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Digital Education Adaptability among Z-Generation Students and Human Capital Accumulation in India

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Abstract

The world has been in the digital revolution since the end of the 18th century and early 20th century. In the Indian context, education cost is increasing day by day, which cannot afford by half of the population of the country and the coverage of physical education are not all over India. The adaptability of digital education among the Z-Generation has changed the whole academic system and opened a new window of human capital accumulation process. It is more convenient and easier to access, which helps to produce more and more human capital stock and also helps to develop the nation. This paper is descriptive in nature and review type, which tries to identify the adaptive nature of digital education among Z – Generation students and its hurdles and opportunities. It also explains the new insights into how much the human capital accumulation process is feasible through the digital education system.

Key Words: Digital education adaptability, Human capital accumulation, Z- Generation students, Digital education platform, Technology, Covid-19

1. Introduction:

The digital education system is not a new phenomenon of education, whole the world has been in the process of the digital revolution since the end of the 18th century and early 20th century. New inventions and innovations are the witnesses of the digital revolution, and day by day, this shows the increasing trend. None was thought before covid-19 that the whole world would be in their own homes and all education systems would depend on technology. All the nations took strict steps to lockdown the country only because of digital technology. As we know that human capital accumulation is the most significant goal of each nation, and they do all those things by which they can make their human resources as human capital through the smart way of teaching and learning process. According to Belitski and Desai, educational institutions

contribute significantly to the growth and development of technology-based industries and especially focus on entrepreneurial actions through research and teaching (Belitski and Desai, 2016). United Nations has also given more emphasis to building the knowledge-based economy through human capital accumulation with equitable access of quality education to achieve sustainable development goal 4 (SDG 4) (United Nations Report, 2016).

In the early stage of the technology revolution, the education sector was most beneficial for the Y generation. People were using technology in education as blended learning in the higher education system with a conventional method of teaching-learning (Poon, 2014). The partial use of technology in education as a blended learning approach improves knowledge coverage and learning engagement and makes the students more efficient and capable (Edward et al., 2018; Ghazal et at., 2018). Especially developing nations like India will benefit more if digital education is transformed up to the need of Z-generation students. The adaptability of digital education among the Z generation will change the academic system and make it more convenient and easier to access. As per various studies and reports, the whole world is planning a major shift to the digital education system and putting a lot of effort into its suitable and effective implementation. India is preparing the various digital platforms and e-learning material for online education, especially for school education, and moving towards it. The Indian government has declared in 2022-23, the union budget to start a digital university with all required equipment and to hire the best teacher to teach the Z- Generation students. Law and legislatures are changing towards promoting digital education in India. Technological revolutions like digital education are rapidly altering the education system, teaching, and the learning process. This covid 19 pandemic made people more adaptable to digital education. Nowadays, it has become a major medium of education for human capital accumulation. This research paper tries to explore the new insights and hurdles, and opportunities in the adoption of digital education among Z- Generation students. This paper also describes the relevance of digital education for human capital accumulation among Z – Generation students.

1.1. Z – Generation

The Digital revolution has transformed the education system and learning behavior of those born between 1995 and 2010, known as the Z - Generation (Spivack, N. 2007; Williams, A. 2015). Z – Generation students differ from previous generation students in various socio-cognitive perspectives. They consider themselves more competent with ICT tools. They are frequent smartphone users with mobile technology and Web 3.0 technologies. Z – Generation students can access an unlimited and wide range of information through multiple channels of digital platforms. They show high expectations and attributes towards technology in the teaching-learning process because of its independent and autodidactic nature. The said generation shows a rapid response, desire for immediacy, and continuous interaction through technology (Bennet & al., 2008; Fernandez & Fernandez, 2016). Dependencies on technology, needs, and behavioral pattern distinguished this generation from the previous generation. The Z - Generation students are also called the ‘copy and paste in school generation’ because of their heavy dependency on technology (Mut & Morey, 2008). Students of the Z – Generation prefer the visual information provided by digital platforms and show their ease of performance in the digital and virtual environment. They also accomplish several tasks simultaneously through digital platforms (Cassany & Atalaya, 2008; Reig & Viched, 2013).

1.2. Human Capital Accumulation

The term “Human capital” corresponds to one of the intrinsic capabilities of human beings, and the process of acquiring these capabilities, such as knowledge, skills are known as the accumulation of human capital. Human capital accumulation is not a simple process of development, and it consumes the time from the birth of a child. Nurturing of the child, primary

education, parent's behavior, friend circle, school environment and quality of education, quality of higher education, mental and physical development, etc., are significant factors that contribute to human capital accumulation. Some economists also said that acquiring knowledge & skills by individuals and enhancing innate abilities is known as the process of human capital accumulation (Laroche et al., 1999). It is a process where people transform themselves from casual labor to human capital through taking quality education, skills, training, etc. Human capital accumulation is a lifelong process where people start learning from childhood to their entire working life through primary, secondary, tertiary education, off or on-the-job training, etc. (Saroj, S. et al., 2022). An increase in human capital stock through education is positively associated with the socio-economic development of any nation. It strongly influences the economic growth of a country (Barro,2001; Gyaimah & Brempong et al., 2006; Hanushek & Kimko, 2000).

2. Adoption of Digital Education among Z – Generation Students

Earlier, only some educational institutions were offering education through digital platforms, and its visibility was limited. But during COVID-19 digital platforms became a significant mode of education. Although the digital education system was new for everyone, it was rarely practiced by students and teachers. But during the Covid – 19 pandemic, people realized the relevance of the digital education system, which helped them to continue their teaching-learning process through online mode. The digital education system has many characteristics which make it more adaptable such as its flexible nature, no time constraints, broader coverage and easiness of accessibility, etc. Previously, the digital education system was used in higher education and research work only, but after the digital revolution, schools are also adopting this system in the teaching-learning for Z-Generation students. Nowadays, the scenario is that schools are giving a lot of assignments and project work based on digital platforms; without using digital platforms, it is not possible to complete those works. Various open online courses on MOOCs, NPTEL, and SWAYAM platforms, etc., have changed the enrolment system of students from limited to unlimited. This changing pattern in educational technology has changed the teaching-learning process, and at present, most leading institutions are adopting online teaching in schools and higher education. Moreover, digitalization in education helps students as well as teachers, such as online ease in access to study resources, ease of saving study materials and time management, etc. (Hung & Jeng, 2013). Many researchers found that many students choose online learning because it provides a better quality of education, broad information in a suitable time duration, and get the learning and degrees without staying and spending extra money in other cities. During Covid 19 Pandemic, most places, schools, and institutions were closed, which made online learning mandatory and made adaptable to people towards online learning (Barron Rodriguez., 2021; Selvaraj et al., 2021).

2.1. Hindrances and Opportunities

In the Indian context, education, especially higher education costs are increasing day by day, which cannot afford by half of the country's population. Apart from it, private schools charge very high fees to parents and also demand capitation fees for giving admission to students. A high-income group can easily afford such fees, but the middle- and the lower-income group faces many problems and challenges in paying the amount. So, in several ways, digital education can resolve many problems directly or indirectly. In the future, most of the activities will be shifted to digital mode, and each one will be digitally literate and able to handle the technology, so there will be no problem. Earlier, people work hard for their income and livelihood, but now a day, people work less and earn more due to manage of their work in digital mode. There are many examples such as Zomato, Uber, Ola, and many apps which easier our life and help us to earn more.

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Following are some major problems that can resolve after promoting a digital education system;

Sr. No	**Problems**	**Solutions after Digital Education**
1.	Enrolment/ Admission problem in higher education	Many students do not get admission due to the limited number of seats. Digital education platforms open the window to enroll anywhere, on any course worldwide.
2.	Poor quality of teaching	Many teachers do not teach as per the expectations of the students. So digital education system will force them to teach seriously as everything will be recorded. And students can get quality information from the subject experts through digital education platforms.
3.	Reservation Problem	Many students blame that due to reservations, they have not got seats. This creates a negative mindset for a particular community. Digital educational platforms provide equal opportunities to all.
4.	Poor learning of students	Many students have slow learning, but if contents are available, they can give more focus to their studies.
5.	Monitoring problems	Monitoring the students and teachers studies will be easier because the study material of both can be evaluated properly.
6.	High fee problem and stay expenditure problem	A high fee is a major concern for most of the population in India, and digital educational platforms provide quality education with less expenditure.
7.	Transportation problem/ Traffic problems	During the opening and closing of school/colleges, traffic becomes a big problem, but it can be controlled.
8.	Population control in the urban area	Most rural students stay in the urban area to get an education, but it can also be resolved if they get good education from home.
9.	Misbehave problems, especially with girls	Many misbehaving cases are happening everywhere, but they can be controlled after the implementation of digital education.
10.	Infrastructure problems	Infrastructure is a big problem in colleges and universities, but it cannot be a problem after digital education.
11.	Time management problems	Students and teachers sometimes have time management problems, but it will not be a problem after the implementation of digital education.
12.	Safe and secure environment problems	Every parent is so much concerned about their childrens safety and security. It will not be a problem if they get an education through digital mode.
13.	Education by choice problem	Sometimes students do not get subjects as per their preference. This problem will also be solved.

3. Human Capital Accumulation through Digital Education among Z – Generation Students in India

The idea of human capital accumulation through digital education has become more prominent due to the technological revolution. The evolution of various technical gadgets and Edu-tech industries changed the learning behavior of human beings, especially of Z-Generation students. Educational institutions majorly focus on human capital accumulation through knowledge transfer and yield new vision and insights. Education is considered the most significant investment for human capital accumulation and proved as the most important effective factor (Becker 2009& Schultz 1961). Entrepreneurial practices have been given much importance in teaching and research, and it has been recognized as a positive factor in economic growth (Etzkowitz 2003 & Guerrero et al. 2015), and historically universities and institutions research activities proved that turned in the commercialization of intellectual property rights has been a major result. Education needs some positive changes; it should be holistic, comprehensive, and effective and must be high quality. Education is said to be quality education only when it satisfies the basic learning requirements and supplements the life of the learner, and changes the overall living practice (Lim et al. 2018, p.371). Investing in the digital education system promotes ICT skills and enhancement along with expanding broad and critical thinking processes, problem understanding & solving ability, and effective communication skills. The growth of ICT skills among students (Z- generation) must not end, but it also facilitates the development of fundamental twenty-first-century skills (Ananiadou and Claro 2009). Open educational material resources and digital books embrace massive potential (McGreal 2017), and connected students should be significantly stimulated. Those individuals, who have more additional interest in ICT skills, can learn more about ICT skills. Virtual education is a new young generation educational platform that plays a significant role in human capital formation (Saroj, S. et al., 2022). Nowadays, in India, many students, as well as working professionals, are using digital platforms to enhance their capabilities. Several students are using digital platforms for taking degrees and doing certificate courses across the world which add to the capabilities of human capital.

4. Discussion

Digital education is a very significant sector that can repeat the education revolution in digital mode. Many problems can be resolved easily, and education can be provided to everyone. During lockdowns, students were getting online education on different online portals and apps worldwide. Z – Generation students have become much more familiar with the digital education system, and their adaptability is much better than other generations of people. Digital education is different from the traditional education system, and it is an easier way to register self at low fee rates and get an education. However, there are still challenges and limitations for some specialized education. The whole world is transforming into a digital era, and education is one of the fields which needs to be revolutionized. There are indeed challenges and barriers, but the transformation of education in digital form will be able to supply quality education to all, including marginalized sections of society. There are challenges in developing nations, such as internet accessibility being very poor, but the government is trying to make availability of high internet speed everywhere. 5G technology has already been in use, and 6G will be also introduced very soon. Such challenges will be changed into strengths, and internet connectivity will not be an issue in the future. Information and communication technology did easier our life and made us more efficient in achieving set goals. In many situations both educators and students are under pressure to teach and learn in classrooms, but digital education will remove such pressure. Educators can prepare their study material and upload it on the portal, which can be accessed by students, and learning become easier. Despite all these benefit, issues, and challenges, the digital method of education can control the bubbling in the education

field, especially in developing nations, where the number of colleges is increasing day by day, but the quality of education is decreasing very faster. There are many reputed and responsible dignitaries that quality of engineering education is very poor in India; if it is not controlled on time, then India will be so far from growth in the future. Education through digital mode may be the right solution for this problem. Z – Generation students are the generation of the revolutionary technology era; students from this generation are more familiar with and adaptable to technology. Digital educational platforms open several windows for human capital accumulation for Z –Generation students. Digital educational platforms increase the coverage of knowledge and skills without any time constraints. It makes the human capital accumulation process easier, more flexible, and affordable. The characteristics of affordability and broad coverage of this platform add more stock of human capital. Now, people can take quality education and knowledge from subject experts across the world with less investment. These characteristics make human capital more capable and efficient who contribute efficiently to the economic activity of the nation, and help to grow faster.

5. Conclusion and Recommendations

From the above discussion, we can say that taking education is the major part of human capital accumulation, which help the individual to become a more capable and skilled resources of the nation. After the digital revolution in the late nineteen century and children born after that (Z - Generation), become more familiar and adaptable to technology. Digitalization of education opens a new dimension of the human capital accumulation process, and the characteristics of a digital education system, such as broad coverage of information, affordability, accessibility, time flexibility, and easiness of accessing multiple courses at one time, etc. Digital education adds more human capital stock and helps the nation's development. Although digital education has much importance, it provides many benefits such as financial benefits, convenient education, and so many but degrees or learning cannot make a human as capital as skills can learn at school or college in physical mode. So, after a study of lots of literature and research, it can recommend that there should be a physical presence of Z- Generation students with at least a 90:10 ratio, ninety percent online, and ten percent offline. If institutions prepare and develop such kind of education system, education may be more effective, and quality can be maintained forever.

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