Gender Digital Divide and Education in Latin America

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Gender equity in education is one of the main targets for social justice and sustainable development. This literature review, from a gender approach, was conducted to understand how the gender digital divide (GDD) in information and communication technologies (ICT) and education are related in Latin American countries.

Keywords: digital divide ; digital gender divide ; education ; Latin America

1. Introduction

Worldwide, there is a large gap in women and girls' digital adoption and use compared to men and boys, even though most data available to quantify this gap focuses on adults only, not children [1]. Moreover, there is little research on gender differences in digital access for children under the age of 18, but reasons for the digital gender gap include inequitable access to education and harmful social norms that exist in the "offline" world and impact digital realities and potential benefits for women and girls [2]. Inequality in education represents a major contributor to the gender digital divide, therefore women's and girls' digital adoption and use is frequently limited by lower levels of digital literacy, and a lack of confidence [3][4]. That can leave women and girls more vulnerable to online risks than men and boys [5]. More research and data are needed in order to effectively design programmes and initiatives that work to close the gender digital divide for girls.

The promotion of research on digital gender exclusion is a strong workspace in Spain, the UK, Canada and the US, but in Latin America the production is scarce, little cited and disjointed, as well as the global articulation of groups of discussion around the subject [6][7]. In fact, one of the findings in the research made at Universidade Estadual Paulista, which included the most cited literature in English, Spanish and Portuguese in the domain of the digital divide, was that Latin America does not research on the problems of digital divide related to gender and it highlights that the fact that the region is considered to have made notable progress in accessibility is one of the reasons why not enough studies have been carried out in the region on the digital divide [8][9]. Other author adds that the digital divide measurement model has been designed from the countries of the global North and that it is necessary to build a concept from the realities of the countries or regions of the Global South [10].

To add to this, the COVID-19 pandemic resulted in the disruption of on-site educational activity in most countries throughout the world during 2020. This led most governments to rely on communication technologies and information (ICT) to give continuity to the right to education during the months of school closure and confinement. Various researchers have shown how, in the international spectrum, many countries and entire regions have developed or implemented alternatives to online education to give continuity to the right to education, due to the lack of means, infrastructure and material and personal resources to support this educational path [11][12][13]. In this line of research on the right to education affected by the decisive political conditions for the control of the pandemic, studies from the gender perspective have been a minority, and they are in an incipient phase with respect to gender intersectionality [14][15][16].

2. Gender Digital Divide and Education in Latin America

This section presents the results obtained by reviewing the literature, analyzing the articles, and identifying gaps to promote future research. The analysis of the 28 articles studied reflected how 28.57% were developed from the approach of access to ICT, as an element that will lead to the reduction of the digital divide, compared to 71.43% who apply other models that consider other gaps (use and access) to understand the phenomenon of the digital divide.

Regarding the articles' categorization, in which the approach from the access to ICT (internet and computers) as an element that emerges from the reduction of the digital divide, it has been possible to observe an instrumental relationship that does not attend to either of the negative correlations derived from socioeconomic and sociodemographic variables. These studies are based on a market rationale, in which access results in positive impacts on the integration into the labor

market or as an opportunity to develop lifelong learning. These studies have been defined in [17] as part of the optimism in access. Therefore, these studies do not integrate a gender perspective or an approach based on the GDD and, if categorizations are established in relation to sex, they are part of the nature of the research (empirically based on surveys). As a differential note, it should be reported that studies that integrate the gender perspective in their analyses began to be developed in the 1990s and the recontextualization of the digital divide, which considered it in terms of access, use and quality [18]. Even so, these studies carried out in the Latin American region do not implement more complex approaches in their analyses. In this respect, the hypotheses of many of the investigations here reviewed, materializes the observation that studies with a gender perspective in the region are insufficient and this obtains from reasons or a rationale based in the assumption that there is not such a problem, because access to ICTs have been widely ensured since the 2000s [6][8][9][19][20]. The aforementioned authors agree that assuming the extension of access in the region to be homogeneous is an error, as it is one of the most unequal regions of the world and in which there are broad gender stereotypes that are not addressed by national government institutions because they hold, within them, a patriarchal bias.

Concerning the categorization of the analyzed studies according to the three-dimensional approach to the digital divide on access, use and quality [21], 71.43% of the investigations (as previously collected) deal with studies that have implemented this type of methodology. It is pertinent to make visible that not all these studies have conceptualized the digital gender gap in the corpus of their research, but the analysis approach, itself, from the three gaps that consider sociodemographic and socio-economic variables, integrate gender as a variable to take into consideration. This has resulted in studies that contemplate the reality of women in an eminently masculine and masculinized field, such as cybernetic and computer sciences, making it possible to make visible problems derived from vertical, horizontal and motivational segregation in access to ICT. It is from these investigations that the realities suffered by women in the region are problematized, as well as how this derives or correlates with other inequalities that reduce the possibilities of women to develop, at all levels, in the society of communication and information [6][8][10][22][23][24][25][26][27][17][28][29][30][31][32].

Other studies, but a minority in this literature review, have rendered their analyses from a critical, hermeneutical or poststructuralist approach. This means that they attend to digital divides from a perspective that emphasizes the dominance of the masculine in the field of cybernetics and in capitalist instrumentality, so, too, the centrality endowed to the information and communication society, and they advocate building research from hermeneutical and discursive positions in order to question the use of these types of concepts and their roles in the reproduction and production of gender inequalities [9][33][34]. This last set of research problematizes the reality of women in Latin America and proposes carrying out intersectional studies that consider the digital divide as “digital divides” in an unequal region and where gender inequality is one of the realities that are problematizing the coexistence and the possibilities of women.

However, from a pedagogical approach, the results obtained allow establishing a broad discussion about the purposes of education and the instrumentalization that is carried out of the pedagogical in the field of ICT. It is, above all, those studies from the perspective of the triple-dimensional digital divide that consider education as a variable dependent on the digital divide and the digital gender divide. Most of these texts conclude with the idea that, with higher educational levels, there are greater possibilities of narrowing the digital divide and of being able to take advantage of the opportunities that lead to good and quality use of ICT in other contexts.

The initial purpose of this research was to collect the studies that were being carried out on the digital gender divide in education in Latin America—curiously, in the end, since no works have been found that address the issue from the understanding of education as an aim in the digital gender gap. In this way, education is one of the stand-out inequalities derived from the motivational gap; that is, from the dispositions of girls and adolescents to decide on the study of computer science. Horizontal, vertical segregations and stereotypes are addressed as a problematic issue that is conditioning of the GDD, which occurs within the school institution and homes [6][8][34]. The social problematization in relation to the gender gaps attributed in these studies end up by pointing to educational institutions, since they are part of society. The adjectivization of education is, once again, emphasized; that is, to exploit its pedagogical function of reducing inequalities in the catalytic idea thereof and it is identified as a tool to combat or reduce the gender gap [35]. However, in itself, the aims of education are not discussed, and an instrumental vision associated with human capital is offered through solutions that are integrated into the background of the articles. In fact, these are presented as part of the political recommendations that can be carried out to reduce the digital gender gap, based on courses, seminars, conferences, learning communities, promotion of STEM subjects in education, etc., but the substance of/means by which education can be the producer or reproducer of these inequalities is not discussed, in line with [34].

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