An Empirical Study on Effectiveness of Digital education in Schools at Hassan city- During the Pandemic

Sowjanya Rajesh Dr. Lakshmi P
Research Scholar   Research Supervisor
VVCE Research Centre

ABSTRACT
Achieving effective learning via digital media continues to be a major concern in the contemporary education. Digital teaching has become a key component education. Educators must consider the process of Digital Media for learning & adapting the form of experience in education. The modern society has a higher priority and brain power is becoming the most valuable asset of any institution for that matter. Advances in Digital Education have opened up many avenues of learning. Digital Education has made information accessible from anywhere to all these students. Digital Education has reached most part of the world via technology. This study demonstrates how the digital education is contributing to the effectiveness of parents and teaching perspective. The goal was to find whether the Digital Education in Hassan city was effective or not. The paper describes the process of acquiring the knowledge through technology and how the effectiveness of education is imparted on the students in general.
KEY WORDS- *Digital Education, Effectiveness, Parents and Teachers Perspectives.*

I.   INTRODUCTION

During the pandemic, Hassan was just as effected as any other city in the nation. Especially the education sectors were affected unpredictably. The pandemic has suddenly shifted the classroom teaching into digital teaching with or without being well prepared for it. The changes had to be accepted and immediately implemented with no teacher training, no input on technological designs and usages. It just had to be done. The school management and teachers have then made enormous effort in a very short time to make the digital or online classes possible within weeks. Investments were made in the technical set of the stable infrastructure. Teachers and other non-teaching staffs have put in a lot of effort in self training themselves and communicating the parents, guiding them and the students in completing the curriculum via video interactive module, developing learning materials, test online, creating learning paths, moderating forums, holding consultation hours via video conferencing, test would be conducted via different digital platforms like Google classroom, teams, zoom. Google meet etc…

This situation entailed a number of challenges, the most critical of which was existence of inequalities in the access of electronic means to ensure adequate online teaching to all children & young people. Teachers also identified the main difficulties they has to handle, like, lack of adequate equipment for pupils, lack of time, lack of support from the parents, teachers had to use their own electronic devices and internet packs for the classes. Pupils' participation had decreased which created a gap in terms of opportunities for learning and achievement, due to inadequate technological resources. There has been a decrease in the children's analysis and critical thinking level because everything is provided by the technology. Although the availability of limitless information on the internet serves a great learning tool, it can kill the creativity of the students. These children cannot solve technical problems even though they are degree holders.

At the present limitless information on internet, there is no guarantee that students are consuming the required information anybody can post anything on the internet and it presents us extremely difficult to determine, what the truth is & what clout-chasing piece of misinformation is. The results have been has students are more indulged in entertainment which is an impulsive behavior rather than performing in academics. There is no doubt that the current situation triggered a great deal of pressure in the direction of digital teaching and also leads to a steep learning curve for many faculty members in the school, which pushes forward competence development processes. Through this the higher authority that is the management of the schools has become painfully aware of the value of their centre for teaching and learning.

II.   LITERATURE REVIEW

Lokanth Mishra,Tushar Gupta Abhashree A1, A2 et; al, in their research article entitled "**Online teaching-learning in higher education during lockdown period of COVID-19" pandemic**, concluded that To develop multimodal approaches to achieve course content objectives for better learning outcome can be a better idea to deal with the complexity of online education. Undauntedly, the governments must ensure the availability of reliable communication tools, high quality digital academic experience, and promote technology-enabled learning for students to bridge the disparities originated in the education system before and after COVID-19 catastrophe which is also inevitably necessitated for uninterrupted learning. Few steps should be accounted in the wake of this pandemic; to develop such a curriculum that reflects the perceptible change in the content knowledge and learning experience of students as well as enable them to think critically.

Hani Morgan in the research article named "**Best Practices for Implementing Remote Learning during a Pandemic",** concluded Schools that cannot implement online education well during school closures may have to think outside the box to keep their students from falling behind. The schools that choose to implement online learning will likely face challenges. Using the standards and articles published by notable organizations like the ISTE will mitigate these challenges and guide schools and teachers to help students make academic gains. As schools and teachers gain experience with online education during this difficult time, they will likely learn valuable methods that will make future school closings easier to manage.

Joanna Jesionkowska1 [0000-0002-1494-602X], Fridolin Wild1,2 [0000-0001-7344-9800], Mikhail Fominykh3 [0000-0001-9958-4816], and Judith Molka-Danielsen3 [0000-0002-4476-5465]A1,A2, et al., in their research article stated that, that such a transformation can be done successfully. We described and discussed technological alternatives and requirements for such a transformation. Future work may include a similar analysis of the pedagogical aspects. The COVID-19 situation is changing while we are writing this paper. Many issues stay open and require further attention. We wish to start the discussion in the Technology-Enhanced Learning community to be able not only to provide emergency remote instruction but quality education despite any disruptive event in future. Moreover, we intend to gather feedback on success and student satisfaction with the course. At the time of writing this paper, the course is still ongoing. When normality returns, policies will likely be created putting recovery plans in place for future eventualities. Decisions will have to be made about responsibilities for rapid conversion such as the one presented here. We hope our analysis of the pandemic induced constraints and design decisions can contribute to framing this discussion

Another initiative developed was to broadcasting educational content on national **television (*RTP Memória*), a programme called *#EstudoEmCasa* (Studying at Home)** which was launched on 20 April. This initiative made available educational resources for pupils in elementary education (from year 1 to year 9: 6 years old to 15 years old). A timetable was provided and lessons were presented by teachers from Monday to Friday. The programme was seen as an important resource for pupils without access to the internet or equipment but it could also be used by teachers to organize their teaching activities within the context of the Remote Teaching plan in each school. A recent study conducted in Portugal revealed that only 15,3% claim that they always use the *#EstudoEmCasa* programme to support their teaching activities **(Flores, Machado, and Alves 2020).**

In addition, two other initiatives were developed to support teachers and schools in the transition to online teaching: i) the provision, of the course entitled 'Training for Digital and Network Teaching' **(DGE 2020c)** aimed at supporting schools in developing distance learning; and ii) the creation of the website 'Support to schools' where teachers and schools can find a wide array of materials and resources related to remote teaching (**documents, sharing of practices, tools, FAQ, etc.).**

A recent study carried out showed that, on average, teachers were not able to interact with 2 pupils per class, due to the lack of resources or equipment, varying between 0 and 20 pupils per class. Teachers also identified the main difficulties they had to handle: lack of adequate equipment for pupils, involving pupils in their learning, lack of time, lack of adequate training on online teaching, lack of support from parents. In most cases, teachers had to use their own technological devices to teach. Most of the participating teachers claimed that the time spent in remote teaching has increased when compared to face-to-face teaching, but pupil participation in assessment has decreased.

In general, teachers claimed that pupils 'hide behind their cameras' as they were not obliged to turn them on. In general, pupil participation has decreased thus contributing to accentuating the gap in terms of pupils' opportunities for learning and achievement, due to the lack of adequate conditions in their homes (including lack of technological resources) and to the lack of support from their parents. As such, while, in general, teachers have adapted to remote teaching in a rapid and effective manner, remote teaching has exacerbated the inequalities in education. If the technical and instrumental response was of paramount importance at the beginning of the transition period from face-to-face to remote teaching, the need to focus on pedagogical matters in order to address pupils' needs became evident. As such, more focused and specific responses will be needed in order to make sure that no pupil is left behind.

Initiatives of Govt. of India on education during Covid-19 to prevent spread of pandemic COVID-19, the Government of India has taken number of preventive measures. The union government declared a countrywide lock-down of all educational institutions on 16 March 2020. Central Board of Secondary Education (CBSE) postponed all examinations of secondary and higher secondary schools on March 18, 2020 throughout India. CBSE released revised guidelines for examination centers to conduct examinations by maintaining a distance of at least 1 meter between the students taking the exam with a class not having more than 24 students. If the rooms of the examination centers are small then the students should be divided into different rooms accordingly. The Union Public Service Commission (UPSC) postponed the interview for the Civil Services Examination 2019 (Wikipedia). Similarly the most of the state Governments and other educational boards postponed examinations due to outbreak of COVID-19. Govt. of India has observed one day nationwide Janta-curfew on March 22 and implement lockdown from March 25, 2020 onwards in different phases. Govt. of India has been extending lockdown periods from time to time adopting different strategies to fight with the pandemic but educational institutions remained closed continuously. The lockdown 6.0 was declared on June 29, which is effective from 1st July to 31st July 2020 with some less restriction in other sectors except education.

Almost all state government ministries have taken measures to ensure that the academic activities of schools and colleges do not hamper during the lockdown period. They have instructed the schools to hold all their classes online. The lockdown has accelerated adoption of digital technology. It has provided a chance to develop new and improved professional skills/knowledge through online learning in more efficient and productive way. Online learning is the best solution during this pandemic Covid-19 situation (Pravat, 2020b). So, the digital India vision of the government is emerging as a vital tool for solving the present crisis due to Covid-19. It is a fact that technology-based education is more transparent with all respect. Looking at this challenge of colleges and schools being shut, government of India, as well as state governments and private players have undertaken proper initiatives. The Ministry of Human Resource Development (MHRD) has made several arrangements, including online portals and educational channels through Direct to Home TV, Radios for students to continue learning. During lockdown, students are using popular social media tools like WhatsApp, Zoom, Google meet, Telegram, Youtube live, Facebook live etc. for online teaching learning system. ICT initiative of MHRD (eBroucher- https://mhrd.gov.in/ict-initiatives) is a unique platform which combines all digital resources for online education

Education in online mode has been conveyed in two different ways such as recorded and live online classes. The recorded sessions can publicly visualize for the general public and are referred to as Massive Open Online Course (MOOCs) Besides, online live classes are can be conducted by webinars, Google meet, or zoom meetings. However, adopting these virtual learning is not easy because these methods are included with fast internet connections along with mobile or PC. Also, the tutor or student must be an expert to handle such a transition of conventional to virtual teaching. It is always arguable about transparency, reliability, and security issues of online examination and assessment

Statement of the problem

The study is to find an Effectiveness of the Digital Education that are in the schools to communicate about the lessons or daily activities. Digitalization of classes have provided platform to spread knowledge and share the activities of the academic curriculum with the parents as well. The question lies in how effective is the digital tools, which can be accessed from the learners responsiveness, interaction & performance in the assessment. In this pandemic situation prevailing in the country, that has started to be more Digital friendly, using this opportunity the teachers and the young learners should have become experts in the utilization of the Digital tools. But the scenario is very different, the more agitated. In spite of the flexibility, time management, convenience of the learners, digital education platform posing many challenging to both learners and teachers, some of the main digital education challenges include, technical issues, lack of the person interaction and many more. Thus the present study is conducted to measure the effectiveness of the digital education

Objectives of the study-
- To study the Factors that help Analytical view of Digital Education
- To study the Effectiveness of Digital Education in Middle Schools in Hassan City and to come up with suitable suggestions for updated learning

Scope of the study
The present study is conducted using middle schools located in Hassan city and the stusy is confined to measure the effectiveness of Digital Education from teachers and learners point of view.

Factors critically effecting the Digital Education
- In the technological point of view e learning is entirely depending on the **accessibility of PC's or mobiles and internets students & teachers with low internet connection possibly affects the access to**

online learning. It is big challenges for learner's faculty & institutions for providing technical equipment in order to create virtual sessions.

• Student's academic performance can largely **affect by difference between economic, racial & resource provision** & stress & anxiety associated with pandemic can have negative effects on learner's ability.

• **Deterioration of students competencies in reading, writing and arithmetic**, which are basic three skills of any students to be mastered

• **Dehumanization of Education in many environment** and distortion of relationship between the teachers & students

• **Isolation of students** in a digital and virtual world that distance them from any form of social interaction.

• **Deepening of social inequalities** between the haves and have not's that is students who can possess technology & those who cannot

• **Technology & the Gap between the social classes**. The students in developing countries graduate with limited basic technological skills & face huge problems to find a well paid job or even to compete in the Global Market.

• **Technology implementation could be highly expensive** for schools because of the varied social classes of the students

• **The technological literacy possessed by the students and parents are limited**. The effects of digital education might be critically affected due to the students' inability to use the technology, due to their age factor& the parents might also be in the same position of inability

• **Privacy and security-** If being misused, technology can expose you to a number of risks. Especially vulnerable   are kids. One in three teenagers reported being victims of cyber bullying. Sexting is another risky behavior teens might be exposed to.   Teens admitted sending sext messages, and almost half of the teenagers received texts containing nudity. With huge population using the Internet, it gives rise to cybercrime. Today it's easier than ever before to find someone's personal information as the borders of privacy is blurred. With a few clicks, you can now discover Face book page with all the contact information, pictures, whereabouts and many more. The information obtained can be used by cheaters for hacking and viruses.

•   **. Multi-medialization of studying Material** will weaken Learners' Logical Ability Intellectualization of computer is the extension of human's intelligence, which can substitute some human's logical function, and even surpass some respects of human's intelligence. Due to replacement of computer when people solve complicated object, they tend to transfer logical thinking to machine. For a long time, human's brain is not accustomed to consider carefully.

Research methodology
• **Type of research Design**
Empirical research was employed in the study**.**
• **Sources of Data collection**
Primary Data- Two structured questionnaires containing closed ended questions were used to collect the data from the respondents. One questionnaire was used to collect the data from the Teachers' and the other to collect the data from the parents' to understand the Effectiveness of the Digital Education in both the perspectives
Secondary Data- Data was collected through journals, magazines, newspapers
• **Sampling Design**

1. **Target plan-**
The middle & high Schools operating in Hassan City was considered in the study
2. **Sample Size**- 57 Parents and 62 teachers were selected to collect the response.
3. Sampling technique – Non Probability Convenient Sampling was employed to collect the responses.
4. **Plan of Analysis**- SPSS version 24 was employed for conducting statistical Analysis. Chi-square test was employed to test the research Hypothesis.

• **Data Analysis**- Google forms was used to collect the data from the respondents.
Null Hypothesis H0- There is No Effectiveness in the Performance of the Students through Digital Education in Middle and High School in Hassan City
Alternative Hypothesis H1- There is Effectiveness in the Performance of the Students through Digital Education in Middle and High School in Hassan City.
Chi-Square test was used to analyze the data below is the table which gives the information of about the analysis

Test Statistics

Parents Perspective	Chi-Square Calculated Value	Chi-Square Critical Value	df	Asymp. Sig.
The Usage of the Electronic Gadgets during the Digital Classes were	60.807	9.49	4	.000
The Usage of Electronic Gadgets during the Digital classes were straining the child	32.439	3.84	1	.000
The Teachers made the class very Lively and Interesting	39.579	9.49	4	.000
Your Child's concentration in the Class was	23.088	9.49	4	.000
Your Child was able to follow the instruction of the teachers' and excelled in his performance	44.842	9.49	4	.000
Was the Gadgets Misused by the Children	23.614	9.49	4	.000
Is the Teacher able to control the class	17.649	9.49	4	.001
The Child's Writing Skills have Improved.	21.246	7.81	3	.000
Teachers' are very Patient and Teach the students by giving Individual Attention	17.877	7.81	3	.000
Problems faced by the parents initially	77.474	9.49	4	.000
Parents faced the child's Health Issues during the Digital Classes	23.614	9.49	4	.000

Source: Field Survey

Interpretation:
From the above table it is evident that, the Calculated Chi-square values are more than the corresponding critical values at 5% level of significance for various degrees of freedom. And since, the significant values are less than 0.05. Hence, null hypothesis is rejected and alternative hypothesis is accepted.

Test Statistics

Teachers' Perspective	Chi-Square Calculated Value	Chi-Square Critical Value	df	Asymp. Sig.
Parents support helped the performance of the students	19.220	9.49	4	.001
Parents' Monitored the activities of the students' during Digital Education	20.915	9.49	4	.000
Parents prepared the students for the Digital classes regularly	19.559	9.49	4	.001
Parents' Involvement in Students Homework activities	25.661	5.99	2	.000
Did the Parents' provide a Learning Atmosphere in their Home Surroundings for the students?	15.492	5.99	2	.000
Did the parents Co-operate with the Activities provided by the Teachers?	14.780	5.99	2	.001
Parents adjusted to the Time Schedule given by the Teachers	28.712	9.49	4	.000
Did the Digital Classes block the Social Development of the Child? if 2 or 1, How?	20.763	3.84	1	.000
The Writing ability of the students has affected	35.831	9.49	4	.000
Have any Student Misused the Teachers' Liberty and created an Awkward Situation?	13.797	9.49	4	.008
Digital Classes have stabilized the emotional level of the Students?	27.695	9.49	4	.000
Students prefer 1rmal classroom teaching than Digital Classes	40.237	9.49	4	.000

Source: Field Survey

Interpretation:
From the above table it is evident that, the Calculated Chi-square values are more than the corresponding critical values at 5% level of significance for various degrees of freedom. And since, the significant values are less than 0.05. Hence, null hypothesis is rejected and alternative hypothesis is accepted. Hence we can conclude that the Digital Education employed during the Pandemic in Middle and High Schools of Hassan was Effective in Parents' Perspective

Findings
- Digital classes have to be more lively by introducing spot activities related to the subjects for a constructive development of the child
- Digital classes were beneficial but it must be more interactive & interesting, by asking random questions for maintain the student's alertness.
- Timings has to be reduced of the digital classes
- Topics and Concepts were forgotten by the students
- Students are not able to concentrate because of more entertainment have been introduced during the lockdown period.

- Digital education lacks speaking skills and expressions. Here students only listen but cannot express the due to mode of virtuality which hinders the recognition and their words are not audible, due to connectivity issue.
- Digital Education is best suited for students who are fast, but it might look intentional that teachers are concentrating on fast students, but because of lack of personal touch from the teachers, some parents feel teachers are practicing favouritism.
- Most of the respondents felt that digital education was effective but not as effective as off line classes or normal classes where the students were live and many factors helped in gauging the students

Suggestions
- Classes were to be organised and coordinated, proper instruction should be given & followed
- Teachers gave a suggestion that the TV channels can use this opportunity and conduct classes to students and reach the mass of students in the rural areas as well where internet is an issue.
- Teachers suggested that parents should create a serious atmosphere of learning, so that performance of the students can improve.
- During Digital Education more emphasis should have been on values, morals, ethics where students can learn something new and practice them in daily life.

III.   CONCLUSION

The study is to find an Effectiveness of the Digital Education that are in the schools to communicate about the lessons or daily activities. Digitalization of classes have provided platform to spread knowledge and share the activities of the academic curriculum with the parents as well. The question lies in how effective is the digital tools, which can be accessed from the learners responsiveness, interaction & performance in the assessment. In this pandemic situation prevailing in the country, that has started to be more Digital friendly, using this opportunity the teachers and the young learners should have become experts in the utilization of the Digital tools. But the scenario is very different, the more agitated. In spite of the flexibility, time management, convenience of the learners, digital education platform posing many challenging to both learners and teachers, some of the main digital education challenges include, technical issues, lack of the person interaction and many more. Thus the present study is conducted to measure the effectiveness of the digital education

There is no doubt that there has been an affirmative response regarding the Effectiveness of Digital Education. But many truths unfolds, we begin to understand that Digital Education might a convenient way of educating. It was better than no education at all. But it is not enough bringing out the actual level of performance of the students an at most commitment from the students via parents. Parents are themselves involved to the highest level to their push child's performance and involvement. It is found in the study that parents do provide a learning atmosphere but it is not enough to gain the seriousness, a child requires during the learning sessions. Finally this study highlights that students show least interest in lessons if not probed by the parents. There was effectiveness of Digital Education was highly adequate, but both parents and teachers opinioned that the earlier the off line classes start the better for the students, which makes the students more active, energetic, enthusiastic for the future.

REFERENCES

[1].   Transforming Learning with Technology in: The Nature of Technology (brill.com)
[2].   Full article: Teacher education in times of COVID-19 pandemic in Portugal: national, institutional and pedagogical responses (tandfonline.com)
[3].   REFERENCES UNESCO. COVID-19 Educational Disruption and Response. Retrieved on WHO. WHO Corona virus Disease (COVID-19) Dashboard. Retrieved on May 20, 2020 from https://covid19.who.int/ Wikipedia. Covid-19 Pandemic in India. Retrieved on https://en.wikipedia.org/wiki/Education_in_India Pravat Ku. Jena 2020a. Challenges and Opportunities created by Covid-19 for ODL: A case study of IGNOU. International Journal for Innovative Research in Multidisciplinary Filed, Volume-6, Issue- 5, Pg. 217-222. Study Abroad Life (2020).
[4].   How Covid-19 will affect the Indian education system. Retrieved on May 25, 2020 from https://www.studyabroadlife.org/how-covid-19- will-affect-the-Indian-education-system/ Pravat Ku. Jena 2020b.
[5].   Online learning during lockdown period for covid-19 in India. International Journal of Educational Research, Volume-9, Issue-5(8), Pg.82-92. Misra Kamlesh 2020. Covid-19: 4 negative impacts and 4 opportunities created for education.
[6].   Retrieved on May 25, 2020 from https://www.indiatoday.in/educationtoday/featurephilia/story/covid-19-4-negative-impactsand-4-opportunities-created-for-education-1677206- 2020-05-12 Educationasia.in 2020. The Impact of COVID-19 on Education and Education Sectors, Know Here Retrieved on May 25, 2020 from https://educationasia.in/article/the-impactof-covid-19-on-education-and-education-sectors-knowhere MHRD notice (20 March, 2020). COVID-19 Stay Safe: Digital Initiatives. Retrieved on May 25, 2020 from https://www.mohfw.gov.in/pdf/Covid19.pdf May 20, 2020 from https://en.wikipedia.org/wiki/COVID19_pandemic_in_India Wikipedia, Education in India Retrieved on May 24, 2020 from June 26, 2020 from https://en.unesco.org/covid19/ education response
[7].   Full article: The Covid-19 pandemic and its effects on teacher education in England: how teacher educators moved practicum learning online (tandfonline.com)

[8]. Literature Review on the Factors Affecting Primary Teachers' Use of Digital Technology **Marthese Spiteri & Shu-Nu Chang Rundgren**

[9]. M. Arora, L. M. Goyal, N. Chintalapudi and M. Mittal, "Factors affecting digital education during COVID-19: A statistical modeling approach," 2020 5th International Conference on Computing, Communication and Security (ICCCS), Patna, 2020, pp. 1-5, doi: 10.1109/ICCCS49678.2020.9277370.

[10]. TY - JOUR AU - Alhumaid, Khadija PY - 2019/10/01 SP - 10 EP - 20 T1 - Four Ways Technology Has Negatively Changed Education VL - 9DO - 10.2478/jesr-2019-0049 JO - Journal of Educational and Social Research ER -

[11]. Technology : The Positive And Negative Effects On Student Achievement Jennifer Lyn Flanagan The College at Brockport https://network.bepress.com/hgg/discipline/807?utm_source=digitalcommons.brockport.edu%2Fehd_theses%2F254&utm_medium=PDF&utm_campaign=PDFCoverPages

[12]. Australian Educational Computing,

[13]. Factors affecting access to digital technologies and the resulting impact for students

[14]. Janette Cochrane

[15]. University of the Sunshine Coast Australian Educational Computing, 2020, 35(1)

[16]. 12 Negative Effects of Technology in Education - Inspirationfeed

[17]. 3213ijmnct02.pdf (wireilla.com)

[18]. The Positive and Negative Effects of Technology on Education Reconsidered - DEZZAIN.COM

[19]. Understanding the Negative Social Impacts of Technology-Driven Education - The European Business Review

[20]. (PDF) Digital Learning in Schools: Conceptualizing the Challenges and Influences on Teacher Practice (researchgate.net)

[21]. (PDF) How digital media and Internet transforming education (researchgate.net)

[22]. (PDF) Impact of Digital Technology on Education (researchgate.net)

[23]. https://www.ejmste.com/download/a-study-of-the-effects-of-digital-learning-on-learning-motivation-and-learning-outcome-4843.pdf

[24]. International Journal Of Education Research Open Volume 1, 2020, 100012https://www.sciencedirect.com/science/article/pii/S2666374020300121

[25]. Hani Morgan (2020) Best Practices for Implementing Remote Learning during a Pandemic, The Clearing House: A Journal of Educational Strategies, Issues and Ideas, 93:3, 135-141, DOI: 10.1080/00098655.2020.1751480

[26]. Joanna Jesionkowska1 [0000-0002-1494-602X], Fridolin Wild1,2 [0000-0001-7344-9800], Mikhail Fominykh3 [0000-0001-9958-4816], and Judith Molka-Danielsen3 [0000-0002-4476-5465] Pandemic-Induced Constraints on Rapid Transformation to Digital Education