



EDUCATION IN THE DIGITAL AGE: SOCIAL MOBILITY AND THE NEW DIGITAL DIVIDE

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1. INTRODUCTION

The education system of the world has changed significantly over the last twenty years due to the blistering development of the digital technologies. Learning platforms based online, virtual classrooms, massive open online courses (MOOCs) and learning applications have become part and parcel of formal and informal education. The digital turn has been popularly and significantly understood within the politics of policy and popular discourse as a way of increasing access to education, lowering the barriers to the cost of education, and increasing social mobility, especially in terms of the traditionally marginalized groups of the population to elite educational institutions. These allegations were further magnified by the rapid transition to digital education in the face of COVID-19 that put online learning on the list of possible equalisation tools able to remove geographical, institutional, and economic obstacles (UNESCO, 2020; World Bank, 2021). In sociology of education, it is widely accepted that educational expansion can bring in more equality or mobility. Classical and modern sociological studies have also clearly shown that education can tend to be an engine by which social inequalities are perpetuated, despite the increased access (Bourdieu and Passeron, 1990; Goldthorpe, 2000). In this respect, the emergence of digital education poses significant sociological questions of whether the new educational forms can truly democratise the opportunity or merely re-pattern the established patterns of stratification. Although digital education can reduce entry barriers, the ability of digital education to produce equitable mobility results is relative to the extent to which it is integrated into larger social systems.

Digital divide has formed the idea of inequalities in access to digital technologies. Initial studies concentrated more on the first level of digital divide in which unequal access to devices and internet connectivity are a priority (van Dijk, 2006). Further literature has since shifted away from access-based explanations, to emphasize second- and third-level digital divides, which are the differences in digital skills, use behaviors, and the social and economic benefits of digital action (Hargittai, 2010; van Deursen and Helsper, 2015). This change is especially applicable to the setting of digital learning where access to online platforms alone does not ensure quality learning, credentialing, and labour market benefit. In the concept of social mobility, education is traditionally perceived as one of the mediating institutions between social origin and social destination. Education

qualifications are supposed to help in job mobility, earnings growth and attainment of social status. Nevertheless, sociological research mobility investigations have revealed that returns to education are highly skewed and are mediated by the class, sex, language, and class prestige (Blau and Duncan, 1967; Erikson and Goldthorpe, 1992). The growth of digital education thus begs fresh scrutiny of the question as to whether online education can improve the mobility options of underprivileged communities or whether it solidifies the cumulative advantage of educational innovations to those communities already advantaged to take advantage of them.

The current body of knowledge concerning digital education has a polar view. On the one hand, they say that online learning systems are a convenient low-cost alternative to education in real institutions, which allow learners to gain skills and credentials that are not available in the traditional institutional channels (Means et al., 2014). Critical sociological studies, however, indicate that digital education tends to favor learners with pre-existing educational privilege, digital literacy, and institutional support, and therefore, creates inequality in the pretext of being open (Selwyn, 2016; Williamson, 2017). In addition, online learning mobility returns are also unclear since the use of digital credentials in the labour markets is not evenly acknowledged. Although more literature on digital education and inequality is on the rise, very few studies directly relate digital learning to social mobility outcomes. A lot of the current literature is based on the access and participation, or even pedagogical efficacy, which creates a gap in the knowledge about how digital education influences life opportunities in the long term. The gap that is filled in this paper is by analyzing the digital education in terms of social mobility, where the digital divide is not seen simply as a technological divide but rather, as a mobility divide where returns on educational participation are disproportionately high.

Instead of taking a deterministic stance, which would posit, and define digital education as either emancipatory or exclusionary, the paper moves a middle-ground sociological examination based on theory and empirical research. It states that digital education seems to work through accepted hierarchies of inequality and that social mobility is mediated by social background, institutional context, and labour market recognition. The paper will contribute to the current discussions in the sociology of education and inequality by redefining digital education as a place of



educational growth and social reproduction. The paper will then present the theoretical framework of the connection between digital education and social mobility and critically review the available literature. It then evaluates the way online education transforms education opportunity and mobility and then talks about the larger sociological implications and future research directions.

The paper makes a contribution to the literature by reviewing the studies on the subject of digital inequality and social mobility in one sociological paradigm. The paper by framing the concept of new digital divide as the mobility divide, which is defined by disparate returns to digital education, expands the debates on digital divide past access and participation. By so doing, it addresses the challenges in sociology to do more resultative analyses about educational inequality in the digital age and offers a platform on which to consider how digital education remaps but not ends the dynamics of social stratification.

2. CONCEPTUAL FRAMEWORK: DIGITAL EDUCATION, SOCIAL MOBILITY, AND THE DIGITAL DIVIDE

The mediating role of educational systems in mediating the association between social origins and social destinations has been an issue of sociological analysis of education and social mobility. In this tradition, education is defined as not only an instrument to acquire a skill but a socially entrenched institution that endows credentials, status, and opportunity unequally (Blau and Duncan, 1967; Goldthorpe, 2000). The advent of online education has made a re-evaluation of these already existing conceptual connections necessary, especially given the assertion that online education can democratise access and upset conventional hierarchies of educational delivery.

In sociological terminology, social mobility is movement in a stratified social structure and usually the analysis is done along with the intergenerational and intragenerational lines. Education has been seen as one of the mediating variables that tend to undermine or support the moderating nature of social background on occupational and status results (Erikson and Goldthorpe, 1992). Nevertheless, studies have always indicated that the returns to education are not equal and depend on institutional prestige, social capital and labour market structures. This fact is essential to study digital education because online learning is frequently not established according to the traditional institutional hierarchy, yet is still integrated into the frameworks of credentialing and job market preferences.

The digital divide has been an effective analytical tool in analyzing disparities in relation to digital learning. Initial sociological and communication analyses had conceptualised the digital divide mostly in terms of unequal access to digital technologies, including computers and access to the Internet (van Dijk, 2006). Although there is still an issue of access, later studies have shown that there are still inequalities even after basic access has been attained. Theorists have hence put forward more balanced approaches that differentiate the various strata of digital

misfortunes, such as disparities in digital expertise, patterns of utilization, and the social and economic results of digital actions (Hargittai, 2010; van Deursen and Helsper, 2015). This multi-level conceptualization of the digital divide is especially accurate to examine digital education. Engaging in online learning is not just a matter of devices and connection but also types of digital competence, self-control, and institutional support, which is redistributed in social groups. Furthermore, the digital learning needs to be converted into recognised credentials and labour market advantage, the broader structure issues, such as employer perception, institutional legitimacy, and current educational hierarchies, are needed. Accordingly, digital education has the potential to recreate disparities through which more culturally and socially capitalized individuals can reap disproportionate advantages on allegedly open platforms (Selwyn, 2016).

The social reproduction sociological theories also explain why digital education can strengthen the prevailing inequality patterns. Based on the article by Pierre Bourdieu, education can be interpreted as the place of the impartation and legitimisation of cultural capital by means of institutional practices. Digital learning does not work beyond these processes; it might place greater advantage to those learners who already have the lingual skills, academic dispositions and other learning conditions that enable them to master self-directed online situations (Bourdieu and Passeron, 1990). Therefore, the digital platforms can enhance cumulative advantage when such opportunities are being created since the parties who are already at a disadvantage to gain are the ones to benefit most in the new educational opportunity.

This paper thus conceptualises digital education as a disputed field of larger frameworks of inequality and mobility. Linking the theories of social mobility to current studies on digital inequality, the framework changes the analytical focus of the research questions on access to the research questions on outcomes and returns. The new digital divide is not merely conceived as a gap in participation, but a mobility divide that is characterised by dissimilar systems of transforming digital learning into enduring social and economic benefit. This theoretical background offers the basis of the further literature review and analysis of the implication of digital education on social mobility.

3. LITERATURE REVIEW: DIGITAL EDUCATION, INEQUALITY, AND SOCIAL MOBILITY

The long-standing issue in sociological studies on education and social mobility has been the need to understand the effects of educational expansion on the possibility of creating more equality of opportunity or reinforcing existing patterns of social stratification. The classical mobility literature has instituted education as a mediating institution critical in bridging the social origin and occupational destination as well as established the evidence that education does not completely mediate family background (Blau and Duncan, 1967; Erikson and Goldthorpe, 1992). This philosophical insight has continued to influence the sociology of education, especially in areas that discuss new forms of education and educational technologies. These debates have



been revived with the blistering development of digital education, with the question of whether the new form of online learning is changing the long-established connection between education and social mobility or exacerbating inequality through new processes.

Initial research of digital inequality concentrated on inequality in access to information and communication technologies. The conceptualisation of the digital divide as binary distinction was based on the difference between those who have access to the computer and internet and those who do not (van Dijk, 2006). Although access-based inequalities are still an important factor, particularly in low-income settings, sociologists and communication researchers quickly realised that access was not enough to account for a steady pattern of disparities in digital engagement and performance. This saw the emergence of more sophisticated frameworks, which theorised digital inequality as being multi-dimensional, and as entailing the distinctions in skills and usage and benefits of engaging with digital (Hargittai, 2010). Starving on this drift, van Deursen and Helsper (2015) suggested a model of differentiating the first level (access), second (skills and usage), and third (outcomes) digital divides. Through this framework the focus has been redirected towards the social impacts of digital engagement as opposed to participation. When applied to online education, the viewpoint emphasizes the significance of studying not only the people involved in online education but their beneficiaries in relation to academic qualifications, job opportunities, and social advancement. Sociological studies are beginning to indicate that online education can minimize barriers to access and at the same time create disparities at the outcome level.

In sociology of education, sociologists have used the theories of social reproduction to study digital learning spaces. Based on Bourdieu model of cultural capital and habitus, research suggests that the success of education, be it online or offline, is based on unevenly distributed dispositions, competencies and resources among social groups (Bourdieu and Passeron, 1990). Online learning usually entails a significant degree of self-regulation, computer literacy, and institutional orientation, which are most frequently present in the students with privileged backgrounds. Consequently, online learning platforms can also have the unintended consequence of favoring those who already have cultural and educational capital, propagating cumulative advantage. This issue is supported by empirical studies. Research published in the British Journal of Sociology of Education and Learning, Media and Technology reveals that learners with a superior socio-economic status are more inclined to successfully accomplish online education, digital resources, and online education (Selwyn, 2016; Davies and West, 2014). Learners with disadvantaged backgrounds, in turn, are frequently challenged by digital skills, learning settings, and unavailability of institutional support, which restricts the benefits that they get out of digital education. Such results indicate that digital education can further increase disparity in educational performance despite increased participation. Credential recognition is another problem that makes the digital education and social mobility relationship more

difficult. According to sociological studies, not every educational attainment is equally valued in labour market and institutional prestige is an important factor that determines returns to education (Brown, Lauder, and Ashton, 2011). Although digital platforms provide certificates and micro-credentials, their acceptance by employers is unequal and relative. Studies in Work, Employment and Society and New Media & Society show that digital credentials are frequently considered as supplements to formal degree credentials, and thus do not have the potential to create upward mobility among those students who do not have formal institutional connections (Kellogg, Valentine, and Christin, 2020).

Digital education grew during the COVID-19 pandemic, which greatly increased the academic interest in these concerns. Articles in Sociology of Education and Social Problems report the contribution of the transition to online learning to existing educational disparities, especially in students who have no uninterrupted internet access, personal learning environments, and educational resources (Andrew et al., 2020; Reay, 2020). These results cut across discourses which present digital education as a natural process of inclusivity and the need to study the interplay of emergency digitalisation and deeply-rooted social disparities. In terms of social mobility, the direct impacts of digital education on occupational and status outcomes have not been studied in many studies. The bulk of the current literature dwells on the educational processes but not mobility paths. Nevertheless, present literature argues that the returns to digital education are very stratified. Research has shown that people with already higher education and occupational advantage are in a better position to use digital learning to further their careers when people at the margins tend to have lower or unstable returns (Helsper, 2021). This trend is consistent with other sociological evidence on cumulative advantage, according to which the initial disparities are increased with time.

There are the fears of technological determinism among critical scholars when understanding these findings. Instead of perceiving digital education as a single power, sociologists highlight its entrenchment in the current institutional and labour market frameworks (Williamson, 2017). Digital platforms are not free of social relations, but they repeat and support existing norms of merit, skill and credential legitimacy. Therefore, the effects of digital education on social mobility can not be comprehended outside the context of adoption of digital learning into the formal education systems and assessment of employers.

The literature accordingly gives a confusing and even conflicting image of the connection between digital education and inequality and mobility. Although digital education has increased access and opened up new opportunities in learning it has also recreated stratification by reproducing difference in skills, institutional recognition, and outcome disparities. Notably, a lot of the current studies are still disjointed in areas like education technology, communication studies, and labour sociology. Integrative



sociological analysis implicating the explicit connection between digital education and social mobility outcomes requires.

4. DIGITAL EDUCATION AND INEQUALITY:

RECONFIGURING EDUCATIONAL ADVANTAGE

Digitisation of education has altered the organisational shapes in which learning is provided but sociological analysis implies that these changes do not happen in a vacuum of current social organisations. Although digital platforms have been introduced as an alternative to traditional education as flexible, open and scalable, the impact on inequality is mediated by social background, institutional context and labour market recognition. As a sociological point of view, digital education is not a break with established periods of stratification but a re-organization of the creation and distribution of educational privilege. Different digital competencies are one of the most important ways in which digital education collides with inequality. Sociological and communication researches prove that digital skills are not evenly distributed according to the classes, education, and age (Hargittai, 2010; van Deursen and Helsper, 2015). There is more to effective participation in online learning than just skills to operate some platforms, it entails the ability to navigate the platforms, to assess information, time management and self-directed learning. These are competencies that are closely linked with respect to past educational exposure and family background. Consequently, students who have more socio-economic advantages have a higher chance of deriving value out of digital learning, and those who have disadvantaged backgrounds tend to have less or disjointed experiences.

Digital education also favors some results because of institutional mediation. It has been identified in sociological studies that learning experience is structured through the participation of educational institutions in order to develop its legitimacy and value (Brown, Lauder, and Ashton, 2011). Digital education tends to work within the peripheral areas of institutional hierarchy, especially when provided via non-degree programmes or through privately provided platforms. Although digital tools have been integrated in credentialed programmes in elite universities, there is a large number of online courses still in the weak institutionalisation. Research proposes that learners who undertake institutional integrated digital programmes have an advantage over those that use stand-alone online courses because institutional membership promotes the credential recognition and labour market signalling (Selwyn, 2016). Digital education has contributed to unequal returns to the issue of learning environments as well. Online learning often leaves the conditions of learning in the hands of individuals unlike the traditional schooling. The sociological research on the time of and after the COVID-19 recorded that the disparities in housing systems, access to a quiet place to study, and family support played a major role in determining academic performance in the digital environment (Andrew et al., 2020). These results indicate that online education shifts the expenses that the institution bore to the outside, consequently enhancing the impact of domestic resources in the determination of educational achievement. Therefore, digital education can exacerbate the problem of inequality based

on classes by reducing the strength of learning outcomes tied to a type of privacy instead of community resources.

Another axis that is very important and where digital education and inequality intersect is labour market recognition. As digital platforms may seem to be a source of employability and skills development, sociological studies show that labour markets are highly credentialist. Employers are more likely to appreciate formal degrees of recognised institutions than informal or platform-based degrees (Kellogg, Valentine, and Christin, 2020). This chain of command restricts the ability of digital education to create upward mobility to learners who do not possess traditional education qualification. Instead of being substitutes, digital credentials tend to be complemented, which can improve the opportunities of already privileged people. Cumulative advantage also strengthens the stratifying impacts of digital education. Social stratification studies reveal that early benefits are likely to multiply over the years resulting in a greater inequality (DiPrete and Eirich, 2006). Within the context of digital learning, better educated and professionally placed people have a higher tendency to employ online learning of advancement in their career, professional networking, and skill diversification. Conversely, those with less resources could pursue digital education without having sustained mobility effects and end up with what it could be argued that scholars call credential churn as opposed to mobility (Brown et al., 2011).

These patterns can be explained using the sociological theories of social reproduction. Based on the analysis of Bourdieu, it is possible to perceive digital education as a privilege to support the types of cultural capital that can correspond to the dispositions of the middle and higher classes, including self-directed learning or linguistic confidence and knowledge of the institutional norms (Bourdieu and Passeron, 1990). These competencies are sometimes presupposed by online learning environments instead of being nurtured, creating inequality in a seemingly open-minded environment. This dynamism makes it more difficult to write about digital education as being democratizing in nature. Significantly, the disproportional impacts of digital education cannot be explained only by the individual shortcomings or technological constraints. In sociological studies, inequality is created as a result of the relationship between technology and institutional organization and policy structures (Williamson, 2017). Digital education platforms are conditioned by the logics of market, data-driven governance and performance metrics that focus more on efficiency and scalability rather than equity. These logics affect the design of courses, practice in assessment and the support of the learner, usually to the detriment of the learner in need of extra support or resources. Meanwhile, one should not make a definite conclusion that digital education must cement inequality. Empirical evidence indicates that, given some circumstances, including high levels of institutional integration, specific assistance and acknowledgment in labour markets, digital education may lead to skills acquisition and labor mobility (Means et al., 2014). Nevertheless, these conditions are disproportionately distributed and seldom found in digital learning environments that are most readily and cheaply



available. Digital education is sociologically important therefore not so much because of the technologies but because of the social situations where it is implemented. Combined, the evidence points to the fact that digital education transforms, not solves, the inequality in education. It widens the participation but at the same time differentiates the results or outputs, creating a new digital divide which now functions at the mobility returns instead of access level. This restructuring is in line with what other sociologists have reported about educational growth, namely, that greater involvement generally goes hand in hand with greater stratification unless structural changes are made (Goldthorpe, 2000).

Conceptualizing digital education as a place of reformed inequality is an important place to start when analyzing its significance to social mobility. Instead of posing the question of whether or not digital education is inclusive, sociological analysis needs to question by whom, under what circumstances and with what long-term outcomes. This discussion is expanded on in the next section which explores the linkages between these unequal educational processes and varying social mobility consequences in the digital era.

5. DIGITAL EDUCATION AND SOCIAL MOBILITY: IMPLICATIONS FOR MOBILITY OUTCOMES

The digital education response to social mobility should be construed in the context of how educational engagement gets coupled into occupational location, income stability, and social rank. The sociology of mobility has long focused on the idea that education is a mediating institution and not an independent motor of mobility and the idea still applies to the digital world. Although the digital education increases the learning opportunities, its ability to provide upward mobility relies on the recognisability, appreciation and convertibility of digital credentials in current labour market framework. Studies on education and work indicate that mobility outcomes continue to have a close relationship with institutional prestige and formal qualification which restricts the transformative power of most online learning pathways (Erikson and Goldthorpe, 1992; Brown, Lauder and Ashton, 2011).

The stratification of returns to learning is one of the key mobility-based impacts of online education. People who have better educational backgrounds and who are more firmly established in their jobs will have a better opportunity to make strategic use of digital education, such as to upgrade their skills, develop better professional profiles, or fit new demands and needs in the labour market. In the case of these groups, digital education can be viewed as a mobility amplifier and it enhances the already existing mobility benefits instead of establishing new ones. Conversely poor people can engage in online education heavily without seeing any equivalent gains in the workplace or to their general earnings that makes educational hard work fail to translate into social mobility. This deviation is indicative of the larger sociological conclusions on cumulative advantage whereby disparities increase with time as a result of varying abilities to transform assets into results (DiPrete and Eirich, 2006). The

digital education also changes the temporal aspects of social mobility. Traditional mobility channels are characterized by comparatively linear processes of education to work. Digital learning, on the other hand, is often incorporated into discontinuous and non-linear courses of life that are characterised by job changes, contract working, and skill acquisition. Although this flexibility is at times marketed as empowerment, sociological studies are of the opinion that it can also lead to precarious mobility whereby, individuals are kept on the move in a state of perpetual learning without staffing occupational growth. This trend is especially noticeable with younger generations that struggle to find their way through the unpredictable labour markets, with digital education emerging as a coping mechanism instead of the predictable means of achieving an upward mobility (Standing, 2011). In terms of status, the mobility aspects of digital education are also unequal. Education has traditionally brought about only symbolic recognition and social legitimacy in addition to economic gains. Nevertheless, the symbolic worth of digital credentials is uncertain especially when they are disengaged with institutionalized systems. The sociological research has shown that although digital learning can help improve the self-perception and aspirational identity digital learning does not necessarily reflect into the recognised social status. Consequently, digital education can create what can be referred to as aspirational mobility of non-material consolidation, strengthening the disparity between expectations and realities. Combined, these trends indicate that digital education leads to a re-organization of social mobility and not its general expansion. The social positioning of learners, the institutionalisation of digital education, and the organisation of labour market opportunities determine mobility outcomes not only due to participation as a factor. This is crucial in determining the long-term social impacts of digital educational growth.

6. DISCUSSION: RETHINKING DIGITAL EDUCATION THROUGH A MOBILITY LENS

The discussion within this paper is a critique of the deterministic discourses that describe digital education as a solution to inequality or a homogenously exclusionary phenomenon. Rather, the results are consistent with sociological views that presuppose the conditional and context-specificity of educational outcomes. Like previous modes of educational growth, digital education works within already established systems of inequality and is influenced by institutional hierarchies and cultural capitalism, as well as labour market dynamics. The digital context is not novel because it eradicates inequality but through how the inequality is reorganised.

This paper broadens the current body of literature on digital inequality by explicitly connecting digital education to the outcomes of social mobility. Here the idea of the new digital divide is redefined as a mobility divide, the ability to transform digital learning in to sustained social and economic benefit in a unequal way. This re-conceptualization adds to the sociological discussion in that the focus question is not who is engaged in digital education, but who gains life opportunities out of it. This



kind of approach echoes the previous critique of mass education found out that increased access was not always associated with equal results (Goldthorpe, 2000). Another key point about the issue of institutional mediation in determining the results of mobility has been highlighted in the discussion. Weakly institutionalised or unrecognised by employers, digital education will not likely shake up existing stratification patterns. On the other hand, in case digital learning is incorporated into formal learning systems and is facilitated by reputable institutions, it can more likely contribute to mobility. This observation implies that digital technology does not create inequality; rather, it is the impact of technology in educational and economic systems that create inequality. The other significance of the implication is the influence of agency in digital learning. Although people are proactively participating in digital learning in the pursuit of their mobility dreams, their agency is designed in a manner that is unequal and constrained. A sociological analysis should thus oppose narratives of individualisation of success and failure in digital education. Rather it ought to anticipate the structural conditions in which it is possible to mobilise digital learning to social progress. This view is in line with more general sociological critiques of meritocracy that focus on the social basis of so-called individual performances.

7. CONCLUSION

The current paper aimed to explore the linkage between digital education and social mobility using a sociological perspective, i.e. the development of a new digital divide that is defined by the dissimilar mobility changes. Based on current sociological research literature on education, digital inequality and social stratification, the analysis will reveal that digital education increases participation and at the same time creates inequality in terms of disparities in skills, institutional reward and returns in the labour market.

Digital education transforms the relationship between education and mobility, instead of changing it. When it comes to the socially advantaged groups, digital learning can be viewed as an added value to the mobility trajectories. In the case of disadvantaged population groups, the engagement in digital education is not always associated with the steady occupational/status progression, which leads to aspirational or precarious mobility. These trends help to emphasize the shortcomings of access-driven narratives and value the necessity of outcome-based studies of educational innovation.

The sociological value of the paper is that it revisits the digital divide as a mobility divide and also locates digital education in centuries old discussions of the growth of education and the reproduction of social classes. In this way, the paper shows that the promise of digital education could not be assessed without social frameworks in which it is being carried out. Future studies can introduce a further expansion of this framework to study the longitudinal mobility outcomes and also to examine how the institutional reforms could increase the mobility potential of digital learning. The interpretation of digital education as a

socially embedded process is the key to evaluating the importance of this process in creating inequality and opportunity in the digital era.

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