HUMAN SCIENCES RESEARCH COUNCIL

TITLE: **The benefits of Information and Communication Technology in tele-education: a case study.**

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1 Background and aim of the study

1.1 Background

In today's world, no country is untouched by the forces of globalisation. The world is becoming a smaller place to live and our destinies are linked together as never before. According to Morales-Gómez (1997) this **globalisation** process can be described as "the confluence of economic, political, social, and cultural factors interacting on a world scale thanks to the expansion of knowledge, information, trade, and technology beyond geographic borders and poles of economic activity". The principal **driving force** of this process is the development and rapid spread of **information and communication technologies (ICTs)** which provide the necessary platform for an emerging "information" economy (Willenius, 1998).

The progress of information and communication technologies is propelling mankind into a new era: the information age (Metthey,1995). It is evident that this emerging global "informationised" society (Webster, 1995) - also called the **"information society"** (European Community Information Society Project Office, 1995) - heralds profound changes (Forbairt, 1996a) in many walks of life, but that the new dispensation provides both **opportunities** (Share, 1993 & 1997b; Forbairt, 1996b) and **threats** (Oppenheimer, 1997; Share, 1997a & 1997b).

According to Duran (1996), the transformation of the world into a global village has allowed computer technology to affect the various sectors of our society, including, economic, political, social, educational and cultural. In the education field, either in learning and teaching or information provision, the acquisition and use of information is an integral part of the learning and teaching process (Zaman, 1993).

The emergence of tele-education is a practical application of the information society. Tele-education is defined as the use of telecommunications technology to deliver education from a distance. These technologies can have profound impact on the way education is delivered and received. It is not however at all clear what the actual impact of any technology will be on society for there is a sharp difference between the optimistic projections made from the "utopian" perspective and those made from the more pessimistic "dystopian" perspective.

According to the "**utopian" perspective**, the information age heralds global access to information to all on an unprecedented scale, especially via the Internet. In turn this is expected to open new opportunities of learning with computers (as distinct from learning about computers) for old and young, e.g. pupils, teachers and education administrators (Seepe, 1997). Prominent among the opportunities (see Franklin and Kinnel, 1990; Schank, 1994) is the potential of new interactive technologies to foster a new **learning culture** in societies, as opposed to the teaching-orientated culture that has been prevalent in most of our educational institutions in the past. Barker and Tucker (1991) call this the "interactive learning revolution".

According to the **"dystopian" perspective,** in developing countries the lack of access to ICT facilities and training will prevent benefits flowing equally to all sectors of society. In education only the most skilled and wealthy learners are expected to be able to take advantage of the new interactive learning potential of ICTs, creating even greater disparities than before. Information overload could also hamper rather than promote learning.

1.2 Aims of the study

The research project operated from the premise that in many parts of the world, ICTs were found to have a potential of fostering a new interactive learning culture in societies, as opposed to the teaching-orientated culture that has been prevalent in most of our educational institutions in the past.

The aim of this research is to determine under what conditions can ICT-related educational and informational initiatives contribute to the creation of a learning culture that is characterised by spontaneous and curiosity-driven learning and understanding rather than by teacher-driven instruction. This study will proactively determine how contextual circumstances are likely to mediate certain desirable ICT effects in the future, rather than only trying to identify direct effects that ICTs have had on society.

1.3 Problem statement

The main **research questions** investigated in this study was as follows:

- how the provision of information and communication technologies can optimally foster an interactive learning culture where learners experience the freedom to develop skills and knowledge through discovery and exploration; as opposed to a teacher oriented culture based on the transference of knowledge and experience from teacher to learner, and

- how the **actual contextual conditions compare with the perceived ideal contextual conditions** for achieving an interactive learning culture.

1.4 Research focus

The focus of this research is on how to establish an interactive learning culture in a knowledge-based society. According to Jacobs (1992) there is a pioneering spirit in the world of education and training. There is widespread knowledge that the world is on the brink of an educational revolution, to be brought by the burgeoning market in computer-based interactive technologies. Book titles such as The Interactive Learning Revolution (Barker and Tucker, 19900 are among the outward manifestation of a deep-seated feeling among many educationists that interactive technologies are spearheading a qualitatively different way of perceiving the educational process.

In South Africa, many policy makers have placed a high priority in transforming this country into a **"knowledge-based society"** through the use of ICTs (Department of Communication, 1999a &199b; South Africa, 1996b, 1996c, & 1996d). However, a prerequisite for this is wide-spread access to ICTs. Accordingly there have been a number of nation-wide **initiatives** aimed at improving the telecommunications and electricity **infrastructure** in all parts of the country (e.g. by Eskom, Telkom, MTN, and Vodacom). In the educational arena this has been accompanied by a number of actions aimed at connecting **schools, colleges and universities** countrywide to the Internet and at developing and supporting ICT training and implementations in these institutions. The most notable actions of this kind are those of SchoolNet SA (working in conjunction with the Department of Education and the IDRC), and the Department of Communication's "Internet 200" and "DOC-WIL" (Web Internet Laboratory) projects (Department of Communication, 1999b & 1999c).

With regard to **adult basic education** there have also been a number of actions aimed at establishing community "**telecentres**" - locations where ICTs are available for use by local communities - in both urban and rural areas. The most prominent actions of this kind were launched by the Universal Service Agency (USA), the Department of Communication (their "Public Information Terminal" initiative), the Government Communication Information System (GCIS), while many telecentres have also been established by NGOs (see the 1998 telecentre database of the National Information and Technology Forum). This proliferation of telecentres prompted the 1999 BICA (Building an Information Community in Africa) conference to propose that as the lack of access to ICT facilities was now being addressed by so many initiatives in South Africa, promoting effective ICT-mediated information provision and exchange, as well as ICT training (e.g. for telecentre staff) were now higher **priority issues** to tackle. What therefore remains a major issue is how to use ICTs effectively in schools and telecentres in order to reap educational or other benefits.

Research conducted locally - see the "TELI" (Technology Enhanced Learning Investigation) report (South Africa,1996d) - has pointed to the importance of using ICT to enhance **learner-orientated interactive learning**, i.e. learning that is learner-initiated rather than teacher-driven, and that is characterised by information seeking by learners rather than teacher instruction and memorisation by pupils. The report suggest that benefits associated with such a learner-centered educational approach can be obtained by using **interactive** and **hypertext media** (Internet, CD-ROM) in educational settings and by means of simulated interaction through **multimedia technologies**. It is however not known **under what contextual**

circumstances this kind of ICT-usage will lead to learning benefits. For example, in situations where the learners involved all have experienced an initial lack of familiarity with ICTs, local studies have pointed out that it might be necessary to use ICT-supported **cooperative learning** environments to promote learning (De Villiers, 1995; Grobler, 1995; Potgieter & Conradie 1998).

This study intends to address this problem statement by gathering information with regard to **ICT application** for information provision and learning in South Africa. It will focus on a number of local educational institutions or informational initiatives in which ICT usage features prominently (e.g. schools, colleges, telecentres or projects that are using ICTs interactively for purposes of education or information provision). The focus of the study will be the Department of Communication's "DoC-WIL" project.

1.5 Research process

The research project focused on the Department of Communication's (DoC) initiative aimed at transforming the country into a knowledge-based society through the use of Information and Communication Technologies (ICTs). This initiative is a programme of the Human Resources Fund that was established through the telecommunications Act no. 106 of 1996. This Fund seeks to "promote the provision of adequately skilled human resources at all levels of the telecommunications sector". As the major funder of this programme, the Department of Communications has created ten (10) Web Internet Laboratories (DoC-WILs), primarily at historically disadvantaged universities, technikons and technical colleges.

Each DoC-WIL has either 23 or 27 networked PCs. Each has a TV monitor and a

VCR. The software installed is Windows 95, MS office, C++, and Java and Microsoft Certified Systems Engineering (MCSE). The various DoC-WILs are connected to the Institution of Space Application (ISA). The connection is established via Internet Broadcasting and satellite link. Lectures are beamed at ISA and received simultaneously at the various DoC-WILs.

The learning content comprise training in:

- Information literacy (use of Microsoft software packages, use of the internet: computer as an information of communication tool,
- A+ technician (learn the architecture of both hardware and software)
- Web Site design and Microsoft Certified Systems Engineering (MCSE) which is the core of the programme: (computer networking)
- Total Quality management and project management

All the necessary equipment and training costs (including, hardware and software, course material and recruitment fees) were supplied by the Department of Communications. The various institutions select trainees and administer the programme. They are also responsible for the security of the facility.

1.6 Research design and procedure

The study focused on gathering information from the Department of Communication's "DoC-WILs project". Research was carried out at six of the ten DoC-WILs:

Thuto Mahlale College: Mamelodi West – Gauteng Province

University of Qwa-Qwa: Phuthaditjhaba – Free State Province

Technikon North West: Ga-Rankuwa – North West Province

Eastern Cape Technikon: Butterworth – Eastern Cape Province

University of Fort Hare: Alice – Western Cape Province

Mangosuthu Technikon: Jacobs – Kwa-Zulu Natal Province

Questionnaires were used to gather information from two types of users: students and co-ordinators of the DoC-WILS. Also important was to gather information first, on the range of educational and non educational benefits that the institutions have obtained by means of ICTs and secondly, on the circumstances that are perceive to be ideal for achieving learning or teaching benefits. The aim was to determine the success of benefits that each DoC-WIL have hoped to achieve and the circumstances which might have a positive or negative effect on the benefits.

1.7 The sample

The total sample consisted of forty two learners and six coordinators of the DoC-WILS. Seven students and a coordinator from each DoC-WIL were interviewed. There were twenty-eight (28) male students between the ages of 19-30 and fourteen (14) female students between the ages of 18 and 36. All co-ordinators were males and their ages ranged between 21-35.

2 Results of interviews with learners and coordinators

This section compares the responses of the learners and coordinators of the DoC-WILs. The responses are discussed in an integrated way, using more or less the same logical order that was used in the questionnaire schedule.

2.1 General usage of the DoC-WILS

When asked for what activities, programmes or courses has the DoC-WILs been used, learners mentioned that the DoC-WILs have been used for a variety of activities. These activities included training in computer literacy, Microsoft packages, technical aspects of computing, A+ techniques, data base and Web Site designing, computer networking, Microsoft Certified Systems Engineering (MCSE) and project management. Some learners mentioned that the DoC-WILs have been used for study purposes, assignment typing, research, web browsing, web site designing, searching for information, communication, receiving and sending mail, entertainment, job opportunities, downloading scripts especially YBS and Java scripts,

The Internet was seen by learners to have formed an integral part of all the above activities. They stated that the internet improved their knowledge of computers, helped them to search and access sites related to their academic studies and DoC-WIL training (Cramsession, hotmail,Yahoo, Anazi); and provided them e-mail access to explore new ways of interactive learning and communication.

2.2 Changes that could result in a more beneficial WWW usage patterns?

When asked what changes, if any, could result in a more beneficial WWW usage patterns, students mentioned that they experience problems in using the WWW because the rooms used as DoC-WILs are small and as such are constantly overcrowded with students trying to get a chance to use the WWW. As most students feel that they are denied an opportunity to use the internet, they suggested that more computers and fast modems are need to ensure that the project realises

its objectives i.e. to produce adequately skilled human resources. Other students suggested a general upgrading of computers, modem and network facilities to accommodate many students in accessing the World Wide Web. In addition, more qualified and skilled personnel need to be appointed and trained to present the course content in such a way that students are equipped with skills that would add value to their qualifications. Providing more practical work and course content related web sites can do this. At the completion of the course, student need to be literate in both hardware and software packages.

2.3 Circumstances (e.g. existing local conditions, policies, or processes) that apply to the DoC-WIL or users of the DoC- WIL that are able to have a positive or negative effect on each benefit mentioned?

2.3.1 Circumstances that could have a positive or negative effect on benefits via the use of the Internet:

- **Benefit 1:Increased basic computer literacy**

The majority of students mentioned that increased computer literacy can be realised when both theory and practice form part of the course content offered. Users need to have a better understanding on a variety of issues pertaining to the entire information and communication industry and how a computer can be used as an information and communication tool. When this information is gained, users need to be given an opportunity to apply the theory into practice. This can be done when users have access to the DoC-WILs. They should be allowed more time to use the

DoC-WILs at anytime of the day and over week-end. This will help them to gain more confidence in using software packages.

Students mentioned that users may find it difficult to use computers when the venues where the DoC-WILs are located are too small and overcrowded to can accommodate them. This means that only a few users will have an opportunity to use the internet while the majority will have limited access and time to do their work. They said accessing sites that are not related to studies may have a negative on users increasing their knowledge of computers.

- **Benefit 2: Improved knowledge of computers/relevant hardware to build computers**

Having a lab with computers that students can utilise to build computers using the relevant hardware can help to improve their knowledge. They will be exposed to the practical and technical aspect of computing. This will reduce techno-phobia as they will be in contact with the different components of a computer on a daily basis. Students said their knowledge of the relevant hardware to build computers could be improved when the information gained from relevant sites can be applied in practical sessions.

Little information, incomplete components, old versions of MCSE and lack of practical exposure and on-line training on the hardware aspects can have a negative effect on users improving their knowledge to build computers. When users are provided only with the theory on how to build computers, they may find it difficult to get a better picture of how the various components can be brought together to

form a single computer. Coordinators mentioned that lack of skilled and qualified staff to install and manage the relevant hardware might result in users tempering and corrupting the system.

- **Benefit 3: Improved knowledge and use of computers/ software packages**

Students mentioned that information that provides users with an understanding of the different types of software packages available could improve their knowledge of understanding which packages need to be used in which situations. Similarly important will be to gain more clarity on when and how to use them. They mentioned that practical sessions would help them to gain more confidence in using these software packages. The coordinators mentioned that the availability of up-to-date software packages can help to improve users' knowledge.

While some coordinators were concerned that the lack of skilled and qualified staff to install and manage software packages might result in users tempering and corrupting the system, students stated that the system may be corrupted when users do not have enough information on the types of software packages required to be used. Failure to upgrade software packages, unavailability of latest software applications and lack of exposure to practical sessions can have a negative effect on users improving their knowledge on understanding of when and how to use particular software packages.

- **Benefit 4: Access to information (via the internet, CD Roms, etc.)**

The coordinators stated that to ensure that there is access to information, the objectives of the DoC-WILs project should be to involve historically disadvantaged

students from the locality of the institutions. Appropriate resources should be provided to ensure that all equipment, including Internet access, is functioning properly. However, students said students can have access to information if more computers are provided to ensure that every student gets an opportunity to use the Internet.

Both coordinators and students stated that users may find it difficult to have access to information via the internet when the venues where the DoC-WILs are located are too small and overcrowded to can accommodate them. This means that only a few users will have an opportunity to use the internet while the majority will have limited access and time to do their work. Some coordinators mentioned that access to information may not be realised when the time available to use the Internet is limited to certain periods and days. Most students were concerned that they may not have access to information if there is a lack of knowledge and skills repair the local router when it goes off.

- **Benefit 5: New ways of learning through the internet**

Coordinators said new ways of learning of learning can be brought about when students are allowed to use the computer as an information and communication tool. They will, in this way, be able to work independently even if the coordinators are absent. On the other hand students mentioned that new ways of learning could be brought about by allowing them to seek, discover and explore various sites on their own. Others mentioned that their creativity would be revealed as they would not have to wait for trainers to direct what they have to do.

Both coordinators and students agreed that new ways of learning could not be achieved when students are not allowed to work independent of trainers, discover issues and sites on their own and wait for the trainers to direct their work.

- **Benefit 6: Entertainment**

Both coordinators and students said as a form of leisure and entertainment, students could use web sites on music, sport and games. Students could use these sites to relax and refresh their minds when not studying. However, while students said frequent access to entertainment sites could distract students' core functions and study, coordinators said failure to monitor entertainment sites could lead to less productivity.

- **Benefit 7: Communication/ with international community**

Students regarded communication, particularly with the international community as one of the most important benefit of the DoC-WILs course. They sad to be able to communicate with the international community, computers should be made available to allow all students access to send and receive e-mails and chat on-line. This will help them to share and exchange ideas and experiences with other people. Both coordinators and students mentioned that these computers need to be properly maintained to ensure that Internet access is functioning properly. However, it might be difficult to communicate with other people, when computers are not functioning properly or are not maintained.

2.4 If you could change anything at the DoC WIL, what would it be?

When asked what, if any, they could change at the DoC WILs, coordinators

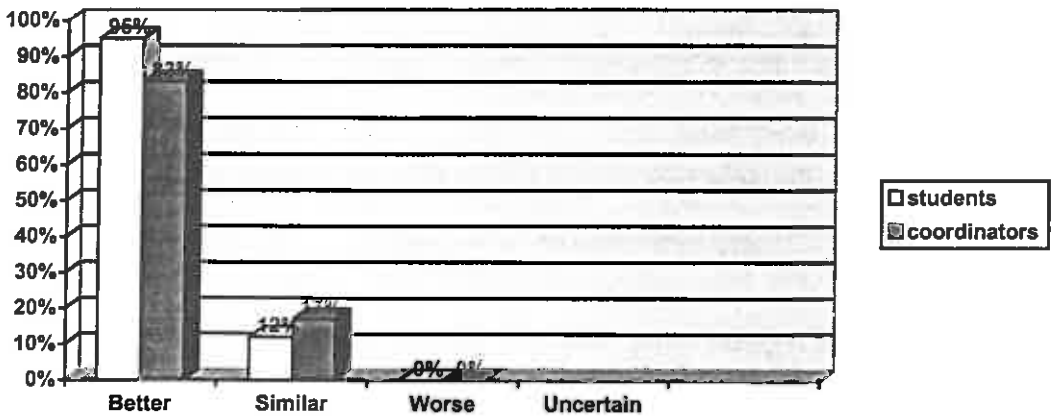
mentioned a number of issues that revolved around more access to students and community, and better support from the Department of Communications. They stated that the Department of Communication should be supportive in providing internet access, more computer facilities, data projector, competent staff, more structure, newer technology, upgrading the operating system to newer ones like Win 2000, installing newer applications and changing the older network components to newer ones.

Students mentioned that they were concerned about the lack of communication between them and co-ordinators and between co-ordinators and the Department of Communications. There have been lack of proper planning, management and follow- ups on projects; and several delays and problems in running the project, including, course material, competent and experienced staff, equipment, internet access. The students further mentioned they would like to see the DoC-WILs project accommodating as many students as possible, using newer technology and providing practical sessions.

The reasons cited for the above changes indicate the problems and obstacles that students and co-ordinators experienced in running the project. They mentioned that too much time and effort was spent to gain experience and knowledge in managing the labs and controlling the workstations and software from the server. Course material and training related costs were often sent late and as such delayed and affected the functioning of the project. A lot of people are deprived of computer facilities more so in some departments and especially Internet and e-mail. Hence, they are left behind in development.

2.5 Do you find that obtaining information through the Internet is better or worse than getting the same information through other communication mediums (television/ radio/newspaper/word of mouth)?

Figure: 2.1

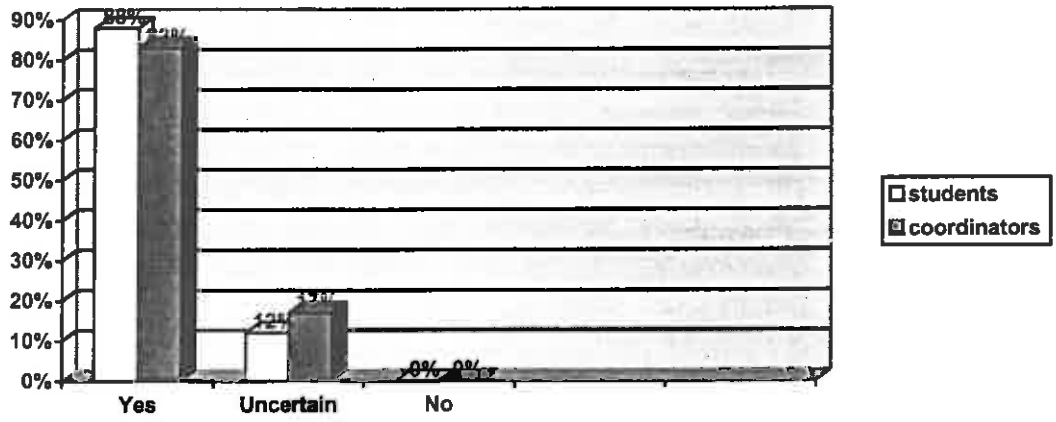


The majority of respondents mentioned that they find that obtaining information through the Internet is better than getting the same information through other communication mediums. Of the 42 respondents who participated in this study, 40 said the Internet provides information that is compact, recent, detailed, reliable, useful, up-to-date and relevant to what users want. This information can be retrieved easily, at any time and at the convenience of the users. Users get varied opinions and views from different sites as quickly as possible. The other two respondents were uncertain to answer this question because they had not used the Internet before.

All co-ordinators said the Internet is fast, interactive, relieves boredom, easy to use and saves time. It provides vast amounts of information that could be useful in a variety of situations such as studies and personal knowledge and growth.

2.6 Do you think the Internet provide educators with new ways of teaching that are different to traditional methods of teaching?

Figure: 2.2



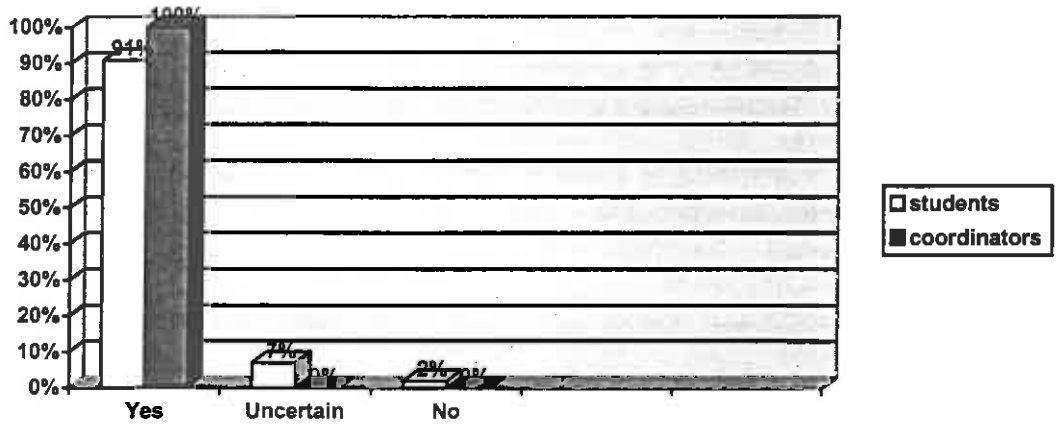
In response to whether they think the Internet provide educators with new ways of teaching that are different to traditional methods of teaching, 83% of co-ordinators mentioned that the interactive distance education and information sharing is possible through the Internet. Students do not have to rely on the co-ordinators for lectures, but can study and discover things on their own. Some co-ordinators mentioned that a variety of resources are available on the Internet that can be implemented in the courses. Only one co-ordinator was uncertain whether the Internet provide educators with new ways of teaching that are different to traditional methods of teaching because he has not been following the trends in the current teaching system.

The majority of students (88%) said the Internet provides educators with new ways of delivering information. They becoming flexible in their teaching, could exchange ideas with colleagues and allow students to explore and discover issues for

themselves in their absence.

2.7 Do you think the Internet provide learners with new ways of learning that are different to traditional methods of learning?

Figure: 2.3

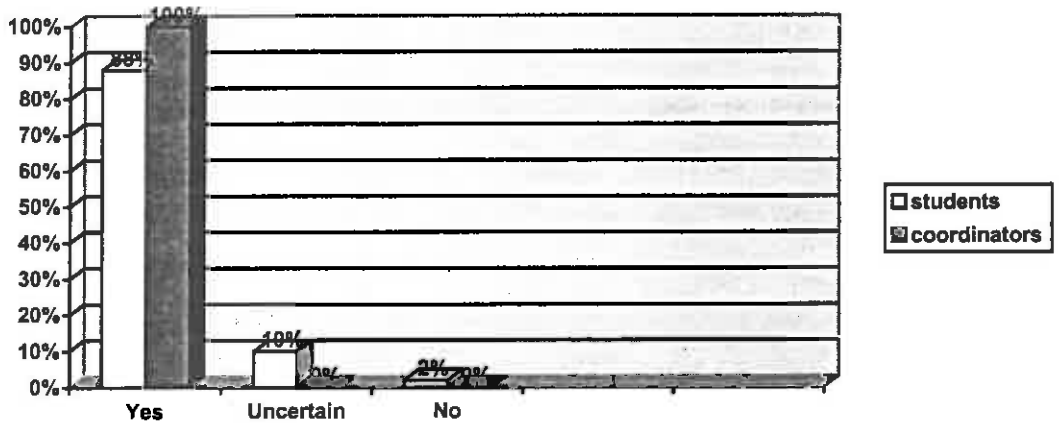


In response to whether the Internet provides learners with new ways of learning that are different to traditional methods of learning, 90% of students in this study mentioned that the Internet allows learners to do independent work at their own time, pace, freedom and convenience. They acquire skills to search and select the most important, useful and relevant information in a much easier and quicker way. They could also share this information with other students in different locations.

All coordinators stated that the Internet provides learners with new ways of learning that are different to traditional methods of learning. The Internet allows for interactivity, sharing of ideas, self-discovery and self-learning. They could access a variety of information related to their studies at their own pace and time independent of their lecturers.

2.8 Do you think the Internet would change the way students interact with information?

Figure: 2.4

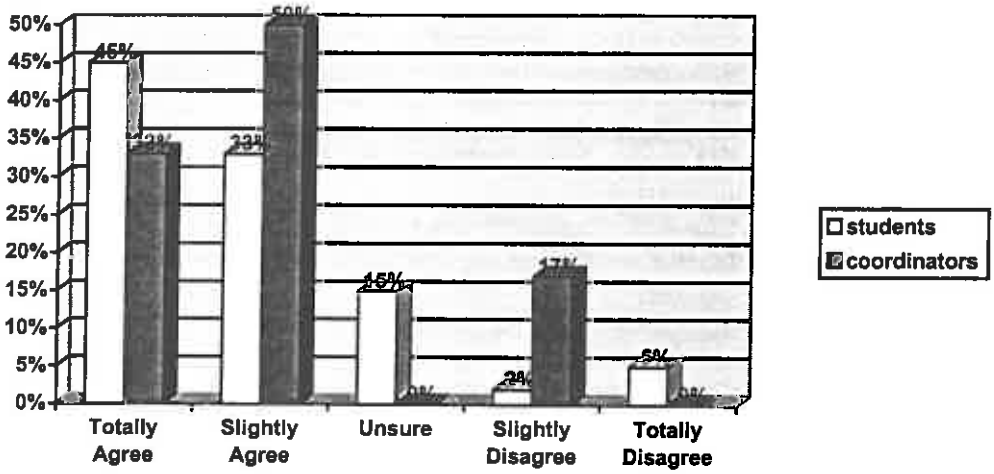


When asked whether they think the Internet would change the way students interact with information, 88% of students stated that many students would acquire the skill to select information they regard as recent and useful from a variety of information provided. They would become more independent, knowledgeable and would study at their own time and pace because all the information they need is readily available from the Internet.

All co-ordinators said the students would be able to select the most up-to-date and relevant information for use in their studies. They would be able to be more self-reliant and share information with other students to get different opinions.

2.9 Learning through the use of ICTs has significant advantages over traditional teaching methods

Figure: 2.5



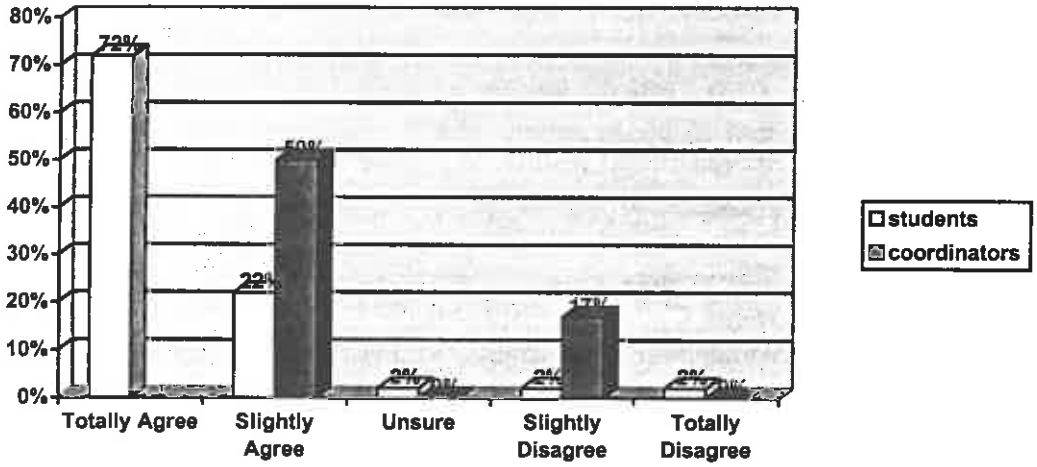
In response to whether learning through the use of information and communication technologies has significant advantages over traditional teaching methods, 78% of students mentioned that they agreed with the statement. They stated that new technologies eliminate the space-time dependence between the teacher, the content and the student because they do not always depend on their teachers for assignments and projects. They are able to work on their own; and search and retrieve information related to their studies, hobbies and interests in a fast and easy way. Fifteen percent were unsure about this statement. They mentioned that although information and communication technologies allow students to be independent, the teacher is still important to give guidance, particularly in the initial stages of training. These reasons were shared by the 7% who emphasised the role of teacher as being important in facilitating learning.

With regard to co-ordinators, 88% agreed that learning through the use of ICTs has significant advantages over traditional teaching methods. Among the reasons cited,

the following stand out: first was that ICTs allows users to access a variety of information at their own convenience and place, second was that ICTs equip users with skills to discover and explore issues on their own. Lastly was that users can communicate and share ideas with others, nationally and internationally. The 17% who slightly disagreed with this statement mentioned that the traditional teaching methods have advantages over ICTs because they allow for face-to-face interaction between teacher and student.

2.10 Training in Internet use will enhance the employability of students

Figure: 2.6



The majority of students (94%) agreed that training in Internet use would enhance the employability of students. They stated that most companies and jobs available in the market require employees with computer and technological background. They argued that currently, most graduates with social science background find it difficult to get employment mainly because of the irrelevance of the curriculum to the modern economy of the country. The other students who disagreed, mentioned that although training in the IT field would enhance the employability of students

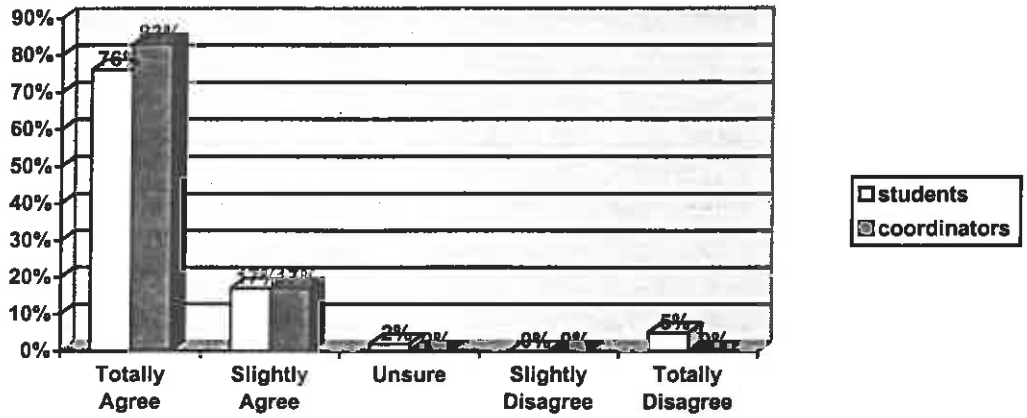
with background in this field, other fields of study should be seen as being important to the development of the country's economy.

More than 80% of co-ordinators shared the same views as those of students. They mentioned that training in Internet use would enhance the employability of students mainly because employers need people who are computer literate.

When asked what can be done at the DoC-WILs to enhance the employability of students, both co-ordinators and students were of the opinion that more practical hands- on- skills training should be provided. Furthermore, students should be allowed to undergo internship at various companies so as to gain more practical experience. What was also seen as important was that the department of Communication should put in place strategies to market students to companies after completion of their training.

2.11 Access to the Internet will equip students with the skill to acquire information and knowledge for themselves

Figure: 2.7

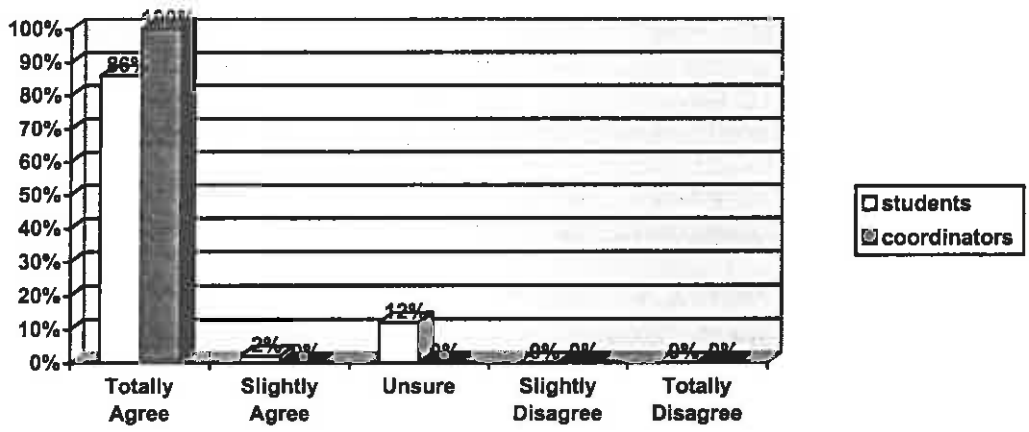


The majority of students (93%) were of the opinion that the Internet would equip students with the skills to acquire information and knowledge for themselves. They argued that using the Internet would help them learn new things, access a variety of information; and choose important, relevant and useful information related to their studies and interests. Those who were unsure stated that the Internet is not the only medium that could equip students with the skills to acquire information and knowledge for themselves because, they argued, that books could do the same. The 5% that disagreed emphasised the motivation and training that students should have to be able to develop the necessary skills. All co-ordinators felt that the Internet would equip students with the skills to acquire information and knowledge for themselves because the information available on the Internet could help students for both recreational and educational purposes.

Both students and co-ordinators were of the opinion that effective computer literacy training would ensure that students develop skill to acquire information and knowledge for themselves.

2.12 Effective teaching and learning involves stimulating a learner's natural curiosity

Figure: 2.8

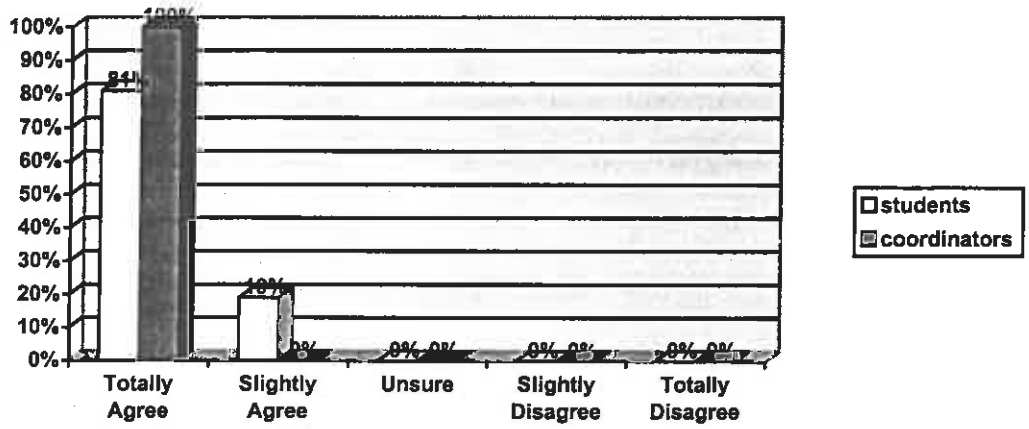


Up to 88% of students agreed that effective teaching and learning involves stimulating a learner's natural curiosity. These students stated that effective teaching and learning makes learners to want to do more than what is expected by teachers, motivates learners to work independent of teachers and challenges learners to explore things they have never been exposed to before. The 12% who were unsure about the above statement, regarded the teacher as being important in helping learners realise that they have the potential to use their natural curiosity to cope with everyday issues. All co-ordinators agreed that effective teaching and learning involves stimulating a learner's natural curiosity because it becomes easy for learners to remember things they initiated.

When asked what can be done at the DoC-WILs to stimulate learners' natural curiosity, the majority of students mentioned that they need to be exposed to practical sessions that allow them to do more work on their own. Some students

said they should be allowed to build their own computer systems and design web pages. Others said more computers are needed to allow all students a chance to explore and discover the various issues and sites on the internet. On the other hand, co-ordinators mentioned that enough resources should be provided to encourage and help students experiment with the technology. Other co-ordinators were of the opinion that although students should be allowed to explore and experiment, they still need to be guided on what and how to experiment.

Figure: 2.9



All students and co-ordinators felt that effective teaching involves the freedom of the learner to develop skills and knowledge through discovery. Students mentioned that effective teaching allows students to learn things that were unknown to them, to explore issues on their own, realise their potential in doing things on their own and remember things they discovered themselves. Other students stated that effective teaching allows students to be confident, motivated and study and learn at their own pace and convenience. Although all co-ordinators agreed that effective teaching involves freedom of the learner to develop skills and knowledge through discovery, others maintained that students need the guidance of teachers to be able to understand what was learned.

In response to what can be done at the DoC-WILs to allow students to develop skills and knowledge through discovery, both students and co-ordinators stated that more computers should be provided to allow all students to have a chance to explore and discover issues previously unknown to them.

3 Conclusion

This chapter contains a summary of the conclusions drawn with regard to responses elicited from learners and coordinators.

With regard to the usage of the DoC-WILs, both learners and coordinators shared the same views that the DoC-WILs have been used for a variety of activities e.g. training in computer literacy, Microsoft packages, technical aspects of computing, A+ techniques, data base and Web Site designing, computer networking, Microsoft Certified Systems Engineering (MCSE) and project management. The Internet was seen by both learners and co-ordinators to have formed an integral part of all the above activities.

When asked what changes, if any, could result in a more beneficial WWW usage patterns, co-ordinators mentioned a number of problems that make it difficult for the DoC-WILS to function as expected. They stated problems relating to unskilled and unqualified staff, lack of training, viruses and users corrupting the installed software. It was therefore suggested that resources and documentation regarding all aspects, strategic as well as operational, should be provided in the initial stages of the project. Students mentioned that they experience problems in using the WWW because the rooms used as DoC-WILs are small and as such are constantly overcrowded with students trying to get a chance to use the WWW. As both coordonators and students were concerned about the functiong of the DoC-Wils, they raised some suggestions. Co-ordinators suggested more computer facilities and a greater bandwidth, incorporation of websites with specific subject matter into the course content and assigning times in the day when only staff can access the

Internet lab. As most students feel that they are denied an opportunity to use the internet, they suggested that more computers, and fast modems are need to ensure that the project realises its objectives. In addition, more qualified and skilled personnel need to be appointed and trained to present the course content in such a way that students are equipped with skills that would add value to their qualifications. Providing more practical work and course content related web sites can do this. At the completion of the course, student need to be literate in both hardware and software packages.

Although coordinators were more on the teaching side while students were more on to the learning side, with regard to the circumstances that could have either a positive or negative effect on benefits, the majority of co-ordinators and students mentioned that increased computer literacy can be realised when both theory and practice form part of the course content offered in order to gain a better understanding on a variety of issues pertaining to the entire information and communication industry and how a computer can be used as an information and communication tool.

While students mentioned the need for a lab with computers that students can utilise to build computers using the relevant hardware, coordinators were concerned about the availability of up-to-date software packages..

While some coordinators were concerned that the lack of skilled and qualified staff to install and manage software packages might result in users tempering and corrupting the system, students stated that the system may be corrupted when

users do not have enough information on the types of software packages required to be used. Failure to upgrade software packages, unavailability of latest software applications and lack of exposure to practical sessions can have a negative effect on users improving their knowledge on understanding of when and how to use particular software packages.

With regard to circumstances that could have negative effects on benefits, both coordinators and students mentioned that users may find it difficult to use computers when the venues where the DoC-WILs are located are too small and overcrowded to can accommodate them. This means that only a few users will have an opportunity to use the internet while the majority will have limited access and time to do their work. While other coordinators mentioned that increased basic computer literacy may not be realised when a lengthier time period is spent on gaining experience and knowledge in managing the DOC-WILS and controlling the workstations and software, students said accessing sites that are not related studies may have a negative on users increasing their knowledge of computers.

Little information, incomplete components, old versions of MCSE and lack of practical exposure and on-line training on the hardware aspects can have a negative effect on users improving their knowledge to build computers. When users are provided only with the theory on how to build computers, they may find it difficult to get a better picture of how the various components can be brought together to form a single computer. Coordinators mentioned that lack of skilled and qualified staff to install and manage the relevant hardware might result in users tempering and corrupting the system.

The Internet was seen by both coordinators and learners to provide new ways of teaching and learning that are different to traditional methods of teaching. While cordinators mentioned that the interactive distance education and information sharing is possible through the Internet because students do not have to rely on the co-ordinators for lectures, but can study and discover things on their own, students said the Internet provides educators with new ways of delivering information. They becoming flexible in their teaching, could exchange ideas with colleagues and allow students to explore and discover issues for themselves in their absence.

Both students and coordinators agree that ICTs allows users to access a variety of information at their own convenience and place; equip them with skills to discover and explore issues on their own, enhance their employability and allow them to communicate and share ideas with others, nationally and internationally.

APPENDIX A

RESPONSES TO QUESTIONS: FREQUENCIES

INSTIT	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	10	23.8	10	23.8
2	20	47.6	30	71.4
3	12	28.6	42	100.0

GENDER	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	28	66.7	28	66.7
2	14	33.3	42	100.0

AGE	Frequency	Percent	Cumulative Frequency	Cumulative Percent
18	1	2.4	1	2.4
19	1	2.4	2	4.8
20	2	4.8	4	9.5
21	3	7.1	7	16.7
22	4	9.5	11	26.2
23	3	7.1	14	33.3
24	5	11.9	19	45.2
25	2	4.8	21	50.0
26	6	14.3	27	64.3
27	6	14.3	33	78.6
28	1	2.4	34	81.0
29	2	4.8	36	85.7
30	4	9.5	40	95.2
31	1	2.4	41	97.6
36	1	2.4	42	100.0

HLANG	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	6	14.3	6	14.3
2	2	4.8	8	19.0
3	6	14.3	14	33.3
4	9	21.4	23	54.8
5	7	16.7	30	71.4
6	2	4.8	32	76.2
7	2	4.8	34	81.0
8	3	7.1	37	88.1
9	5	11.9	42	100.0

OFTEN1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	4	9.5	4	9.5
2	5	11.9	9	21.4
4	10	23.8	19	45.2
5	23	54.8	42	100.0

OFTEN2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	2	4.8	2	4.8
2	4	9.5	6	14.3
3	3	7.1	9	21.4
4	10	23.8	19	45.2
5	23	54.8	42	100.0

OFTEN3	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	2	4.8	2	4.8
2	3	7.1	5	11.9
4	9	21.4	14	33.3
5	28	66.7	42	100.0

OFTEN4	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	3	7.1	3	7.1
2	6	14.3	9	21.4
3	10	23.8	19	45.2
4	15	35.7	34	81.0
5	8	19.0	42	100.0

BENEFIT1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	32	76.2	32	76.2
2	3	7.1	35	83.3
3	7	16.7	42	100.0

SUCCESS1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	17	40.5	17	40.5
2	14	33.3	31	73.8
3	4	9.5	35	83.3
5	7	16.7	42	100.0

BENEFIT2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	42	100.0	42	100.0

SUCCESS2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	12	28.6	12	28.6
2	14	33.3	26	61.9
3	5	11.9	31	73.8
4	5	11.9	36	85.7
5	6	14.3	42	100.0

BENEFIT3	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	42	100.0	42	100.0

SUCCESS3	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	15	35.7	15	35.7
2	17	40.5	32	76.2
3	6	14.3	38	90.5
5	4	9.5	42	100.0

BENEFIT4	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	42	100.0	42	100.0

SUCCESS4	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	23	54.8	23	54.8
2	12	28.6	35	83.3
4	1	2.4	36	85.7
5	6	14.3	42	100.0

BENEFIT5	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	42	100.0	42	100.0

SUCCESS5	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	14	33.3	14	33.3
2	17	40.5	31	73.8
3	2	4.8	33	78.6
4	2	4.8	35	83.3
5	7	16.7	42	100.0

BENEFIT6	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	42	100.0	42	100.0

SUCCESS6	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	22	52.4	22	52.4
2	9	21.4	31	73.8
3	6	14.3	37	88.1
5	5	11.9	42	100.0

BENEFIT7	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	42	100.0	42	100.0

SUCCESS7	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	18	42.9	18	42.9
2	8	19.0	26	61.9
3	8	19.0	34	81.0
5	8	19.0	42	100.0

Q7	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	40	95.2	40	95.2
4	2	4.8	42	100.0

Q8	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	37	88.1	37	88.1
2	5	11.9	42	100.0

Q9	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	38	90.5	38	90.5
2	3	7.1	41	97.6
3	1	2.4	42	100.0

Q10	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	37	88.1	37	88.1
2	4	9.5	41	97.6
3	1	2.4	42	100.0

Q11	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	19	45.2	19	45.2
2	14	33.3	33	78.6
3	6	14.3	39	92.9
4	1	2.4	40	95.2
5	2	4.8	42	100.0

Q12	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	22	52.4	22	52.4
2	10	23.8	32	76.2
3	5	11.9	37	88.1
4	4	9.5	41	97.6
5	1	2.4	42	100.0

Q13	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	40	95.2	40	95.2
2	1	2.4	41	97.6
5	1	2.4	42	100.0

Q14	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	30	71.4	30	71.4
2	9	21.4	39	92.9
3	1	2.4	40	95.2
4	1	2.4	41	97.6
5	1	2.4	42	100.0

Q15	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	28	66.7	28	66.7
2	10	23.8	38	90.5
3	2	4.8	40	95.2
4	1	2.4	41	97.6
5	1	2.4	42	100.0

Q16	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	27	64.3	27	64.3
2	9	21.4	36	85.7
3	4	9.5	40	95.2
4	1	2.4	41	97.6
5	1	2.4	42	100.0

Q17	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	32	76.2	32	76.2
2	7	16.7	39	92.9
3	1	2.4	40	95.2
5	2	4.8	42	100.0

Q18	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	36	85.7	36	85.7
2	1	2.4	37	88.1
3	5	11.9	42	100.0

Q19	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	34	81.0	34	81.0
2	8	19.0	42	100.0

HUMAN SCIENCES RESEARCH COUNCIL

Economic and Social Analysis

ICT BENEFITS QUESTIONNAIRE: 2000 – TELE-EDUCATION (DoC-WILS) (STUDENT)

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Card number			
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It is generally accepted that the world is currently undergoing a historic period of transformation to a so-called "information society" in which information and communication technologies (ICTs) play an increasingly prominent role in education, the economy, and in everyday affairs. The Human Sciences Research Council (HSRC) is currently busy with a research project that is aimed at finding out how South Africa can benefit most from this emerging information society. By answering the questions in this questionnaire, you will be participating in this project.

In many parts of the world, it has been found that ICTs have the potential of fostering a new interactive learning culture in societies, as opposed to the teaching-orientated culture that has been prevalent in most of our educational insitutions in the past. In this way ICTs are said to be contributing to an "interactive learning revolution". In South Africa there have been a number of nation-wide initiatives aimed at transforming the country into a knowledge-based society" through the use of ICTs. This questionnaire forms part of the HSRC project, and focuses on one such ICT initiative by the Department of Communication (DoC): the "DoC-WIL" (Web Internet Laboratory) project at tertiary institutions.

The aim of this part of the research is to determine under what conditions this ICT-ted educational initiative can best contribute to the creation of a learning culture that is characterised by spontaneous and curiosity-driven learning and understanding.

Thank you for participating. Please remember that your name will not appear anywhere on the questionnaire and all information provided by you will be regarded as confidential.

The Department of Communication's Web Internet Laboratories (DOC-WILs) at tertiary educational institutions:

Learning and other benefits for students, and teachers/staff

1 **Background information needed regarding each institution**

a. **Name of institution:**.....

b.**Type of institution:College/technikon/university**.....

c. **Nearest city/town:**.....

d. **Gender: Male**..... **Female**.....

e. **What is your age:**.....

f. **What is your home language**.....

2. General usage of DoC- WIL

a. For what activities, programmes or courses has this DoC WILL been used?

.....

.....

.....

b. In what way(s) has the Internet - or other forms of Information and Communication Technologies (ICTs)– formed part of these activities?

.....

.....

.....

3. Internet Usage Patterns

3a. How often do you use each of the following

E-mail	Never	Seldom	Uncertain	Often	Very Often
Web surfing	Never	Seldom	Uncertain	Often	Very Often
Searching for nformation	Never	Seldom	Uncertain	Often	Very Often
Other	Never	Seldom	Uncertain	Often	Very Often

3b. What are the typical student WWW usage patterns here at the DoC WIL? (e.g. types of topics/pages accessed)

.....

.....

.....

For what purposes do students use the WWW for?

.....

.....

.....

Can you think of any changes that, if made, would result in a more beneficial student WWW usage patterns?

.....

.....

.....

3c. How is e-mail used in combination with the WWW?

.....

.....

3d. Any use of other ICTs in combination with or in support of the WWW?

.....

.....

4. Which of the following benefits does this institution hope to obtain by means of the DoC-WIL?

(a). Educational benefits

Benefit 1:Increased basic computer literacy

Yes	Maybe/Uncertain	No

If yes how successful have you been in achieving this benefit

Very Successful	Slightly Successful	Unsure	Slightly Unsuccessful	Very Unsuccessful
1	2	3	4	5

Benefit 2: Improved knowledge and use of computers/relevant hardware (e.g. how to build computers, PC maintenance and repair, etc

Yes	Maybe/Uncertain	No

If yes how successful have you been in achieving this benefit

Very Successful	Slightly Successful	Unsure	Slightly Unsuccessful	Very Unsuccessful
1	2	3	4	5

Benefit 3: Improved knowledge and use of computers/ software packages

Yes	Maybe/Uncertain	No

If yes how successful have you been in achieving this benefit

Very Successful	Slightly Successful	Unsure	Slightly Unsuccessful	Very Unsuccessful
1	2	3	4	5

Benefit 4: Access to information (via the internet, CD ROMS, etc.)

Yes	Maybe/Uncertain	No

If yes how successful have you been in achieving this benefit

Very Successful	Slightly Successful	Unsure	Slightly Unsuccessful	Very Unsuccessful
1	2	3	4	5

Benefit 5: New ways of learning through the internet

Yes	Maybe/Uncertain	No

If yes how successful have you been in achieving this benefit

Very Successful	Slightly Successful	Unsure	Slightly Unsuccessful	Very Unsuccessful
1	2	3	4	5

b. Other non-educational benefits such as

Benefit 6: Entertainment

Yes	Maybe/Uncertain	No

If yes how successful have you been in achieving this benefit

Very Successful	Slightly Successful	Unsure	Slightly Unsuccessful	Very Unsuccessful
1	2	3	4	5

Benefit 7: Communication/ with international community

Yes	Maybe/Uncertain	No

If yes how successful have you been in achieving this benefit

Very Successful	Slightly Successful	Unsure	Slightly Unsuccessful	Very Unsuccessful
1	2	3	4	5

Benefit 8: Others such as:

.....

.....

5. What circumstances (e.g. existing local conditions, policies, or processes) that apply to the DoC-WIL or users of the DoC- WIL do you think are able to have a positive or negative effect on each benefit mentioned?

(a).: Benefit 1:Increased basic computer litercary

Positive effect:

.....

.....

Negative effect:

.....

.....

Benefit 2: Improved knowledge of computers/relevant hardware to build computers

Positive effect:

.....

.....

Negative effect:

.....

.....

Benefit 3: Improved knowledge and use of computers/ software packages

Positive effect:

.....

.....

Negative effect:

.....

.....

Benefit 4: Access to information (via the internet, CD Roms, etc.)

Positive effect:

.....

.....

Negative effect:

.....

.....

Benefit 5: New ways of learning through the internet

Positive effect:

.....

.....

Negative effect:

.....

.....

Benefit 6: Entertainment

Positive effect:

.....

.....

Negative effect:

.....

.....

Benefit 7: Communication/ with international community

Positive effect:

.....

.....

Negative effect:

.....

.....

Benefit 8: Other benefits

Positive effect:

.....

.....

Negative effect:

.....

.....

6. If you could change anything at the DoC WIL, what would it be?

.....

.....

.....

Please give reasons for your answer?

.....

.....

.....

7. Do you find that obtaining information through the Internet better or worse than getting the same information through other communication mediums (television/ radio/newspaper/word of mouth)?

Better	
Similar	
Worse	
Uncertain/do not know	

Please give reasons for your answer?

.....

.....

.....

8. Do you think the Internet provide educators with new ways of teaching that are different to traditional methods of teaching?

Yes	
Uncertain/Do not know	
No	

Please give reasons for your answer

.....

.....

.....

9. Do you think the Internet provides learners /students with new ways of learning that are different to traditional methods of learning?

Yes	
Uncertain/Do not know	
No	

Please give reasons for your answer

.....

.....

.....

10. Do you think the Internet would change the way students interact with information

Yes	
Uncertain /Do not know	
No	

Please give reasons for your answer

.....

.....

.....

To what extent do you agree or disagree with the following statements

11. Learning through the use of ICTs has significant advantages over traditional teaching methods

1	2	3	4	5
Totally Agree	Slightly Agree	Unsure	Slightly Disagree	Totally Disagree

Please give reasons for your answer

.....

.....

.....

12. Effective teaching and learning involves the transference of ideas from teacher to student

1	2	3	4	5
Totally Agree	Slightly Agree	Unsure	Slightly Disagree	Totally Disagree

Please give reasons for your answer

.....

.....

.....

13. Training in the use of the Internet will make students more capable of functioning well in a modern economy.

1	2	3	4	5
Totally Agree	Slightly Agree	Unsure	Slightly Disagree	Totally Disagree

Please give reasons for your answer

.....

.....

.....

What can be done here at the DoC-WIL to make students more capable of functioning well in a modern economy?

.....

.....

14. Training in Internet use will enhance the employability of students

1	2	3	4	5
Totally Agree	Slightly Agree	Unsure	Slightly Disagree	Totally Disagree

Please give reasons for your answer

.....

.....

.....

What can be done here at the DoC-WIL to enhance the employability of students?

.....

.....

15. Training in Internet use will equip students with skills that would add value to their qualifications.

1	2	3	4	5
Totally Agree	Slightly Agree	Unsure	Slightly Disagree	Totally Disagree

Please give reasons for your answer

.....

.....

.....

What can be done here at the DoC-WIL to better equip students with skills that would add value to their qualifications?

.....

.....

16. Internet training will diversify career opportunities for graduates.

1	2	3	4	5
Totally Agree	Slightly Agree	Unsure	Slightly Disagree	Totally Disagree

Please give reasons for your answer

.....

.....

.....

What can be done here at the DoC-WIL to diversify career opportunities more for students?

.....

.....

17. Access to the Internet will equip students with the skill to acquire information and knowledge for themselves.

1	2	3	4	5
Totally Agree	Slightly Agree	Unsure	Slightly Disagree	Totally Agree

Please give reasons for your answer

.....

.....

.....

What can be done here at the DoC-WIL to better equip students with the skill to acquire information and knowledge for themselves?

.....

.....

18. Effective teaching and learning involves stimulating a learner's natural curiosity.

1	2	3	4	5
Totally Agree	Slightly Agree	Unsure	Slightly Disagree	Totally Disagree

Please give reasons for your answer

.....

.....

.....

What can be done here at the DoC-WIL to stimulating the students' natural curiosity more?

.....

.....

.....

19. Effective teaching involves the freedom of the learner to develop skills and knowledge through discovery.

1	2	3	4	5
Totally Agree	Slightly Agree	Unsure	Slightly Disagree	Totally Disagree

Please give reasons for your answer

.....

.....

.....

What can be done here at the DoC –WIL to allow students to develop more skills and knowledge through discovery?

.....

.....

.....

THANK YOU FOR YOUR COOPERATION

HUMAN SCIENCES RESEARCH COUNCIL

Economic and Social Analysis

ICT BENEFITS QUESTIONNAIRE: 2000 – TELE-EDUCATION (DoC-WILS) (COORDINATOR)

For office use only

Card number			
Record number			

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The aim of this part of the research is to determine under what conditions this ICT-related educational initiative can best contribute to the creation of a learning culture that is characterised by spontaneous and curiosity-driven learning and understanding.

Thank you for participating. Please remember that your name will not appear anywhere on the questionnaire and all information provided by you will be regarded as confidential.

The Department of Communication's Web Internet Laboratories (DOC-WILs) at tertiary educational institutions:

Learning and other benefits for students, and teachers/staff

1 Background information needed regarding each institution

a. **Name of institution:**.....

b. **Type of institution:College/technikon/university**.....

c. **Nearest city/town:**.....

d. **Gender: Male**..... **Female**.....

e. **What is your age:**.....

f. **Size of the institution**
Number of students: Overall.....Using DoC-WIL:.....
Number of teachers/lecturers .....At DoC-WIL.....
Number of technical staff.....At DoC-WIL.....

2. General usage of DoC-WIL

a. For what activities, programmes or courses has this DoC WILL been used?

.....

.....

.....

b. In what way(s) has the Internet - or other forms of Information and Communication Technologies (ICTs)– formed part of these activities?

.....

.....

.....

3. **Internet Usage Patterns**

3a. How often do you use each of the following

E-mail	Never	Seldom	Uncertain	Often	Very Often
Web surfing	Never	Seldom	Uncertain	Often	Very Often
Searching for information	Never	Seldom	Uncertain	Often	Very Often
Other	Never	Seldom	Uncertain	Often	Very Often

3b. What are the typical student WWW usage patterns here at the DoC WIL? (e.g. types of topics/pages accessed)

.....

.....

.....

For what purposes do students use the WWW for?

.....

.....

.....

Can you think of any changes that, if made, would result in a more beneficial student WWW usage patterns?

.....

.....

.....

3c. What are the typical teachers/staff WWW usage pattern here at the DoC WIL? (e.g. types of topics/pages accessed)

.....

.....

.....

For what purposes do teachers/staff use the WWW for?

.....

.....

.....

Can you think of any changes that, if made, would result in a more beneficial teacher/staff WWW usage patterns?

.....

.....

.....

3d. How is e-mail used in combination with the WWW?

.....

.....

3e. Any use of other ICTs in combination with or in support of the WWW?

.....

.....

4. Which of the following benefits does this institution hope to obtain by means of the DoC-WIL?

(a). Educational benefits

Benefit 1:Increased basic computer literacy

Yes	Maybe/Uncertain	No

If yes how successful have you been in achieving this benefit

Very Successful	Slightly Successful	Unsure	Slightly Unsuccessful	Very Unsuccessful
1	2	3	4	5

Benefit 2: Improved knowledge and use of computers/relevant hardware (e.g. how to build computers, PC maintenance and repair, etc

Yes	Maybe/Uncertain	No

If yes how successful have you been in achieving this benefit

Very Successful	Slightly Successful	Unsure	Slightly Unsuccessful	Very Unsuccessful
1	2	3	4	5

Benefit 3: Improved knowledge and use of computers/ software packages

Yes	Maybe/Uncertain	No

If yes how successful have you been in achieving this benefit

Very Successful	Slightly Successful	Unsure	Slightly Unsuccessful	Very Unsuccessful
1	2	3	4	5

Benefit 4: Access to information (via the internet, CD ROMS, etc.)

Yes	Maybe/Uncertain	No

If yes how successful have you been in achieving this benefit

Very Successful	Slightly Successful	Unsure	Slightly Unsuccessful	Very Unsuccessful
1	2	3	4	5

Benefit 5: New ways of learning through the internet

Yes	Maybe/Uncertain	No

If yes how successful have you been in achieving this benefit

Very Successful	Slightly Successful	Unsure	Slightly Unsuccessful	Very Unsuccessful
1	2	3	4	5

b. Other non-educational benefits such as

Benefit 6: Entertainment

Yes	Maybe/Uncertain	No

If yes how successful have you been in achieving this benefit

Very Successful	Slightly Successful	Unsure	Slightly Unsuccessful	Very Unsuccessful
1	2	3	4	5

Benefit 7: Communication/ with international community

Yes	Maybe/Uncertain	No

If yes how successful have you been in achieving this benefit

Very Successful	Slightly Successful	Unsure	Slightly Unsuccessful	Very Unsuccessful
1	2	3	4	5

Benefit 8: Others such as:

.....

.....

5. What circumstances (e.g. existing local conditions, policies, or processes) that apply to the DoC-WIL or users of the DoC- WIL do you think are able to have a positive or negative effect on each benefit mentioned?

(a). Circumstances that could have a positive or negative effect on benefits via the use of the Internet.:

Benefit 1:Increased basic computer litercary

Positive effect:

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Negative effect:

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Benefit 2: Improved knowledge of computers/relevant hardware to build computers

Positive effect:

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Negative effect:

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.....

Benefit 3: Improved knowledge and use of computers/ software packages

Positive effect:

.....

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Negative effect:

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.....

Benefit 4: Access to information

Positive effect:

.....

.....

Negative effect:

.....

.....

Benefit 5: New ways of learning

Positive effect:

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Negative effect:

.....

.....

Benefit 6: Entertainment

Positive effect:

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Negative effect:

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Benefit 7: Communication/ with international community

Positive effect:

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Negative effect:

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Benefit 8: Other benefits

Positive effect:

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.....

Negative effect:

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6. If you could change anything at the DoC WIL, what would it be?

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Please give reasons for your answer?

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7. Do you find that obtaining information through the Internet better or worse than getting the same information through other communication mediums (television/ radio/newspaper/word of mouth)?

Better	
Similar	
Worse	
Uncertain/do not know	

Please give reasons for your answer?

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8. Do you think the Internet provide educators with new ways of teaching that are different to traditional methods of teaching?

Yes	
Uncertain/Do not know	
No	

Please give reasons for your answer

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.....

9. Do you think the Internet provides learners /students with new ways of learning that are different to traditional methods of learning?

Yes	
Uncertain/Do not know	
No	

Please give reasons for your answer

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.....

10. Do you think the Internet would change the way students interact with information

Yes	
Uncertain /Do not know	
No	

Please give reasons for your answer

.....

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.....

To what extent do you agree or disagree with the following statements

11. Learning through the use of ICTs has significant advantages over traditional teaching methods

1	2	3	4	5
Totally Agree	Slightly Agree	Unsure	Slightly Disagree	Totally Disagree

Please give reasons for your answer

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12. Effective teaching and learning involves the transference of ideas from teacher to student

1	2	3	4	5
Totally Agree	Slightly Agree	Unsure	Slightly Disagree	Totally Disagree

Please give reasons for your answer

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13. Training in the use of the Internet will make students more capable of functioning well in a modern economy.

1	2	3	4	5
Totally Agree	Slightly Agree	Unsure	Slightly Disagree	Totally Disagree

Please give reasons for your answer

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.....

What can be done here at the DoC-WIL to make students more capable of functioning well in a modern economy?

.....

.....

14. Training in Internet use will enhance the employability of students

1	2	3	4	5
Totally Agree	Slightly Agree	Unsure	Slightly Disagree	Totally Disagree

Please give reasons for your answer

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.....

.....

What can be done here at the DoC-WIL to enhance the employability of students?

.....

.....

15. Training in Internet use will equip students with skills that would add value to their qualifications.

1	2	3	4	5
Totally Agree	Slightly Agree	Unsure	Slightly Disagree	Totally Disagree

Please give reasons for your answer

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.....

What can be done here at the DoC-WIL to better equip students with skills that would add value to their qualifications?

.....

.....

16. Internet training will diversify career opportunities for graduates.

1	2	3	4	5
Totally Agree	Slightly Agree	Unsure	Slightly Disagree	Totally Disagree

Please give reasons for your answer

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.....

What can be done here at the DoC-WIL to diversify career opportunities more for students?

.....

.....

17. Access to the Internet will equip students with the skill to acquire information and knowledge for themselves.

1	2	3	4	5
Totally Agree	Slightly Agree	Unsure	Slightly Disagree	Totally Disagree

Please give reasons for your answer

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.....

What can be done here at the DoC-WIL to better equip students with the skill to acquire information and knowledge for themselves?

.....

.....

18. Effective teaching and learning involves stimulating a learner's natural curiosity.

1	2	3	4	5
Totally Agree	Slightly Agree	Unsure	Slightly Disagree	Totally Disagree

Please give reasons for your answer

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What can be done here at the DoC-WIL to stimulating the students' natural curiosity more?

.....

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19. Effective teaching involves the freedom of the learner to develop skills and knowledge through discovery.

1	2	3	4	5
Totally Agree	Slightly Agree	Unsure	Slightly Disagree	Totally Disagree

Please give reasons for your answer

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What can be done here at the DoC –WIL to allow students to develop more skills and knowledge through discovery?

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THANK YOU FOR YOUR COOPERATION