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A Contextualising Introduction

In this research project I hypothesise, through the use of two case studies: Kloof and Bechet High School, that policies and programmes to address the digital divide need to account for the myriad of specific issues that arise from different socio-economic contexts. Different contexts elicit different needs which need to be incorporated into policy and programmes. These backgrounds could result in nuanced differences which require a focused response from policy and programmes. The question here is what are the assumptions that are taken for granted in traditional notions of provision? Here, I look at the programmes that were implemented respectively by Bechet and Kloof and I critique and compare each programme with regards to their contexts. Also, are there other media forms that could temporarily be used to help alleviate problems and act as compromises in the face of constraints such as restricted finances? Furthermore, contexts could also elicit different meanings that surround the technology and could possibly be responsible for *how* the technology is seen and used. Once again this requires that policy and programmes be aware of these meanings to properly and adequately facilitate a multi- and differentially-tiered response to addressing the digital divide as it manifests itself amongst a multitude of peoples from a multitude of different, sometimes conflicting, sometimes completely foreign and yet, sometimes within physical proximity to each other, contexts.

Methodology

For this research assignment, I have chosen to make use of questionnaires, focus groups and interviews. Two schools were selected: Kloof and Bechet High School which comprised mainly higher socio-economic and lower socio-economic groups respectively. I chose these two schools because (in trying to analyse different socio-economic backgrounds), these two schools were representative of middle- and working-class socio-economic communities. Both schools are co-ed schools. Kloof High School as it name indicates is situated in Kloof, an area which is generally considered to be a middle to upper middle-class area. Bechet is situated in Sydenham and mostly comprises people from working-class backgrounds. The research participants were split into teachers and students. I ran two focus groups with the students, with one at each school which comprised a questionnaire, a literacy test and then a focus group (explained on page 2). Each of the focus groups

comprised six students chosen by a member of staff at each school (the school counsellor at Kloof, Mrs. Shires, and the vice-principal at Bechet, Mr. Williams), through nonprobability convenience sampling. The students were chosen as being representative of the average student at each school in terms of their socio-economic status. There were three boys and three girls in each group, and all of them were 18 years of age. None of the students is on a bursary. Prior to their starting the session the students were required to complete a consent form (see Appendix 1) of which they kept a signed copy with the details and conditions of participation, and I kept a signed declaration.

The first part of the session with the group comprised a questionnaire (see Appendix 2). The purpose of the questionnaire was to elicit information pertaining to students' patterns of use of the computer and the Internet. The questions were divided between their computer usage at home and at school, and then their Internet usage at home and at school. The questionnaire was concerned with dealing with the 'technicalities' of their computer and Internet usage patterns such as what equipment they have and their frequency of use etc. It focussed on asking general questions, after which participants added more specific information to their responses.

After the questionnaire the participants were given a computer literacy test (see Appendix 3) to obtain a general idea of their computer literacy levels. This test was by no means an official test. It comprised twenty multiple-choice questions which were largely taken from *Discovering Computers: Fundamentals* (Cashman, Shelly, Vermaat 2007) and the others were based on my general knowledge. A score was taken from how many questions were answered correctly and then totalling it out of twenty and obtaining a percentage from that score. They were given twenty minutes to complete the test. One problem which emerged after the test which could have had an impact on the results was the fact that the test examined the participants' terminology. This could have perhaps impacted on the results as some students may have been able to actually perform some of operations without actually knowing the terminology for what they were doing and therefore may have scored low on the test owing to this.

After the completion of the literacy test the participants were then required to take part in a focus group, which lasted about 20-30 minutes and was recorded on my dictaphone. The purpose was to elicit the meanings 'behind' the technology for the students as a whole – to understand how the computer is positioned as a tool in their lives and then how this affects their respective usage patterns. These meanings were then related back to their socio-economic groupings to facilitate a comparison between the two schools/socio-economic groups. This was then used to suggest that the meanings that surround technology in different socio-economic contexts might affect their respective usage patterns and literacy levels and therefore, require policies and programmes to incorporate measures to account for these meanings. The information was then transcribed and saved on my computer.

In terms of the teachers, the principal of Bechet, Mr. Padayachee, was interviewed on 22nd October 2008 and the IT specialist at Kloof, Mr. Ross, on 24th October 2008. These interviews were done to provide in-depth information about policies and the running of the respective schools as regards computers and the Internet from an authority at the school.

Putting It All in Context

My theoretical framework is informed by certain key readings, which were then further embellished through other readings which provided more specifics and more nuanced approaches to the theoretical framework. I hypothesise that the digital divide has been too narrowly defined and that, as a result, there has been too narrow a focus on access in attempts to address and assess the digital divide. I also hypothesise that people's contexts also need to be taken account of when implementing strategies to address the digital divide. Also within these contexts, the meanings that surround technology also need to be taken into account as they could possibly have an impact on how the technology is utilised in people's lives owing to differing meanings that might emerge as a result of the contexts of their lives.

Jennifer S. Light's essay, *Rethinking the Digital Divide* (2005), addressed the epistemological problems inherent in the way that the digital divide has been defined. She argues that the focus on the

digital divide seemed only to acknowledge *access* to computers and not *use*, õthe debate has been allowed to proceed along remarkably narrow linesö (2005: 256). Either the debate would need to therefore broaden the definitions of access in the digital divide, or, theorists would need to acknowledge access as only one aspect of a complex issue if they should choose to keep their current definition of access. Paul DiMaggio and Eszter Hargittai in, *From the 'Digital Divide' to 'Digital Inequality': Studying the Effects of Internet Use as Penetration Increases* (2001), argue for a broadening of the definition of access in addressing the issues of the digital divide. They argue that a definition of access should be broadened beyond the õbinary distinction of õhavesö and õhave-notsöö to include a social as well as a technological aspect (2001: 5). Definitions of access should go beyond what technology people actually have in their possession and reach, to include õ÷what people are doing, and what they are *able* to do, when they go on-lineö (2001: 5-6).

A simplistic notion of access to computers, as argued against by Light (2005), contains within it certain implicit assumptions. By merely providing computers, there is an implicit assumption that certain needs and requirements etc have already been met. Mr. Padayachee (Bechet) raised an important issue with regards to access to computers and the Internet within Bechetøs context. There are implicitly certain context-specific assumptions which are not accounted for in a simplistic notion of access. For example, as a result of students not having their own computers and owing to timetable constraints as Computers was not offered as a subject at Bechet, computer classes were made after school during the week and on Saturday mornings. Many students however, could not make the classes owing to transport issues. Although these classes were after school it is certainly a factor which needs to be taken into account as a result of their *need to travel in order to access computers* (whether it be accounted-for travel expenses during school time or unaccounted-for expenses after school time), for which traditional notions of provision and access do not account. There are assumptions here such as, whether there is space in the timetable for computers and transport issues which a school like Kloof (upper socio-economic) did not have to consider, or at least consider to the same extent as Bechet (lower socio-economic). Here, the assumptions are that students have a reliable means of transport any day of the week to attend classes are taken for granted. There are also

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assumptions which need to be factored into access policies during school time when students are able to attend school, such as the number of computers and time (as a result of financial restrictions). These factors were specific to Bechet and not Kloof therefore suggesting that perhaps lower socio-economic groups might have various requirements and needs which are not provided for in traditional notions of access. Therefore access needs to be broadened or redefined.

Another assumption that emerged was that of language levels and the understanding of the technical language of computers. Bechet (an English medium school) has many students for whom English is not their first language. In this case, there were three refugees[1] who were French mother-tongue speakers in the focus group. This raises a range of issues that need to be accounted for in ensuring that policies and programmes are best developed to suit the students of Bechet such as: making sure that studentsø English is up to the required standard, making sure that their basic knowledge that they might have learnt in schools in their home countries is up to the required level etc. Simple provision of technology assumes that language is not a problem or at least that it can be taken care of. One would assume that owing to the severe economic situation of most refugees, this would be an issue for schools of predominantly lower socio-economic backgrounds and not so much an issue for schools from higher socio-economic backgrounds (Mr. Ross said that he did not really encounter English language problems) and would therefore require specific and focussed attention for development.

Mr. Padayachee (Interview: 22/10/1008) also spoke of some of the South African students, for whom English was their first language, as struggling with the technical language of computers and the Internet. In comparison, Mr. Ross (Interview: 24/10/2008), as already mentioned above, said that in general there were not many language problems (English and technical) owing to the reasonable level of literacy amongst students at Kloof. Thus, the provision of technology would also need to account for literacy levels in English *and* computer õtechno-speakö and address certain assumptions that

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[1] Mr. Padayachee said that there are about 60 refugees currently at the school (Interview: 22/10/2008). Although there were three refugees in the Bechet group, this is not representative of the demographics of students at school. In terms of the entire school, the percentage of students who were refugees was much smaller than 50%. The students were chosen by members of staff and I did not know that there were so many refugees at Bechet as compared to Kloof.

would, albeit, be consciously or unconsciously made. Essentially, can the students speak the required level of English and also what are the different levels of technical language literacy of the different schools, so that measures can be put in place to ensure an equal pace of development. Thus, feeder (primary) schools would also need to be factored into a specific high school when providing technology as it is at the primary level where literacy is first developed. (Mr. Ross spoke of Kloof's feeder schools providing students with reasonable literacy levels (Interview: 24/10/2008). Policy and programmes would also need to consider what levels of literacy, both English and technical, are being developed in the different feeder schools for high schools in various areas. Here, the results from the literacy test (see Appendix 4) could possibly reflect the general technical language literacy levels as the test required their understanding of the terms. The overall average for Kloof was 62, 5% whereas for Bechet it was 55%. On speaking to the participants at Kloof they did not seem to have as much difficulty in using technical terms as some of the Bechet participants, thus suggesting that different, context-based policies are required to account for and address literacy issues. Whilst Kloof might not have to worry about language issues very much, it might be a considerable problem for Bechet. Thus, programmes and policies need to take into account the assumptions made within technology based on the specific context in which the technology was placed and the resulting assumptions.

Inherent within some policies and programmes for the provision of technology is a fascination with what technology can do rather than what people actually need. James Deane in *Not a Telecoms, Nor a Digital, But an Informational Divide* (2005) argues that in order to address problems in society there needs to be a focus on the choice of technology made as a result of õan analysis of the problem that existsö and not purely a focus on õwhat technology can do, rather than...what people actually needö (2005: 54). Technologically determinist positions for tackling inequality might result in õsolutionsö that do not match up to the immediate needs of society. Extending on this, inequality might require that the technological dimensions of the digital divide be put on hold so to speak to address more immediate, or as Lisa J. Servon in *Bridging the Digital Divide: Technology, Community and Public Policy* puts it, õfirst-orderö needs (2002: 19) of the community.

Essentially, a failure to account for these assumptions is a failure to properly mediate between the provision of technology and the provision of first-order needs. Two Bechet participants said that they did not have computers at home and both of them listed financial reasons as the reason why they did not have a computer. Four of the five Bechet participants said that they did not have the Internet owing to financial reasons, with one participant saying that they did not have the Internet because other members in their family had the Internet and another saying that they also did not have a computer. These are in stark contrast to Kloof where all the participants had a computer and access to the Internet at home. Therefore in this case, home finances would be a first-order need that would need to be taken into account by policies and programmes. The first-order needs of the school would also need to be taken into account. Some of the Bechet participants experienced a lot more problems when using the computers at school as compared to those at Kloof. Some of the problems experienced with the school computers were as follows: they were slow and out of order most of the time, they were too old and the software on the computers was outdated. All of this owing predominantly to the schooløs lacking finances. Whereas Kloof seemed to have much of the necessary infrastructure and õinfrastructureö, Bechet did not (here, õinfrastructureö does not refer the hardware structures immediately required of computers and the Internet such as telephone cables for dial-up connections etc, but rather infrastructure for the infrastructure, i.e. the ability to speak the lingua franca of the technology (e.g. English), the ability to actually find transport to get to class, the funding required for security, general funding etc). Mr. Padayachee spoke of numerous issues, some already mentioned, that are not even indirectly covered in the provision of technology, such as the number of class rooms, security, reliable staff to provide some semblance of continuity in learnersø studies and the funding for the entire operation (Interview: 22/10/2008) which would need to be provided first before computers and the Internet could even be considered. Thus, whereas basic first-order needs specific to Kloof seemed to have already been addressed, Bechetøs needs were largely unaddressed. Policies which are only concerned with providing technology would completely ignore the more urgent first-order needs that may arise owing to different socio-economic contexts. This also relates back to Deaneøs (2005) argument about policies and programmes not providing what people actually need. Here, their first-order needs would be the most immediately urgent needs as opposed to the technology.

Deane (2005) also discusses how we should see the discourse of the digital divide as one that is focussed on an *information* divide as well. This therefore opens the debate up to perhaps a more holistic approach to accessing the information highway of the Information Age. Deane suggests that other technologies can be used to address the information divide such as radio, õ...it is not just telecommunication that can provide the solutions to many of the information and communication challenges of the developing worldö (2005: 60). All of the Kloof participants said that they also accessed the Internet from their cell phones with one participant saying that they also accessed the Internet from their Xbox. All of the Kloof participants said that other media that could be used for communication/networking in their house are their cell phones and telephones. And all of them listed their cell phones as another media form from which they could access information. Five of the Bechet participants said that they could use their cell phones as a means to connect to the Internet. In terms of other media at home, all the Bechet participants said that they could use their cell phones to communicate/network and access information from the Internet. James Deane, Kunda Dixit, Njonjo Mue, Fackson Banda and Silvio Waisbord in *The Other Information Revolution: Media and Empowerment in Developing Countries* (2004) discuss the õõotherö ICTs of radio, television, and the pressö (2004: 65) and how technologies can augment each other (2004: 75), to argue the case of working with what people already have and are familiar with to help elevate them out of poverty and also into the Information Age. Thus, as Deane (2005) and Deane, Dixit, Mue, Banda and Waisbord (2004) argue for the use of other technologies to help bridge the information divide, perhaps problems could at least be *temporarily* resolved by making use of other technologies in studentsø possession. Although it would be a considerable compromise, it is a solution based on peopleøs contexts and situations and could at least begin the process of merging into the Information Age, albeit through õother ICTs.ö The rising trend of mobile communications technologies such as cell phones and the developments in mobile television for example would seem to suggest that perhaps cell phones are a feasible way of addressing the digital and information divides. As cell phones become multi-platformed devices ó devices with more than one facility such as radio, television, the Internet etc ó it would seem that perhaps compromises could be made for those who do not have access to a computer

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and the Internet in the traditional, to make space for the (re)emergence of the cell phone, see for example Akerberg, Sellin and Ljungblom (2008), Guo (2008) and Nokia (2006).

Thus what is central to my hypothesis is that debates about how to address and resolve issues of the digital divide need to take cognisance of people's contexts when developing strategies to tackle the digital divide. Sonia Livingstone in *The Diffusion and Appropriation of New Media* (2002) argues that technologies become part of a social process when they are slotted into the contexts of people's daily lives "yet [young people's] use of these technologies depends in turn on the social and cultural contexts of their daily lives" (2002: 30). In this vein Light says that "[t]echnology is not a neutral tool with universal effects, but rather a medium with consequences that are significantly shaped by the historical, social and cultural context of its use" (2005: 256). William Heuva, Keyan Tomaselli and Ruth Teer-Tomaselli in *The Political Economy of Media in Southern Africa, 1990-2001* (2004), discuss of how the "uneven impact [of globalization] illustrates the continuity of historical processes," (2004: 98) thereby further suggesting the need for strategies and policies tackling the digital divide to become more sensitive to the specifics of context. For example, Mr. Padayachee said that owing to past reasons, Computers was never offered at Bechet, meaning that Bechet would now have to implement policies to address the historical imbalances from not offering Computers as a subject in order to catch up to Kloof for example.

Linked to contexts, Livingstone argues that policy needs to become more aware of how different media become meaningful in various people's lives by accounting for the "÷biographies' of media goods" in terms of their "temporal, spatial and social relations...thereby rendering [the media good] meaningful" (2002: 35). This information informed my research such that I tried to elicit an understanding of the various relationships with and meanings of media within the contexts of people's lives, arguing that these meanings are important as they affect usage and how the computer and the Internet are seen, thereby resulting in a range of effects. Livingstone highlights how media access and use are shaped in complex ways through the public meanings of media goods entering the household

(2002: 35). Brian Wynne in *Unruly Technology: Practical Rules, Impractical Discourses and Public Understanding* (1988) argues that technology, once slotted into a specific society, becomes an õextensive, open-ended technical social system (sic)ö (1988: 147). He argues for seeing technology as part of a õsocial organization, rather than black-box hardware with external effectsö (1988: 147). As a result of technologyøs becoming part of a social process, various õrelationships...intrinsic to them (technologies)ö (1988: 149) are possibly formed.

Thus, policies and programmes need to develop structures to incorporate the meanings that exist õbehindö technology. When I questioned both groups (in the questionnaire and in the focus group), they both said that they saw computers and the Internet predominantly as entertainment tools. Five of the Kloof participants stated that they used the computer predominantly for entertainment (õwork reasonsö and õlearning more about the computerö ranking second and third respectively), with one participant using it mostly for work related reasons, such as homework etc, (with õentertainmentö ranked as second and õlearning about the computer as thirdö). Three of the Bechet participants said that they used the computer firstly for entertainment reasons with the other participant stating that they used it firstly to õlearn more about the computerö (two of the Bechet participants said that they did not use the computer and therefore did not answer this section.) All of the Kloof students ranked the Internet as an entertainment tool, with õaccessing informationö being ranked as second and õnetworking/communicationö as third. Two of the Bechet participants saw the Internet firstly as an entertainment tool, with one seeing it firstly as an information tool, then two saw it secondly as an information tool, with one seeing it secondly as an entertainment tool, and then all three saw it thirdly as a communication and networking tool (here, one other participant who used the Internet but did not specify where, said that they saw it firstly as an entertainment tool, then secondly as a networking/communication tool, then thirdly as an information tool.) All the participants from Kloof said that computer use at home were largely split between work and entertainment, with computers seen as work and business tools for their parents, and computers as instruments for entertainment for the children of the respective families. In particular, this viewpoint of the participants at Kloof was reinforced at home, where there was very much a divide between computers and computer use for the

parents and for the participants. They were not really encouraged to use the computer at home (and at school) which might further compound this viewpoint õ...our parents donøt really encourage us. The due date of the project encourages us. Boredom encourages meí ö (Focus Group: 13/10/2008). For the Internet, the Kloof participants said that it meant õfreedomö to them, but this was more an entertainment-oriented freedom. For example, one participant said that if one were to see an advert on television telling them to go to a certain website to enter a competition, then one could do so if one had the Internet at home (Focus Group: 13/10/2008). What I hypothesise here is that these meanings towards the computer and the Internet affect certain results. For example it might explain why, in the face of rapidly advancing technologies, why computer use was almost minimal compared to Internet use by Kloof participants perhaps owing to the *entertainment* nature of the Internet. In terms of their computer use, four participants stated that they used the computer once a week, with one participant using it once a fortnight, and another student using it every day. Five participants used the Internet every day, with one participant using it once a month[2]. It might also then explain why there did not seem to be a sense of urgency amongst the Kloof participants in general as regards the need for them to become more computer (and Internet) literate. One participant (Kloof) said that they knew nothing about computers before the focus group started, and when questioned why they did not make greater attempts to rectify this, they and others said that at this stage in their lives, computers were not seen as a priority, they were seen as only a requirement for certain careers and there was no need to learn about computers at this point in their lives. The type of skills required to õgain access to the electronic highwayö (Warf: 2001: 11) are under threat in the face of entertainment technologies and other more appealing activities. Therefore, I argue here that programmes and policies need to address this issue specific to, it would seem, higher socio-economic groups. Mr. Ross said that the school has tried to work around the entertainment discourse by using strategies such as using games as rewards for having completed required work, using SimCity and The Incredible Machine (TIM) (both õgamesö) to help with the learning process (Interview: 24/10/2008), thus demonstrating an attempt to tailor

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[2] Here I think that the participant was referring specifically to accessing the Internet through his computer. This participant used his X Box regularly to access the Internet and perhaps misinterpreted the question.

programmes to suit context. Although this trend did emerge in the Bechet group, it was not to the same extent, and there were more variations in viewpoints.

Most of the Bechet participants said that they saw computers and the Internet as mostly entertainment tools. However some students said that they also saw them equally as information and communication/networking tools (e.g. refugees for remaining in contact with people from their home countries). The participants also saw computers and the Internet as a means to give them an advantage over other people ó a sense of competition surrounded these technologies (Focus group: 15/10/2008). They also seemed, in some instances, acutely aware of the fact that not being computer literate is a major disadvantage in todayøs world, õnot coming from a computer background then youøre at a disadvantageö (Focus Group: 15/10/2008). As a result of this awareness, one issue emerged which programmes would need to take account of. Students said that it is frustrating when you are surrounded by people who know how to use a computer and you do not. One particular participant who knew very little about computers and the Internet was embarrassed by the fact that they are computer illiterate. These relationships towards technology that the Bechet participants experienced are in stark contrast to those of the Kloof group and would need to be factored in to programmes and policies. Mr. Padayachee was aware of the entertainment discourses that surround technology, but the programmes that he spoke of offered by the school did not seem to actively take this into account. Nor did he mention any attempts to address embarrassment and frustration felt by computer illiterate students. Policies and programmes would therefore need to implement measures to address and resolve the negative effects that could be generated through feelings of embarrassment and frustration.

The literacy test results seem to also reflect a phenomenon across both schools and one which Livingstone (2005 39-40) and Servon (2002: 4) also refer to in connection with the meanings and discourses behind technology: gender bias within access and use of computer technologies. At Kloof the average score for boys and girls was 50, 7% and 49, 3% respectively and at Bechet for boys and girls, 53 % and 46, 9% respectively. There was a difference in scores between boys and girls of 1, 4% at Kloof, and 6, 1% at Bechet. These results signal a need, particularly within the lower socio-

economic groups to address various factors and discourses that might surround technology. For example, technology could be seen as a male domain particularly within lower socio-economic groups. This bias is also reflected in usage patterns of the computer and the Internet. From the Kloof participants, boys on average spent more time on and used the computer more often than girls (1-7 times a week, and once a week to once a fortnight respectively for boys and girls), and at Bechet, only one of the girls had a computer at home (used once a week for one hour) as opposed to the boys who all had a computer and used it every day. For Kloof and the Internet at home, boys used it seven days a week for about an hour each session (one result here was spoiled as the participant put monthly usage, when the question asked for weekly usage), with girls having similar results. For Bechet, only one of the boys had his own means of Internet access (the others using different means to access the Internet). However, they used it an average of about four times a week for about two hours each session. None of the girls had the Internet at home and did not state any usage of the Internet. These results demonstrate factors that exist within a contextualised access therefore requiring context-specific policies that address why, for example, girls on average seem to be less computer literate than boys and also why this seems to be more pronounced in lower socio-economic groups. Ernest J. Wilson III in *The Information Revolution and Developing Countries* (2004) refers to the õ[c]omplex social, political, and economic interactions [that] operate simultaneously across macro, meso and micro levelsö (2004: 4). In addressing issues such as gender biases that exist within the digital/information divide it is imperative to consider all these õinteractionsö on all õlevelsö ó essentially the need to (continuously) contextualise technologies to environments (Orlikowski, Yates, Okamura, Fujimoto 1995: 423-4). It is therefore important that policies and programmes take into account these relationships and meanings in order to tailor context-specific policies for communities. Elena Murelli in *Breaking the Digital Divide: Implications for Developing Countries* (2002) subtly re-phrases this point by suggesting that in trying answer the development question as to whether õthe Net and the new information and communication technologies can be directly applied to all the social and economic realities in the worldö we need to bear in mind the gaps and divides that exist between hemispheres, continents, nations, societies, communities and people etc (2002: 33).

Having a computer and the Internet at home is critical in combating the digital divide. All the participants at Kloof High said that they had a computer at home, with an average of two computers per household. Four of the six Bechet participants stated that they had a computer at home, with the average being one computer for the whole family. All of the Kloof participants had access to the Internet at home. Five of the Bechet participants said that they did not have access to the Internet at home. One of these participants went to an Internet Café instead, and another went to the local municipal library. There are computer facilities at Kloof and there are also Internet facilities. Bechet also has computer facilities but there are no Internet facilities. The Bechet participants who do not have access to a computer at home[3] are greatly disadvantaged as compared to the Kloof participants (who for even those who do not have a computer at home can make use of one of the 130 computers that the school has) as there is little means for readily and freely available reinforcement of lessons at school, or any form of practice. Mr. Padayachee also said that he was not aware of any computer learning centres (CLC) or community technology centres (CTC) that the students could attend, except Internet cafés (which many students cannot afford and still do not know how to use) and municipal libraries (which required students to book computers thus limiting their access time and opportunities), to substitute for the schooløs lack thereof (Interview: 23/10/2008). Therefore, the provision of computers and the Internet at schools for example should also entail a secondary means for students to practise what they learn at school or at least implement measures to account for their not having computer and Internet access outside of school so as to maintain a level of competence in the face of a higher incidence of secondary computer and Internet access possibilities in higher socio-economic groups as compared to lower socio-economic groups. Thus, the school for many of the Bechet students becomes the only space where they can use a computer free of charge. Yet, their time and access are still limited. Thus, people from lower socio-economic groups it would seem require policies that make provisions for secondary means for computer access owing to the lower incidence of computers at home.

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[3] Two participants in the group and most students at the school according to Mr. Padayachee do not have computers at home.

The division between the haves and have-nots with regards to the Internet is even starker, as not only did only one of the participants from Bechet have access to the Internet at home, but also there are no Internet facilities at the school owing to financial restrictions. Kloof on the other hand has Internet access for any class, and all the participants have Internet access at home. As discussed above, the potential for widening the digital/information divide is great in the face of some students (those with Internet access) moving forward and, as a result of rapidly developing technology õ[g]iven the speed with which electronics become outmoded, it is not hard to imagine a new technological divide not so far down the road...ö (Light 2005: 259). Here, perhaps if not by wiring the school, the policies could look at other means for access such as through the development of alternative means for students to have an opportunity to access the Internet such as through the establishment of CLCs or CTCs, if not at the school itself. For example, Servon (2002: 56) talks about a CTC in Colorado Springs, USA called the Penrose Library which provided a physical space where people could access the Internet and interact with others both online and offline. As compared to the resource situation at Kloof where there are Internet facilities, CTCs and CLCs could help to not only provide a place outside of school for access, but to also combat the effects of severely restricted financial resources at home and at school and the resulting effects on the quantity and quality of technological resources.

Servon (2005: 7) talks about the õsecond dimensionö of the digital divide as concerning IT training and literacy, with access being the õfirst dimension.ö Programmes and policies also need to be tailored to consider this second dimension. For example, the computer literacy of teachers in general needs to be assured and in particular, and obviously, the literacy of the computer teacher. At Bechet, Mr. Padayachee said that the literacy levels of the teachers were not very high (Interview: 22/10/2008), whereas at Kloof, Mr. Ross said that the level of literacy amongst the teachers was reasonable to good (Interview: 24/10/2008). Mr. Ross said that about 25% of staff used computers regularly and some of the staff have the Computer Driving Licence (Interview: 24/10/2008). Schools comprising students from higher socio-economic groups would therefore seem to have access to a better qualified or educated teacher as compared to schools from lower socio-economic groups. Students at Bechet also said that they were not taught anything of any particular relevance and that they mostly played games

during the computer class. Here, policies and programmes need to ensure that the necessary skills required of the Information Age are imparted to learners. Kloof's curriculum for their grade eight learners imparted considerable cognitive and research skills to learners through being taught how to do research and also problem solving exercises. The curriculum also worked on a graded system to include intellectual concepts involved in ICTs. Mr. Padayachee on the other hand said that the focus in their program was basic skills (obviously taking into consideration the limitations created through financial restrictions) (Interview: 22/10/2008). Servon (2002: 7) says that the need to go beyond the basic skills of typing and drills to include the õskills and thinking that the information society demandsö is paramount. Issues as regards the teacher need to be incorporated into context-specific programmes. Mr. Padayachee also spoke of the difficulties in maintaining a continuous level of teaching owing to teachers leaving to find more financially lucrative opportunities elsewhere. Thus, policies and programmes for lower socio-economic schools would need to ensure a continuous education for learners by providing teachers who will see the respective course through to its end. In terms of the equipment, some of the participants at Bechet also complained that it was slow, outdated and broken most of the time. It is extremely important that learners are provided with the right hardware and software in order to fully enter the Information Age (here, obviously excluding the compromise of using the cell phone and other ICTs mentioned earlier to access the Internet. Until needs are met then technology which might not provide students with the right software will have to suffice). Fast high-capacity fibre-optic lines are preferable over dial-up connections etc, õslow Internet connections are not very useful, and poorer schools are typically saddled with slow 56 kilobits per second...connections, which...deny students the experience of the full scope of the Internetö (Warf 1999:12). Thus programmes offered by Bechet would need to take into account *their* financial resources to include measures to ensure constant maintenance and upgrade of preferably the latest technology. The most up to date information is preferred in rectifying the digital and information divides. Once again policies and programmes which focus purely on provision do not adequately account for the various context-specific factors which emerge. Access needs to include a variety of instructional measures to modify programmes to propel people from various contexts into the Information Age.

In attempting to develop a program for a specific community, it is important to take into consideration their support networks that they feel are available to them. Figure one shows the support networks that were ranked as most reliable with regards to the computer by Bechet and Kloof participants respectively. Here, I would argue that contexts result in certain patterns with regards to support networks. Perhaps lower socio-economic groups would be less reliant on their parents because of not having a computer in the household, and assuming that the parents have never had any or much training as regards the computer. School policies and programmes would need to take into account who students could obtain help from and then factor these in. For example, if students, as in the Kloof example, feel that teachers would be their most reliable source of support, then Kloof needs to factor this into its policies so as to make sure that teachers are able to consistently provide support to students. Bechet on the other hand would either need to ensure that õotherö support networks are indeed consistently reliable so that they could work with these networks, or develop their teacher resources so as to shift reliance to teachers rather than to external and uncontrolled and potentially detrimental networks.

Figure 1 The Support Networks Ranked as Most Reliable by Kloof and Bechet Participants with regards to the <u>Computer</u>
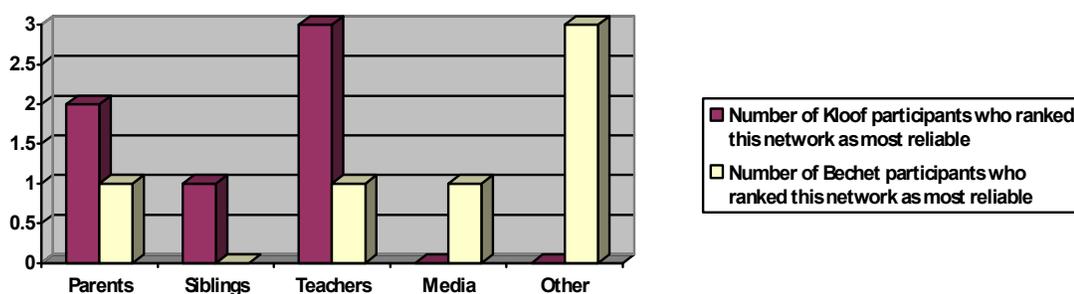
This is just an example from the results obtained about computers. Programmes and policies would obviously need to do the same with regards to the Internet (see figure 2 below).

Figure 2 The Support Networks Ranked as Most Reliable by Kloof and Bechet Participants with regards to the <u>Internet</u>
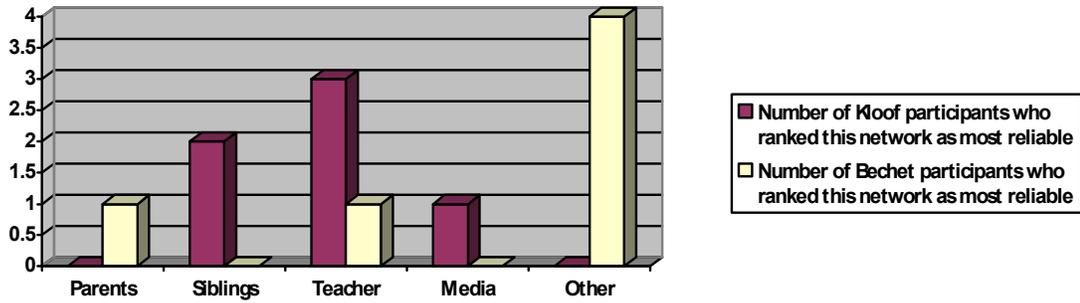
A Contextualised Conclusion

Thus the socio-economic backgrounds of each school require their own tailor-made policies and programmes to ensure that issues specific to them are addressed. Policies and programmes which focus on the most immediate such as the provision of computers and the Internet forgo their aims of elevating people out of poverty and inequality by ignoring their situation. Without this nuanced approach I would argue that policy and programmes in effect are rendered almost useless as the needs of the people are not met by the õsolutionsö propounded by policy makers through their effective removal of dialogue and analysis from the equation ó equations that favour one side over the other. A context-specific policy or program will not only adapt the policy or program to the community in question but should also forgo the fascination with what technology can do, to rather include what technology, or indeed anything other than technology, do people actually need. The two case studies, Kloof and Bechet show that there are numerous considerations that have to be taken into account when developing a policy or programme that will alleviate the community in questionøs specific problems. The case studies thus show that traditional notions of provision focus on the surface of the problem and do not delve into the contexts of the problem to properly rectify it. In doing so, policies would then discover that technologies are imbued with

meanings and that these meanings affect access and use. Like with the entertainment and gender issues mentioned above, they have considerable effects for technology. Therefore it is paramount that they are considered. Also a proper analysis of the situation at hand would also make use of the technologies that people already have and are already familiar with so at least begin the process of entering people into the Information Age albeit being a compromise. Thus, what this data shows is that there is considerable need to broaden or redefine current conceptions of access. Access in many ways **is** definable outside of specific contexts, yet, in many other and significant ways, access is heavily reliant on the contexts in which it is applied to.

Appendix

Appendix 1

Consent Form:

Title of the Project

A Study on the Role of Context in Media Usage and its effects for development policy

Project Description

A research study in partial fulfillment of the requirements for the graduate module Media in the global World in Culture, Communication and Media Studies, Faculty of Humanities, Development and Social Sciences, University of KwaZulu-Natal, Durban.

The project aims to assess what the level of the participantsø computer-literacy skills are as a result of current development policy and link these results to the various contexts of the participantsø lives. The project aims to argue that development policies need to take into account the various contexts of peoplesø lives and the effects of these contexts on media usage.

Procedure

Students:

You will be required to fill out a questionnaire detailing various aspects of your computer usage and skills. You will then also participate in a focus group discussing in-depth certain issues about the media in your lives.

Teachers:

I will conduct interviews with you during which I will discuss some of the results of the questionnaires and focus groups in light of the current policies available, the facilities offered by the school and the contexts of the lives of the students.

Financial Benefits

You will not be paid for participating in this research project

Confidentiality

You can choose to remain anonymous in the project by using a pseudonym of your choice or you can use your real name. I will provide name badges during the focus group and will adhere to these names. I will not require any **personal** details from you such as home address, phone numbers etc. However I will need to develop a **general understanding** of your background in order to develop a context for my argument such as what area you live in, the media that you have at home, how you use that media etc.

Ownership and Documentation of Research Data

For the questionnaires you will have to provide answers on the question paper. During the focus group and teacher interviews I will use a Dictaphone to record the sessions and then will transcribe this in a word document. **All data collected from the entire research process will be used solely for the purposes of this research project.** Research data will be filed safely throughout the duration of the project, and will subsequently be housed in the CCMS department of the university for a period of one year. Shredded disposal of all research data will thereafter take place.

If you would like any further information or need to contact me, please feel free to contact me (Jonathan Dockney) on:

Cell   079 593 0740
Email dockney254@gmail.com

DECLARATION

I………………………………………………………………… (full names) hereby confirm that I understand the contents of this document and the nature of the research project, and I agree to participate in the research project.

I understand that I am taking part in this project voluntarily. I also understand that I am at liberty to withdraw from the project at any time, should I so desire, and that doing so will not have negative consequences for myself.

SIGNATURE   **DATE**

…………………………….   **……………………………**

Appendix 2

PLEASE NOTE: THE FIRST 13 QUESTIONS FOCUS ON THE COMPUTER, THEN THE OTHER 20 FOCUS ON THE INTERNET. SO PLEASE ANSWER THE FIRST SECTION ONLY IN TERMS OF THE COMPUTER, NOT THE INTERNET.

Female/Male
Age:_____

1. **Do you have a computer at home? (Y/N)**

   _____

2. **If no, why?**
   Circle the most appropriate response:

   Financial reasons

or,

Other reasons (specify ó cultural, parental etc ó if possible)

_____
_____

3. How many computers do you have (including laptops) at home? Which members of your family are these computers for?

_____

4. How often do you use the computer at home? (per week – how many days)

_____

5. How long would you spend on average on the computer at home per session?

_____

6. What do you use it for at home?

(Here rank out of 3 with 1 being the option for which you use the computer for the most and 3 being the option for which you use the computer for the least).

Donøt use the computer   _____ (tick if appropriate)

Entertainment   _____
Work reasons (i.e.homework)   _____
To learn more about the computer   _____

7. When you have homework or an assignment to do, do you prefer to:

Type it out on the computer,

Or

Write it out by hand?

8. Who taught you how to use a computer? (Rank out of 7, with 1 being the way you learned the most and 7 being the way you learned the least)

Self-taught (by experimenting)   _____

Self-taught (form of media and
specify which media)

                        _____

Parents   _____
School teacher   _____
Friends   _____
A course lecturer   _____

Other (specify)   _____

9. **Where did you learn how to use a computer? (Rank out of 5 with 1 being where you learned the most and 5 being where you learned the least)**

Home (self)   _____
Home (others)   _____
School   _____
Course   _____
Media   _____

10. From who and where do you feel that you learn about the computer most effectively? Explain.

_____
_____

11. Does your school have computer facilities? (If no then leave question 12)

_____

12. Do you make use of them? (If no then specify why)

_____
_____

13. If yes, how often and how long do you use them for?

_____

14. Do you experience any problems with the computers at school? (Explain)

_____
_____

15. Do you have access to the Internet at home? (Y/N)

_____

16. If no, why?
Circle the most appropriate answer

Financial reasons
or,

Other reasons (specify ó cultural, parental etc ó if possible)
_____
_____

17. **If yes, is it a:** (tick correct response)

dial-up connection   _____

or a

broadband/DSL connection?   _____

or an

pay card   _____

18. How many times do you use the Internet a week? (how many days)

_____

19. How long would you spend on the Internet per session?

_____

20. How many connections points do you use in your house? Or do you have Wi-Fi?

_____

21. What do you use the Internet for?

(Here rank out of 3 with 1 being the option for which you use the Internet the most, and 3 being the option for which you use the Internet the least)

Donøt use the Internet   _____ (tick if appropriate)

Entertainment   _____
Accessing Information   _____
Networking/communication   _____

22. When you have homework or an assignment to do, do you:

search on the Internet for relevant information,

or

use other means to find the information (specify) _____

23. Who taught you how to use the Internet? (Here rank out of 5, with 1 being the person from whom you learned the most and 5 being the least.)

Self-taught (by experimenting)   _____

Self-taught (rom the media. Specify which media)

_____

Parents	_____
School teacher	_____
Friends	_____
A course lecturer	_____
Other (specify)	_____

24. Where did you learn how to use the Internet? (Here rank out of 5, with 5 being where you learned most effectively).

Home (self)	_____
Home (others)	_____
School	_____
Course	_____
Media	_____

25. From who and where would you prefer to learn how to use the Internet? Explain.

_____
_____

26. Does your school have Internet facilities?

_____

27. Do you make use of them?

_____

28. If no, then specify why

_____

29. If yes, how often and for how long do you use them?

_____

30. Do you experience any problems with the Internet facilities? Explain.

_____

31. How else do you access the Internet?

_____

32. Which <u>other</u> media in your home could you possibly use for: (you can put more than one)

Communications/Networking

_____
_____

Accessing information

_____
_____

33. What support networks do you feel are available to you for using the Internet and the computer? (Here support networks need to include *encouragement,* and *knowledge* on how to use the technologies, or at least advice on what to do if you're uncertain. Rank from 1-5 with 1 being the most helpful and 5 being the least helpful)

COMPUTER:

Parents   ____
Siblings   ____
Teachers   ____
Media   ____ (specify which) _____
Other   ____ (specify) _____

INTERNET:

Parents   ____
Siblings   ____
Teachers   ____
Media   ____ (specify which) _____
Other   ____ (specify) _____

Appendix 3

1. What is the difference between hardware and software?
   A) Hardware is the set of instructions needed by the computer to perform a specific task, and software is the actual physical parts that make up your computer.
   B) Hardware is the actual physical parts that make up your computer, and software is the set of instructions needed by the computer to perform a specific task.
2. Three commonly used _____ devices are a keyboard, a mouse and a microphone
   A) Input
   B) Output
   C) Storage
   D) Mobile
3. _____ allow(s) people to share their thoughts with other people over the Internet
   A) Blogs
   B) Podcasts
   C) Web pages
   D) All of the above
4. If you wanted to write a letter to a friend, you would use:
   A) Microsoft Office Word
   B) Microsoft Office Excel
   C) My Computer

D) Microsoft Office OneNote

5. An example of an operating system would be:
   A) Microsoft Word
   B) Microsoft Excel
   C) Microsoft Windows

6. Although it is slow-speed technology, some homes and small businesses use _____ to connect to the Internet
   A) A satellite modem
   B) A cable modem
   C) DSL
   D) Dial-up access

7. Uploading is:
   A) The combination of a user name and a domain name that identifies an Internet user
   B) The process of transferring data in a continuous and even flow
   C) The process of transferring documents, graphics, and other objects from your computer to an Internet server
   D) The process of transferring documents, graphics, and other objects from an Internet server to your computer

8. If someone wanted to make a duplicate of part of a document, which of the following ways could be used?
   A) Control + u, and right click cut
   B) Control + c, and right click paste
   C) Control + I, and control + c
   D) Control + c, and right click copy

9. Is there a difference between a web page and a web site?
   A) Yes, a website is an electronic document which contains graphics, audio, and video, whereas a webpage is a collection of related web pages and associated items such as documents and pictures stored on a web server
   B) No, the terms õwebsiteö and õwebpageö are essentially two different words for the same thing
   C) Yes, a webpage is an electronic document which contains graphics, audio, and video, whereas a website is a collection of related web pages and associated items such as documents and pictures stored on a web server

10. What is a hyperlink?
    A) It is the address box at the top of the Internet Explorer
    B) It is the function which allows you to move from one web page document to another
    C) It is the term used to describe what you type into the text box of a search engine
    D) It is a search engine which links you to other web pages on the Internet

11. RAM stands for
    A) Random Available Memory
    B) Random Alternative Memory
    C) Random Access Memory

D) Random A+ Memory

12. RAM allows the computer user to:
 A) Open and run programs at the same time
 B) Save data after the file has been closed

13. Your homepage on your computer is:
 A) The same thing as your desktop
 B) The default setting that opens up when you open Internet Explorer
 C) The start function
 D) The address box on the Internet Explorer

14. In which icon would you find the C drive?
 A) My Documents
 B) My Computer
 C) My Network Places

15. Wi-Fi refers to:
 A) The ability to access the Internet from your cell phone
 B) Technology that requires some form of wireless networking capability
 C) A dial-up Internet connection

16. CPU stands for:
 A) Central Performance Unit
 B) Central Processing Unit
 C) Central Parameters Unit
 D) Central Portable Unit

17. The Internet can be used as a networking tool:
 A) True
 B) False

18. Which computer program would you use in order to complete a spreadsheet?
 A) Microsoft Office OneNote
 B) Microsoft Office Word
 C) Microsoft Office Power Point
 D) Microsoft Office Excel

19. Which of the following are examples of search engines?
 A) Yahoo, Google, Microsoft Windows 2007
 B) Yahoo, Google, Face Book
 C) Yahoo, Google, MSN
 D) Yahoo, Google, Linux

20. The Intranet is:
 A) A worldwide collection of electronic documents
 B) A worldwide collection of networks
 C) An internal network that uses Internet technologies
 D) An internal network that connects people on a worldwide basis

Appendix 4

Kloof					Bechet				
Question	Right	M	F	Wrong	Question	Right	M	F	Wrong
1	6	3	3	0	1	6	3	3	0
2	3	1	2	3	2	3	3	0	3
3	4	1	3	2	3	1	1	0	5
4	6	3	3	0	4	5	2	3	1
5	5	3	2	1	5	6	3	3	0
6	4	3	1	2	6	3	2	1	3
7	4	2	2	2	7	2	2	0	4
8	4	1	3	2	8	3	2	1	3
9	1	1	0	5	9	3	1	2	3
10	3	1	2	3	10	2	2	0	4
11	1	0	1	5	11	3	1	2	3
12	0	0	0	6	12	2	1	1	4
13	4	2	2	2	13	4	2	2	2
14	6	3	3	0	14	6	3	3	0
15	5	2	3	1	15	3	1	2	3
16	3	2	1	3	16	1	0	1	5
17	6	3	3	0	17	5	3	2	1
18	5	3	2	1	18	3	1	2	3
19	3	2	1	3	19	2	1	1	4
20	2	2	0	4	20	3	1	2	3
Total	75	38	37		Total	66	35	31	
%	62.5	50.6667	49.3333		%	55	53.0303	46.9696	
Computer	39	19	20		Computer	38	19	19	
%	65	48.7179	51.2820		%	63	50	50	
Internet	36	19	17		Internet	28	16	12	
%	60	52.7777	47.2222		%	46.6667	57.1428	42.8571	

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Interviews

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Bechet High School	Focus group at Bechet High School	15th October 2008
Mr. Padayachee	Interview at Bechet High School	22nd October 2008
Mr. Ross	Interview at Kloof High School	24th October 2008