

Embedding e-inclusion initiatives in people's daily reality: The role of social networks in tackling the digital divide.

Mariën, Ilse (ilse.marien@vub.ac.be)
Van Audenhove, Leo (leo.van.audenhove@vub.ac.be)
IBBT - SMIT, Studies on Media, Information & Telecommunication
Vrije Universiteit Brussel
Pleinlaan 9, 2nd floor
B - 1050 Brussels
Belgium
Tel: +32 2 629 26 87
Fax: +32 2 629 17 00
<http://smit.vub.ac.be>
www.ilsemarien.com

Abstract: The discussion on the digital divide has evolved from a dichotomous concept between *haves* and *have nots* into the notion of a multivariable phenomenon, covering a wide range of differences in access, usage and attained digital literacies caused by a large number of – often intertwined – social and economic characteristics. This study focuses on the current implementation of e-inclusion initiatives in Flanders and critically analyzes how they relate to existing social networks. It is based on theoretical insights relative to the mutual influence of social networks, lifestyles, life stages and ICT-adoption. The empirical part consists of two elements. First, nearly 400 e-inclusion initiatives were mapped according to their *modus operandi*, pedagogical approach and embedding in existing social structures. Second, qualitative brainstorm sessions were organized during which the most important bottlenecks and corresponding solutions were discussed. The results indicate that to ensure effective adoption and domestication, initiatives need to relate to people's daily reality and should therefore be integrated in the existing social and cultural life of people. Further, from a pedagogical point of view, initiatives should be in accordance with the needs of each individual. Therefore, a demand driven, bottom-up approach, at the pace of the individual learner is required.

Keywords: digital divide, e-inclusion, digital literacies, implementation

Introduction

During the last decade research relevant to the digital divide underwent a noticeable and undeniable transition of the conceptualization and characteristics of the digital divide as such. (Barzilai-Nahon, 2006; Brotcorne & Valenduc, 2008; DiMaggio et al., 2001; Hargittai, 2004; Livingstone & Helsper, 2007; Selwyn, 2004; van Dijk, 2005; Warschauer, 2003) At first research put forward a dichotomous view of the digital divide considering the digital divide as a situation in which people either have or do not have material access to ICT and either use or do not use ICT. (Hargittai, 2004, 2008; Selwyn, 2004, van Dijk, 2005; Zillien & Hargittai, 2009) In the meanwhile it has become clear that such a dual approach no longer reflects the complexity and multileveled character of the digital divide. Instead the notion of the digital divide has evolved into the idea of a spectrum of positions going from no access at all to a complete and continuous 24/24, 7/7 online access. (Brotcorne et al. 2009; Hargittai, 2003; Livingstone & Helsper, 2007; van Dijk, 2005) The same can be noticed with regards to usage. Different people can use different ICT in different ways with different intentions and finalities. (Anderson & Tracey, 2001) To determine the existence of exclusion mechanisms the context of use has become decisive. In this context the attainment of digital skills and the quality of use have been put forward as influential indicators. (Mossberger et al., 2003; van Dijk, 1999, 2005)

Meanwhile it has also become clear that socio-demographic characteristics alone no longer measure up to explain the differences that occur regarding ICT-access, motivational issues, ICT-usage and digital skills. (Selwyn, 2004; Zillien & Hargittai, 2009) Other issues have been identified as for example the role of lifestyles and life changes or the influence of social network on the adoption and domestication of ICT. (Anderson & Tracey, 2001; Bakardjieva & Smith, 2001; Brotcorne et al., 2009; ; Haddon, 2004; Mariën, 2007; Moreas, 2007; Selwyn, 2004; Selwyn et al., 2005; Ribak, 2001; van Dijk et al., 2000; van Dijk, 2005)

Consequently, several questions arise. First, what has effectively changed and how should today's digital divide be conceptualized. What is the exact role and added value of social networks for the domestication of ICT? Second, are existing e-inclusion initiatives in line with the increased complexity of today's digital divide or do they still solely focus on providing access to ICT? Third, how do existing e-inclusion initiatives relate to the role of social networks? Do additional barriers exist that lead to more mechanisms of social exclusion or do e-inclusion initiatives bring about the same added value as common social networks?

To answer these questions an overall research project was launched. The theoretical framework of this study is based on a variety of digital divide research. On the one hand it is partly based on the four levels of access – mental, material, usage, skills – identified by van Dijk (1999): The first, mental access refers to the motivational barriers that prevent people from using ICT. The second, material access refers to the traditional notion of access and is about the actual possession of ICT. The third, usage access, points out the differences that occur at the level of using ICT and the exclusion mechanisms that accompany this usage. The fourth, skills access, refers to the lack of digital skills as a main barrier for usage. On the other hand it is based on research related to the adoption and domestication of new technologies and the significance of social networks, lifestyles and life stages in this regard.

The empirical part of this study consists of two aspects. In the first place an inventory of existing e-inclusion initiatives in Flanders was realized. By an online survey initiatives were asked to give information about 1) their modus operandi (target groups, number of computers and Internet connections, number of participants...); 2) their pedagogical approach (type of coaching, learning material, group size, demand or supply driven approach, focus of training opportunities...); and 3) their embedding and partnerships at a local level (number of partners, financial resources, type of support received...) In the second place a brainstorm session with various representatives of e-inclusion initiatives was organized in order to identify current barriers, reflect about adequate solutions and discuss about the possible role of policy.

From digital divide to digital inclusion

As already mentioned in the beginning the digital divide was merely considered as a problem of lack of access or lack of usage. It was always thought of as a gap-related phenomenon between those with access – the so-called *haves* – and those without access – the so-called *have nots*. In the meanwhile this has changed and it is believed that there is no longer one digital divide but many digital divides that often coincide. (Barzilai-Nahon, 2006; Brotcorne & Valenduc, 2008; DiMaggio et al., 2001; Hargittai, 2004; Livingstone & Helsper, 2007; Selwyn, 2004; van Dijk, 2005; Warschauer, 2003) But what has changed exactly and which new concepts and problematic issues have risen? The categorization presented by van Dijk (1999) has been taken as a starting point for this analysis as it is still valid today and facilitates to identify and clarify the complexity of today's digital and social exclusion mechanisms.

Submerging digital divides

Over time barriers concerning *material access* have decreased significantly. Prices for computers and other ICT dropped and acquiring ICT has become more mainstream than in the past. However, for a vast majority of underprivileged groups like people living in poverty, under educated, unemployed and low-income groups, material access remains highly problematic. They clearly lack the financial means to acquire a computer and associated materials like a printer, ink, paper, storage materials. In areas like Belgium the price for a subscription to the Internet continues to be too high. Nevertheless, for most households the material access barrier no longer exists. (Mariën, 2007; Mariën & Van Audenhove, 2010; van Dijk, 2005) Consequently, it is clear that other issues influence people's motivation to acquire material access to ICT.

At first sight, motivational barriers might seem less important but recent studies indicate that there might be a vast percentage of people who are determined to reject the use of ICT. For example in the Netherlands where prices for a subscription to the Internet are significantly lower than in Belgium and where 90 percent of the population has home access to computer and the Internet, it is suspected that it will be very hard to convince the remaining 10 percent to engage in the acquirement and use of ICT. (van Deursen & van Dijk, 2009) A same situation is to be expected in Belgium. Material access increases progressively with time but research by Verdegem and Verhoest (2009) leads to the same hypothesis as van Deursen and van Dijk (2009). Research by Mariën & Van Audenhove (2008) indicates that there exist so-called *hidden non-users*. Most measurements of ICT-access and use are done at the level of households by way of an extensive survey. In most cases it is the head of the household who provides the answers to this survey and as such the survey only reflects the view and experiences of one member of the household. In most households significant usage differences exist between household members but this is currently not indicated nor shown in existing surveys. As a consequence, non-users within households are rarely identified or examined within their context of (non)-use. More research on these non-users in relation to the use of the other household members could clarify exactly what elements hinder the take-up of ICT.

At the level of usage the so-called *Matthew effect* comes into play. This refers to the fact that already advantaged groups – those with high education levels, high incomes, active job status and increased training opportunities – use ICT in such a way that it gives them a significant added value. Hence, these groups are continuously enabled to improve their societal position. This in contrast to underprivileged groups – those with low education levels, low incomes, inactive job status and few training opportunities – who show a more leisure-oriented use of ICT without an immediate added value at a societal level. (van Dijk, 2008) Differences in user profiles – from non-users to a high level and always-on-line users – and differences in types of usage have also gained importance as they, when placed in their context of use, often explain why and in what way digital and social exclusion mechanisms occur. The cause-effect relationship between differences in ICT-use and social exclusion mechanisms is not predetermined in a sense that differences in usage do not necessarily lead to mechanisms of social exclusion. Hence, it is important to look at the context of use. If someone wishes to participate in education, training, work or other societal activities but is not able to because of a lack of access to ICT or a lack of skills, it is clear that exclusion mechanisms exist and that policy intervention is needed.

Differences in attainment of skills often explain why differences in usage or differences in quality of uses occur. (Brotcorne et al., 2010, 2008; Livingstone & Helsper, 2007; Selwyn, 2004; Mossberger et al., 2003) Steyaert (2000) and van Dijk (1999) developed a valuable framework for the notion of digital literacy. As a whole they identified four kinds of digital skills. A first type is operational skills. This type of skills refers to the notion of *button knowledge*, which is about the knowledge to manipulate ICT. A second type is formal skills that consist of the ability to navigate through a certain medium. On media as for example the Internet and mobile phones the ability to navigate is of high importance to ensure efficiency and quality of use. (van Deursen & van Dijk, 2009) A third type of skills is informational skills. The attainment of these skills is also important for the use of traditional media like television or newspapers because they reflect the capability of people to search, find, critically evaluate, manage and store information. A fourth and final type of skills defined by Steyaert (2000) or van Dijk (1999) is strategic skills. This refers to the ability of people to improve their knowledge via ICT and obtain a concrete added value out of the use of ICT. When considering digital skills each of these different types of skills should be taken into consideration. Hence, recent studies more and more use the notion *digital literacies* instead of *digital literacy*. (Lankshear & Knobel, 2008; van Deursen & van Dijk, 2009)

In spite of a clear framework and description of existing digital literacies, current methodologies and most empirical studies do not take the multifaceted aspect of digital literacies into account. Most surveys operationalize digital skills as the number of tasks people can perform or the number of applications people use. Also often, this is mainly based on self-reporting methods. (Eshet-Alkal, 2004; Lankshear & Knobel, 2008; van Dijk, 2005; van Deursen & van Dijk, 2009) This approach leads to a highly distorted view of the actual level of attained skills. Some more valuable measuring methods have been developed by van Deursen & van Dijk. (2009) By way of real life experiments in which respondents need to execute certain tasks on the computer and the Internet, they aim at achieving a more correct view. Their study confirms what other critical researchers already suspected with regards to the so-called *digital natives*. In spite of most common views in which the digital natives are considered as a highly Internet savvy generation without any ICT-related problems whatsoever, the research by van Deursen & van Dijk (2009) shows that these youngsters who have grown up with ICT, have very good operational and formal skills but clearly lack the necessary informational and strategic skills. While young people very well know how to manipulate machines and programs, they succeed far less in finding and critically evaluating information that is available on the Internet. Moreover, they are less capable of using the Internet to their advantage. In contrast to middle-aged users that have low operational and formal skills, but high informational and strategic skills. Furthermore, van Deursen & van Dijk (2009) expect that the lack of informational and strategic skills amongst young people will persist in the future and become a structural problem. Whereas operational and formal skills can more easily be learned at home by trail and error, this is less the case for informational and strategic skills. Here intervention by formal education is needed as both skills demand for changes in attitudes and knowledge. (van Deursen & van Dijk, 2009)

Increased complexity and risk of social exclusion

The digitization of society is continuously increasing. More and more services are offered in a digital way. This applies for information, employment, housing but also schooling and governmental services. Moreover, the advanced integration of ICT within society ultimately increases the chance of being excluded from one or more social fields. Also, the notion of *ICT* as a whole is much wider than the often implicitly assumed computer and Internet related

technologies. Exclusion mechanisms also occur at the level of technologies like mobile phones and interactive digital television. (Selwyn, 2004) Research shows that even the use of bank cards is not yet natural for everyone. (Mariën, 2007) And as indicated previously exclusion mechanisms can occur at different levels – material, mental, usage, skills access – and this for each type of ICT. As a consequence, social exclusion due to digital exclusion is no longer bound to the more obvious underprivileged groups of people in poverty or those with a low income, low education level or inactive job status. Instead social exclusion mechanisms also exist at the level of more advantageous groups like high-educated digital natives who lack certain digital skills and of whom a vast part shows a distinct lack of motivation to ICT-use. (Hargittai, 2010) Comparable problems exist at the level of middle class households where motivational issues hinder the ICT-use of some household members – in particular mothers. (Mariën & Van Audenhove, 2008) As a whole it can be stated that an increased risk of social exclusion exists because of the increased complexity and diversity of digital divide related issues.

A call for a new terminology

The notion of *digital divide* is accompanied by different negative connotations and false assumptions and hence, easily leads to false ideas and attitudes. The use of the word *divide* is misleading and suggests the idea of a gap that exists between two opposites. It hereby reinforces the outdated dichotomous notion of digital exclusion as those with access versus those without access, whereas recent studies clearly indicate the existence of a complete spectrum of possible positions with regards to access. The same even so applies to the notion of usage. Here also, the idea of users on the one side versus non-users on the other side is outdated but still suggested by the use of the word *divide*. Moreover, it has been made clear that there is no longer one *digital divide* but many *digital divides* that exist side by side or coincide. The problems related to digital and social exclusion are highly complex and multidimensional and are linked to numerous factors. (Barzilai-Nahon, 2006; Hargittai, 2004; Selwyn, 2004; van Dijk, 2005; Verdegem & Verhoest, 2009; Warschauer, 2003) The word *divide* also brings about the idea that the *digital divide* is a static phenomenon that hardly changes in time, which in reality is clearly not the case. Access, usage and skills related to ICT change continuously. (Frissen, 2000; van Dijk, 1999, 2005) Altogether the notion of the *digital divide* as such no longer reflects the current situation and complexity of social exclusion mechanisms caused by ICT. Different researchers therefore call for a change in terminology and bring forward the notion of *digital inequality*. (Brotcorne et al., 2010; DiMaggio et al., 2004; Hargittai, 2003, 2004; Selwyn, 2004; van Dijk, 2005;) We propose *digital inclusion* because it has a more positive connotation.

The social capital of social networks

Most research starts from socio-demographic characteristics like age, gender, income, education level or family constellation to explain the presence of ICT-related exclusion mechanisms. (Hargittai, 2010; Lee, 2008; Moreas, 2007; Selwyn, 2004; Verdegem & Verhoest, 2009; Warschauer, 2003) This approach is today still valid as many socio-demographic characteristics have a major influence on the take-up of ICT. However, research shows that other non socio-demographic issues also have a significant influence. (Brotcorne et al., 2010; Crang et al., 2006; Lee, 2008; van Dijk, 2005) One important aspect in this regard are social networks. (Mariën & Van Audenhove, 2008) But what is the actual impact and significance of social networks? And to what extent do mechanisms of social exclusion occur?

The added value of social networks

Different researcher argue that social networks have a significant added value for its' members and represent a substantial influence on the adoption and domestication of ICT. (Bakardjieva, 2001; Brotcorne et al., 2009; ; Haddon, 2004; Mariën, 2007; Moreas, 2007; Selwyn, 2004; van Dijk et al., 2000; van Dijk, 2005) According to DiMaggio social networks provide three types of support that hand over information, lend assistance and advise on ICT-use. A first is technical support provided by IT-professionals like technicians and teachers. A second type is technical support provided by friend and family. And a third type is emotional support also given by friend and family. Haddon (2004) and Bakardjieva & Smith (2001) use the notion of *warm experts*. This refers to family, friends and other social contacts that function as point of reference for ICT-related questions and problems. Van Dijk et al. (2000) points out three kinds of social network related resources that as a whole constitute the social capital of people, namely cognitive, material and social resources. Material resources are the people within one's social network that have material access to ICT. Cognitive resources refer to the availability of digital skills within one's social network, while social resources reflect the extent to these resources are willing and able to provide support to the members of the social network. In other words social resources indicate to what extent members can rely on the available material and cognitive resources within their social network. (van Dijk et al., 2000)

Having access to these different kinds of support networks or different types of resources has a major positive influence on the adoption and domestication of ICT. People who move in ICT-rich environments, meaning social networks with high levels of access, usage and skills, have more opportunities of use and are subject to more exchange of information about new and interesting applications. They also have more ways to obtain support when they are confronted to technical problems or questions regarding more operational or formal aspects. Being part of an ICT-rich social network means that its' members are more incited to use ICT compared to people who belong to ICT-poor social networks as members stimulate one another to start using new ICT or new applications. ICT-poor social networks provide fewer resources because in these networks there is a lack of material access to ICT, low levels of usage and skills. Hence, there are fewer impulses to start using ICT and fewer opportunities of use. (Bakardjieva, 2001; Brotcorne et al., 2009; ; Haddon, 2004; Mariën, 2007; Moreas, 2007; Selwyn, 2004; van Dijk et al., 2000; van Dijk, 2005)

Indicators

A first indicator is the heterogeneity of social networks. The number and diversity of social networks significantly increases the chances of integration of ICT within these networks. Being part of different and differing social networks means that there is a higher chance that one of these networks is an ICT-rich environment. Hence, chances of take-up of ICT become higher. (van Dijk et al., 2000) The odds for a more divers use of ICT also increases because different social networks in most cases use different ICT in different ways. Belonging to heterogenic social networks means also being exposed to the diversity of ICT-use within these networks and hereby also leads to more stimuli that incite members to copy other members and engage in a more divers use of ICT. (Haddon, 2004; van Dijk, 2005) Being a member of a homogeneous ICT-poor social network significantly decreases the chances for take up of ICT. Moreover, if an individual is the only one within his social network to use a certain application this would probably lower his use because there are too few opportunities of use within his social network. (Haddon, 2004) The diversity of social networks is mainly

determined by an individual's participation in society. In turn, education level, job status and type of employment influence participation in society. The participation in employment and the engagement in civil society organizations are essential because colleagues, friends and acquaintances – also called *weak ties* – often function as cognitive resources. (Dekkers & Kegels, 2003; Mariën, 2007, van Dijk et al., 2000)

A second indicator is the attitude towards ICT that is shown in social networks. Here, the effect can be positive and negative. If most members of a social network have a positive attitude towards ICT than the remaining members are more likely to develop a positive attitude as well and engage in the use of ICT. The same applies for social networks in which a negative attitude predominates. Members of such a network are more likely to reject the use of ICT. (Dekkers & Kegels, 2003; Moreas, 2007; Zillien & Hargittai, 2008) In addition, if usage patterns within a social network are more leisure-oriented then its members will be more incited to leisure-oriented activities. In social networks made out of mainly high-educated individuals, a more diverse use of more complex applications can be noticed. As a consequence its members are also more motivated to a complex and diverse use of ICT. Also, it will be easier for these individuals to obtain advantage out of their ICT-use as they have a large amount of material, cognitive and social resources at their disposal.

The willingness of members of social networks to provide support is a third indicator. Thus far, research on this subject is scarce but first results show that not all individuals are able and willing to give support to other individuals. At the level of households power relations between household members play a significant role. In some families high ICT-skilled household members hinder or even forbid the remaining digitally illiterate household members to use the ICT that is available. Instead they show a resentment to provide coaching. Several questions arise. Why do these members do not wish to provide coaching. What hampers or hinders this? Do the same type of power relations also play in extended social networks? Additional research is clearly needed to investigate further the reasons why members of social networks do not wish to function as a social resource for the other members of their social networks, but also in which way this situation could be addressed. (Mariën & Van Audenhove, 2008)

A worst-case scenario for underprivileged groups

Underprivileged groups are confronted with highly difficult situations when taking ICT into consideration. Most members of these groups have low access to ICT, low usage levels and few digital skills. (van Dijk, 2005) When looking at social networks another barrier arises. Most underprivileged individuals are part of a merely homogeneous network of other underprivileged individuals, mainly because they participate less in society. Financial constraints hamper the participation in culture, leisure-oriented activities or other social events. As most underprivileged individuals are also undereducated their chances of active employment in an ICT-rich environment are severely reduced. (Dekkers & Kegels, 2003; van Dijk, 2005) Furthermore, learning barriers – low self-esteem, lack of confidence, learning difficulties, negative school experiences – prevent them from participating in education. (Mariën & Van Audenhove, 2008) Underprivileged groups have few *weak ties* like colleagues, acquaintances or distant friends but many *strong ties* like nearby family and close friends. (Mariën, 2007) These so-called *strong ties* are mainly other underprivileged individuals with likewise, low access to ICT, low usage and few digital skills. In other words, underprivileged individuals mainly belong to one ICT-poor social network. (Dekkers & Kegels, 2003; van Dijk, 2005) As a consequence, they have very few opportunities of use. Why should I email if

there is no one to whom I can send an email? Why should I go on Facebook if none of my friends is on Facebook? When underprivileged individuals use ICT, they use it in a more leisure-oriented way. Hence, the remaining members are encouraged to the same leisure-oriented use. (Mariën, 2007; van Dijk, 2005) Also, within this homogeneous ICT-poor network there is no social and motivational support to incite members to use ICT, let alone to use ICT in a strategic way. Within their social network underprivileged groups rarely have the necessary material, cognitive and social resources.

At the same time, underprivileged groups rarely transcend this homogeneous but familiar social network because of too many negative experiences in the past. Continuous rejection by society, for example at the level of education or employment, has led to a loss of confidence, low levels of self-esteem, insecurity and the constant fear for rejection. This has two major consequences with regards to ICT. A first repercussion is that underprivileged groups rarely participate in formal education because they associate education with negative emotions and experiences. Why should someone re-engage in something that has led to problems in the past and is most likely to lead to problems and negative emotions again in the future? Hence, improving their digital skills cannot be obtained by formal education opportunities. (Mariën & Van Audenhove, 2008) A second adverse reaction is that underprivileged groups rarely go to public computer spaces that are linked to formal institutions like for example libraries. These are mainly visited by high-skilled and high-income groups whereas underprivileged groups consider libraries as everything they are not and will never be. The entrance barrier of these kinds of formal institutions is too high for underprivileged groups. This implies that other, more suited, places need to be found if one wishes to provide alternative ways of ICT-access to underprivileged groups. (Mariën, 2007)

As such, it can be stated that a *social network barrier* exists that hampers the take-up of ICT by underprivileged groups. This implies that alternative solutions are to be found, meaning other ways of providing underprivileged groups with the necessary ICT-related social capital.

Alternative approach to digital inclusion

In the past research and policy focused mainly on problems regarding access to ICT. This has resulted in policy solutions that only foresaw in expanding people's access to ICT. In the meanwhile research has advanced and identified the extended complexity of digital and related social exclusion and inclusion. Appropriately, more advanced policy interventions should arise that go beyond providing access. A possible alternative way of looking at digital inclusion is to consider the notions of *adoption* and *domestication*. While adoption is about obtaining material access to technology, domestication refers to the complete integration of ICT-use within people's daily reality. Once a technology is domesticated it has completely blended into people's daily routines and in a sense its' use has become vital. (Wellman & Haythorhwaite, 2002)

Question then is how to strive for domestication? Research shows that providing access – or *adoption* – is not enough to ensure domestication. Instead the significance, relevance and added value of ICT in the daily reality of the end user are considered to be crucial elements. The use of ICT needs to have a major positive influence and a clear added value in order to lead to domestication. People who do not need ICT in their daily routines will not be motivated to use ICT either. (Manueli et al., 2007; Moreas, 2007; Selwyn et al., 2005; van Dijk, 2005) Important in this regard is that the use of ICT will not lead to tremendous changes in people's reality but will only support their already existing lifestyles. Research shows that

the use of ICT in most cases relates to actions people already undertake without ICT. As such, ICT just enables another, or a more diversified use or makes the current use easier. (Anderson & Tracey, 2001; Selwyn et al., 2005)

Striving for domestication means the creation of usage opportunities that are relevant to the lifestyle and daily reality of individuals because there is no use in teaching someone how to use Word if in his daily reality he does not need Word. (Manueli et al., 2007; Moreas, 2007; Selwyn et al., 2005; van Dijk, 2005) A possible approach is to implement learning opportunities within people's social networks and apply a demand driven approach. This means starting from concrete questions of learners themselves instead of a supply driven approach in which the course tutor decides about the content of the course. In that way it is the learner who indicates what he wishes to learn, which application, in what context and for what goal. (Dekkers & Kegels, 2003; Selwyn et al., 2005)

For underprivileged groups this means taking into account the context of (non)-use and overcome *social network barriers* and *learning barriers* and provide alternative access to ICT within existing social organizations that underprivileged groups already visit. In that way there is no need to transcend their familiar social network. It also means the creation of opportunities of use and essential resources because these are currently lacking. Important here, because of the distinct differences in daily routines and realities between underprivileged groups and advantaged groups, is to work demand driven and to let disadvantaged individuals themselves indicate what they wish to learn. This increases motivation and ensures the existence of a link with the daily reality of disadvantaged groups.

e-Inclusion in Flanders

In Flanders there exists no clear-cut top-down policy with regards to e-inclusion and the implementation of alternative access points – or so-called *public computer spaces*. This has resulted in a highly scattered field of e-inclusion initiatives organized by civil society. At the same time policy stakeholders are completely unaware of the number, scope or impact of these initiatives. Our study consisted of an inventory of existing e-inclusion initiatives in Flanders and studied the ability of these initiatives to provide alternative access to ICT or training opportunities. By way of an online survey nearly 400 initiatives were identified and questioned about their *modus operandi*, pedagogical approach and embedding in local structures. In order to provide relevant policy recommendations additional brainstorm sessions were organized with representatives of different initiatives.

Modus operandi

Most initiatives provide access and training opportunities. Only 14 percent focuses solely on access to computers and the Internet. The majority of the public computer spaces are small sized. In 66 percent a maximum of 10 computers is available for use. All initiatives but one are connected to the Internet. Training opportunities focus mainly on the combination of computer and Internet skills, namely in 87 percent of the initiatives that provide training. Only a minority focuses solely on teaching computer skills. These courses are mainly meant for elderly individuals.

Free access is provided in 89 percent of the public computer spaces. In 7,5 percent an entrance fee between zero and five Euros is asked. Training opportunities are more expensive. Only 41 percent of the initiatives that provide training are free. In 12 percent an entrance fee

between zero and five Euros is asked. In 18 percent this entrance fee exceeds 26 Euros. Approximately the same number of initiatives – 16 percent – uses a guarantee-based system in which participants pay an entrance fee when they apply for the course, but get reimbursed after finishing the course. This system prevents participants to drop out of a course or not show up at all while registered.

The majority of the public computer spaces are open to all public, namely 87 percent. Some initiatives – 38 percent – make additional efforts to reach underprivileged groups. In case of training opportunities elderly are put forward as a target group in 29 percent of the initiatives.

Pedagogical approach

The majority of public computer spaces, namely 91 percent, provide coaching for their visitors. In 75 percent of the initiatives – public computer spaces and training opportunities – a combination of a demand and supply driven approach is used. In 20 percent of existing public computer spaces volunteers without additional training provide the coaching. For training opportunities this is only 10 percent. In most training opportunities (44 percent) the coaches are professional teachers. For public computer spaces this is only 21 percent. During coaching in public computer spaces and training opportunities most attention is given to operational skills while fewer attention is given to strategic skills.

Existing initiatives rarely provide structural support for technical issues of the personal computer material of their participants. However, almost one out of two initiatives occasionally gives this kind of support but only for some issues in particular like the execution of updates or the installation of hardware, software or an Internet connection.

Local embedding

Most initiatives have increased partnerships with other organizations as results indicate that 49 percent works together with one to three partners and 29 percent has over 10 partners. These partners provide support regarding hardware, infrastructure and financing. More pedagogical oriented support in terms of learning materials or trainer-trainer sessions is only given in respectively 19 percent and 15 percent. Only 9 percent of the existing initiatives are self-reliant. Local authorities, regional and federal government, finance the majority of the initiatives.

Initiatives are to a high extent linked to existing organizations and networks. 22 percent of the initiatives are part of a network of public computer spaces whereas 30 percent is part of a network of social organizations and 35 percent collaborates with local authorities. In most cases this collaboration takes place with the local Welfare Department (61 percent) or the local Education Department (45 percent). Moreover, 20 percent is linked to one or more local organizations, 29 percent is connected to the local library and 23 percent is embedded in a local community center.

Positive aspects

When questioned about the positive aspects that are brought about by current initiatives it is clear that they very well serve to overcome different existing barriers of underprivileged groups. In the first place initiatives are able to neutralize social network barriers because they are to a high extent embedded in local social organizations. This means that initiatives are in

immediate contact with underprivileged groups what enable them to incite these groups to engage in training or ICT-use. In the second place initiatives succeed in overcoming learning barriers of underprivileged groups because of the specific pedagogical approach that is used. As initiatives work in small groups, work at a low pace and with custom made learning materials, along with a highly personalized coaching and a demand driven approach, initiatives lower the negative emotions against learning that exist amongst underprivileged groups. Instead initiatives, more than formal education, succeed more at creating positive learning experiences and motivate underprivileged groups to engage in additional training.

Bottlenecks

The brainstorm sessions show that different problems exist but at this instance three important barriers were identified that hamper the future development of existing initiatives. A first barrier is financing. Nearly all initiatives are financed by way of project-based financing mechanisms. This implies that for funding initiatives need to address their policy and approach according to the project calls that are launched by the different financing institutions. This hampers a long-term approach and threatens the durability of existing initiatives. The lack of structural financing mechanisms leads to several barriers at other levels. Hence, a second barrier is the maintenance of the computer park. Initiatives encounter difficulties to continuously update their computers or to keep their computers spam and virus free. On the one hand initiatives lack the technical knowledge. On the other hand initiatives do not have enough financial means to engage professional technical support. A third barrier arises at the level of coaching. Here also, the lack of financial means is an important barrier because it obliges initiatives to work mainly with volunteers instead of professional teachers. Working with volunteers has advantages and disadvantages. On the one hand working with volunteers means a high discontinuity in the availability of coaches as people easily engage, leave and re-engage in these kind of voluntary activities. On the other hand most volunteers are close to the target group (cfr. underprivileged users) and have a better understanding of their daily realities and problems than professional teachers. Professional teachers, however, have the necessary pedagogical skills to incite unmotivated groups to engage in learning. As such, both type of coaches – volunteers and professional teachers – could benefit from trainer-trainer courses in which they are taught pedagogical skills and empathy and understanding for the living circumstances of underprivileged groups. But also here, most initiatives do not have the personal or the financial means to provide such trainer-trainer courses.

Conclusion

As a whole it can be stated that the current e-inclusion initiatives in Flanders have developed a successful approach that is open to all citizens but focuses in particular on disadvantaged groups while overcoming most of the barriers disadvantaged groups encounter with regards to ICT. Initiatives counter the social network barriers because of their advanced embedding in existing social structures. Learning barriers are diminished by the use of a down-to-earth pedagogical approach suited to the needs of underprivileged groups. In this way initiatives give underprivileged groups to a certain extent the necessary ICT-related social capital. However, this study also shows that initiatives succeed less in providing the technical support for the personal ICT-materials of these underprivileged groups. That this need exists is made clear by the fact that there is demand within initiatives and on an occasional basis technical support is given to execute updates or install hardware and software. This technical support however is not given in a structural way and hence, policy stakeholders should reflect on solutions to provide this type of support.

The majority of the existing initiatives are quite well in line with the increased complexity of current ICT-related social exclusion mechanisms. The scope of the initiatives clearly goes beyond access to ICT as most initiatives provide coaching and pay attention to the context of use. Initiatives mainly work demand driven and start from daily-life realities for training, hereby striving for a meaningful use of ICT with an immediate added value for learners. By doing so initiatives increase the chances of effective take-up and domestication in the future, also amongst underprivileged groups.

Considering the successful scope and approach of existing initiatives policy stakeholders should provide more support and diminish the existing bottlenecks that hinder a further expansion of current initiatives. Providing structural financing mechanisms is one crucial element to ensure durability and a long-term approach. Looking at the highly scattered field of initiatives and the existence of similar needs and problems amongst these initiatives collaboration should be organized at a policy level. In this way best practices and custom-made learning materials could be exchanged more easily and freely. Initiatives would also be more enabled to organize and participate in trainer-trainer courses. Other bottlenecks and according solutions were discussed during the brainstorm sessions but do not fit within the scope of this article.

REFERENCES

- Anderson, B., & Tracey, K. (2001). Digital living: The impact (or otherwise) of the Internet on everyday life. *American Behavioral Scientist*, 45(3), 456-475.
- Bakardjieva, M., & Smith, R. (2001). The Internet in everyday life: Computer networking from the standpoint of the domestic user. *New Media & Society*, 3(1), 67-83.
- Barzilai-Nahon, K. (2006). Gaps and bits: Conceptualizing measurements for digital divide(s). *The Information Society*, 22, 269-278.
- Brotcorne, P., & Valenduc, G. (2008). *Ontwikkeling van digitale vaardigheden en verkleining van ongelijkheden. Een verkenning van de digitale kloof van de tweede graad*. Brussel: POD Maatschappelijke Integratie, cel 'digitale kloof', Fondation Travail-University (FTU).
- Brotcorne, P., Mertens, L., & Valenduc, G. (2009). *Offline jongeren en de digitale kloof. Over het risico op ongelijkheden bij 'digital natives'*. Brussel: POD Maatschappelijke Integratie FTU Fondation Travail-Université, Centre de Recherche Travail & Technology.
- Brotcorne, P., Damhuis, L., Lauren, V., Valenduc, G., & Vendramin, P. (2010). *La fracture numérique au second degré*. Namen: Fondation Travail-Université ASBL.
- Crang, M., Crosbie, T., & Graham, S. (2006). Variable geometries of connection: Urban digital divides and the uses of information technology. *Urban Studies*, 43(13), 2551-2570.
- Dekkers, G. J. M., & Kegels, C. (2003). *Informatie- en communicatietechnologieën in België: Analyse van de economische en sociale impact*. Mechelen: Kluwer Uitgevers.
- DiMaggio, P., & Hargittai, E. (2001). From the 'digital divide' to 'digital inequality': Studying internet use as penetration increases.
- Eshet-Alkali, Y., & Amichai-Hamburger, Y. (2004). Experiments in digital literacy. *Cyberpsychology*

& *Behavior*, 7(4), 421-429.

Frissen, V. (2000). *Cultuur als confrontatie. De mythe van de digitale kloof*.

Haddon, L. (2004). *Information and communication technologies in everyday life: A concise introduction and research guide*. Oxford: Berg.

Hargittai, E. (2003). The digital divide and what to do about it. In D. C. Jones (Ed.), *New Economy Handbook*. San Diego, CA: Academic Press.

Hargittai, E. (2004). Internet access and use in context. *New Media & Society*, 6(1), 137-143.

Hargittai, E. (2008). Second-level digital divide: Differences in people's online skills. *First Monday*, 7(4), 20p.

Hargittai, E. (2010). Digital Na(t)ives? Variation in Internet skills and uses among members of the "Net Generation". *Sociological Inquiry*, 80(1), 92-113.

Lankshear, C., & Knobel, M. (2008). *Digital literacies. Concepts, policies and practices*. (30). New York: Peter Lang Publishing.

Lee, L. (2008). The impact of young people's internet use on class boundaries and life trajectories. *Sociology*, 42(1), 137-153.

Livingstone, S., & Helsper, E. (2007). Gradations in digital inclusion: Children, young people and the digital divide. *New Media & Society*, 9, 671-696.

Manueli, K., Latu, S., & Koh, D. (2007). *ICT adoption models*. Paper presented at the 20th Annual Conference of the National Advisory Committee on Computing Qualifications (NACCQ 2007).

Mariën, I. (2007). *Gebruikersgeoriënteerd ontwikkelen van ICT: inclusie of exclusie van mensen in armoede in Vlaanderen*.

Mariën, I. & Van Audenhove, L. (2008). *e-Learning en e-inclusie initiatieven: Een kwalitatieve analyse van een aantal laagdrempelige e-learning en ICT-cursussen bij VDAB*, IBBT Acknowledge project, Vereisten laagdrempelige User Experience.

Mariën, I., Van Audenhove, L. (2010) Van digitale kloof naar digitale geletterdheid: sociale uitsluiting in het internettijdperk. In: *Mediageletterdheid*, Leuven, Lannoo Campus. (Forthcoming)

Moreas, M.-A. (2007) *De digitale kloof in Vlaanderen*. Brussel, Studiedienst Vlaamse Regering.

Mossberger, K., Tolbert, C. J., & Stansbury, M. (2003). *Virtual Inequality. Beyond the digital divide*. Washington D.C.: Georgetown University Press.

Ribak, R. (2001). Like immigrants. Negotiating power in the face of the home computer. *New Media & Society*, 3(2), 220-238.

Selwyn, N. (2004). Reconsidering political and popular understandings of the digital divide. *New Media & Society*, 6, 341-362.

Selwyn, N., Gorard, S., & Furlong, J. (2005). Whose internet is it anyway? Exploring adults' (non) use of the internet in everyday life. *European Journal of Communication*, 20, 5-26.

Van Deursen, A. J. A. M., & Van Dijk, J. A. G. M. (2009). Using the Internet: Skill related problems in users' online behavior. *Interacting with Computers*.

- van Dijk, J. A. G. M. (1999). *The Network Society: Social aspects of new media*. London, Thousand Oaks, New Delhi: Sage.
- van Dijk, J. A. G. M. (2005). *The deepening divide. Inequality in the information society*. Thousand Oaks, London, New Delhi: Sage.
- van Dijk, J. A. G. M. (2008). The digital divide in Europe. In *The handbook of Internet Politics*. London, New York: Routledge.
- van Dijk, L., De Haan, J., & Rijken, S. (2000). *Digitalisering van de leefwereld: Een onderzoek naar informatie- en communicatietechnologie en sociale ongelijkheid*. Den Haag: Sociaal en Cultureel Planbureau.
- Verdegem, P., & Verhoest, P. (2008). The 'relative utility' approach for stimulating ICT acceptance: profiling the non-user. *European Journal of ePractice*, 3, 1-11.
- Warschauer, M. (2003). *Technology and social inclusion. Rethinking the digital divide*. Massachusetts: MIT Press.
- Wellman, B., & Haythornthwaite, C. (2002). *The internet in Everyday Life*. Wiley-Blackwell.
- Zillien, N., & Hargittai, E. (2009). Digital distinction: Status-specific types of internet usage. *Social Science Quarterly*, 90(2), 274-291.