Conceptual and Methodological Problems in the Study of ICT Appropriation Process by Low-income Urban Youth in Argentina.

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Abstract— **In this work we discuss the theoretical framework and the methodology to approach the relationship between public access to ICT, poor urban youth groups and socio-economic changes in their daily lives. For this purpose we analyze the concepts of appropriation and contribution versus those of impact and attribution, considering the theoretical and methodological implications of this difference. This is followed by an analysis of the selected methodological strategy and the logical model used in this research. Finally, the article analyses the practical implications of these concepts and the selected methodological strategy for the efficiency in the design of public policies.**

Index Terms— **Appropriation, Contribution, ICT, Poor Youth**

I. INTRODUCTION

THIS paper discusses the theoretical and methodological implications of a major research titled "The impact of public access to ICT in Argentine low- income urban youth". Our research proposal focuses on how the young urban poor in Buenos Aires appropriate ICT through public and shared Internet access venues. We are interested in the everyday life uses and meanings attached to these different types of venues by these social groups. For this purpose, the study approaches the impact promoted by a shared Internet access in the following dimensions: education, employability, civic participation and sociability. The objective is to compare the appropriation experience in three different projects situated in the most densely populated municipality of Buenos Aires (La Matanza): 1) a private and commercial venue (cybercafé), 2) a non-profit communitarian space sustained by the Unemployed Workers Movement and 3) a telecentre sustained by the local council and the national state.

This work focuses on the framework and methodological aspects of the above-mentioned research project. In this sense, the aim of the paper is to discuss several concepts and categories and to clear methodological issues in order to render them applicable for this context. In the first place, we address the relationship between technology and society and we discuss the notions of appropriation, impact, contribution and attribution. Afterwards, we develop the questions and the logical model that will guide our research. Finally, as a conclusion, we provide some considerations in terms of the contributions that our research can give to policy makers dedicated to digital and social inclusion and youth.

II. THEORETICAL FRAMEWORK AND IMPLICATIONS FOR THE RESEARCH

Our research incorporates a constructivist view of technology [1] and the pragmatic sociology of Latour [2] – [3] to situate the work under what Feenberg categorizes as a critical theory of technology [4]. This epistemological approach does not admit a priori definitions of the meaning of technology. Quite the opposite, it posits that its meaning is constructed through the social and historic practices of people with objects. Thus, technology is not value-free but embedded in social relations and contextually situated. In this way, interpretations vary according to the historical moment, socio-cultural contexts and variables such as class, age, gender, ethnicity, etc. which are varied and multiple and in consequence do not necessarily coincide with the codes of technology and its devices.

Taking into account the relevant aspects of this critical conception of technology, we also consider the social theory of media of J.B. Thompson [5]. We relate subjective experiences of individual appropriation of the Internet in public shared access centers with broader social dimensions of

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their context, which enables us to supersede the dispute between methodological individualism versus systemic approaches. In order to address the relations between youth and ICT as practices and values we use the term appropriation, understood as the material and symbolic interpretation of sense-making of certain cultural and technical artifacts by a social group, privileging it over the concept of consumption. While this last category implies that the chances of action are predetermined and closed in a technology, the concept of appropriation emphasizes the capacity of subjects to make it significant for their own purposes. For this reason the notion of impact is also questioned, as it implies that technology has a particular agency, veiling the capacity of subjects to interpret and reinterpret technical objects. Although our consideration is that impact studies are necessary and valuable, they should also be understood for what they can provide. Appropriation and impact hold a different epistemological status. Firstly, there is an interrelation between subject and object, which implies a signification process. Only after we understand this process we are able to study the ways in which the incorporation of this technology transforms the daily life of people. What should not be lost is that these transformations are always the result of a previous interaction with technologies; they are not incorporated or consumed in a vacuum without a history of experiences, as if individuals could be molded like clay by these technical objects. That process of signification is not achieved from scratch. Individuals always have assumptions and expectations with respect to technologies and the media with a social and cultural origin [6]. This implies shared assumptions by a group with similar trajectories. Interpretation is thus a hermeneutical relational process which implies socialization with others [5, p. 62].

Another relevant theoretical issue is related with the capacity of attribution of causal relations between public shared access to ICT and changes in everyday life of low income urban youth. From the conception of technology as a process of appropriation between subject and object, where numerous types of mediations operate [7], we believe we can appreciate the contribution of public access in the daily life of low income urban youth. Given that the emergence of these venues and their appropriation shape a complex system [8] y [9] where multiple variables operate, we will seek to determine in which way public shared Internet access contributes to improve certain social, cultural and economic features of these groups, rather than establishing certain attribution effects in each of these spaces. "A theory of change is compatible with the notion of a paradigm or worldview in that it encompasses a set of assumptions (…) The key word in this theory of change is contribution, as opposed to attribution. Contribution suggests that ICTs will be part of strategies where the broadband services and applications may enhance, enable, and provide options that were not there before. The term suggests an assumption that the intervention has good odds of contributing to the goals but that efforts to prove

causality will not be a priority. Moreover, it embraces the socio-technical interaction between people and technology as a source of innovation, often leading to unexpected outcomes (…) What is added here is an explicit acknowledgment that the gap between outcome and purpose (or results or impact) will be addressed through a contribution theory of change." [7, pp. 90-91].

III. METHODOLOGICAL CONSIDERATIONS

Following previous statements, our research questions analyze mechanisms of appropriation. We want to question the practices and technological representations of the youth in order to understand the ways in which ICT, particularly the Internet, are incorporated into their daily lives in the different shared access venues stated previously. The research is centred around the practices undertaken by low-income youth groups in these venues, analyzing their perceptions on the computer and the Internet and the effects of the relationship with these technologies in terms of their own capacity building to access and stay in the educational system, employability, sociability and engagement with public life. Lastly the research addresses what would happen if these Internet venues would disappear.

Given that appropriation processes are, by definition, extremely complex, a specific methodological approach is needed to address this issue. Following the conceptual framework developed previously for this research, an impact assessment is rendered as an inconvenient approach. The study is not centered in measuring quantitative data (employability indexes, scholarly qualifications, technological capability indexes, amount of new contacts, etc.) which could be attributed to the presence of Internet shared access venues. On the contrary, the epistemological and methodological strategy which is aligned with this research's objectives and theoretical underpinnings aims at determining the intermediate results achieved by these youth groups in Public Access Venues (PAC). These intermediate outcomes are primarily of a qualitative nature, as they intend to comprehend the impact that public access to ICT promotes in the capabilities and imaginaries of these youth. In this way, literature that links flow and web usage [10] – [11] – [12] – [13] could help us to think the possible intermediate outcomes related to poor youth flow experience, which is defined by Csikszentmihalyi [14] as an integration of the constructs of a clear goal, feedback, challenges matching skills, concentration, focus, control, loss of selfconsciousness, transformation of time, and the autotelic nature of an activity. Moreover, we aim at determining the impact of the modes of appropriation of public access to ICT in terms of the accumulation of social capital [15] – [16] of young, urban poor. This capital is essential, according to the literature, to counteract the so-called "discouraging effect": where they can feel trained enough to search for a job [17], where they value the permanence in an educational system as the driving motor of social promotion [18], where they use

their social networks as a strategy for social inclusion and where they feel that public participation can be effective [19]. In other words, we hope to disseminate the ways in which the appropriation of ICT in PAC contributes towards the construction of positive evaluations with

attain.

The Chart N° 1 depicts this analytical model. It shows the tentative / hypothetical relations amongst variables which we expect to validate with the research. This model establishes a

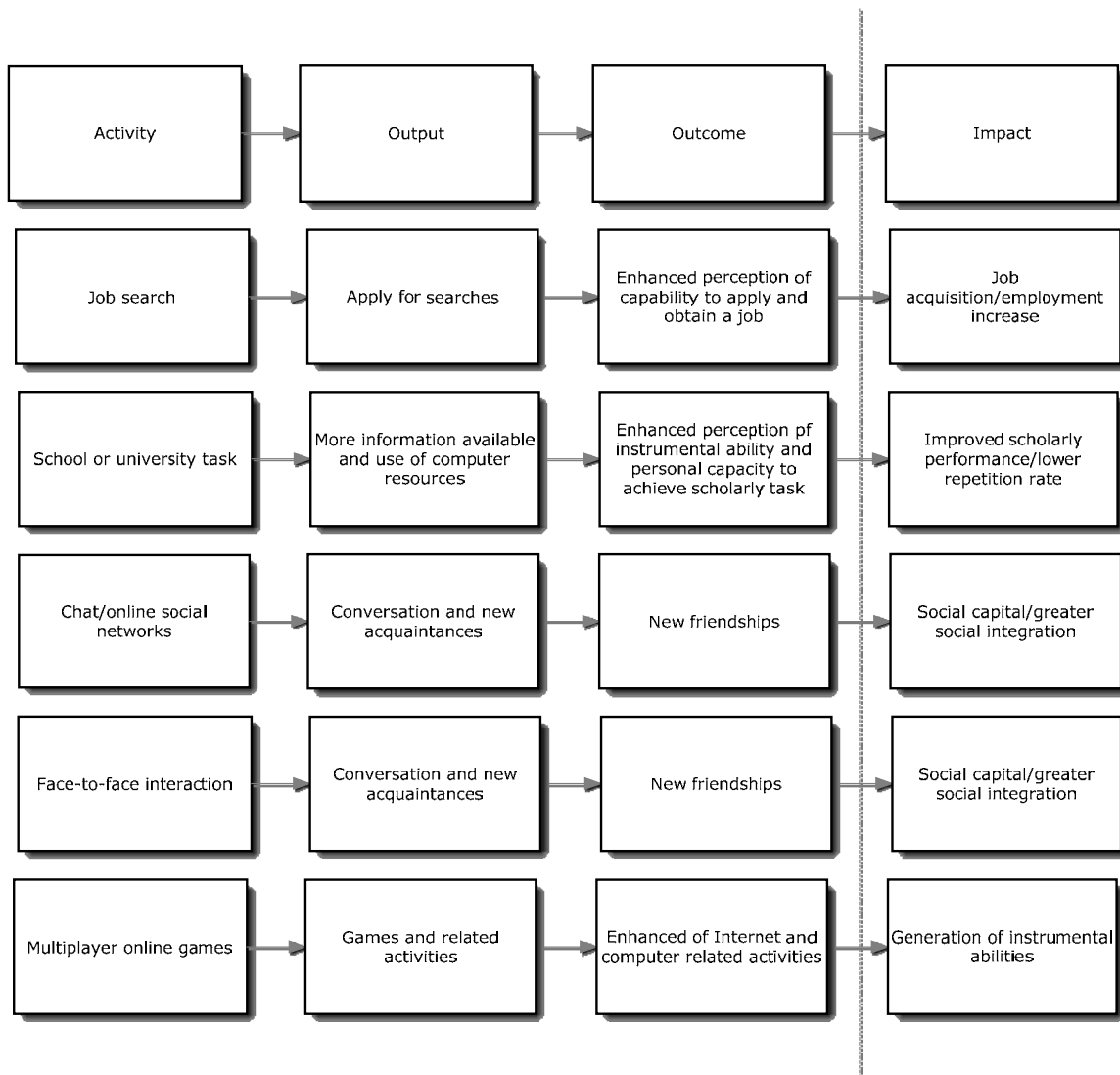| Activity	Output	Outcome	Impact
Job search	Apply for searches	Enhanced perception of capability to apply and obtain a job	Job acquisition/employment increase
School or university task	More information available and use of computer resources	Enhanced perception pf instrumental ability and personal capacity to achieve scholarly task	Improved scholarly performance/lower repetition rate
Chat/online social networks	Conversation and new acquaintances	New friendships	Social capital/greater social integration
Face-to-face interaction	Conversation and new acquaintances	New friendships	Social capital/greater social integration
Multiplayer online games	Games and related activities	Enhanced of Internet and computer related activities	Generation of instrumental abilities

Chart N° 1. Logic Model for assessing the appropriation of ICT in public access venues

regards to their own capacities, social ties, the benefits of education and of collective action. Without these it is quite unthinkable to achieve final outcomes such as the improvement of their work performance, the permanence in an educational setting, the strengthening of social ties and the increase in civic participation and public engagement. Given the specific objectives of this research, we do not aim to measure the degree of compliance or achievement of these final outcomes but rather to show how the different shared access venues can contribute towards the generation of those intermediate outcomes, without whom the final impact and the outreach of public policy goals would be very difficult to

complex system between inputs, activities, intermediate results and final impact, as they are all inevitably mediated by social, economic and cultural conditions. The dotted line between the intermediate outcomes and the final ones (final impact) shows the contribution between both parts. The line also frames the explanatory potential of this research. Our research aims at understanding the complex tie established between the first three dimensions (columns), which is nothing other than the process of appropriation. It is essential to understand then this relationship between: inputs (access, devices and services offered at the venues); the socio-cultural conditions of these actors and their practices and social representations by analyzing how they appropriate ICT and potentially strengthen their opportunities in terms of education, work, sociability and participation in public life.

The third column explains with examples how the appropriation of ICT in shared venues could contribute to strengthen each of these capacities.

Given our interest to capture the interrelation between practices and technological representations and the degree of complexity of our analytical model, the methodological approach of this project incorporates qualitative and quantitative techniques.

Also, given that there are no finished theoretical findings regarding our object of study, that is the relationship between public access to ICT by low-income urban youth sectors, descriptive tools will be used to process and analyze the data (for eg: the "most significant change" technique). We will also proceed in the construction of complex typologies, crossing the modes of appropriation of ICT with social class, relevant socio-cultural variables, as well as gender and age. Through these methods we will develop grounded theories based on facts [20], [21].

Methodological sequence is crucial in order to respond to each of our research questions. Thus, the fieldwork is organized in three stages. The first stage is focused on a literature review of publications, research and sources. The second stage is a qualitative and exploratory fieldwork technique, including semi-structured interviews to users and non-users, non-participatory observation techniques in the shared Internet access centers and structured interviews with the managers and coordinators of each venue. This stage also includes focus groups with users from each venue, allowing us to compare them. The third stage will work on the findings from the interviews to build a questionnaire that will help us explore the validity of these data though a survey on ICT uses, activities and intermediate outcomes.

IV. CONCLUSION.

As a conclusion we would like to reflect on the practical utility of concepts such as appropriation and contribution. More than a contribution to the academic debate, as we have done up to now, we are sure of the importance of this perspective for decision making and design of public policies concerned with bridging the digital and social divide and the application of ICT for development.

As was mentioned before, we expect that the concept of appropriation and the approach it entails will help to question, revise and propose new categories to reflect the relationship between the urban poor and ICT, enriching the concepts of "digital divide" and "digital poverty". We expect the results of this study will allow us to generate original knowledge and indicators for the monitoring and evaluation of digital inclusion programs in Argentina. Because despite the advances in diagnosing and implementing policies to address the digital divide, there is a lack of studies which incorporate

users' appropriation experience. This omission evidences an epistemological limitation expressed in the construction of indicators which do not contemplate actors' perspective for the evaluation of these programs [18]. Taking into account these considerations we will device a communications plan in order to disseminate these results to policy-makers.

For this purpose, it is essential to understand the interrelationship between low-income youth groups and ICT though the study of the contributions of the different PAC and the subject-object technical mediation which operates in them. That is, the work seeks to understand what these youngsters do in these spaces, how they interact personally in these settings and with others (via the Internet) through the appropriation of the potentials that ICT offer in each of these different shared access venues.

The knowledge of the qualitative changes that have occurred through this mediation offers a new and indispensable perspective when providing strategic guidelines for public programs. This research's final objective aims at providing policy recommendations to the State with regards to the types of shared ICT access initiatives that, if supported and financed, would generate an improvement in the social and economic indexes of these groups. Which public access model should be financed? Should games and playful uses be allowed in these venues, or should they be banished? Which training strategies should be proposed? In which ways could education and shared ICT access be articulated? This research expects to provide scientific evidence which will allow decision-makers to answer these questions when designing and evaluating digital inclusion policies amongst the mots vulnerable social groups.

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