Chapter 3
Education

Comparison of the (ICT related) education at academic level in South Africa and the Netherlands

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Abstract

Education is very important in a society. This is where children become our future. Therefore governments spend a good deal of their funds and time on this subject. Especially the ICT related education is becoming more and more important. There is no company who can do without ICT. Since ICT has become very important to all societies over the world, we found it very interesting to compare our Dutch ICT related education to the ICT related education provided in South Africa.

To investigate the education in both countries we went to South Africa from the 18th of October until the 29th of October. Here we had several interviews and spend a great deal of time observing the education at first hand. In our research paper we will describe the differences with the education in the Netherlands.

Introduction

Every day people use the internet to communicate with each other. It becomes more interesting for companies to work together with people all over the world. Particularly for companies in the IT businesses which often outsource their work. Therefore it is extremely important to have a better understanding about their potential partners. Employees with an ICT oriented education become more interesting for companies. So it is very important for a society to provide adequate ICT related education.

South Africa holds a variety of different cultures. Here in the Netherlands we only have one dominant culture, the western culture. All the education provided in the Netherlands has been based on this culture. But is this the same as in South Africa, where they have such different cultures?

With this question in mind we came up with the following main research question which will form the foundation of our research:

"To what extent do cultural differences influence the ICT related education in South Africa in comparison to the Dutch ICT related education?"

To provide a well founded answer to the main research question, we have separated the main research question into several sub questions. These sub questions are listed below:
·   To what extend are the Dutch and the South African ICT educational system related to each other?
·   In what degree are the ICT related studies, in the Netherlands and South Africa, related to each other?
·   How do the different cultures within ICT related studies relate to each other?

The domain of our research is the University of Pretoria in South Africa and the Radboud University in the Netherlands. We have selected the following aspects which we have investigated during our research:
·   Educational system;
·   Educational studies;
·   Cultures within education.

The conceptual model

This conceptual model is a graphical representation of our three main research aspects, educational system, educational studies and cultures within education. Those aspects are shown here with their own variables which we have used to do our research.

Educational system

The first aspect of our research was the comparison of the Dutch educational system with the South African educational system. But what does a educational system mean? In order to compare the two educational systems, we have selected the following variables (which refer to the conceptual model in the previous section).

- Educational structure;
- degree's;
- value rating;
- quality of universities;
- scholarships.

We have investigated these variables in the Netherlands and South Africa. Because we have investigated the same variables for both countries, we can easily compare the outcomes.

We start off by describing the South African educational system. First we describe how the system is formally arranged. After that we will present our own observation. In the conclusion we give an overview of the differences between the South African educational system and the Dutch educational system.

South African educational system

In this paragraph we give an overview about how the South African educational system is formally arranged.

Formally arranged

In South Africa, Universities consists of Faculties. At the University of Pretoria we had the faculty 'Engineering, building & IT' faculty. These faculties consist of several schools. In our case we went to the 'Information Technology' school within the faculty 'Engineering, building & IT'. And these schools again consist of departments. A representation of the educational structure:
- University: University of Pretoria
- Faculty: Engineering, building & IT
- School: Information Technology
- Department: Information science
- Department: Informatics
- Department: Computer science
- Undergraduate degree
- Honours degree
- Postgraduate degree

Next to Faculties, schools and departments, the educational system uses 'grades'. When you first go to school in South Africa you start off with grade null (0) (Which is not really a grade, but more like kindergarten school). Every year you go to a higher class or school, you will be in a higher grade. The first three (actually four) years (0, 1, 2, 3) are called the 'foundation' phase. Then grade 4, 5 and 6 are called the intermediate phase and grade 7, 8 and 9 are the senior phase. After those years you can start off with you final phase, which are grades 10, 11 and 12. You need to have passed the twelfth grade in order to apply to a University. Without finishing those 12 (or really 13) grades, you will not be accepted at any University in South Africa.

After grade 12, when you have entered a study at a University, they work with degrees. When you enter a study at a University you start with your Bachelor degree. Which will be three years total. After that you can get your honours degree, which will take up to one year. With this honours degree you can eventually start off with your master study to get

your master degree.

As in many countries in the world, South Africa uses a value rating system to rate the weight of a courses. South Africa uses modules as a value rating system for studies. The first year at the University typically is worth 8 modules. Which stand for 80 hours. Within your bachelor study (which will take up to three years) you will get an average of 420 modules. These modules are used to weigh the difficulty of a study and to compare studies.

A big problem within South Africa is the quality of schools. Not only primary and high schools in rural and rich areas, but also on Universities. (Which are considered to be only for the rich people.) This problem with poor and rich is the biggest one for the education in South Africa. So it is extremely hard for people in rural areas to get a good education.

In South Africa most of the people have to pay for their studies. There is no funding from the government for the high and middle class in South Africa. For the people in rural areas, who have little to no money, the government has a little funding. The height of this funding depends on your background and is only for families who cannot pay for their children.

In practice/own observation

During our visits to South African schools, we quickly notice a big difference between the Dutch and the South African system. In South Africa, most of the people who go to school wear uniforms. This is because the South African educational system is fully based on the British system. In Brittan the students still wear uniforms when they go to school. But then again we noticed that this was only the case on schools lower than universities.

At the University of Pretoria we met little to no people who had a rural area background. Most of the people have parents who do very well in the South African society. There was only a hand full of people who had their roots in rural areas. It was very hard for these people to get to the University. But when they got there they still have to pay a great deal of the study themselves. Therefore few people make it through their study.

Conclusion

The first variable of our research is the educational structure. How is the system being structured? The Dutch educational structure is as follows. We put our view on the Radboud University Nijmegen in the Netherlands. The university consists of different kind of faculties. When we look at the Faculty of Science (in Dutch: Faculteit der Natuurwetenschappen, Wiskunde en Informatica) it consists of scientific research institutes and scientific educational institutes. During our research our scope is on these scientific educational institutes. Information science and Informatics are the two kinds of institutes within this faculty which are related to ICT. So there is some difference between the educational structures in The Netherlands and South Africa.

As said in the previous paragraphs, there are 12 grades you have to finish to apply to a University. In the Netherlands this is very different. While in South Africa there is one way to the university, in the Netherlands there are different kind of routes to the university. The image below gives a good overview of the different kind of routes to a university.

There are a lot of advantages of a multiple route system. One of them is the opportunity for every kind of student to reach the level he/she wants. There is a disadvantage in comparison with the system which is being handled in South Africa. It is very difficult to set clear admission rules when every student has his own way to go to a University. In comparison with the University of Pretoria what is more of a straightforward system the admission rules are very univocal.

The same as in South Africa there are different kinds of degrees on a university. In South Africa they have a Bachelor, Honors and Master degree. Here in the Netherlands we only have a Bachelor and Master degree. The Honors in South Africa, which is a qualification to apply to a master study, is a bit the same as a 'schakel-jaar'. But this is only required for students who apply to a master study and come from a HBO education. Students who have done their Bachelor on a university and apply for a master study do not have to do any qualification.

To rate a study, the Netherlands use a value rating called European Credits (EC's). This value rating system is used in various countries in Europe. When we compare the EC's with the South African modules we come to a very interesting conclusion. In South Africa you get an average of 140 modules per year. With one module being 10 hours study weight, we come to 1400 hours of study weight a year. In the Netherlands an academic year stands for 60 EC's. With one EC's being 28 hours of study weight, we come to 1628 hours study weight a year. So to complete an academic year in the Netherlands you have to spend (1628-1400) 228 hours more than in South Africa.

A big problem in South Africa is the quality of schools. This problem even expands to the different Universities of South Africa. In the Netherlands we do not really have this problem. All Universities have to deliver an amount of quality set by the government. There are some very high quality universities, but we do not have universities who deliver very low quality studies.

In South Africa it is hard to go to college when you do not have any money. In the Netherlands, going to college should be available to everyone. Before the age of 18, parents get a child benefit from which parents can also pay the school for their children. When you become the age of 18, you get a scholarship. This scholarship is four years on a MBO level and four years on a Bachelor and Master level. After these years it is very easy to get a loan from the government to pay for your study.

We can conclude that in the Netherlands, going to school is available to everyone. It does not depend on your background, where in South Africa you need money. Or be very poor to get a funding from the government. But most of these 'poor' students rarely make it to their academic study. For the educational structure, we can say it is a bit the same. But in the Netherlands there are more routes to the University instead of one way as in South Africa.

ICT related studies on acedamic level

In the previous section we described the Dutch educational system in comparison with the South African educational system. One interesting outcome is the quality difference. In this section we will look a bit further and zoom in on the ICT related studies.

In order to measure and compare the educational studies provided in South Africa and in the Netherlands, we have selected the following variables which we have investigated:

- · Different kind of studies;
- · Apecialization;
- · Qualification;
- · Language;
- · Appliances;
- · Failure level;
- · Practical versus theoretical.

These variables are a part of the conceptual model which you will find in the corresponding section. Because we have investigated the same variables for both countries, we can easily compare the outcomes.

Academic ICT related studies in South Africa

In this paragraph we start off with a description of these variables in a formal way. After that we will show the variables in practice, by sharing our own experience of the lectures we have followed at the University of Pretoria. This section ends with a conclusion were we describe the differences between the ICT related studies in South Africa and the ones being provided in the Netherlands.

Formally arranged

In the previous sections we already describe that the University of Pretoria consist of faculties. Within this faculty there are several schools which consist of departments. Due the limited time we were in Pretoria and the huge amount of studies which are provided, our scope will only be on the studies of the department of Computer science in more detail.

Within the school of Information Technology there are three departments. The department of Information Science which is more a publishing study. The department of Informatics which is more about software design. And the department of Computer Science which is more about software development. Within the department of computer science there is a variation of studies. We will describe these studies shortly.

Undergraduate studies:
- · Computer Science: exist of the core modules, the foundation for the Computer Science and elective modules of Natural Science.
- · Information and Knowledge Systems: exist of design and develop systems within a particular discipline.

Honour studies:
- · Specialization program that depends on the interest of the student and the range of topics that are presented by experts in the department.

Postgraduate studies:
- · Research program where the student has to identify and pursue a research project.

During the master program students have the opportunity to do a specialization. Within the department computer science there are four main research focus areas: Artificial intelligent, Computer security, Distributed systems and Theoretical computer science.

The University of Pretoria provides a huge variety of ICT related studies. For most of the studies some extra discipline on a specific domain is preferred. Within the ICT related studies provided by the department Computer Science the following admissions are required.

To obtain admission to the undergraduate studies, a student should have obtained a grade 12 certificate with 60% result. With the final grade 12 examinations the student has at least 60% in mathematics to apply to Computer Science. To apply to Information Science the student must have at least 50% in mathematics to apply to Information and Knowledge Systems.

To obtain admission to the honours studies, the student must have obtained an BSc(IT) or BSc(CS) degree. When a student wants to do a postgraduate study, the honour study must have been finish with success.

South Africa is a country with many different cultures. Of all the languages which are being spoken by these cultures, eleven official languages are recognized. It is not feasible to provide education and literature for every student's native language. For this reason the University of Pretoria uses English and Afrikaans. Which are the two most common languages.

A professor of the department of Computer Science told us that during the years the Computer Science studies are very popular. A total of 1600 students are following one of the three programs. In comparison with previous years the interest is going down.

There are a lot of student who do not pass. Only 55% to 60% of the students pass mathematics. Mathematics is a required course for all the ICT related studies. Because mathematics is becoming a big problem, students can expand the bachelor study with one year to improve their mathematic skills before starting with their real study.

All the studies which are provided by the department Computer Science are becoming more practical, especially for the bachelor studies. During the study there are a lot of practical courses like programming. In the last year of the bachelor study, the student has the possibility for an internship.

In practice/own obsevation

In this paragraph we describe our own observation during the time we visited the University of Pretoria.

We saw a great difference in the quality of ICT related studies provided in the University of Pretoria. We went to a final presentation of Bachelor students and to a graduation presentation of Engineering students. The quality, as we are used to, wasn't there at all. The quality of their final products was very low (according to us). Their findings were not based on any literature. Their comparisons were also wrong. For example, the students from the Bachelor study had a presentation about Nigeria. To show how poor Nigeria is, they compared the amount of airports in Nigeria to the amount of airports in the United

States. But they forgot to mention that the United States is much bigger than Nigeria. The same was the case for the presentation of the Engineering students. The quality was very low. For example, Wikipedia was used as a reference in their presentation. Both presentations were marked, to our astonishment, around 80 points out of 100.

At the end of the course the students have to give a short presentation about their results. We were surprised by the individual level differences based on content, English and presentation skills.

Conclusion

In this paragraph we will conclude the differences between the findings in South Africa and the Netherlands.

On the Radboud University of Nijmegen in the Netherlands we have the studies 'Informatiekunde', 'Informatica' and 'Artificial Intelligence'. These studies are similar to the ones offered at the University of Pretoria. 'Informatiekunde' is the same as 'Information science' where 'Informatica' can be compared to 'Informatics' in South Africa. Except the study Artificial Intelligence, this study is in South Africa only possible as a specialization during the master study.

In Pretoria students have to choose between four main focus areas for a specialization subject. All of the specializations are society oriented. The students in Nijmegen have the ability to choose from a large variation of specialization. The specialization should be organizational, educational or communication oriented.

The University of Pretoria has two common languages: English and Afrikaans. There are a lot of courses which are being provided in both English and Afrikaans. At the Radboud University the most common language is Dutch. During the master study the common language should be English. But if everybody in the same class can understand Dutch, most of the time classes will be in Dutch.

In comparison to the University of Pretoria, which have 1600 appliances, in Nijmegen there are 100 appliances to ICT related studies. This is only an indication because we are not sure of the total amount of student that applies to other studies. We think the admission rules are an important factor which influences this difference. The appliances should be lower at the Radboud University of Nijmegen if the same Mathematics admission rule will be introduced as used at the University of Pretoria.

The failure level of 30 % at the Radboud University of Nijmegen is a little bit lower than the failure level at the University of Pretoria, which is 45 %.

In general both Universities have the same practical and theoretical relation. Most studies are becoming more practical and have the opportunity to have an internship.

Different cultures within education

This section describes the differences in culture between South Africa and the Netherlands. We have used the theoretical model of Hofstede to describe the differences in these cultures. Next to the theoretical study of the culture in South Africa and the Netherlands, we will also describe our own experience.

Hofstede describes a culture in five aspects. Those aspects are:

- Power distance (PDI) is how less powerful members of organizations and institutions (like family) accept and expect the more powerful members. Power distance looks from below to above. Not from above to below.
- Individualism (IDB) versus collectivism. With individualism everyone is trying look after him-/herself and his/her very close family. On the other side we have collectivism which is for example people who are grown up in very strong groups. These groups often consist of extended families (like uncles, aunt and grandparents). These groups are very strong and are very loyal.
- Masculinity (MAS) versus femininity is the difference in roles and values between male and female. Women in femininity countries have the same values as men. In masculinity countries the women are more competitive and assertive, but not as much as men. So that these countries have differences in men's values and women's values.
- Uncertainty Avoidance index (UAI) says something about how much a culture avoid uncertainty or the opposite, how much a culture does not avoid an uncertainty. Uncertainty avoidance cultures try to minimize uncertainties by laws and rules, safety and security measures. Uncertainty accepting cultures try to have a few rules as possible and are more tolerant of opinions different from what they used to.
- Long-Term Orientation (LTO) and the opposite short-term orientation. This aspect deals with Virtue regardless of Truth. Values associated with Long Term Orientation are thrift and perseverance; values associated with Short Term Orientation are respect for tradition, fulfilling social obligations, and protecting one's 'face'.

In the following paragraphs we will describe the differences in culture between the Netherlands and South-Africa.

The Dutch culture

This paragraph will describe the Dutch culture. In the first paragraph we describe the Dutch culture according to Hofstede. Following we will describe the Dutch culture based on our own experience.

The Dutch culture according to Hofstede

As stated above we first will describe the Dutch culture according to the theoretical model of Hofstede.

The first thing which stands out when you look at the graphical representation of the Dutch culture is individualism. The Netherlands has a very high individualism according to Hofstede (2003).

According to his research, Hofstede concludes that the Netherlands have a society with more individualistic attitudes and loose bands to others. The Dutch population is more self-reliant and looks only out for themselves and their closest family. As a result individual pride and respect are high held values in the Dutch culture. Degrading a person is not accepted or will not be appreciated.

The second highest aspect for the Netherlands is Uncertainty Avoidance at 53. The

world average number of this aspect is 64. According to this measurement, Hofstede concludes that the Netherlands is trying to minimize or reduce the level of uncertainty by rules, laws, policies and regulations.

As can be seen in the image above, the Netherlands scores very low on 'masculinity'. This means that the Netherlands is more feminism. So women have the same opportunities and values as the men in our society.

The Dutch culture according to our own experience

If we look to our own experience within the Netherlands, Hofstede seems generally right. We do not have a really high power distance. In most cases we treat our boss like any other colleague. We believe Dutch people do not really look up to their bosses. It is for everyone better that you have a loose band with your boss and see him like a friend.

For the aspect 'individualism' Hofstede is also quite generally right. We believe individualism is really quite strong in the Netherlands. If we look to our own families, we can say that we have less contact with our uncles and aunts than with our close family (brothers, sisters, mom and dad). We think this is because of the government. When a family member is unemployed and cannot get a job, the government is taking care of him/her by giving him/her money. Even when a family member gets very sick and is unable to work, he/she can get money from the government. This might explain why we spend the most of our family time with our closest relatives and not with family outside our houses.

Masculinity is not very strong in the Netherlands. Females share the same values as males. Females are able to do exactly the same things as males can. Sometimes there is still a little discrimination by some employers. Some employers still believe that women cannot drive or that women are not build for constructing a building. So there is still a little masculinity in some way.

Uncertainty avoidance is quite high in the Netherlands. This is because we have many rules which results in equality. People have the same rights and must be treated as equals.

There are three more points we want to discuss because these points were very clear when we went to South-Africa.

Poor versus rich: in the Netherlands there is not a big difference between poor and rich. Of course we have very rich people but not really poor people. The government takes care of the people who are very poor and do not have enough money to look for themselves.

Ethnical groups: in the Netherlands there are quite some ethnical groups. But the majority speaks Dutch. The language that is spoken on every school is Dutch. Only on Universities the language for master courses are provided in English.

Employee rate: in 2004 the amount of not-worked job-seekers, according to the CWI (Centrum voor Werk en Inkomen) was 692.200. That is 9.2% of the working population. In the second quarter of 2006 the total amount of unemployment was 407.000 (5.5)%. The descent in the last quarter of 2005 has slowly continued. [CBS1]

The South African culture

This paragraph will describe the South-African culture. In the first paragraph we will describe the South-African culture according to Hofstede. Following in the second paragraph we will describe the South-African culture based on our own experience.

The South African culture according to Hofstede

The image below is a graphical representation of the South African culture according to Hofstede:

The first thing which stands out is that all the aspects of Hofstede are quite high. The highest aspect is individualism (70) compared to a world average of 50! This means that the people in South-Africa are really look for each other. According to Hofstede most of the South-African society is grown up in close groups. These groups mostly consist of extended families (aunts, uncles).

The second aspect which stands out is Masculinity with a degree of 68. The masculinity world average is 58! Again South-Africa reaches above the average. This means that there is a bigger gap between men's values and women's values.

The South African culture according to our own experience

The Power distance in South-Africa is higher than in the Netherlands. Unfortunately we were very short in South-Africa to investigate the power distance. So we are unable to give a clear opinion about it.

What we did saw when we went there, was a strong individualism. Most of the people in South Africa have not much confidence in the government (according to a student on the University of Pretoria). The government does not look after a person who is poor. There is no funding for those people. Even when a person gets sick the government gives no money. Maybe this is why individualism is so strong; the family has to look after each other.

The masculinity in South-Africa is very high. According to St. Josephs support centre the fertile is a very important subject in the South-African society. Some South-African people believe that a man or female is not a real man of women when he/she becomes 20 years old and still does not have a child or a pregnant girlfriend.

Uncertainty avoidance is normal in South-Africa. This is not as strict as the Netherlands. Unfortunate we couldn't gather more information about this subject. So we cannot give a well founded opinion about this.

Poor versus rich: there is a lot of criminality because of this big difference. There is a very big difference between poor and rich and they live together. This difference is the sharpest in the world. The rich are very rich and the poor are extremely poor. Most houses in South-Africa have a very big fence with barbed wire around the building because of the big amount of criminality.

Ethnical groups: another important aspect of South-Africa is that it has the most official languages in the world. This influences nearly about everything. At school and at work everyone speaks another language. The main languages are English and Afrikaans. Beside

English and Afrikaans everyone has his own language. Next to the difference in languages, we observed that different people from different backgrounds group together.

Unemployment rate: the unemployment rate is extremely high. Referring to the interviews 40% of the people are unemployed and from the working people a lot of them have shops at the corner of the street. Those people do not have a steady income because one day they sell a product for 100 rand the next day they sell the same product for 10 rand and when it's raining they don't sell anything. This is really a big issue in South-Africa. We checked the unemployment rate on the internet at "Indexmundi". The unemployed rate is currently on 24,2%.

Combining education with the culture

There is no racial discrimination, it is an economical discrimination. This has influence on education. There are not black or white schools anymore because of the Apartheid, there are only grey school. This means that all schools allow white as well as black students.

There is a big difference in quality of teaching. Teachers on poor schools do not interact with the students. The teacher knows everything and the student knows nothing. When a student asks a question and the teacher does not know the answer, the teacher says something like: "You ask too many questions". On rich schools the teacher tries to find the answer together with the students, there is far more interaction. The bottom line is that good teachers do not stay or go to poor schools.

There are many differences between the kinds of students. There are students who have never seen a computer and students who already have done some programming. The students, who have never seen a computer, have to follow extra classes to learn computers. Technology Natives (born with computer part of lives) and foreigners (never seen computer) all end up in same class.

Conclusion

The biggest difference between The Netherlands and South Africa according to Hofstede is masculinity. This means that there is a bigger gap between men's values and women's values. We can confirm this with the story of St. Josephs support centre.

Also the individualism is a bit lower than in the Netherlands. This means that the people take more care for each other than in the Netherlands. The society has not much confidence in the government. Maybe this is why South-African peoples look more for each other than in the Netherlands.

It is hard for schools to get the educational system on the right track. For poor schools it is hard to get quality teachers. There are many different languages spoken at one school. Some student never touched a computer others grown up with them. All these cultural aspects make it more complex.

Conclusion/discussion

Our main research question is: "To what extent does cultural differences influence the ICT related education in South Africa in comparison to the Dutch ICT related education?"

To give a satisfied answer to this comparative research question, we researched three aspects:
- · Educational System;
- · ICT related studies;
- · Different cultures within education.

The first aspect: Educational system:

The South African educational system is based on the British and does not difference much from the Netherlands. They also have Bachelor and Master Programs. The only difference is that the study weight in the Netherlands is more. In the Netherlands one academic year consists of 60 EC's. One EC stands for 28 hours of study. This means that one academic year has a study weight of 1628 hours. Compared to one academic year in South Africa, which consists of 140 modules. One module stands for 10 hours of study. So one academic year in South Africa has a study weight of 1400 hours. This is a big difference.

Another big difference is that the Dutch educational system consists of different routes to the university. In South Africa you have to follow one route, of 12 grades, to the university. When you have you grade 12 certificate, you can apply to the university.

The second aspect: ICT related studies:

In the Netherlands we have the following ICT related studies: 'Informatiekunde', 'Informatica' and 'Artificial Intelligence'. 'Informatiekunde' and 'Informatica' are the same as the 'Information science' and 'Informatics' studies provided in South Africa. Except the study Artificial Intelligence, this study is in South Africa only possible as a specialization during the master study.

In South Africa there are a lot of courses which are being provided in both English and Afrikaans. In the Netherlands the most common language is Dutch. During the master study the common language should be English.

The last aspect: different cultures within education:

During our trip it became clear why teaching is so hard in South Africa. There are 11 official languages! Sometimes the student speaks better English then the teacher. Another problem is that technology natives and foreigners are in the same class together. For the foreigners it is much more difficult to follow the same courses as technology natives. Another problem is that teachers do not stay on poor schools; they go to the rich schools. This has influences the quality on poor schools. The population of South Africa has not much confidence in government.

After our research we can provide a well-founded answer to our main research question.

To what extent does cultural differences influence the ICT related education in South Africa in comparison to the Dutch ICT related education?

We can say that the real cultural difference is between poor and rich and not between skin color. This difference really influences the ICT related education. South African people who have little to no money cannot afford to go to school or to buy a computer. So those people have never seen a computer or have never worked with one. When we put our view on the rich people in South Africa, we can say that they are more familiar with computers and can get a better form of education. Here in the Netherlands everybody has the possibility to get well-educated. This is because of the scholarships provided by our government.

References

[CBS1] Centraal Bureau voor de statistiek, Werkloosheid vrijwel onveranderd, *Persbericht*, 20-11-2008

[HOF83] G. Hofstede, The cultural relativity of organizational practices and theories, *Journal of International Business Studies*, Fall, 75-89, 1983

[STR99] A.H. Strydom & M Fourie, Higher education research in South Africa: Achievements, conditions and new challenges, *Higher Education*, vol: 38, 155-167, 1999

[HEU00] K Heugh, The Case Against Bilingual and Multilingual Education in South Africa, *PRAESA*, Occasional papers No. 6, 22, 2000

[MOR90] W.E. Morrow, Aims of education in South Africa, *In: International review of education*, vol. 36, 171-182, 1990

[ISA07] S. Isaacs, ICT in Education in South Africa, *Survey of ICT and Education in Africa*, Volume 2, 29, 2007

[HAW90] Hawkridge D, Jaworski K. and McMahon, H. 1990. *Computers in Third World Schools*. Examples, Experience and Issues. Hound mills, McMillan

[CAW98] Cawkell, T. 1998. The information age-for better or for worse. *Journal of Information Science*, 24 (1): 56-58