Analysis of the Third Digital Divide in Relation to Digital Socialization Itineraries among University Students in Uruguay

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Abstract: The social transformations generated by digitization and the increasing prominence of Information and Communication Technology (ICT) in social relations have underscored the need to delve deeper into the analysis of digital divides to enhance our understanding of social inequalities in the digital age. Thus, sociology has delved into identifying the variables that underpin differential capacities to make productive use of digital technologies for improving living conditions, a phenomenon referred to as the third digital divide. This study delves into this issue by analyzing the digital socialization itineraries of young people. To achieve this, the technique of techno-biographical interviews was employed with 30 university students in Uruguay. Through the classification of interviews into clusters based on coding similarity, five digital socialization itineraries were identified: contextual disengagement, aspirational advancement, productive channeling, controlled development, and abusive development. By closely examining these groups, a set of variables with significant biographical impacts was identified, affecting both the capacity to harness digital technologies and the potential risks associated with their use. The findings hold relevance for guiding research in the field and for policymakers in addressing ICT education challenges during childhood and adolescence.

Keywords: digital socialization; youth population; digital divide; new digital inequalities; digitalization; social change

1. Introduction

Digital technologies have played a pivotal role in the social changes that have occurred since the 1990s, shaping what is known as the Information and Knowledge Society [1]. Changes in various social subsystems have produced new inequalities that are intertwined with traditional inequalities [2,3]. Information and Communication Technologies (ICTs) have led to an intense process of internet mediation in all social relationships [4] with ICT-related skills becoming a necessity due to their extensive use in daily life [5], especially among young populations [6].

However, the reach of ICTs has significantly diverged among individuals and territories, with structural sociodemographic and socioeconomic factors influencing this divergence [7]. The concept used to refer to these inequalities is the digital divide [8]. While the idea of a technological gap is older [9], the concept of the digital divide emerged in the early 2000s [10]. Recognizing the crucial role that ICTs were beginning to play in economic development and opportunities (especially internet access), a series of policies were initiated to reduce this divide [11]. Subsequently, this concept was extended globally through international organizations and the efforts of less-connected countries [12].

The advancement in ICT access and the intensification of their role in the economy and society led to the emergence of significant disparities in people’s skills and knowledge of their use becoming apparent in the early 2000s [13]. This “second level” of the digital divide was termed the “second digital divide”, and attention shifted towards what is now known as digital literacy [14], measured by individuals’ knowledge and use of these
technologies [15]. Public policies gradually began to focus on narrowing these gaps, resulting in the emergence of the so-called New Digital Inequalities [16].

Among developed countries, the notion that age is the most explanatory variable for this divide became prevalent, alongside other important factors such as gender and socioeconomic status [17]. Thus, the concept of “digital natives”, coined by Marc Prensky [18], became ingrained in the collective imagination [19]. In his work, Prensky posits that certain age cohorts consist of individuals socialized from an early age in the use of ICT, referred to as digital natives; on the other hand, there are “digital immigrants”, individuals who, without being surrounded by ICT during their primary and secondary socialization processes, had to adapt to their use. In any case, the primary objective for reducing the second digital divide shifted towards digital literacy, consisting of a set of competencies meticulously codified by various international organizations [20].

However, this has not put an end to the academic debate. More recently, what we might consider a third level of the digital divide has begun to be addressed. The identified issue can be summarized quite simply as follows: if individuals have full access to ICTs, use them constantly in their daily lives, and, on average, possess a considerable level of digital literacy, how can we explain the significant differences in their ability to harness these technologies [21,22]? These disparities have been identified in numerous research studies [23–26]. While it might be assumed that some of these inequalities result from social heterogeneity itself, the increasingly pervasive role of ICTs in society and the growing importance of various emerging technologies pose the risk that these New Digital Inequalities, intertwined with the traditional ones, will play an increasingly significant role in the social structure [22].

Unlike the previous cases where the problems and solutions were clearer, this is not the case here. Defining the nature of these inequalities, their causes, and understanding how to address them presents a greater intellectual challenge because of their more latent rather than overt nature [9]. Furthermore, this level of the digital divide has a more enduring nature. While the main factors in reducing previous digital divides have been generational change, the lowering cost of access, and educational efforts regarding digital competencies, in this case, it is not necessarily about divides that will naturally resolve themselves over time and following technical progress, nor do they necessarily have to be resolved solely through the optimization of learning outcomes in formal education, as most of the learning occurs in informal learning processes [27].

One could argue that there are two fundamental reasons that have led to insufficient attention being paid to this issue. First, focusing solely on internet access and technology does not emphasize the quality of such access [22]. Second, relying on a static image of reality in ICT access obscures the significance of processes and usages throughout life, which significantly influences the processes of technology domestication [28].

Regarding this matter, the COVID-19 pandemic constitutes a phenomenon that has highlighted this reality [29–32]. In Spain, a comprehensive study among individuals aged 15 to 29 demonstrates how 44.7% of students reported that this shift negatively affected their academic performance, a figure that increases to 49.3% for individuals from lower and lower-middle socioeconomic backgrounds [27]. The primary challenges, aside from those related to teacher adaptation and the educational system, are linked to the instrumental use of ICT, representing a problem tied to practical use capability.

Continuing with the case of Spain, through a longitudinal statistical analysis, a significant asymmetry in the forms of access and usage of ICT is observed, primarily linked to the level of education and employment status, representing an effect conditioned by the quality of differential access based on socioeconomic and cultural resources [28]. Another study based on the same dataset demonstrates notable discrepancies concerning the devices used by socioeconomic level, alongside other variables that signify unequal capability in using ICT. Particularly noteworthy is the greater dedication to using social networks via mobile phones among groups with lower economic and cultural levels [33].
Perhaps the most comprehensive and holistic proposal for addressing this issue is the concept of the third digital divide proposed by Raggneda [34]. In this vein, and from a Bourdieusian perspective, the notion of the third digital divide implies the existence of digital capital as a form of mediating capital supported by our capacity to access digital technologies and the degree of digital literacy [35]. Thus, the third digital divide entails inequalities related to the ability to transform one form of capital into another through the use of digital technologies. Raggneda defines digital capital as “skills, experiences, abilities, knowledge, literacies, and forms of access to ICT that can be converted into other forms of capital” [9] (p. 249). Therefore, in addition to objectified digital capital (technological equipment and physical elements) and institutionalized digital capital (credentials and qualifications related to the digital realm), we can identify the existence of an internalized digital capital in individuals’ habitus through their biographical trajectories or life courses. This encompasses not only digital skills and knowledge but also their dispositions, social attitudes, motivations, affective experiences, and so on, regarding the use of ICT, in line with the concept originally proposed by Bourdieu. From these perspectives, we can conclude that the use of digital technologies is not only determined by the formation of certain levels of digital capital and the capacity for it to contribute to the accumulation of other forms of capital by the individual but also forms part of their habitus [9].

Issues related to the formation of habitus and the development of individuals’ digital capital can be empirically observed in the work of Gordo López, García Arnau, De Rivera, and Díaz-Catalán [33,36,37]. Although the authors do not employ the frameworks of Raggneda and Ruiu, they identify significant differences in the use of ICTs among young people based on various socioeconomic and sociodemographic variables. They construct a series of profiles based on their socialization itineraries in relation to their uses, risk behaviors, and dispositions towards ICTs. The variables around which the different profiles are formed include different levels of self-quantification and self-monitoring, the degree of overexposure to ICTs, the degree of overidentification with ICTs, the extent to which evasive uses predominate, and the level of isolation from digital environments. According to the authors’ proposal, through these dimensions, we can classify the different profiles that can be found among young people, at least in Spain.

In this research, the hypothesis is raised that the confluence of both theoretical perspectives provides an analytical viewpoint of interest in addressing issues related to the third digital divide. Thus, individuals’ digital socialization itinerary conditions not only the development of their digital capital but also their habitus, altering their disposition towards ICTs. Therefore, the analysis of these itineraries can explain the third level of the digital divide. The research proposals partially arise from the conclusions drawn in a previous study [38], which defined two objectives. First, the aim is to relate individuals’ socioeconomic profiles and biographies regarding digital technologies to their abilities to make beneficial use of ICTs, considering their levels of digital literacy, problems of excessive use, addictions, or deficiencies manifested by individuals. This study seeks to identify a series of digital socialization itineraries based on the main variables that define the different groups of individuals analyzed. The second objective is to analyze the role of the formal education system in these itineraries. More specifically, the hypothesis presented is operationalized on the basis of the assertion that the youth digital divide is conditioned by the form and intensity of their relationship with technology throughout an individual’s biography, which in turn affects their digital competencies and the ability to make beneficial use of them. Furthermore, this biographical relationship with ICTs is influenced by the characteristics of individuals’ environments, the socioeconomic profile of their families, and their knowledge regarding ICT use.

Finally, before delving into the methodology employed and the analysis conducted, it is crucial to acknowledge the research context. The fieldwork for this study was conducted in the Oriental Republic of Uruguay. The reason for selecting this context is that, since 2007, Uruguay has implemented the CEIBAL plan (Connectivity of Basic Computing for Online Learning). Initially inspired by the One Laptop per Child project [39], the CEIBAL plan
distributed portable devices to all primary and secondary students in the country, as well as to teaching staff (referred to as “Ceibalitas”), a process that was completed in 2009 [40]. While the policies of the CEIBAL plan have evolved, expanded, and undergone significant modifications, the distribution of laptops to students in the country has continued since then. This represents an active policy addressing the first level of the digital divide, impacting an entire generation of students who are currently of university age. This experience is highly relevant in the research context as it allows us to assume that all interviewees have had access to computers and the internet for academic purposes since childhood, in addition to having technological resources available in the classroom [41–43].

2. Materials and Methods

Given the research objectives, a qualitative methodology was applied. The technique used is the semi-structured interview in the format known as the techno-biographical interview [44]. This technique involves the use of semi-structured interviews with a focus on analyzing an individual’s biography in relation to technology. In this way, the influence of the studied technology is examined across various stages of an individual’s life. Therefore, a semi-structured questionnaire was developed focusing on individuals’ digital competencies and their biographies in relation to the use of digital technologies. During these interviews, individuals were asked about their profiles (age, place of residence, and educational background); their activities (both work and academic); their level of education; their parents’ use of ICTs; the individual’s perspective and uses of ICTs; available technological resources; academic and professional trajectories; their perception of how their ICT knowledge has benefited or hindered them during these academic and/or professional journeys; more intensive uses of ICTs throughout their biographies; their assessment of whether digital technologies have helped or harmed them in meeting others, improving their learning, earning money, or enhancing their economic situation; their primary skills and limitations related to ICT use; and their biographies regarding access to and changes in ICT use, primary sources of learning, experiences teaching others, and the presence or absence of parental controls regarding ICT use.

A total of 32 interviews were conducted with university students between the cities of Salto and Montevideo (Uruguay), resulting in 20 h and 49 min of recorded interviews. The sample was selected with the aim of achieving equitable representation based on gender (man or woman), socioeconomic parents’ status (parents with low and medium-low socioeconomic status or parents with medium-high and high socioeconomic status), and academic discipline (technical and physical degrees or humanities and social sciences degrees), thus ensuring an appropriate variety of profiles. Additionally, an age range of 17 to 24 years was considered as a criterion to be part of the sample, in order to control for the mentioned influence of the CEIBAL plan. For this reason, two of the interviews were discarded and the analysis was based on 30 interviews, thereby considering sample saturation to have been achieved. Interviews were conducted between February and May 2023.

The variable related to the type of university education has been examined by creating a distinction between technical studies in various fields, whether connected to information and communication technologies or not, and studies in the humanities and social sciences. On the other hand, the variable “socioeconomic status” has been constructed with less rigidity, as it relies on non-standardized information provided by the interviewees. For this reason, the division has been divided into broad categories. In this manner, a medium-high and high socioeconomic status has been considered for cases where at least one of the parents has attained a university education or higher technical studies and where at least one of them holds a well-paying skilled job. Alternatively, cases where the education criterion is not met but the family owns a profitable business that provides comfortable access to consumer goods or employs part of the family have also been considered. Conversely, low and medium-low socioeconomic statuses have been assigned to households where this
condition is not met. Based on these variables and the conducted interviews, the following sample table (Table 1) has been composed.

**Table 1.** Sample table. Source: authors.

<table>
<thead>
<tr>
<th>Type of University Studies</th>
<th>Parents with Low and Medium-Low Socioeconomic Status</th>
<th>Parents with Medium-High and High Socioeconomic Status</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Technical degrees and physical sciences</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Humanities and social sciences degrees</td>
<td>3</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>9</td>
<td>8</td>
</tr>
</tbody>
</table>

For case selection, the purposive sampling technique was employed by randomly consulting students on university premises where students from various fields could be found. The snowball sampling technique was also used to identify missing cases.

Coding was conducted using Nvivo 14 in an emergent method [45] while organizing codes into various pre-existing categories, as follows: biography regarding ICT use (access, addictions, and abuse; learning and teaching; and applications), COVID-19 (discourse on the pandemic and pandemic experience), educational experience (ICT experience during education, educational itinerary, and type of educational institutions), available resources, personal profile (parents’ ICT knowledge, age, environment, education, parents’ educational level, parents’ economic level, and employment), CEIBAL Plan (discourse on CEIBAL and experience regarding CEIBAL), and about ICT (utilization, discourse on ICT, ICT skills, limitations in ICT use, and ICT applications). Once the process was completed, 956 codes were obtained between the nodes and subnodes. After an extensive recoding process based on merging redundant codes, the coding tree consisted of 463 elements, with 2187 references.

The primary analysis technique used was cluster analysis based on coding similarity, followed by content analysis [46] applied to each identified cluster. Content analysis was conducted by examining the content of references in the interviews corresponding to each cluster for the defining codes of each cluster. Thus, we started with the configuration of various socialization itineraries and subsequently enriched the analysis on the basis of common codes defining different cases within each cluster. Before the final analysis, several tests were conducted regarding the selection of categories for analysis and the statistic chosen for cluster creation (Pearson correlation coefficient, Jaccard coefficient, or Sorensen coefficient). The final decision involved excluding categories related to the experience during the COVID-19 pandemic and the experience regarding the CEIBAL plan from the analysis, as they generated excessive heterogeneity and a large number of nodes. The result was the definition of well-defined clusters, with the results being relatively insensitive to the use of either statistic. However, it was observed that the Sorensen coefficient produced clearer and more defined results, possibly because of its greater capacity to assign less weight to atypical codes, leading to the decision to use it for analysis.

### 3. Results

The first step involved the analysis of clusters generated on the basis of the similarity of coding among the codes themselves. Through this initial analysis, five clusters were identified. The information extracted through this analysis serves as a guideline for determining the number of clusters when conducting the same analysis for the interviews. Coinciding with the code analysis, the best fit was achieved when using five clusters, as can be seen in the dendrogram (Figure 1). The cluster to which each case belongs is reflected by using a number at the end of the interview identifier. These have been named on the
basis of gender and the order of the interviews to ensure the anonymity of the interviewed individuals.

Figure 1. Dendrogram of interviews organized into clusters based on coding similarity (Sorensen coefficient). The color of the text and the numbers within brackets indicate membership in each of the 5 clusters, along with the coding similarity across different clusters. Source: authors.

3.1. Characterization of Clusters

To characterize the clusters, we use the numerical labels provided by the software to initially distinguish each of them. For their characterization, we employed codes that are shared across the entire group or are prevalent within clusters containing a larger number of cases.

3.1.1. Cluster 1

The cases in this group, consisting of two women and three men, are characterized by predominantly coming from households where their parents lack ICT knowledge beyond basic mobile phone usage, requiring assistance from their children. Additionally, they have a socioeconomic level that could be classified as medium-low. They hail from rural areas and, in general, have followed a linear educational itinerary in public institutions related to their university careers, with a prevalence of technical training in fields such as agronomy and veterinary science.

Both currently and throughout their life stories, they have made limited use of ICT, primarily focusing on communication and basic academic purposes. Although they have both mobile phones and personal computers, access to the latter, aside from the CEIBAL plan, is mostly delayed, typically occurring toward university access or due to circumstances arising from the COVID-19 pandemic. In contrast, access to mobile phones occurs during adolescence and pre-adolescence. Their primary avenue for learning digital technologies has been through educational institutions, despite expressing that this education has been limited, and they have generally not been encouraged or required to use them more extensively.

Regarding the use of ICT, they did not report any experiences related to economic activities or a deepening of their academic utilization, nor did they identify significant benefits in their relationships. Finally, it is noteworthy that they associate personal com-
puters exclusively with these basic academic uses, such as reading documents, submitting assignments, or participating in virtual classes.

Due to the profile characterized by a lack of exposure to ICT, this itinerary could be termed “contextual disengagement” and may be considered a profile with significant socioeconomic risks arising from the absence of basic digital competencies for certain job areas and a lack of readiness for self-directed learning.

3.1.2. Cluster 2

Cluster 2 is the group with the fewest cases, and its characteristics are similar to those of Cluster 1 regarding family backgrounds and context. However, they exhibited much more awareness of the importance of ICT, having invested financial resources in their learning and being motivated for more intense self-directed learning. It is worth noting that there were only two cases in this cluster, both males.

While their access to a personal computer has also been delayed, and their primary device of use is the mobile phone, primarily for studying and communication, they demonstrate a much broader knowledge of the possibilities and tools available for learning, communication, leisure, and economic activities compared to Cluster 1, both on the computer and mobile phones. In addition to the mentioned self-directed learning, this group is also characterized by the presence of a family member or friend who has acted as a mentor in introducing them to computer use. This is the main differentiating factor identified in their life stories.

Regarding utilization, both cases demonstrate experiences related to economically leveraging ICT, expanding their social circles, and using more advanced tools for their studies. They have also developed a greater degree of critical perspective towards ICT, understanding its utility while being aware of the need to avoid negative uses and not to engage in what they consider to be deceptively facilitating learning—that is, achieving study results with much less effort than expected—without making significant mentions of issues related to abuse, addiction, or other negative discourses often associated with ICT.

Therefore, while Cluster 2 shares many characteristics with the previous cluster, a higher level of awareness about these technologies stemming from the presence of mentors or role models in their close circles leads to greater motivation for learning ICT, resulting in higher levels of experimentation and investment of financial resources in education, despite clear economic limitations during parts of their life stories. For this reason, we could refer to this itinerary as “aspirational advancement”, as they exhibit similar profiles to the “disengaged” group but have come to understand the utility and necessity of ICT for improving their future, without displaying risky behaviors or excessive practices that would generally harm them.

3.1.3. Cluster 3

In Cluster 3, we encounter cases with a very different profile compared with the previous ones. First, they come from families with socioeconomic levels that can be categorized as medium-high, where parents generally have basic user-level knowledge of both mobile phones and computers. This difference influences early access to both mobile phones and personal computers at home, despite half of the cluster members coming from rural backgrounds. The cluster consists of six males and one female, with a notable gender imbalance.

Their biographical use of ICT has been much more intensive and varied. While they express the central use of communication tools and those intended for academic purposes, they also use ICT for audiovisual entertainment and gaming. On the other hand, they do not consider the educational institution relevant in terms of their ICT learning, although they highlight their classmates, with peer-to-peer learning processes occurring within the educational framework, complemented by self-directed learning.

Regarding ICT utilization, it varies widely. In the realm of social relationships, there is a general trend of expanding social networks through digital social media, leading to
lasting friendships in many cases. Furthermore, they not only stated that their skills and knowledge have been beneficial in improving their academic results but also used ICT as a support for learning other skills, hobbies, or topics of interest. Thus, they view ICT as a fundamental tool for study, which is why they give great importance to personal computers as their primary tool over mobile phones, as personal computers offer greater utility, partly due to their ability to identify and value advanced uses of ICT, such as programming skills or solving computer-related problems, expressing their lack of knowledge as limitations they encounter.

On the other hand, this is a group where excessive ICT use is more pronounced in their biographies, sometimes from a very young age (facilitated by early access, in many cases, prematurely), with intensive use of video games or the Internet as the primary means of communication. In many cases, they self-identify a decline in the development of their face-to-face social skills. However, these excesses tend to be moderate with age, shifting towards more productive and less problematic uses due to increased academic demands. These demands result from either a genuine increase in requirements that do not correspond to the skills and study habits developed, external pressures, or self-imposed standards based on their aspirations. These periods, which could be considered as “transition”, mostly lead to irregular educational itineraries in terms of selecting their fields of study, such as shifting away from ICT-related studies, which is the most common case. These experiences shape their personal dispositions toward moderation in ICT use, giving rise to discourses about the need for responsible use, the elimination of taboos, or the necessity to educate on how not to use ICT and the associated risks. They view ICT as a necessary and highly useful tool while recognizing it as a dangerous source of distraction and time wastage.

Therefore, Cluster 3 is characterized by high access levels and more intensive use from an early age, often stemming from belonging to families with higher socioeconomic levels and greater ICT knowledge. Through self-directed learning and peer-to-peer learning, they have developed a close relationship with computer use, possessing greater competencies compared to the average and understanding the importance of advanced knowledge and use. Experiences related to excessive ICT use were identified in this case, leading to a loss of interpersonal skills and the development of certain addictions, with video games being prominent. However, behavioral patterns and issues related to use tend to moderate with age, primarily due to academic demands and the development of new experiences. We can refer to this itinerary as “productive channeling”.

3.1.4. Cluster 4

Cluster 4 stands out significantly due to its gender composition: ten out of the eleven cases that make it up are females, mainly from rural areas or rural–urban and peri-urban areas. Furthermore, the majority were around 18 years old at the time of the interviews. Their family profile primarily consists of families with low to medium-low socioeconomic levels, with basic and very limited knowledge of ICT usage. They typically assist and teach their parents about using ICT. However, they had early access to mobile phones and positively highlighted their access to computers through the CEIBAL plan.

Unlike the first group, they use ICT for a greater variety of activities, emphasizing both academic and learning-related tasks and the use of social networks and forms of audiovisual entertainment, such as watching videos or listening to music. In this case, they did not express a negative evaluation of their learning in educational institutions but emphasized co-learning processes with their classmates, friends, and self-directed learning to a greater extent.

In many cases, access to a personal computer has been a problem. While they all enjoyed the Ceibalitas for many years, it is common for this not to be the case throughout their entire student life due to various reasons and circumstances. Consequently, they find themselves in need of a personal computer, which their families, in many cases, cannot afford. There have even been challenging experiences during the COVID-19. Although computer access is prevalent at the time of the interview, there are many cases where this
access has been relatively recent, mainly for entering university, often thanks to the money they earned working on their own, in some cases specifically for this purpose.

Despite this, and unlike the other groups, this cluster stands out for the majority having various forms of parental control related to ICT usage. While it is uncommon for what some interviewees referred to as “demonizing” ICT, their parents restricted or supervised their daughters’ usage, gaining an awareness of limits and control that is reflected in their discussions on the topic. This lesser personal involvement in ICT usage may have led to fixed educational itineraries in terms of selecting areas of study, with a more significant role for formal education in their life stories. In cases where these itineraries are related to ICT-related areas, there are occasional late shifts in orientation, with a relatively late discovery of the intention to specialize in this area.

In terms of utilization, the perception of having benefited greatly in their studies through the use of ICT is prevalent, as well as regularly learning new skills and acquiring new knowledge through them. There is a strong willingness to learn how to use and adopt new ICT tools. However, there is also a lack of experience related to economic exploitation or social use of ICT.

We could refer to this cluster as “controlled development” because there is a biographical relationship between progressive learning, access, increased usage, and awareness of the usefulness and necessity of ICT. This process is limited by parental control, which appears to mitigate the risks associated with excessive and abusive ICT usage.

3.1.5. Cluster 5

Finally, in the case of Cluster 5, the socioeconomic profiles are similar to the previous one but with the difference that, in this group, there are five males out of seven cases. They also differ in terms of their parents’ knowledge of ICT usage. Thus, the majority come from rural, rural–urban, and peri-urban areas, and families with a medium-low socioeconomic level. However, in general, both parents have sufficient user-level knowledge of both mobile phones and computers. Nevertheless, the interviewed cases are nearly ICT references in their homes, possessing notable competencies in general terms.

Regarding their uses and biographical profiles, this is a highly heterogeneous group, as it includes cases where there are very advanced uses of ICT alongside others where there is a significant lack of “vocation” for learning these tools. However, the cases were similar in terms of early access to ICT as a whole and in terms of histories of excessive usage and cases of addictive usage. They also stand out for their predominance in computer usage and secondary, sometimes insignificant, use of social networks. For this reason, in several cases, they expressed feeling disadvantaged in terms of their social relationships due to their limited use of ICT, claiming to have been excluded from interactions within their circles of friends.

In this case, there is also the explicit expression of having acquired insufficient knowledge within the educational system, having learned through co-learning and self-directed learning. In this case, a common motive for enhancing their skills was the need to obtain free software and the use of video games, driven by early and intensive engagement with this form of entertainment. While they use communication tools and other forms of entertainment, this one stands out in particular. Academic uses, on the other hand, are not prominent, although there is widespread recognition of having sufficient skills to aid in academic learning and their explicit use, but it represents a reduced facet in terms of their overall usage. Thus, for example, they demonstrate a broader knowledge of office tools than other groups.

These extensive skills and considerable knowledge result in significant use of ICT in their academic trajectories, mainly aimed at facilitating studies and learning, reducing the effort dedicated to this activity. The existence of irregular academic itineraries, both in their trajectories and in the choice of areas, may be motivated by the lack of significance given to studies in their daily lives. There is also no manifestation of economic use beyond obtaining software and other proprietary content for free through the Internet.
Therefore, Cluster 5 is perhaps the group that, in general terms, shows a closer biographical relationship with ICT. However, they do not exhibit significant use of these technologies, while also being the group where excessive and abusive uses are most identified. For these reasons, we could characterize this itinerary as “abusive development”.

3.2. Joint Analysis of Clusters

Based on the analysis conducted, we can first observe significant differences in terms of risks, competencies, and use capacity depending on the background context, the availability of economic resources, and the characteristics of the parents, considering their socioeconomic level and ICTs usage. It notably stands out that the educational system has limited capacity to mitigate the negative effects arising from these differences. While policies related to the distribution of laptops through the CEIBAL plan appear to have had a significant impact in reducing access gaps and creating a shared minimum knowledge and skill base, experiences in educational institutions are more influenced by random factors, and differences persist between more rural and less rural environments. Although there are cases in which the educational institution is positively evaluated, this is only relevant in clusters far removed from technology.

Regarding the family’s socioeconomic level, higher academic demands, parents with higher levels of education, and better economic resources seem to positively influence trajectories linked to more productive uses and long-term moderation of excesses. Parental control also appears to significantly influence digital socialization itineraries. However, while it is seen as useful in preventing problematic use, excesses, and addictions, in cases where parents have limited knowledge of ICTs and limited resources, it also limits the development of their skills. This is because throughout their biographies, they have faced access problems, acquiring part of their knowledge through the educational system. However, in the absence of mentors and private courses, the development of their skills depends on self-directed learning, which is often hindered by parental control. Nevertheless, this parental control reduces the very real risks of ICT abuse and addiction. The skills developed throughout their biographies are less but so are the ICT-related risks. However, these limitations in their skills were not so intense as to significantly lag behind the rest of the interviewees. A limitation is observed in choosing educational itineraries related to ICTs, which in most cases is motivated by a late vocational identification.

This gender difference related to parental control is added to another significant gender difference identified, which shows that interest in more complex uses of digital technologies and ICTs among men develops much earlier, usually linked to video games, which conditions more digitally connected biographies and more intensive learning for men. This more intensive relationship with ICT began to occur later among the interviewed women and was more closely linked to internet use and digital social networks. In terms of parental control, it is possible that parents perceive video games as less threatening for their sons, with greater concerns about digital social networks due to the risks associated with online interaction with strangers, among other potential problems. It is also possible that parents assume a higher degree of vulnerability among their daughters regarding their exposure to the internet. Consequently, it is very common for the interviewed men to report that their parents have “complete confidence” in their free use of the internet.

Finally, considering the variables included in the sample, it is worth noting that a relationship between individuals’ academic discipline and digital socialization itineraries has not been identified. The only relation identified is in the case of the “contextual disengagement” itinerary, where profiles linked to agronomic engineering and veterinary studies prevail. Nevertheless, this correlation arises primarily because these individuals originate from rural areas, and their studies are associated with the predominant economic activities in their respective regions.

The research results represent a qualitative approach to the study problem, aiming to confirm hypotheses related to the existence of the youth digital divide. These trajectories represent experiences, knowledge, and attitude changes depending on life stages or even
seem to influence the choice of study paths, shaping their future. Furthermore, a significant role of the variables of the environment, family socioeconomic profile, and TIC knowledge of parents (or alternatively, the presence of potential mentors with TIC knowledge in their close environment) in the development of their trajectories is confirmed.

4. Discussion

This research yields a series of results that need to be compared with findings from similar investigations. In this regard, it is essential to consider the limitations of the study beyond the inherent limitations of the methodology used. Two main limitations can be identified. First, it should be noted that the research was exclusively conducted among university students. While their distribution based on the variables considered, along with the purposive selection process, may be adequate to ensure diversity within the population, it does not account for itineraries that have not yet reached the university system. This implies that the identified profiles are limited in relation to the full range of possible profiles, and certain biases in the results may exist. Second, most cases are grouped into three of the five identified clusters, which means that the definition of two of these clusters is more limited.

Taking these factors into account, a synthesized reinterpretation of the conclusions should be made before comparing them with other studies. In response to the objectives, it can be concluded that, at least in the analyzed case, variables related to the first two levels of the digital divide (variables linked to socioeconomic aspects) appear to have a significant effect on the use capacity of ICTs. This effect occurs through individuals’ biographical processes and their relationship with technology. Additionally, early mentorship, the presence of parental controls, and the intention to remain in the educational system seem to have a considerable impact on digital socialization itineraries. Aspects related to the use and culture of ICTs in their environments are also highly significant, with a particular influence from peer groups. A detailed analysis of the interviews provides an ambivalent assessment of whether this influence is positive or negative; although, in general terms, it represents a necessary space for socialization. Scenarios range from situations where such socialization leads to excessive use in areas such as video games or social networks to cases where everything related to video games becomes a dynamic of competition and challenge within the group, aligning with aspects related to the hacker ethic of work [47].

This peer group influence, in turn, has a strong connection with educational institutions, with educational institutions being the primary agents of socialization in the digital realm in most cases.

However, the influence of educational institutions is limited. It impacts aspects related to access and, in general terms, basic competencies, but it does not exert a significant influence at the biographical level. While various cases have been identified where such influence does occur, they are not widespread or systematic enough to play a significant role in defining the clusters. Nonetheless, the existence of these cases demonstrates that it is possible and, in most instances, represents an effort to introduce new useful tools and discuss technology, motivating and changing individuals’ attitudes.

If the results are compared with other similar research, such as the work by Gordo, de Rivera, García-Arnau and Díaz-Catalán [33,36,37], interesting conclusions can be drawn. Except for the itineraries labeled as “abusive development” and “contextual disengagement”, the three identified itineraries fall into the category they refer to as “technoresilient”. This may be due to the aforementioned bias where the educational system serves as a filter and an agent of change in individuals’ itineraries, not only favoring these profiles as the most likely to reach university but also promoting technoresilience. The two previously mentioned groups, on the other hand, represent extreme cases where we find “the disconnected” and “the over-identified”, although their characteristics are moderated compared to the research conducted by Gordo et al.

In another study with similar findings, also conducted in the Spanish context [22], based on quantitative data on access and usage, six groups were identified: digitally Ex-
cluded, smartphone users, basic users, multiple users, cyber experts, and professional users. Although the classification may not directly translate to the groups resulting from our research, we can suggest some relationships. Both in the group where there is a productive channeling of their ICT knowledge and among those exhibiting an excessive development, we find elements characteristic of the cyber experts’ profile, as well as professional and multiple user profiles. However, among users who have experienced contextual disconnection, the profiles align more closely with digitally excluded and smartphone users, whereas among the disengaged and those who have undergone controlled skill development, the profiles range from smartphone users to multiple users through to basic users. In any case, the inclination toward professional users is predominant. This can be attributed to the characteristics of the sample as university students, which has been observed in other studies [48].

This comparison leads us to draw two conclusions. First, the quantitative variables of access and usage determine significant differences in individuals’ development considering their socialization processes, but they do not fully explain all the differences. The results suggest that the variables “educational level” and “parents’ ICT knowledge” would complement the explanation of the differences related to the capacity for utilization, findings that align with another study conducted in Finland [49], which concludes that cultural capital is the most easily transferable into digital capital. Second, differences in access and usage have a greater influence on female trajectories than on male trajectories. This difference could be determined by greater parental control in the case of females, but it could also be influenced by differences in peer socialization, as suggested by another research [50]. A lesser weight of certain more intensive dispositions toward ICT in peer groups could facilitate parental control. This does not prevent them from developing dispositions favorable to becoming professional users, but it limits their potential to become cyber experts. This conclusion aligns with that of another study among 16–18-year-old youth in Spain [51], which concludes that women even slightly outperform men in technical and informational skills, but men surpass them in critical skills.

Furthermore, these conclusions are substantiated by extensive quantitative research conducted in the United Kingdom. Based on the same sample, two distinct analyses were conducted: one focusing on socioeconomic variables [52] and another addressing technosocial variables [53], defined as those related to internet access methods, locations of ICT use, and individuals’ skills. While the first analysis confirms the positive influence of individuals’ economic, social, and cultural capital on the development of their digital capital and digital practices, the second analysis identifies technosocial variables as a more potent predictor, increasing in predictive capacity when both factors are considered. Overall, the predictive power of socioeconomic variables diminishes as more productive and advanced uses are addressed. The conclusions suggest contingent influences in individuals’ biographies as determinants in developing more intense digital capital, which evolves from changes in technosocial variables not determined by socioeconomic status. These results can help us understand, on one hand, the identified differences between clusters 1 and 2, where, despite similar socioeconomic situations, a few individuals develop significantly higher levels of digital capital based on early changes in their relationship with ICT, motivated by contingent factors. On the other hand, it can also be applied to differences between Clusters 3, 4, and 5 regarding how gender and socioeconomic differences in peer socialization, as well as parents’ ICT perspectives and knowledge, condition such development. This is primarily motivated by biographical experience, with technosocial variables serving as indicators of these processes. Particularly noteworthy is Cluster 4, where differences in advanced use among women are mainly influenced by a later increase in the intensity of their relationship with ICT. However, in this study, no significant influence of social support was identified, contrary to findings in other cited studies [54,55]. Based on the results obtained, the hypothesis can be described that the lack of significance of this variable is due to two factors. First, peer social support was predominant and widespread in the interviewed cases—except for profiles that were more distant from technology—but its
impact on developing more advanced skills was limited by peer group characteristics. It is evident that cases where this support enhances skills development focus on profiles previously motivated by ICT use, aligning with their biographical trajectories. Second, while this support is crucial for generating motivation toward ICT in various cases—such as individuals in Cluster 2—it is largely an exception linked to contingent factors. Finally, it is noteworthy that various studies in the United Kingdom and the United States have attributed these types of differences to the formation of various “digital cultures” [56–58], with significant explanatory power and related to the mentioned variables. Proposing that these digital cultures arise due to digital socialization trajectories in relation to the environment is consistent with the research findings.

Therefore, we can assert that if the access gap were eliminated as an economic determinant, the primary predictors of adolescents’ digital socialization trajectories would be, on the one hand, the cultural capital present in their homes and the intensity of its acquisition throughout the individual’s biography and, on the other hand, the dispositions toward the use of ICT within the peer group. In both cases, the determining variable is the intensity of the relationship with ICT throughout the individual’s life and the extent to which it is directed toward productive uses. This latter factor is particularly identified in the case of women and individuals from rural backgrounds, although the influence of socioeconomic status could also be considered, without clear results in the findings. In any case, a more extensive and specific qualitative study might have allowed for a deeper exploration of other differences that could arise from peer group dispositions. Furthermore, a quantitative study cross-referencing variables related to these dimensions would allow us to confirm the results. In any case, the conclusions align with those expressed by Merisalo and Makkonen, who explain that

“Digital divide research needs to acknowledge not only the input, output, outcomes, and impacts of digital technologies, but also more attention should be given to exploring everyday digital spaces and the resultant capital-related outcomes, as the digital spaces may be lucrative in generating digital economic, social and cultural capital in everyday life. Simply put, the digital realm provides differentiated spaces for people with different interests. However, if digital spaces—due to social inequality and underlying power structures—become increasingly socially stratified and segregated [...], it may have significant impacts on how individuals from differing backgrounds gain accumulated forms of capital through the digital realm. Thus, since socially stratified digital spaces may lead to reinforced differentiation in capital accumulation, the question is of great importance for battling reinforcement of social inequality”. [59] (p. 248)

In any case, the presented results reveal the existence of various sources of inequality in the development of individuals with digital technologies. Individuals from families residing in more urban environments or of higher socioeconomic status not only possess greater competencies but also demonstrate a greater ability to overcome abusive uses. It is proposed that beyond mere access, these differences are motivated by home and peer group socialization processes. This underscores the limitations of both the technological focus from which the CEIBAL Plan was initially developed [16] and approaches solely centered on digital competencies. These findings emphasize the need to conceptualize the youth digital divide as a significant issue driven by deeply rooted socioeconomic disparities that extend into socialization processes, impacting digital competencies and individuals’ relationship with technology. This study underscores the family’s influence on motivation and patterns of ICT use in biographical development, as well as the significance of peer groups and the potential role of teachers in shaping these trajectories. Teachers can play a crucial role in both motivating and raising awareness among students and demanding productive usage, thereby encouraging students to alter their usage patterns and relationship with ICT from an earlier age.

The results indicate the necessity of developing more systematic approaches within educational institutions that address these issues from the perspective of peer groups.
This involves planning strategies to motivate students toward productive uses at an early stage, while emphasizing the importance of the family and seeking to influence usage patterns. The significance of informal learning must be acknowledged, and efforts should be made to prevent social contexts from generating disadvantages and issues in individuals' relationships with ICT. On the other hand, aligning with the concept that there is not a singular youth experience but rather multiple youth experiences [60], it is crucial to consider the importance of accurately analyzing the context. This entails addressing the diverse youth and social realities linked to their families and adapting strategies accordingly.

Author Contributions: Conceptualization, M.A.G.-C. and R.R.-C.; methodology, M.A.G.-C.; formal analysis, M.A.G.-C.; investigation, M.A.G.-C.; data curation, M.A.G.-C.; writing—original draft, M.A.G.-C.; writing—review & editing, M.A.G.-C. and R.R.-C.; supervision, R.R.-C.; project administration, R.R.-C. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by Vicerrectorado de Investigación of the University of Alicante, grant number UAFPU2019-22.

Institutional Review Board Statement: Due the data used in the research comprises anonymized information, in accordance with Article 98.1 of the Organic Law on Data Protection and Digital Rights Guarantee, it is deemed that the objectives pertaining to data protection for research purposes are achieved without the need for additional measures. Consequently, explicit authorization from the ethics committee is not required.

Informed Consent Statement: All interviewees were informed about the use of the interviews and provided consent for their use.

Data Availability Statement: All data are available on request, ensuring the anonymity of the interviewees.

Conflicts of Interest: The authors declare no conflict of interest.

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