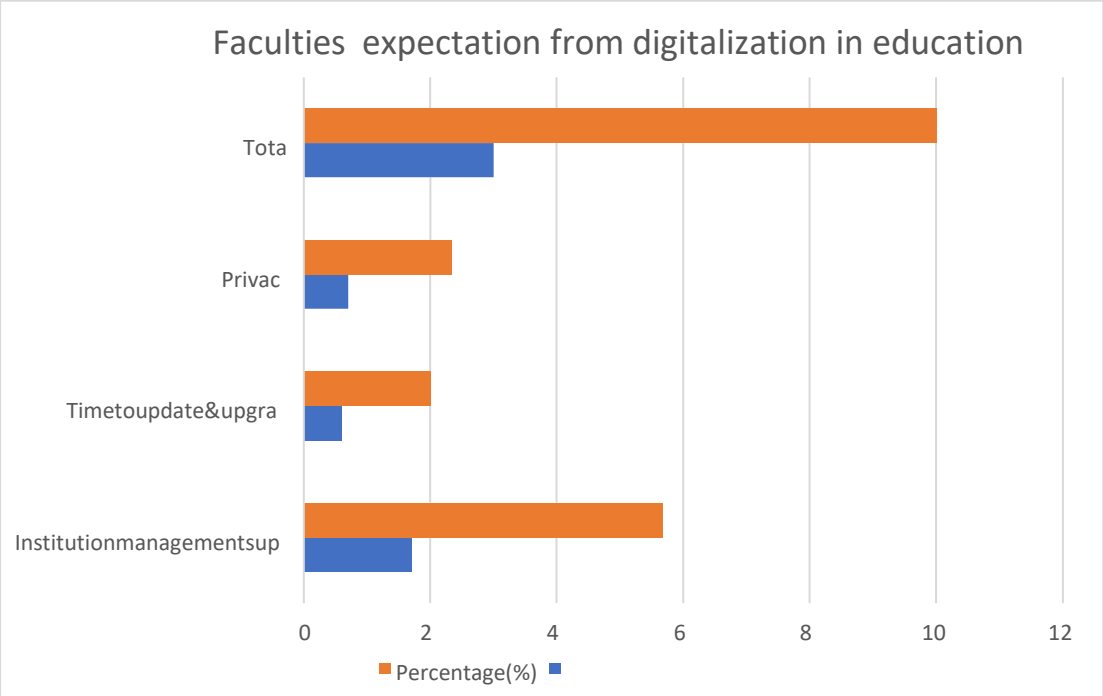

Figure 7: Faculties expectation from digitalization in education

From the above diagram, it is observed that, 56.6667% of the faculty expect in situation management support, 20% expect the time to update and upgrade the syllabus and 23.333% expect privacy

Conclusion

The major findings of this study are as follows.

1. The proportion of students who are aware of digitalization in higher education is more than 30% with 40% of the students being highly aware, 33% aware and the rest not aware of the digitalization in higher education.
2. The proportion of students who find comfort using digital classes were more than 50%.
3. The number of faculties who have an average opinion on digital transformation of education is 50%, 17% of the faculties have an excellent opinion on digital transformation, 30% of them say it is good, 40% say that it is average and the rest 13%that it is satisfactory

4. 27% of the students view digital classes as excellent, 54% view it as good and 19% have an average opinion on digital classes.

Scope for higher research

This study considered only the degree colleges in entire Belthangady taluk of Dakshina Kannada district. Number of audiences targeted in conducting this study is seventy respondents (students) from arts, commerce, science, business management & computer applications stream & thirty faculties handling subjects of various streams. Type of sampling used in this study is convenient sampling and the area chosen for this study is Dakshina Kannada district.

References

1. Abhinandan and Anupama (2020), "A study on perception of teachers and students toward online classes in Dakshina Kannada and Udupi District", *Asian Association of Open Universities Journal*, Vol.15 No. 3, pp. 285-296.
2. Armstrong, D.A. (2011), "Students' perceptions of online learning and instructional tools: a qualitative study of undergraduate students' use of online tools", *Turkish Online Journal of Educational Technology*, Vol. 10 No. 3, pp. 222-226.
3. Arora, A. (2017), Online Education Market in India 2016–2020, Franchise India Education, available at: https://www.franchiseindia.com/education/Online-education- Market-in-india-2016-2020.9263
4. Beatty, B. and Ulasewicz, C. (2006), "Faculty perspectives on moving from Blackboard to the Moodle learning management system", *TechTrends*, Vol. 50 No. 4, pp. 36-45.
5. Benson, R., and Brack, Ch. (2010), Online learning and assessment in higher education: a planning guide, Oxford: Chandos Publishing.
6. Brian, B. and Connie, U. (2006), "Online teaching and learning in transition: faculty perspectives on moving from blackboard to the moodle learning management system", *TechTrends*, Vol. 50 No. 4, pp. 36-45.
7. Burns, B.A. (2013), "Students' perceptions of online courses in a graduate adolescence education program", *MERLOT Journal of Online Learning and Teaching*, Vol. 9 No. 1, pp. 13-25.
8. Conrad, R. and Donaldson, J. (2004), *Engaging the Online Learner*, Wiley and Sons, San Francisco
9. Gillpatrick, T. (2020), "Innovation and the Digital Transformation of Education", *The Journal of Limitless Education and Research*, Vol. 5 No.3, pp. 194-202.
10. Kearsley, G. (2000), Online Education: Learning and Teaching in Cyberspace, Wadsworth Publishing Company.
11. Kebritchi, M., Lipschuetz, A. and Santiague, L. (2017), "Issues and challenges for teaching successful online courses in higher education", *Journal of Educational Technology Systems*, Vol. 46 No. 1, pp. 4-29, doi: 10.1177/0047239516661713
12. Koroleva, E. and Kuratova, A. (2020), "Higher education and digitalization of the economy: the Case of Russian Regions", *International Journal of Technology*, Vol. 11No.6, pp. 1181–1190.
13. Mansureh Kebritchi et al. (2017), "Issues and challenges for teaching successful online courses in higher education: a literature review", *Journal of Educational Technology Systems*, Vol. 46 No.1, pp. 4–29.
14. Vladimir, V. and Anna, E. (2021), "Digitalization of Education: Models and Methods", *International*

Journal of Technology, Vol. 12 No.7, pp. 1518-1528.

15. Xu, H. and Ebojoh, O. (2007), "Effectiveness of online learning program: a case study of A higher education institution", *Issues in Information Systems*, Vol. 8 No. 1, p. 160