
Analysing Cameroon Government's ICT Policy Documents and Trainee Teachers' Perception of ICT in education policy implementation using Critical Discourse Analysis

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ABSTRACT

Based on forum discussions of 10 trainee teachers at the higher teachers training college in Cameroon, this paper aims to synthesise teachers' perception of ICTs in education and development using Critical discourse analysis. It gives a radical implication on the governments' techno-centric view of ICTs for education and development through their policy documents and how this intends translates through implementation, utilisation and teacher development at the micro level. The researcher uses critical discourse analysis informed by critical policy to interrogate how hegemony influences public policy of ICTs which intend leads to poor implementation because contextual factors are not carefully considered before policy is being drafted. Critical Discourse analysis is used to understand these contextual factors through trainee teachers' discourse of ICTs from forum discussions and also word clouds are used to analyse the main discourse in the Cameroon policy documents. The researcher confronted a massive compliance and ideological rhetoric to ICT discourse but observes a latent integration process of ICTs in education and development. Preliminary findings indicate that policy implications should include the need to greatly provide opportunities for training to teachers in the use of ICTs for education in order to encourage initiative for use and also calls for an improvement of mobile technology infrastructure.

KEY WORDS

Critical discourse analysis, ICT policy, Critical Policy, Hegemony

INTRODUCTION

The 2006 edition of the UK parliament release *Postnote* clearly stated that “Information and communication technology (ICT) can help developing countries tackle a wide range of health, social and economic problems. By improving access to information and by enabling communication, ICT can play a role in reaching Millennium Development Goals such as the elimination of extreme poverty, combating serious disease, and achieving universal primary education and gender equality (PostNote, 2006)”.

However Africa in General and Cameroon in particular still continue to be plagued by disease and poverty causing the economy to progress very slowly. Literacy levels still remain shockingly low in most African countries and there is even still a language problem considering the ‘global language’ use is English. However, western economies especially the United States and Europe and lately Asia have developed exponentially over the years enabled by ICT infrastructure and technology which greatly eases communication. Against this background of interest in ICT for development, the discourse on information society that emerged in industrialised countries in the 1990s was quickly transferred into political circles, the international development agencies, the academic literature, and the popular debate arenas of most developing countries (Avgerou et al, 2005). African countries therefore felt the need to be part of this globalised world through rapid economic development. European researchers have argued that information, knowledge and communication have replaced the traditional economic factors (Whittaker, 1995). Amid other factors therefore, ICTs can play an important role in improving the lives of its users. Most people, including minorities, more than ever before are now buying goods and services online, sending messages across the globe to loved ones, sending e-mails to donor agencies for support and receiving instant replies (Ebeling, 2003). Therefore the concept of ICTs use has been successfully assimilated by developing communities and its affordances are greatly utilised. This development in the west has impelled a flurry of ICT policy-making in Africa and other developing countries (Chiumbu, 2008). With this affordances, communication for development issues have been greatly strengthened, notwithstanding the overemphasised concept of the digital divide. Sadly with the high illiteracy rate in most African countries, not everyone knows or even wants to learn how to use a computer. Also the high poverty rate makes it virtually impossible for the poor to own computers. This entire notion of the digital divide has affected development adversely (Wilkins, 2000).

Cameroon lies between Equatorial Guinea and Nigeria with a population of about 19.4 million people, with 52 % of the population living in urban areas (Tande, 2010). In December 2011, there were only about 750,000 internet users (Internet World Statistics) which constituted 3.8% of the total population. Although there is growth, this is still low for a population of about 20 million people. Nevertheless, it is worth noting that Cameroonians have a relatively high literacy rate in Africa with 67.9% of population being literate (CIA, 2006). The Cameroon government is also particularly serious with ICTs and its role in development. This led the government of Cameroon into drafting the first national policy for the development of ICTs in 2007. Prior to 2007, several other initiatives were undertaken by various state departments and government personnel with no real framework as a guide to its implementation. Key commitments in this policy were to accelerate Cameroon's entry into the information society by encouraging large scale use of ICTs in the public sector (National ICT Policy, 2007). The national policy on ICTs serves as a driver to the general notion on the requirements by the state and other N.G.Os which are involved in development especially in the ICT sector. Although the National policy on ICT education mentions the need for development in this sector, the Vision 2035 document released by the Cameroon ministry of Economy, planning and regional development in February 2009 does not place any particular emphasis on ICT development. However, it mentions a need for global participation. This was going to be achieved by encouraging the use of ICTs by workers, issuing new rules for information processing, improving citizens' access to public information and modernising administration by promoting online administration. Therefore, government services were going to be fully equipped, online government services were going to be developed, workers trained on the use of ICTs, development of information systems for the collection and dissemination of government data by developing digital storage systems and increasing the number of public access points (NAICT, 2007). This was the general conception, which was regarded as key to enabling the country participate effectively in the 21st century.

The Higher Teacher's Training College is part of the University of Yaoundé 1 which is the oldest teachers training college in Cameroon. However, the ICTs infrastructure is very poor and most teachers do not receive adequate training in the use of ICTs for Education. Local use of the internet is through Cyber cafes or very few training seminars which only last a few hours. Most trainee teachers don't own laptops because of very high costs.

This paper therefore seeks to investigate the Cameroon government's view on ICTs for education and development and by doing so; the researcher wishes to gain insight on how trainee teachers experience this process of policy implementation through their training. Critical Discourse analysis would be used to analyse teachers discourse both at the text, discursive and socio-cultural level through text collected from forum discussions on a mobile site. Lessons learnt from this research would be applicable to other developing countries because Cameroon faces the same challenges in terms of ICT infrastructure development hence similar problems in the difficulty of implementation of ICT policies due to inadequate ICT infrastructure. The researcher argues here that Cameroon government's ICT policies have been influenced by world view of ICTs in development and policy documents although well written, do not address the needs of the ordinary citizen.

METHODOLOGY

Wikispaces was used as a resource site for the collection of artefacts which included policy documents on ICTs for education and development, videos and podcast of interviews from various private and government institutions around Africa. These documents were analysed in order to understand what various African organisations talk about regarding ICTs for education and development. Content analyses of these documents were carried out using word clouds in order to start conceptualising the primary discourse in this policy documents. Apart from these artefacts, we also had to understand what the ordinary African thinks about ICTs and what they use it for. In order to get this information, a mobile application (winksite) was used to create a free mobile site (view screen shots below). This was developed considering the fact that mobile phones are easily accessible by most Africans and therefore participation in the discussion forum would be greatly facilitated. According to industry estimates, there are more than 500 million mobile phone subscribers in Africa now, up from 246 million in 2008 (Mobile report Africa, 2011). In this particular study, trainee teachers were engaged in forum discussions and surveys on the mobile site. The researcher posted questions relating to their use and view of technology and the trainee teachers had to give their replies in the form of text. This replies constituted authentic discourse of ICTs at the micro level. Critical policy was employed as a theoretical perspective in order to analyse the policy documents and critical discourse analysis was used to analyse discourse from the 'forum' and 'survey' at the micro and macro level. Analysis of content was therefore qualitative in nature.

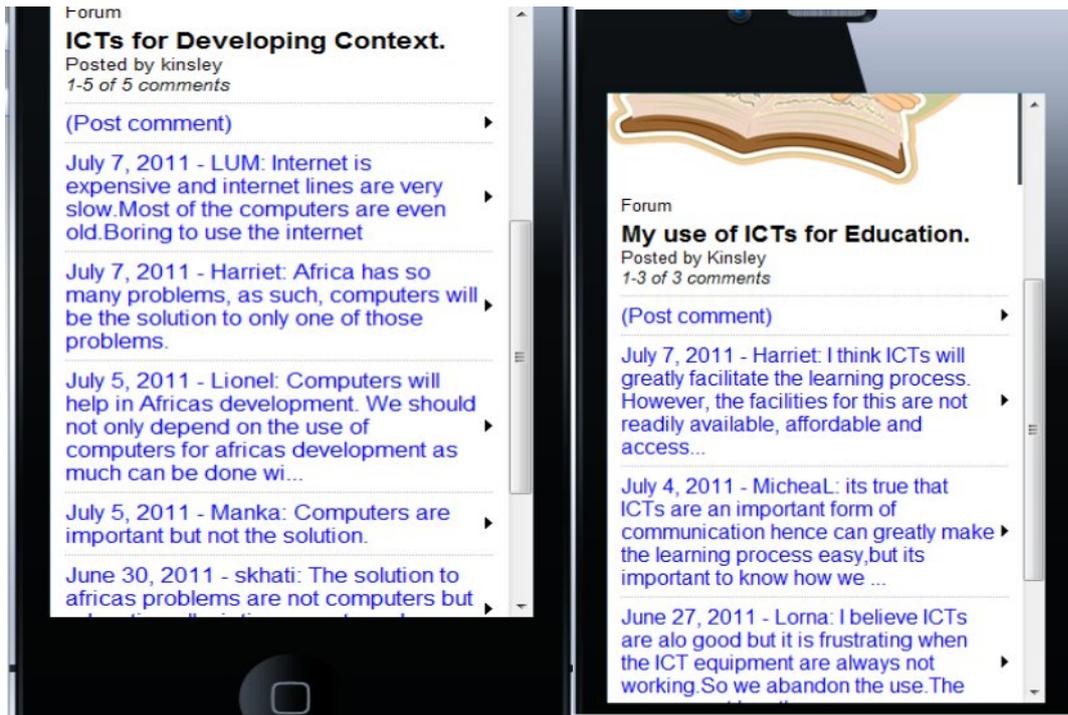


Figure 1: Screenshots of text generated through Mobile Site.

There was also a qualitative analysis of the study using wordle to get an idea of the frequently used words or dominant ideology present in the policy documents.

THEORITICAL PERSPECTIVES

The main analysis here would focus on the Cameroon Governments ICTs in Education policy and how this policy manifests within the teacher training community. The questions that the researcher raises here are how well does the government implement its ICTs in education policy? How do trainee teachers who are supposed to propagate this policy feel about its implementation? The researcher would draw on theories of critical policy to answer these questions. Critical Discourse analysis would be used to contextually analyse the discourse of ICTs in Education policy by trainee teachers.

ICT POLICY HEGEMONY

Considerable time and effort has been spent by academics in interrogating the African ICT agenda. Chiumbu, (2008) argues that rapid ICT development in the West impelled a flurry of regional and national ICT policy making in Africa and other parts of the developing world.

He goes further to state that multilateral and bilateral donors have been at the forefront of these ICT policies by providing both financial and technical assistance.

International organisations such as the World Bank, ITU and ECA play an important role in the spread of the dominant scenario. These organisations are able to influence policy formulation as well as actual implementation of ICTs in developing countries through several mechanisms i.e. programmes in policy assistance, institution building and private sector support; specific ICT related projects; international and regional conferences and the spread of documents and scientific articles (Van Audenhove et al, 1999). The west and these big organisations therefore set a standard through their gift of international aid, creating a powerful mechanism of consent, thereby making even the poorest developing nations to conform to their harsh neo-liberal order (Hattori, 2003:162). Cameroon and other African countries have fallen victim of this neo-liberal order and have tried to implement giant ICT policies to an economy which barely has the infrastructure to support this projects. Policy makers feel the need to prepare the country for globalisation and information revolution in order to make the society more competitive on a global scale. A critical policy approach therefore constitutes a macro level policy approach to analysing the evolution of policies and ways in which policy dynamics are intertwined, infiltrated and contested in the policy making process (Liasidou, 2009). Adopting this critical policy approach helps facilitate a deeper understanding of the capitalist and social relations and how these are mutually implicated with structural features in the production of hegemony. There is competitiveness in policy making and ICTs have become a symbol Technology of power.

Ngai-Ling, (2009), gives us an idea of questions we should be asking when siting critical studies on policy and these include;

- Where do particular policy ideas and their related discursive networks originate?
 - Which actors, individual land collective, get involved in the policy discursive networks that construct objects of economic governance?
 - What ideas (or knowledge brands) are selected and drawn upon to recontextualize the referents of these objects?
 - How do these ideas enter policy discourses and everyday practices?
 - How these modes of do thought discipline and/or governmentalize the organization of spaces, policies and diverse populations?
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- How do they become part of the hegemonic logics and challenge by diverse social forces?
- How are they challenged and negotiated to maintain unstable equilibria of compromise?

ICT policies in developing countries have therefore not fallen short of adopting ideas from western nations. The hegemonic function arises from the productive structure, and, particularly, from the leading role of the hegemonic group or class in the production process, and subsequently, this is extended and generalized in the complex superstructures, thus sealing a unity in the concrete historical construction, among economics, politics, ideology, and culture (Donzelli, 1981). The leading problem here is most African Governments and other international N.G.Os have resorted to computers as the solution to solving Africa's development problems, such as the one Laptop per child program and also recently, the south African government giving out laptops to school teachers and various international organisations donating refurbished computers to Africa. The question here is; are computers widely used in Africa? They are important but should this be a focus area for government Policy makers? Chrisanthi Avgerou and Shirin Madon, (2005) have made it clear that; *"... the root of counter-development obstacles to ICT might be the extent to which the information society conveys aspirations, and privileges technologies, information and knowledge that are irrelevant to the way the majority of people in many communities in developing countries live their lives."*

Therefore there is a need for ICT projects in developing countries to be driven by context. Wenger et al, (2009:1) argues that communities work and learn in different ways and each orientation is supported by tools that support its (the community's) pattern of activity. Therefore, different communities would chose and use different technologies, based on their specific needs. This is of particular importance because technologies that work in developed communities may not work in developing communities and therefore ICT policy which is influenced by organisations in developed communities might be difficult to implement in developing communities.

Through critical discourse analysis of text from trainee teachers who are directly influenced by ICTs in education policies, we can begin to understand what they really think about ICTs.

CRITICAL DISCOURSE ANALYSIS

Critical Discourse Analysis (CDA) is the uncovering of implicit ideology conveyed in text. It unveils the underlying ideologies and prejudices conveyed by individuals through their texts.

Fairclough, (1995:132-3) defines CDA as follows:

'By critical discourse analysis I mean discourse analysis which aims to systematically explore often opaque relationships of causality and determination between (a) discursive practices, events and texts, and (b) wider social and cultural structures, relations and processes; to investigate how such practices, events and texts arise out of and are ideologically shaped by relations of power and struggles over power; and to explore how the opacity of these relationships between discourse and society is itself a factor securing power and hegemony.

Fairclough, (1992:8) pays attention to the history and environment in which the research is produced. He stated that: Discourse constitutes the social. Three dimensions of the social are distinguished; knowledge, social relations, and social identity, and these correspond respectively to three major functions of language. Therefore *discourse* is shaped by relations of power and invested with ideologies. *Critical* on the other hand is a term which is contingent on the view of discourse. Therefore, CDA portrays discourses as ideological because they are used to represent the systems of thought, manifested in language that groups and individuals use to identify themselves, filter information, and interpret meaning (Burns & Morrell, 2004). The main purpose of introducing Critical discourse analysis (CDA) in this study, is to try an understand what preservice teachers talk about ICTs at a micro and macro level. This would shed light on what teachers really think about ICTS both for education and development and also how they feel about the implementation of government policy in their context. CDA provides a way of thinking that analysing text and discourse practices and may give access to social identities and social relations (Phillips and Jorgensen, 2002) .Teun A. van Dijk put the year argues that it is not the social situation itself that influences the structures of text and talk, but rather the definition of the relevant properties of the communicative situation by the discourse participants. By his argument, this forms context models and he goes further to argue that context models are missing links between discourse, communicative situation and society (Van Dijk, 2008). Therefore bearing in mind that discourse analysis can be approached from a range of constructivist or critical perspectives (Phillips & Hardy year). Considering this, we will use the critical approach which pays attention to dynamics of power, knowledge and ideology that surround discursive processes.

This is a matter of perspective and an underlying belief that, from a critical perspective, some ideologies are “better” than others when the social project involves an attempt to achieve equity (van Dijk, 2004).

APPROACH TO TEXT ANALYSIS

Considering text as artefacts, which emerge from social interactions, we can adequately analyse and understand social perceptions through analysing text. Fairclough **year** considers language as a form of social practice and he uses the term discourse to imply a form of social interaction. He considers discourse as text, interaction and context;

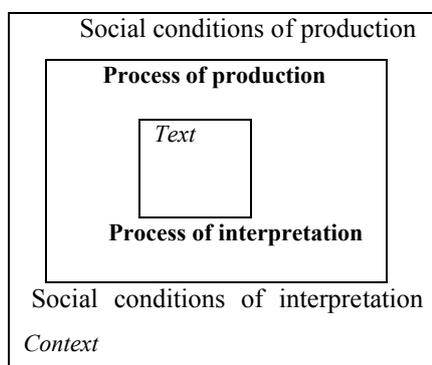


Figure 2: Adapted from Fairclough, (1989).Discourse as text, Interaction and Context

In comparison to the three aspects of discourse (shown in figure 1.), Fairclough (1989:

26-27) identifies three dimensions for CDA:

- Description is the stage which is concerned with formal properties of the text.
- Interpretation is concerned with the relationship between text and interaction by seeing the text as the product of the process of production and as a resource in the process of interpretation.
- Explanation is concerned with the relationship between interaction and social context, with the social determination of the process of production and interpretation, and their social effects.

developed and developing countries. Countries must be able to benefit from the technological developments. To be able to do so, a team of professionals has to be educated with a sound ICT-background, independent of specific computer platforms or software environments (SPICT, 2007).

UNESCO considers ICTs as a revolutionary tool in learning and this belief has been incorporated in drafting the ICTs in education policy document for Cameroon. In this policy document, great emphasis is laid on ICTs as a driving force for Education. The government therefore has resorted to placing greater emphasis in ICTs than in learning. We should begin to ask questions like, what is more important in education, ICTs or Authentic learning? What influences does a UNESCO statement have in this policy document?

A key point from this word cloud therefore is;

- Information Communication technologies would provide a key role in the development of education in Cameroon.

ANALYSIS OF TEACHERS DISCOURSE ON ICTs USING CDA

Analysis is carried out from artefacts which are text gathered from teachers' comments on a mobile site. Text is an outcome of an online interaction therefore; Text is both a medium and an outcome of mental constructs (Ng'ambi, 2008). CDA does not only help to interpret texts, but also explains them (Ng'ambi, 2004). CDA also provides a way of thinking that analysing text and discourse practices may give access to social identities and social relations (Ng'ambi, 2004). Questions were posted on Forums and trainee teachers' replies were analysed using CDA. Generic specific Text genres (written discourse) and discursive types Roode, Speight, Pollock & Webber (2004), Ng'ambi (2008) are identified by examining issues of power and domination (Ng'ambi, 2008). In this study, the **Neutrality** Discursive Type would refer to discourses that are not taking sides on the discussion (Ng'ambi, 2008). **Corporatism** discursive type refers to discourses that imply collaboration; **Exclusion** refers to a feeling of fear and "not belonging" especially to the use of ICTs. **Technological optimism** refers to discuss that acknowledge the potential of ICTs, **Pragmatism** discursive types refers to discourse affecting practical issues (Ng'ambi, 2008), **Legitimacy** discursive type refers to authoritative discourse (Ng'ambi,2008) and the **technocratic** discursive type refers to technocentric discourses (Ng'ambi, 2008).

TEXT GENRE(TG)	DISCURSIVE TYPES(DT)
Confidence	Neutrality
Factual information	Corporatism
Humour	Technological Optimism
Persuasion	Pragmatism
Uncertainty	Legitimacy
	Technocratic

Table 1. Text genres and discursive types, adapted from Roode et al, (2004), Ng'ambi (2008)

QUESTION 1

The first question was aimed at getting the trainee teachers perception on ICTs in a developing context. It was aimed at interrogating what they really feel about the government and other organisations giving out computers in a bit to curb the digital divide. It goes thus;

- Do you think computers are the solution to Africa's development? Please explain briefly.

REPLIES.

- *T 1: Internet is expensive and internet lines are very slow. Most of the computers are even old. Boring to use the internet*
- *T 2: Africa has so many problems, as such; computers will be the solution to only one of those problems.*
- *T 3: Computers will help in Africa's development. We should not only depend on the use of computers for Africa's development as much can be done without computers.*
- *T 4: Computers are important but not the solution.*
- *T 5: The solution to Africa's problems is not computers, but Education, alleviating poverty and disease.*

QUESTION 2

The second question was aimed at inquiring about teachers' use of ICTs in Education and their perception about ICTs policy implementation. It was aimed at examining the implication of critical policy and how ICTs are actually used in Cameroon.

- *Personally, I believe ICTs could greatly mediate the learning process if several structures are present. What do you think about this? Do you think the government creates enough opportunities for use and adoption of ICTs? Do you think computers are the solution to economic development?*

REPLIES

- *T 6: I think ICTs will greatly facilitate the learning process. However, the facilities for this are not readily available, affordable and accessible to all. If the government could look into availability, affordability and accessibility, then this will go a long way in helping in the learning process.*
- *T 7: It's true that ICTs are an important form of communication hence can greatly make the learning process easy, but it is important to know how we can sustain its use as well, not just making them available.*
- *T 8: I believe ICTs are also good but it is frustrating when the ICT equipment is always not working. So we abandon the use. I think the government has other interest, not in education.*

ANALYSIS:

REF	Text	Description (text analysis)	Interpretation (Discursive Type)	Explanation (Social Practice)
T 1	Internet is expensive and internet lines are very slow. Most of the computers are even old. Boring to use the internet	Disappointed(New TG),Factual information	Pragmatism i.e. Teacher addressing practical issues such as slow and old computers.	Generalises that old and slow computers discourages the use of ICTs in teaching. ICT use becomes boring. The government should therefore improve existing infrastructure.
T 2	Africa has so many problems, as such; computers will be the solution to only one of those problems.	Uncertainty, Factual Information	Pragmatism, Technological Optimism in the believe that computers can be a solution to one of Africa's problems.	Seeks to bring to attention that a lot of emphasis is being placed on ICTs when there are other pressing problems in Africa

T 3	Computers will help in Africa's development. We should not only depend on the use of computers for Africa's development as much can be done without computers.	Factual information, Confidence. Caution(New TG)	Technological optimism as there is confidence computers will help in development.	The teachers feel that a lot can be done to improve development and education without computers and feel the need for other areas in need of attention to be re-visited.
T 4	Computers are important but not the solution.	Confidence	Legitimacy, Technological Optimism.	Gives an informed opinion that ICTs are important but reiterates that there is no one solution to development.
T5	The solution to Africa's problems is not computers, but Education, alleviating poverty and disease.	Uncertainty , about role computers would play in development. Factual information about poverty and disease as major problems.	Pragmatism	According to this statement, teachers might actually be opposing ICTs use because they feel too much attention is placed on ICTs while relevant practical issues are ignored.
T6	I think ICTs will greatly facilitate the learning process. However, the facilities for this are not readily available, affordable and accessible to all. If the government could look into availability, affordability and accessibility, then this will go a long way in helping in the learning process.	Confidence,	Technological Optimism, Pragmatism.	Teachers have a perception ICTs are good but feel that other practical issues such as affordability must be met in order to encourage initiative for use of ICTs amongst them.
T 7	It's true that ICTs are an important form of communication hence can greatly make the learning process easy, but it is important to know how we can sustain its use as well, not just making them available	Confidence, Advice(New TG)	Pragmatism, Technological Optimism	Teachers feel that apart from just providing computers, structures must be put into place for maintaining them. Computers that work properly might actually make the teachers feel like using them.

DISCUSSION

Wordle is an important tool for generating word clouds which can be very useful in preliminary analysis of documents. In a word cloud, grammatical words and non-frequent words are hidden so that the resultant representation clearly shows the most frequently occurring words of importance (McNaught & Lam, 2010). The main aim of introducing wordle to this study is to get an idea of the most frequently used words in the policy documents and this directly relates to what the policy makers are talking about. The Cameroon ICT policy documents clearly perceive ICTs as the key to both Socio-economic and educational development. ICTs presents an important factor which would enable the country to participate effectively in the global economy. This view of course is at the Macro level. Critical Discourse analysis of trainee teachers' discourse at the Micro level presents several interesting dichotomies. They feel that the government is only interested in making computers available to schools. They still complain of poor infrastructure and internet connectivity which makes using the available computers virtually impossible. Maintenance of these computers is also very poor and there isn't adequate training by the government in the use of ICTs in teaching and learning. They believe that there are several impeding factors such as poverty and disease which they have to worry about and the cost of computers and internet connectivity is still very high. Access to computers by learners is still very low and they find it needless to use computers at schools for teaching because most learners don't even have access to computers at home.

So where do we strike a balance between ICTs, Development and Education in the Cameroon context? Are the digital habits (Wenger et al, 2009:1) of the Cameroon's society not reflected in the policy documents?

The researcher has so far used the Critical approach to CDA which pays attention to the dynamics of power, knowledge and ideology that surrounds discursive practices. Evidently, the view on ICTs held by trainee teachers and the Government are slightly different. It therefore becomes evident that approaches to formulating ICT policy documents should consider first the problems developing communities face that can be ameliorated by ICTs and then developing appropriate technologies that would be more relevant in a particular context. A bottom top approach should therefore be used in implementation of ICTs for education and development policies in Cameroon and Africa in general and particular care should be taken to ensure that the idea inherent in the policy documents have not been influenced by other giant organisations .

CONCLUSION

ICTs are no doubt an important form of communication and acquiring information in Africa and could be an important factor in economic development by improving trade and making government services more efficient. However, ICTs are not the primary solution to the development of Africa as several other factors such as poverty and disease impede development. It is important for contextual factors to be considered before implementing ambitious projects involving ICTs in developing countries as various communities use and perceive technology differently (Wenger et al, 2009:1). Account must be made to the fact that these are poor communities and don't have the monetary resources and adequate technical expertise to sustain giant ICT infrastructure. These could eventually lead to even more cost to an already fragile economy. Considering that Human development emphasises the need for a democratic society that is in favour of expanding human choice (Anand & Sen, 2000, Chigona et al, 2010) and since Mobile technology constitutes the main form of communication, the researcher believes greater emphasis should be placed on expanding the existing mobile infrastructure in Africa in general and Cameroon in particular. The researcher made an earlier argument that African ICT policy makers have misinterpreted ICT for education and development to a need to make internet and computers widely available to schools. While this is important, it shouldn't be the central area of focus. Rather, efforts should be made to greatly reduce mobile phone subscription rates and create innovative programs for the distribution of standard mobile and smart phones to local African communities and also encourage projects on mobile learning. The researcher believes greater emphasis should be made in ensuring that each and every African has a mobile phone and if possible a smart phone. The researcher strongly advocates for a policy on ICTs for development which places greater emphasis on developing mobile technology both for social and educational use and even the support by government on the use of mobile technology for classroom teaching in Africa because in our context, this is what really works.

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