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ICT in Business

E-learning integration in developing countries
with a case study of
the Anton de Kom University of Suriname

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MASTER'S THESIS

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Abstract

E-learning is extensively used in the education system of The Netherlands and is integrated in almost every school, especially in the universities of higher education. E-learning needs to be more visible, needs to be used more widely and the benefits should be made more clearly. Technology is more and more used within the education system which requires developing countries to follow the developed countries. The question arises of how E-learning could be integrated in developing countries? And research is needed of how developing countries can benefit from the integration of E-learning with various E-learning applications and methods.

To assess this question and research the topic further, a comparison between Leiden University and a University of a developing country is made to see what the differences are and how they both can benefit from each other's situation. For this research the Anton de Kom University of Suriname (AdeKUS) is assessed as a case study, because it is located in my hometown. Suriname copes with problems that most developing countries also cope with. For example, the education level of AdeKUS is low and learning is still mostly provided through physical books which are sometimes even outdated. Suriname also copes with a huge geographical disperse, which I believe could be solved with E-learning and a proper E-learning integration. These problems and opportunities are subject in this thesis and are viewed from different perspectives in the research work.

In the first chapter an introduction is given followed by the problem definition and background. The significance of the study alongside the research questions are also described in here. In chapter two a exploratory literature review is conducted on the topic E-learning which assesses the research gap, therefore the objects are incorporated in the interview to see to what extend E-learning is used and what the barrier and benefits are. In chapter three the methodology of this research approach is described starting with the research scope, followed by the background of Leiden University as well as AdeKUS. In chapter four the results of the literature review, interviews and questionnaire are assessed. On of the major finding which was researched regarding the quality perspective is the quality of the current education program where a great deal of information is outdated. By integrating E-learning, universities can reach many more students, and education can be given from one spot. This means that E-learning can also be received from universities abroad.

In chapter five the findings of this research are discussed followed by a conclusion, which is described in chapter six. This research discusses that cultural, geographical and physical obstructions can be removed with the use of E-learning, which can lead to studying anywhere, anyplace and anytime for students. This research also proposes recommends an implementation in chapter seven for setting up an E-learning school in Suriname.

Keywords: E-learning, underdeveloped countries, developing countries, educational technology, E-learning environment, blended learning, distance education, m-learning, higher education, communication technology.

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Acknowledgement

When it was time to find a topic for my thesis research I realized that I wanted to do something with E-learning, mostly because I worked 40 hours full-time while completing this master course. The time it took me to go to Leiden and sit in a classroom, where the lecture was not always that informative, as it was just an explanation from a slideshow, could be much easier. There are so many possibilities I thought, so why is this not already implemented for example a simple slideshow explanation can just easily be presented on Blackboard, and in the classroom we can do other things like discussions. That is where the basic idea started and then I went on vacation to my hometown Suriname where I kept thinking how nice it would be if I could study from here without having to be in Leiden. Also the possibility that all the students would have equal chances for studying as the education from other countries can be brought to Suriname with the use of E-learning. The solution were endless and the idea's kept piling up, ending with an idea to write about E-learning methods and usage in developing countries and how Leiden University can also benefit from these solutions. To narrow the idea down I started with the search for an supervisor ending up at the Centre of Innovation of the Leiden University in the Hague. I had a nice talk there with Leontine van Melle and Tanja de Bie who liked my idea and advised me to write about the E-learning integration in developing countries taking a case study of my hometown Suriname. They were excited to find out what the results would be and how Leiden University could also benefit from this as they were already into E-learning.

After this I met Claudia Buecker, my first supervisor, who helped me structure the idea and guided me till the end alongside Robert Verburg, my second supervisor. Both supported me with great guidance and kept motivating me. Claudia was always encouraging me to look at each topic from different angles which challenged me into thinking different. Both Claudia and Robert gave good advice and were there for me as they pulled me through the last miles. Therefore I would also like to thank them for their patience.

Furthermore I would like to thank everyone as well in the Netherlands as in Suriname who helped me with this research. Especially the people who helped finding interviewees and helped sharing the questionnaire and sending it to their friends and fellow students. I would also like to thank Ish Ramautarsing, Chairman of SSA, who helped me with interviewees from the Netherlands as well as from Suriname and shared the questionnaire on the Facebook page of Surinamese Students Abroad.

Furthermore I would like to thank my father who always believed in me and encouraged me to go beyond my limits. He knew that it wasn't easy to follow a full time master course alongside a full time job and all the other secondary activities, but he always kept believing in me. There were times when it was too much, but then I thought of my father and why I wanted to do this research in the first place. I told myself that it was for a good cause and that I can give a contribution to my own future but also to the students who can't. I believe that every student should have a chance to get an education; this research gave a contribution to that. I'm also grateful to my cousin Roopesh Santokhi who is like a brother to me and always gives me good guidance especially when it comes to my career, future and education. Finally, I want to thank everyone who stood by me and believed that I could achieve great things, they inspire me to set the bar higher.

"Give a bowl of rice to a man and you will feed him for a day.

Teach him how to grow his own rice and you will save his life."

<<___Confucius___>>

Abbreviation

AdeKUS (Anton de Kom University of Suriname)

ICT (Information Communication Technology)

MOOCs (Massive Open Online Courses)

SPOCs (Small Private Online Courses)

CeTIM (Center for Technology and Innovation Management)

IUGG (International Union of Geodesy and Geophysics)

CBS (Central Bureau of Statistics)

LIACS (Leiden Institute of Advanced Computer Science)

LMS (Learning Management Systems)

SMS (short Message Service)

WWW (World Wide Web)

M-learning (Mobile learning)

T-learning (TV-based interactive learning)

U-learning (Ubiquitous learning)

Moodle (Modular Object-Oriented Dynamic Learning Environment)

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1 Introduction

E-learning is currently being used in various ways, sometimes teachers as well as students don't even know that they're making use of E-learning methods. Education has always challenged people to go further and to accept new technology which makes it easier to attend colleges and gain new information and knowledge in a more expeditious way. Education is one of the most important things people care for, so children also can contribute to the society later on. It is unfortunate that education or technology is not accessible worldwide, especially in developing countries where the need for good education is bigger so that people can contribute to the economic growth of these countries. I believe that E-learning can help solve this problem as it enables people to have access to education worldwide. But integrating E-learning successfully comes with various barriers depending on the country's possibilities; for example lack of a good internet connection. Universities in The Netherlands already work a lot with E-learning and still it is not being implemented intensively in the courses. For example: a lecture from distance is as yet in the initial phase.

To say that E-learning will solve this problem is of course not proven; there is research needed. This research must give answer to the question to which extend E-learning is already in use at Universities and to look more in depth what the various barriers are, when wanting to fully implement E-learning. This research will also try to assess the differences and similarities between developing countries and developed countries regarding the topic. The goal is to come up with a solution to each of the barriers regarding the country. To narrow the scope a case study of a developing country (Suriname) has been chosen to assess the problem.

The goal of this research is coming up with conclusions and recommendations which could benefit all the students of Suriname as well as those of the Netherlands. Regarding the differences and similarities, this research will assess the various cultural aspects which can make the implementation of E-learning a challenge. For example: a comprehensive literature review by looking into other developing countries and universities that are alike, the various barriers will be assessed with solutions/predictions that can benefit the demands of both universities regarding E-learning. These solutions/predictions will be researched by interviews and questionnaires to see what the relevance is and how accurately this could work.

This research is built up in five phases, starting with the 'introduction' whereas the goal, background and research questions are assessed. In this phase I will discuss research gap for the integration of E-learning methods in developing countries compared to the Dutch education system with a case study on the education system of the Anton de Kom University of Suriname.

After this an 'exploratory literature review' will be conducted which will go more in depth to the research questions and get a general view on the topic.

Hereafter the 'methodology' phase will be assessed whereas a description of the research approach will be given, alongside the research scope and background of both the universities.

Then the 'result' phase will be assessed where the results of the interviews and questionnaires are gathered, grouped and analysed.

And in the last part of this research, there will be a discussion, conclusion and recommendation for implementation followed by limitation and opportunities for further research.

1.1 Problem definition

We live in a world where modern technology is indispensable. Technology makes our life easier and is being used in wide varieties. In the education system of the Netherlands, progress can be seen, for instance the fact that there are now 'Ipad classrooms', which are named 'Steve JobsSchools'. The students at these primary and elementary schools are getting the education virtually consisting of an iPad loaded with specialized apps instead of books and structured courses. It is clear that E-learning is already extensively used in the education system of the Netherlands (Dutch education system) and is integrated in almost every school, especially in the universities of higher education. But, what is E-learning and how is it exactly being used in the Netherlands?

E-learning, explained in the easiest way, is 'the use of electronic media (the Internet, DVD, CD-Rom, videotapes, television, cell phones, etc.) for teaching and learning at a distance [Engelbrecht, 2005]'. Due to the use of the internet, study material can be accessed anytime and anywhere which has an huge advantage. Leiden University for example, is using E-learning methods via Blackboard or Dropbox and today even via Spocs and Moocs. Some universities also use Skype as a E-learning method to give lectures or pre-recorded 'web-colleges'. Education is always being updated and people, mostly students, invent smarter ways for learning, e.g. with video's, forums, student intranets and online groups. But E-learning can also have disadvantages such as low speed connections (especially when working from home) [Engelbrecht, 2005]. Most of the developing countries cope with problems like these, it was even stated in the blog of Joshua Goldstein that three of five people in the world do not have internet access [J. Goldstein, 2014]. There are currently 137 developing countries according to the International Union of Geodesy and Geophysics [IUGG: List of developing countries, 2015]. But these developing countries need good education if they want their country to evolve. And I believe that every student should have the chance of access to good education.

So the question raises: how can developing countries benefit from the implementation of E-learning with various methods? To assess this question and research the topic further, a comparison between Leiden University and a University of a developing country will be made to see what the differences and similarities are and how both can benefit from each other's situation.

For this research, I chose the Anton de Kom University of Suriname (AdeKUS), which will be assessed like a case study, because it is located in my hometown. And Suriname is also on the list of the 137 developing countries mentioned above.

AdeKUS is located in the capital city of Suriname, Paramaribo; Suriname is divided into ten Districts across the country. Students who live far from Paramaribo, in the 'hinterland', have to travel sometimes far distances for their study. Some travel distances can take three to five hours backs and forwards.

The university education is still provided mostly through text books. Compared to the Dutch education system like e.g. that of Leiden University, the education system of Suriname is outdated. With the fast growing information technology there is need for an easy and more effective way to address these two problems, (the distance barrier and the outdated education system).

In this research It is my will to explore different E-learning methods, and how developing countries can use the results, in situations that are equal. A comparison of the Netherlands to Suriname university on various aspects of E-learning will result in recommendations how AdeKUS and Leiden University could benefit both from successfully introducing E-learning in their education systems.

One of the general benefits from E-learning is the geographical dispersal, with limited time and resources to travel. The aim of this research is to look into the variety of options which could facilitate courses in the districts, through teaching from just one single spot. With this integration of technology, a teacher will be able to do two things at a time viz. teaching the university class and groups of students in the districts.

As Suriname is a developing country, especially now, this is a special occasion to take a closer look at its education systems. There are already organisations in the Netherlands, which made it possible for students in Suriname to follow “online courses”, but all examinations have to take place in Holland. Only possible for a selective group of students, that can afford the expenditures.

Therefore, in the clasp of this research, a recommendation will be given for implementation which is intended for AdeKUS as well as for Leiden University whereas other universities in developing countries can also benefit from.

1.2 Significance of the study

The main reason of this research study is to deepen the existing knowledge of the use of E-learning and to research the important role it plays in the current education system of the Netherlands as well as Suriname. New insights and findings are useful for Leiden University as well as AdekUS and can even lead to a collaboration between the two universities to exchange and share knowledge. For both universities when implementing the recommendations given in the last phase, can lead to great improvements in their education systems and benefit the students and professors as well. Geographical and physical obstructions can be removed with the use of E-learning resulting in studying from anywhere and anytime for students. For most people this seems obvious, but in developing countries this has affect on several cultural aspects.

It is never too late to recognize quality and value within your education system; therefore, implementing E-learning with the right methods and application especially developed for blended and distance learning with the benefit of decreasing geographical issues, will create (more) international educational opportunities and continuous improvements of your education system.

Institutions of higher education have slowly begun to appreciate that the content of educational experience alone will define no quality learning but the context - how teachers design the interactions that drive the learning transaction - will ultimately distinguish each institution [A. G. Abdel-Wahab, 2008].

The short-term goal of this paper is to look at the different barriers for implementation of E-learning in developing countries by looking into different dimensions such as culture and

technical aspects of Suriname compared to the Netherlands to come up with solutions for a better education system by successfully integrating E-learning.

The long-term goal of this paper is to bring the education level from Suriname to an international level, like that of Leiden University by integrating the various methods of E-learning into their education system. Suriname will then have the resources to compete with the (competitive world of) universities and give every student a chance to have access education.

This research attempts to obtain the following findings which will be assessed with the research questions listed below:

- ❑ Different E-learning methods and barriers for implementation;
- ❑ The current situation of AdeKUS with all the barriers that could have effect on the implementation of E-learning in their education system;
- ❑ Recommendations to implement E-learning and how the education system of AdeKUS could be improved;
- ❑ Recommendations for Leiden University (collaboration between Leiden University and AdeKUS).

Research question 1: To what extend are E-learning applications a part of the education programs of institutes of higher education in both Suriname and the Netherlands?

To get insight on the current situation of AdeKUS and Leiden University with regard to the use of E-learning in their education systems, interviews will be conducted. The outcome of this research question will first give insight on how E-learning applications are currently part of the education programs in various developing countries. The input for this information will be gathered from the literature study. The variables to be taken into account are the various E-learning applications such as Blackboard, Moodle or systems that are alike and E-learning tools such as Skype, web-colleges, forums, etc.

Research question 2: What are the current barriers for the successful introduction of E-learning applications at institutes of higher education in both Suriname and the Netherlands?

E-learning has various barriers for a successful introduction of E-learning applications. Developing E-learning is more expensive than preparing classroom materials and training the trainers, especially if multimedia or highly interactive methods are used. However, delivery costs for E-learning (including costs of web servers and technical support) are considerable lower than those for classroom facilities, instructors time, participants' travel and job time lost to attend classroom sessions. The outcome of research question two has to give insight to the current barriers in Suriname as well as the Netherlands. Barriers for a successful introduction could be lack of knowledge, resistance to change, network access, the schools budget for ICT development and the connectivity of the university.

Research question 3a: What are the differences between Suriname and the Netherlands in relation to the introduction of E-learning in higher education institutes?

The outcome of research question 3a will give insight to differences between a developing country and a developed one, regarding the introduction E-learning in their education system. For the introduction of E-learning in Suriname it has to be taken into account that teachers from Suriname are expected to take all initiatives in class compared to that of the Netherlands (Power Distance). Also In Suriname the purpose of education is learning how to do compared to that of the

Netherlands where the purpose of education is learning how to learn (Individualism). Another variable is Uncertainty Avoidance where for Suriname it means that 'what is different, is dangerous' compared to the Netherlands where what is different, is curious'. The statement for Suriname also applies for other developing countries.

Research question 3b: What are the differences between Suriname and the Netherlands in relation to the application of E-learning in higher education institutes?

The outcome of research question 3b will give insight to differences between a developing country and a developed one, regarding the application of E-learning in their education system. The variable which has to be taken into account for this research question is the difference in how people learn. For example in the Netherlands, students are comfortable with open-ended learning situations and concerned with good discussions compared to where Surinamese students are comfortable in structured learning situations and are concerned about the right answers and their teachers, supposed to have all the answers. By applying E-learning there has to be a tolerance for deviant and innovative ideas and behavior which applies for the Netherlands, but for Suriname this is a huge contrast. In Suriname there is a suppression of deviant ideas and behavior and a resistance to innovation. Also a variable which I will take into account for answering this question is 'time'. For the Netherlands 'time is a framework for orientation' and for Suriname 'time is money'.

In conclusion this research is important as it assess whether it is feasible to integrate E-learning in a developing country to stimulate the economy further.

This research could also lead to further research on other parts of this topic such as new technology and give extensively recommendations regarding the two universities for a potential cooperation by working together as one.

2 Literature review

To obtain input for the variables mentioned in the research questions and to get input for the questions for the interview and questionnaire, a literature review was conducted. The literature review gives input to this research and is conducted as an exploratory research to discover ideas and insights regarding the topic 'E-learning integration in developing countries' and to shape the questions for the interview and questionnaire. If there are statements which are particular relevant for this research, but there is a research gap, it will be assessed in the next phase. In the 'methodology' phase, predictions will be made for Universities in the Netherlands, mainly Leiden University, as well as AdeKUS. These predictions will then be assessed with the interviews and questionnaires.

2.1 E-learning

E-learning is a very broad topic and can be divided into study material which is fully online and tools which support the current way of learning. E-learning refers to the use of ICTs to enhance and support teaching and learning processes. It is the instructional content or learning experiences delivered or enabled by electronic technologies, and it incorporates a wide variety of learning strategies and technologies [Sife, Lwoga & Sanga, 2007]. E-learning enables students to pace their studies according to their needs, making learning accessible to people who do not have enough free time for studying, so they can program their lessons according to their available schedule; those far from a school, or the ones unable to attend classes due to some physical or medical restriction [E. Pontes, A. Silva, A. Guelfi and S.T. Kofuj, 2012]. E-learning can provide the courses round the clock i.e. 7 days a week and 24 hours a day, which further attracts working peoples, students and even individuals [Md. T. Islam and A. S. Md. Selim, 2008].

E-learning has the ability to change the way people learn and how people process knowledge. The implementation of new technology in education systems should be more frequently and the institution itself or the government has to invest in new technology, but also in their professors. As Hedge and Hayward discuss in their paper we have to accept that knowledge creation and dissemination are no longer predominantly located within the confines of the academy's walls, so it is time for the academy to ensure that its role outwith those walls is consonant both with traditional values of educational opportunity, of quality research, learning and teaching and with the technological means at our disposal [N. Hedge and L. Hayward, 2004]. And when the education is obtained within the academy's wall, it has to be of relevance so not a teacher who is only reading a powerpoint presentation to a class of students. Therefore implementing new technology does not come easily. There is a lot of technology in the world, so to determine which technology works best with the education system of your university is not easy. And not only technology can be seen as a barrier, but there are a lot more barriers that make implementation of E-learning difficult. For instance the barriers for implementation lies mostly at the adaption and acceptance part, but also at the lack of knowledge and good equipment for supporting the various E-learning methods. Especially for developing countries where they still follow the traditional instructor-centred approach due to the lack of infrastructure and the fact that the implementation and full use of E-learning environments has not yet penetrated the existing educational organisation [N. Iahad, G.A. Dafoulas, M. Milankovic-Atkinson and A. Murphy, 2004]. In chapter 2.4 the barriers for integrating E-learning will be fully examined.

In developing countries where there is shortage of human resources and available skills, particularly in the field of science and technology, there is an increasing need to implement E-learning due to increasing student numbers [N. Iahad, G.A. Dafoulas, M. Milankovic-Atkinson and A. Murphy, 2004]. Students who cannot be reached by traditional delivery methods remain a captive market for distance education, for instance students in. This also why distance education is more cost-effective especially for allocating educational resources to reach large numbers of students. Under the right circumstances distance learning systems have proved that they can provide quality education and training to large numbers at lower unit costs than conventional education systems [A.W. Bates, 2005]. Distance education is attractive in developing countries, because it is said to increase access and, at the same time, to be more cost-efficient.

Distance teaching is also a complex system, requiring a number of components being in place in order to function properly, but does not imply that all components have to be housed at the same institution. E-learning, in principle, not only allows easier sharing of resources, it also facilitates the process of co-operation at a distance [T. Hülsmann, 2004]. Distance education also lead to lesser interaction between student and teacher with the use of technology. But with two-way communications media such as the Internet or video-conferencing interaction could be enabled between the teacher who originates the instruction and the remote student [A.W. Bates, 2005]. At most universities you see that they use blended learning, which is a combination of face-to-face and online learning. The online learning part is mostly the initiative of the student whereas they get information from the web which acts as additional material to their current study material.

A.W. Bates also discuss in his book that some 'online' courses are often designed with printed readings, either in the form of required textbooks or as collections of printed articles distributed to students by mail. This defines the term E-learning as you can see it in a way that you get the information from the internet, but it does not involve modern technology. That's why A.W. Bates uses the term E-learning for when courses have anything from a relatively small Web-based component of a course or program to a fully online offering. With the use of E-learning, universities can improve the quality of their education and also produce technology-savvy graduates, which are able to use new technologies in the new economy.

2.1.1 E-learning methods

According to the findings in the chapter above, E-learning in combination with distance learning can become the new way of how education will be transferred between teachers and students. So E-learning is an innovative approach for delivering electronically mediated, well-designed, learner-centered and interactive learning environments to anyone, anyplace, anytime by utilizing the internet and digital technologies in concern with instructional design principles [Hedge and Hayward, 2004]. E-learning represents various methods and can only deliver value if the combination of these methods achieve the university's goals.

A great benefit of this is winning time which is spent on accessing study material and attending classes. Small jobs of approximately twelve hours are increasingly being fulfilled by students between 15-25 years. Almost three quarters of these students want or cannot work more hours [CBS publication: One in nine employed work less than twelve hours a week, 2014]. Part-time students on the other hand work approximately 40 hours in a week and have to attend colleges in the evening. By making learning smart with the use of technology, E-learning with the use of the right methods will make it easier to align education better with the needs of business, which

benefit both employees and employers. With this universities can contribute to delivering students who can directly apply their knowledge in companies or start their own business.

There are various E-learning methods, for example self-study, learning by video/audio tape, web based learning, Blended eLearning (which is mix of classroom and digital learning), mobile Learning and social Learning. Blended learning denotes a solution that combines several different delivery methods, such as collaboration software, web-based courses, computer communication practices with traditional face-to-face instructions [A. S. Sife, R.T. Lwoga and C. Sanga, 2007]. A method which is already stated before in chapter four is that AdeKUS operates their Medical Faculty (Public Health) fully from distance through telephone conference. But as technology evolved, this method emerged into video conferencing. Video conferencing is a system where two or more participants, based in different physical locations, can see and hear each other in real time for e.g. through Skype. This method can be either two-way (point-to-point) or multipoint, linking three or more sites with sound and video. It can also include data sharing such as an electronic whiteboard where participants can draw on, or text based real time 'chat' [A. S. Sife, R.T. Lwoga and C. Sanga, 2007].

Each E-learning method also has a different learning perspective. For this research I've chosen the 'pyramid of Bethel Maine'. This learning pyramid of Bethel Maine is still up for discussion at several parties whether the pyramid is accurate are not. But it is not about who invented this pyramid and where it came from, it is about taking student's view about lectures seriously and give a hear to their believe which is more accurate for them [John Baer, 2010]. This pyramid may not give an accurate overview (percentages) of how students learn, but it gives an image. Students need to experience a variety of instructional methods and understand why what they learn is useful. This pyramid has also interesting facts for when a college course needs to be build up. Going to an E-learning environment, courses will get an new image and will be built up differently.

Universities in developing countries can benefit a lot from E-learning methods by using more technology in their education and becoming part virtually. Information Communication and Technology in education in the developed countries facilitated the establishment of 100% ICT – based University known as Virtual Universities [Ajadi, Salawu & Adeoyee, 2008]. Some universities even aims at replicating as far as possible the classroom model through the use of synchronous interactive technologies and relies heavily on lecturing and questions. It offers no economies of scale, lacks flexibility for learners, and is expensive, but is popular because instructors do not have to change or adapt their classroom teaching methods to any extent. This however encourages or reinforces traditional approaches to teaching such as lecturing, rather than developing the new skills needed in knowledge-based economies [A.W. Bates, 2005].

Conditions for being successful in distance education teaching and learning can be broken down into the following constituent parts [A.W. Bates, 2005]:

- ❑ Students
- ❑ Course design (including: the organization of the design process; the choice of pedagogical or epistemological approach and choice and use of media)
- ❑ Course delivery (including: tutorial support; faculty development and training; and student assessment).

For integrating E-learning in an existing education system, the learning theories which will be applied have to take these constituent parts into account. With a knowledge of alternative theoretical approaches, teachers and instructors are in a better position to make choices about how to approach their teaching in ways that will best fit the perceived needs of their students, within the very many different learning contexts that teachers and instructors face [A.W. Bates, 2005]. This is particularly important when integrating E-learning in an existing education system. So the choice of one particular theoretical approach will have major implications for the way that technology will be used to support teaching.

When integrating E-learning in an existing education system, learning theories should also be taken into account. For this research the learning theories 'behaviorism' and 'cognitivism' will be assessed. According to Tony Bates behaviourist psychology is an attempt to model the study of human behaviour on the methods of the physical sciences, and therefore concentrates attention on those aspects of behaviour that are capable of direct observation and measurement [A.W. Bates, 2005]. With the term behaviorism in E-learning it is about knowing what is changing and how to react to this. Teachers as well as students should be told what the explicit outcomes of an online lesson are so they can set expectations and judge for themselves whether or not they have achieved the desired outcome. So when setting up an online course, the instructors should break down the study material into parts with appropriate explanation before learners are expected to duplicate the desired behavior.

The Cognitive theory is about 'knowing how', it is about learning how to observe, practice and adapt to the new technology. The cognitive approach holds in that when it comes to learning people cannot confine ourselves to observable behaviour, but must also concern ourselves with the learner's ability mentally to re-organize this psychological field in response to experience. The primary purposes of E-learning implementation is to achieve the objectives of instruction, and achieve retention and transfer of knowledge [T. O. Ajadi, I. O. Salawu and F. A. Adeoye, 2008].

So the cognitivist approach means focusing on teaching teachers and students how to learn and on developing deeper and constantly changing understanding of concepts and ideas. This latter approach therefore lays stress not only on the environment, but upon the way in which the individual interprets and tries to make sense of the environment. It sees the individual not as the somewhat mechanical product of his environment, but as an active agent in the learning process, deliberately trying to process and categorize the stream of information fed into him by the external world [A.W. Bates, 2005]. According to Tony Bates the cognitive approaches to E-learning with a focus on comprehension, abstraction, analysis, synthesis, generalization, evaluation, decision-making and creative thinking, seem to fit much better with higher education than the behaviourism approach.

2.1.2 E-learning applications

Over the past decade there has been widespread use of web-based E-learning applications for distance and classroom learning [S. Ssemugabi and R. de Villiers, 2007]. Several innovative Internet technologies such as Web 2.0 applications have been applied in the development of E-learning systems. Web 2.0 principles were analyzed from a learning perspective, highlighted stimulation of active participation, i.e., interactivity; and interactive content as distinguished features [S. Ozkan and R. Koseler, 2009]. The web 2.0 is a set of economic, social, and technology trends that facilitate a more socially connected web where everyone is able to add to and edit the

information space [A. S. Sife, R.T. Lwoga and C. Sanga, 2007]. This is important when integrating E-learning in the education system, to have an application where teachers and students can be connected with the use of a platform like Moodle and Blackboard for instance. Ozkan and Koseler also discuss that students felt isolated using the Web 2.0 in a distance environment since they were not able to interact with the instructor and other students. According to the research of Ozkan and Koseler interactivity is an essential component in both blended and online learning. E-learning applications provide opportunities for synchronous communication within distance education [V. Mehra and F. Omidian, 2011].

E-learning platforms (sometimes called learning management systems (LMS)) are applications used for delivery of learning content and facilitation of the learning process. They are developed for administration and teaching in tertiary education [A. S. Sife, R.T. Lwoga and C. Sanga, 2007]. It is used within educational organizations as both a web-based learning system for e-learning and as a supportive tool for blended learning environments [S. Ozkan and R. Koseler, 2009]. E-learning applications can make it possible to create, deliver, manage and improve learning content. These applications can create a fully virtual classroom and can also create learner interaction such as online discussions and even live chat. Widely used platforms are Moodle, Blackboard and Claroline, which are used for learning content which is provided through that platform by teachers. Teachers can build a course Webpage, with links through the Internet to relevant resources on other Websites. They can also convert their PowerPoint slide presentations to pdf files which students can download from a website, or teacher's own papers and research materials such as photographs or slides, as well as links to other relevant sources. Teachers may also use other web sites for illustration within their classroom lectures. And students may be asked to participate in online discussion forums, to discuss the lecture afterwards amongst them [V. Mehra and F. Omidian, 2011].

The three platforms which are mentioned look a lot like each other and most of the functions are embedded in each of them for e.g. making groups, enroll for different courses, discussion with classmates and professors, putting up announcements and study material/documents. Moodle and Claroline are open source platforms which could be a benefit for universities in developing countries as they will have budget available for investing in the platform for e.g. specializing this and to maintain this. Moodle has the highest features and capabilities compared to Claroline and Blackboard. Claroline has the minimum features and capabilities. Moodle known as an LMS has a good architecture, implementation, interoperability and internationalization. It has 400.000 registered users all over the world [L. Uden, Y.H. Tao, H.C. Yang and I.H. Ting, 2013].

When acquiring an E-learning application for a university, the university has to look at the cost, efficiency and effectiveness of the application. Also usability of such an application has to be easy of use. Usability of E-learning poses its own requirements, hence its usability evaluation is different from that of general task-oriented systems and requires different criteria [S. Ssemugabi and R. de Villiers, 2007]. To get to know what the best application is for a university the learning goals have to be set first. The application will be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context. These E-learning applications make it possible for permanent accessibility (24 hours, all days of the week), direct communication, links to related topics and up-to-date notes. But to benefit fully of these advantages universities need fast computers with sound cards and reliable Internet connection. For implementing these applications with additional E-learning methods, they will need hardware,

technical expertise and videoconferencing. Also new pedagogical methods required to provoke interaction [A. S. Sife, R.T. Lwoga and C. Sanga, 2007].

Also for implementing E-learning, both teachers and students require basic training, and advanced equipment is needed. For e.g. when the education becomes part virtually and virtual classrooms are being created you will need:

- ☐ Sound proof room(s) and be able to control the lighting conditions
- ☐ Audio-visual peripherals
- ☐ TV monitor or video projector
- ☐ camera(s) and microphone(s)
- ☐ Videoconferencing tool
- ☐ More bandwidth for higher-quality images.

Applications such as educational games, simulations, virtual laboratory visualizations and graphics, representations of abstract concepts could also be used [T. O. Ajadi, I. O. Salawu and F. A. Adeoyee, 2008].

2.2 Internet usage

Through the use of the Internet as a communication medium, education is now changing towards the constructivist paradigm or learner-centered paradigm where the instructor acts as a moderator primarily responsible for facilitating learning [N. Iahad, G.A. Dafoulas, M. Milankovic-Atkinson and A. Murphy, 2004]. World Wide Web (WWW) is a set of software tools and standards that allow users to obtain and distribute information stored on a server and connected to Internet. WWW is a decentralized information system, in which anyone can add new information whenever he/she wants. Lecture notes and other teaching materials are placed on the WWW and linking useful websites to these resources for students to access. With the growth of the WWW and the explosion of the Internet into popular culture, many lecturers and academic departments have started to exploit the potential of these technologies and sophisticated network infrastructures are provided to enhance teaching and learning [E. Pontes, A. Silva, A. Guelfi and S.T. Kofuj, 2012].

Also with the trend 'Internet of things' universities see potential to incorporate more technology in their education system. WWW and Internet technologies have matured significantly by providing a uniform access media for both asynchronous and synchronous learning. This phenomenon has significantly increased the popularity of online learning, which include blogs, wikis, multimedia sharing services, content syndication, podcasting and content tagging services [A. S. Sife, R.T. Lwoga and C. Sanga, 2007].

In the book 'E-Learning - Long-Distance and Lifelong Perspectives' it is demonstrated that there is an upward trend in the link between growth and internet penetration rates (both usage rates and fixed broadband) [E. Pontes, A. Silva, A. Guelfi and S.T. Kofuj, 2012]. It is also clearly stated in the book how E-learning developed itself with the use of internet. From Face-to-Face to U-learning, which stand for Ubiquitous learning. Ubiquitous learning is almost like Mobile learning (M-learning), but more advanced, it is not only associated with mobile phone technology, but also

with large number of small electronic devices which have computation and communication capabilities such as smart mobile phones.

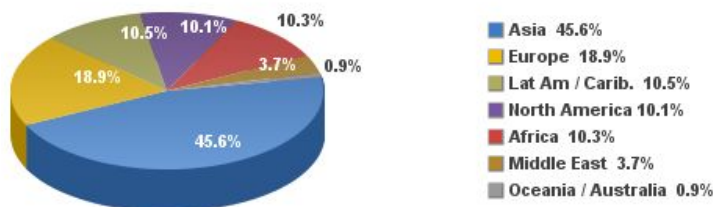
2.2.1 Internet connectivity

When making fully use of E-learning applications for e.g. when using videoconferencing, which can perform interactive video communications over a regular high-speed Internet connection fast computers are needed. So for implementing E-learning a good internet connection is required, especially for distance education. As Annika Andersson discussed this in her research study whereas the use of ICT for distance education evidently makes access to the technology an enabling or disabling factor, but access also refers to the quality of the connectivity [A. Andersson, 2008]. The difference of Internet accessibility between developed and developing countries is a reflection of the country's infrastructure and telecommunication abilities [Y. N. Chen, H. M. Chen, W. Huang and R. K. H. Ching, 2006]. So 'low speed internet connection' is also a barrier for using E-learning.

Insufficient ICT infrastructure at the national and institutional levels discourage the adoption of E-Learning because students and administrators do not have adequate internet connectivity or bandwidth to support transmitting large files [M. Qteishat, H. Alshibly, J. Alqatawna and M. Al-Ma'aitah, 2013]. An educational institution can slow the rate of diffusion of E-Learning in their organisation by placing relatively low value on the importance of ICT and E-Learning, which discourages educators from adopting learning methods mediated by ICT [M. Qteishat, H. Alshibly, J. Alqatawna and M. Al-Ma'aitah, 2013]. So if internet is a barrier, what are the possibilities therefore? According to A. G. abdel-Wahab simple technologies gradually lead to higher usage rates and ultimately to gradual leveraging of newer capabilities. High quality Internet infrastructure and networking will help to deliver high quality courses [Md. T. Islam and A. S. Md. Selim, 2008]. In 2012 there were 12.4 million internet users in the Netherlands, that is 96 percent of all 12 to 75 year olds [CBS press release: further growth mobile Internet, 2012].

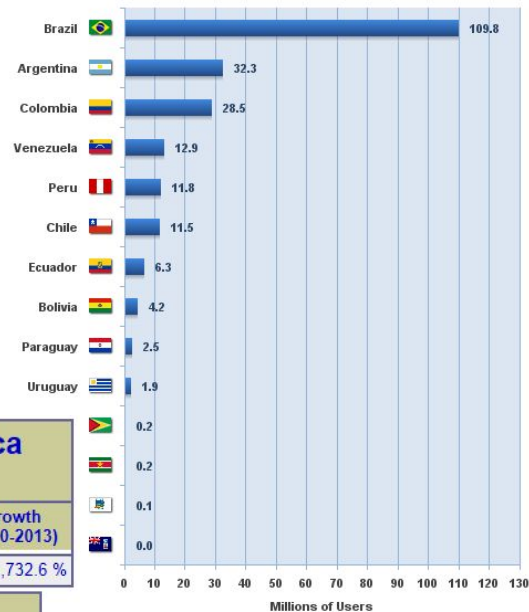
In the three graphs below, presented as figure 1, the figures are given of the internet usage of Suriname versus that of the Netherlands. And in the graph where the internet usage is given of South America, which is a graph that is dept of the graph about the internet usage of the world, Suriname is positioned on the 12th place. The figures for this were only available from 2013, unfortunately not 2014. But for this research this isn't relevant, so the figures give a good indication about the position and it is enough input to research during the interviews.

Internet Users in the World Distribution by World Regions - 2014 Q4



Source: Internet World Stats - www.internetworldstats.com/stats.htm
Basis: 3,079,339,857 Internet users on Dec 31, 2014

Internet Users in South America December 31, 2013



World Stats - www.internetworldstats.com/stats15.htm
Internet users in South America estimated for 2013Q4

Internet Usage and Population Statistics for South America December 31, 2013

SOUTH AMERICA	Population (2014 Est.)	% Pop. Table	Internet Usage, 31-Dec-2013	% Population (Penetration)	% Users Table	Growth (2000-2013)
Suriname	573,311	0.1 %	214,418	37.4 %	0.1 %	1,732.6 %

Internet Stats and Facebook Usage in Europe 2014 Mid-Year Statistics

EUROPE	Population (2014 Est.)	Internet Users, 30-Jun-2014	Penetration (% Population)	Users % in Europe	Facebook 31-Dec-2012
Netherlands	16,877,351	16,143,879	95.7 %	2.8 %	7,554,940

Figure 1: Internet usage of Suriname versus that of the Netherlands.

2.2.2 Mobile learning

While looking into internet usage in developing countries whereas the connectivity problem is a well known issue, there were various discussion about alternatives and one of them was the use of mobile learning. Mobile phone technology used for educational purposes could be a great alternative when implementing E-learning in developing countries. Particularly, it can be a medium of interest in developing countries where the number of mobile users is far greater than the number of wire users [S. Iqbal and I. A. Qureshi, 2012]. But not only for developing countries, Leiden University can also benefit from this. Also one of the barriers for integrating E-learning is that it is expensive and the use of mobile technology is not. Most of the communication nowadays is via internet and already mainly via mobile (smart) phone and mobile phones are not only an easy way for communicating, but also for obtaining information.

Mobile E-Learning (sometimes called 'm-Learning') is a new way to learn using small, portable computers such as personal digital assistants (PDAs), handheld computers, two-way messaging pagers, Internet-enabled cell phones, as well as hybrid devices that combine two or more of these devices into one. These technologies have enormous potential as learning tools [A. S. Sife, R.T. Lwoga and C. Sanga, 2007].

M-learning has been defined as 'E-learning using mobile devices and wireless transmission', two important aspects of m-learning are its ubiquity and mobility [S. Iqbal and I. A. Qureshi, 2012]. In a study of 2008 by Scott Motlik it is shown that mobile learning was becoming a great technology in

E-learning. It started to play a very important role for Africa where the usage of mobile phones were used for bulk SMS mailing in Kenya for in-service teacher training [S. Motlik, 2008]. And also in North Bangkok where graduate students at King Mongkut's Institute of Technology used mobile phones to participate in tests via short message service (SMS), and more than 90 per cent of the participants owned the mobile phones themselves [S. Motlik, 2008]. M-learning conditions include factors which can contribute to the adoption of m-learning, such as resources, knowledge, Internet speed, and support personnel [S. Iqbal and I. A. Qureshi, 2012].

Mobile networks can be designed and implemented in far quicker and cost-efficient ways than fixed networks, which is attractive and efficient for regions with difficult geography or poor economic conditions, for e.g. like Suriname. Also as an example are Korea and China, where web-based learning has already been plagued by poor instructional design, poor instructor training, poor matching of technology with learner skills, a lack of technology and a lack of accessibility. And Korea is one of the most wired nations in the world and internet-based learning has been strongly supported in China as well. The inability of these nations to develop efficient E-learning methods should act as a deterrent for the developing nations considering a move to Web-based learning [S. Motlik, 2008]. M-learning has the potential to become an effective partner for providing education along with traditional methods. Particularly, it can be a medium of interest in developing countries where the number of mobile users is far greater than the number of wire users [S. Iqbal and I. A. Qureshi, 2012].

In the Netherlands more than 90 percent of 18 to 25 year old youngsters are mobile online with their smartphone [CBS publication: Youngsters especially online with smartphone, 2014]. In the chart below, the mobile internet usage is displayed where the difference in growth from 2007 to 2012 is clearly visible [CBS press release: Further growth mobile Internet, 2012].

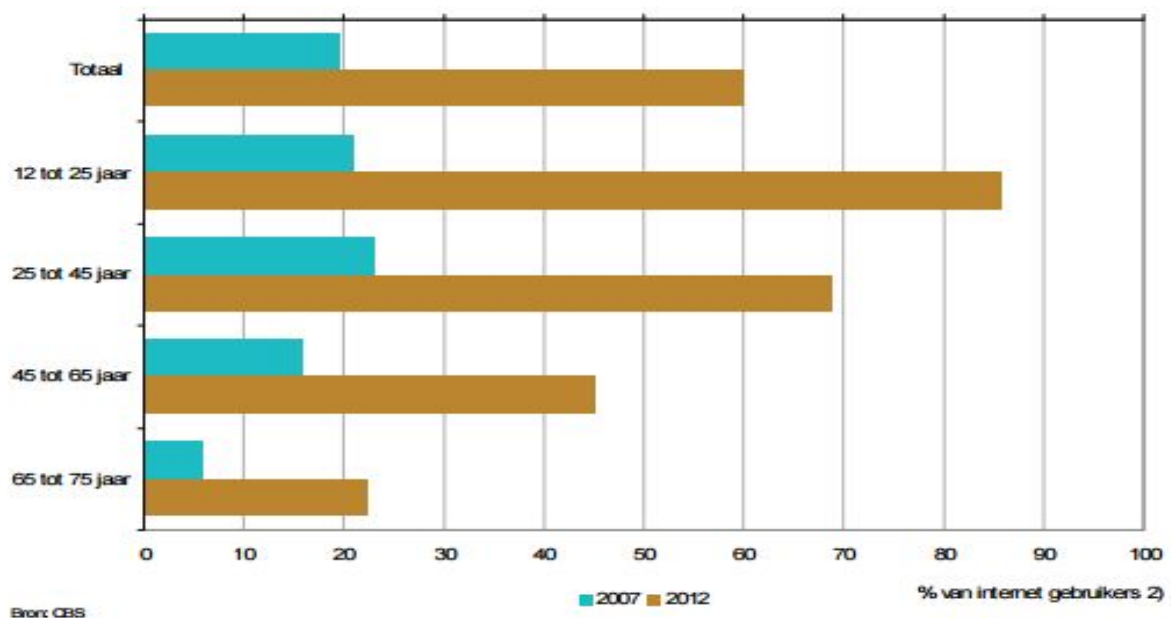


Figure 2: Mobile internet usage growth in the Netherlands from 2007 to 2012.

And in the chart below you see the growth of internet usage via mobile phone where the internet usage of mobile phone has far exceeded the internet usage on a laptop [CBS press release: Mobile Internet use increased substantially, 2011].

Gebruik van mobiel internet als % van de gebruikers

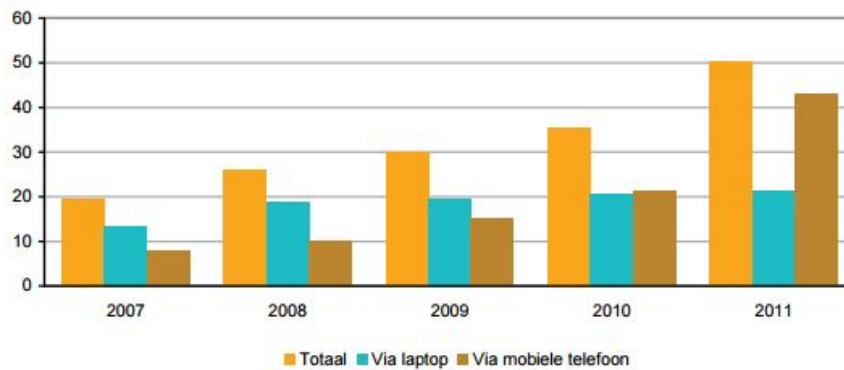


Figure 3: Internet usage growth via mobile phone in the Netherlands.

The chart below also shows that because internet access on mobile phones is still growing, the growth rate is higher [Blog By Tomi Ahonen: Interesting Mobile Statistics, 2010]. More people have access to a mobile phone than to a PC. He stated in his blog that more people on this earth now have access to mobile phones than have access to running water and toilets. And also that an SMS message is read within 4 minutes while an email could take up-to 48 hours and making a SMS is 720 times faster, so it is perfect for speedy delivery of emergency information. But because this was a blog of 2010, I'm curious how the teachers and students uses mobile technology in the current education system.

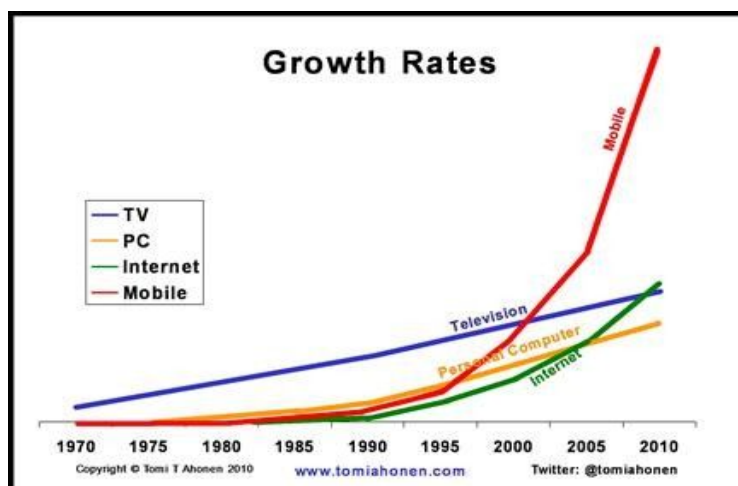


Figure 4: General internet growth rate per device.

But using mobile learning technology also has its barriers for adopting M-learning such as lack of standardization, low bandwidth, limited processor speed, small screen size, low storage, short battery life, lack of data input capability, and software issues and interoperability [S. Iqbal and I. A. Qureshi, 2012]. Also an concern is how the production side has to put much effort into the support functions for students. In a setting where E-learning is new and ICT literacy is low, the students will be very confused and in need of much guidance [A. Andersson, 2008]. Content quality in E-learning depends on how well the learning environment is designed and managed. Learners place great value on content where a quality content is well-organized, effectively presented, interactive, clearly written, in the right length, useful, flexible, and provide appropriate degree of breath [S. Ozkan and R. Koseler, 2009]. Another factor that would make it easier for students is if the course is given in their mother tongue. In countries with many different languages or global educations this may not always be possible but efforts could be made to provide, at least, bilingual information and guidance – even when content is in English [Md. T. Islam and A. S. Md. Selim, 2008].

2.3 Factors that influence the adoption of E-learning

As technology is constantly changing, new technological developments can have profound effects on education [A.W. (Tony) Bates, 2005]. Looking at the aspects so far at the previous topics, the focus has to be on the integration and adaption part. Currently most developing countries follow the traditional instructor-centered approach due to the lack of infrastructure and the fact that the implementation and full use of E-learning environments has not yet penetrated the existing educational organization [N. Iahad, G.A. Dafoulas, M. Milankovic-Atkinson and A. Murphy, 2004]. The instructor-centered approach implies that knowledge is transmitted from professor to students and where students passively receive information. This is commonly used whereas a teacher gives a lecture by just reading the powerpoint slides. So as stated in chapter three not most developing country uses this approach, but also the developed ones looking at the Netherlands.

The two main themes of technology in education for developing countries focus either on aspects of technological support for traditional methods and localized processes, or on the investigation of how such technologies may assist distance learning [N. Iahad, G.A. Dafoulas, M. Milankovic-Atkinson and A. Murphy, 2004]. To make good decisions about technology, we need to understand the relative educational strengths and weaknesses of different technologies [A.W. (Tony) Bates, 2005].

E-learning can be used in two ways, 'at the same time' and 'not at the same time'. The first way involves interaction with the teacher via real time and the second way involves education which is available whenever the student needs this or want to access this. This can also be associated with hybrid and blended learning, which are all terms used to designate a combination of face-to-face and online teaching [A.W. (Tony) Bates, 2005]. New skills must be learned by faculty members to meet the needs of quality distance education [Md. T. Islam and A. S. Md. Selim, 2008].



Figure 5: The continuum of technology based learning [A.W. (Tony) Bates, 2005].

As stated before education in which teachers and learners are separated by time and distance has been referred to as distance education or distance learning. Distance education could be explained as planned learning that normally occurs in a place that is different from where the teaching takes place. The rapid and intensive use of ICTs in education in the developed countries facilitated to the establishment of 100% ICT-based universities called ‘virtual universities’ [Md. T. Islam and A. S. Md. Selim, 2008]. This requires special techniques of course design, instruction and methods of communication by electronic and other technology [E. Pontes, A. Silva, A. Guelfi and S.T. Kofuj, 2012]. Distance education could be offered at the basic, secondary or higher level of education. For this research the focus lies on the higher level of education. In the netherlands ‘Ipad Classrooms’ are already being used for the secondary education.

One of the big challenge which developing as well as developed countries is that they cope with the acceptance of any new technology as it largely depends upon the supporting conditions and environment [S. Iqbal and I. A. Qureshi, 2012]. Not only in the field of education people have tried to analyze what the factors of adopting new technology and innovation could be. Several studies have been trying to identify factors that affect innovation adoption in business organization [A. G. abdel-Wahab, 2008]. E-government technologies have a potential to improve the lives of 80% of the world’s population that lives in developing countries [Y. N. Chen, H. M. Chen, W. Huang and R. K. H. Ching, 2006]. Major challenges for E-learning in developing countries are support, flexibility, teaching and learning activities, access, academic confidence, localization and attitudes [A. Andersson, 2008].

In the book ‘E-Learning - Long-Distance and Lifelong Perspectives’ a case of Ghana is discussed. Ghana as a developing country continued to search for a system of education that is relevant to the world of work, adequate for rural development and the modernization of its agriculture-based economy. The mission of their Ministry of Education was “to provide relevant education to all Ghanaians at all levels to enable them acquire skills that will assist them to develop their potential, be productive, facilitate poverty reduction and promote socio-economic growth and national development”. In this case study they promoted E-learning through internet services that are provided on mobile telephony which can be used to supplement E-learning programs in the country. Ghana used mobile telephony operators because it made a substantial inroad into the market with a mobile subscriber base of 8 million at the end of 2009 only. But although they’ve adapted to the mobile technology, they still faced challenges [E. Pontes, A. Silva, A. Guelfi and S.T. Kofuj, 2012]. Their main findings for challenges which can also be applied for other developing countries were:

- ❑ Access to information technology facilities still remains highly inadequate and unevenly distributed throughout the country.

- ❑ The capacity of teachers and educators to manage E-learning programs still remains low While some do not have the adequate skills, others are averse to using E-learning platforms.
- ❑ There is insufficient equipment and slow Internet connectivity in most parts of the country.
- ❑ There is also unreliable access to electricity.

This rapid and intensive use of ICTs has an effect on technology, economic, political and culture as it requires education systems to adapt to new technology and knowledge. Looking further into the effect on culture, it is proven that it is learned and not inherited. It derives from one's social environment, not from one's genes [G. Hofstede, 2005]. A dimension is an aspect of a culture that can be measured relative to other cultures. Therefore people's perception of ICT and E-learning differ as they depend on their backgrounds [A. Rhema and I. Miliszewska, 2010].

The basic problem areas correspond to dimensions which Geert Hofstede named as power distance (from small to large), collectivism versus individualism, femininity versus masculinity, and uncertainty avoidance (from weak to strong).

If we explore the Surinamese culture we can get a good overview of the deep drivers of the Surinamese culture relative to that of the Netherlands. Instead of the 6D model of Hofstede, I only address the 4D model of Hofstede's cultural dimensions. So the dimension which will be researched for the comparison of the Netherlands with that of Suriname are:

- ❑ Power Distance.
- ❑ Individualism.
- ❑ Uncertainty Avoidance.
- ❑ Masculinity.

Looking first into Power Distance, this dimension deals with the fact that all individuals in societies are not equal – it expresses the attitude of the culture towards these inequalities amongst us. Power Distance is defined as the extent to which the less powerful members of institutions and organisations within a country expect and accept that power is distributed unequally. Suriname scores high on this dimension (score of 85) which means that people accept a hierarchical order in which everybody has a place and which needs no further justification. With such a high score in this dimension, it is also known for the fact that teachers are expected to take all initiatives in class compared to the Netherlands it is the other way around where teachers expect initiative from students [G. Hofstede, 2005].

The fundamental issue addressed by this individualism dimension, is the degree of interdependence a society maintains among its members. It has to do with whether people's self-image is defined in terms of "I" or "we". In Individualist societies people are supposed to look after themselves and their direct family only. In collectivist societies people belong to 'in groups' that take care of them in exchange for loyalty. Suriname, with an intermediate score of 47 compared to a score of 80 for the Netherlands is considered a slightly collectivistic society. This is manifested in a close, long-term commitment to the member 'group', be that a family, extended family, or extended relationships. Loyalty in a collectivist culture is paramount, and overrides most other societal rules and regulations. The society fosters strong relationships where everyone takes responsibility for fellow members of their group. For Suriname this means the purpose of education is learning how to do compared to that of the Netherlands where the purpose of education is learning how to learn. Another comparison is that for the score of Suriname,

diplomas provide entry to higher status groups and compared to that of the Netherlands where diplomas increase economic worth and/or self-respect.

Masculinity as a dimension indicates that the society will be driven by competition, achievement and success, a value system that starts in school and continues throughout organisational life. Suriname scores 37 on this dimension and is thus considered a feminine society. In feminine countries the focus is on “working in order to live”, managers strive for consensus, people value equality, solidarity and quality in their working lives. Incentives such as free time and flexibility are favoured, which could be a factor that could have a bad influence on the adoption of E-learning as there has to be a lot of discipline from the students as well as the teachers. Another factor is that for the people of Suriname, warm relationships are important and Netherlands put the emphasis more on money and things. With the adoption of E-learning in combination with distance learning this could have impact on the relationship for Suriname. Also the norm for Suriname in average student is accepted, the norm and friendliness in teachers is appreciated and failing in school is just a minor accident. Compared to the Netherlands where the best student is the norm, failing in school is associated as a disaster and the brilliance in teachers is appreciated. In the interviews this will be researched to gain information about these factors and to make a comparison with the findings of the Netherlands with that of Suriname.

The dimension Uncertainty Avoidance has to do with the way that a society deals with the fact that the future can never be known: should we try to control the future or just let it happen? This ambiguity brings with it anxiety and different cultures have learnt to deal with this anxiety in different ways. The extent to which the members of a culture feel threatened by ambiguous or unknown situations and have created beliefs and institutions that try to avoid these is reflected in the score on Uncertainty Avoidance. Suriname scores 92 on this dimension and thus has a very high preference for avoiding uncertainty. Also one of the findings in this dimension is that in the Netherlands there is a tolerance for deviant and innovative ideas and behavior in huge contrast with Suriname where there is a suppression of deviant ideas and behavior and resistance to innovation.

In the graph below the comparison model of Suriname versus that of the Netherlands is visualised according to Hofstede’s cultural dimensions. As stated above, only the 4D model will be used, which are the first four dimension when reading from left to right.

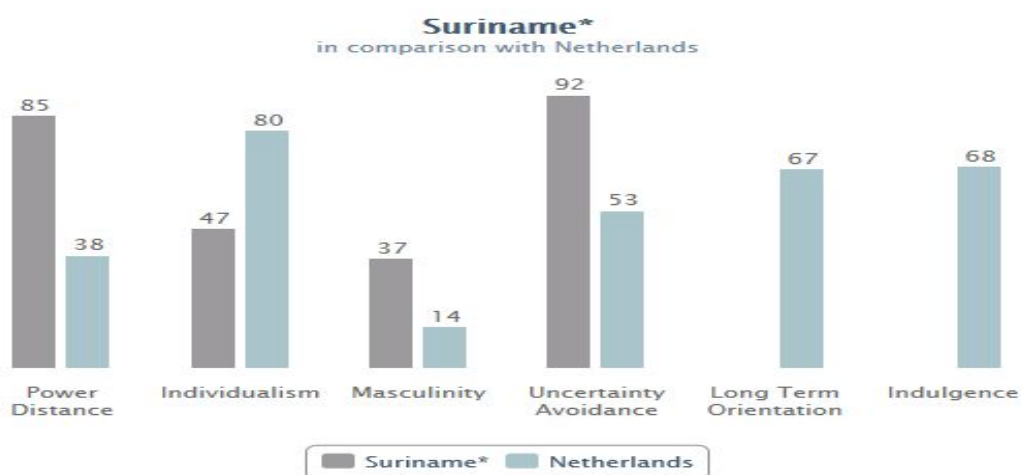


Figure 6: Comparison model of Hofstede’s cultural dimensions for Suriname versus the Netherlands.

2.4 Barriers and challenges of implementing E-learning

E-learning, in principle, not only allows easier sharing of resources, it also facilitates the process of co-operation at a distance [T. Hülsmann, 2004]. One of the barriers in developing countries are the expenses that E-learning brings. Although E-learning in the universities and educational institutes of the developed countries are getting popularity day by day, it is still a dream for the less developed countries because of poor ICT infrastructure and other socioeconomic reasons [Md. T. Islam and A. S. Md. Selim, 2008].

The use of E-learning with distance learning can exploit cost and educational benefits of technology. It has even been claimed that distance education is the more cost-effective means for allocating educational resources, and that it is especially capable of reaching large numbers [T. Hülsmann, 2004]. The fact that distance teaching is a complex system, requiring a number of components being in place in order to function properly, does not imply that all components have to be housed at the same institution [T. Hülsmann, 2004]. Some contemporary studies have argued that, E-learning educational systems provide more instructor-student and student-student interaction than the traditional systems. The contemporary studies further indicate that slow learners are particularly advantaged by online programs since they get to spend as much time as they wish reading and participating online than they would in a class-based program [N. Jabli, A. Qahmash, 2013].

The integration of ICTs in the functions of any organization is a complex process that needs to be fully conceptualized and defined from the beginning. However, this is not the case in many higher learning institutions in developing countries as most of them have embraced the ICT integration process without clear plans to guide the way. The institution ICT policy and strategic plan should be defined to provide a framework for the development and implementation of specific ICT projects. The diversity and competing interests of different stakeholders in the institution should be recognized when developing ICT policy and a strategic plan [L. Uden, Y.H. Tao, H.C. Yang and I.H. Ting, 2013]. For developing countries the barriers and challenges are:

- ☐ The ICT infrastructure.
- ☐ The number of teachers and students.
- ☐ The skill level of the teachers and students.
- ☐ A proper cost-analysis.
- ☐ Making proper choices for their technology.

For implementing E-learning in the developing countries reliability of technology, stability of technology and the interface and its ease of use have to be taken into account [Md. T. Islam and A. S. Md. Selim, 2008]. As Tony Bates discussed it another development which resulted from the increased move towards E-learning is the challenge for institutions in how to manage and organize new developments [A.W. Bates, 2005]. It is important for all stakeholders in the institution to know the existing ICT facilities and services and their importance in relation to their specific tasks.

These stakeholders also have to be positive towards new technology and the universities have to give trainings which contributes to the awareness of the positive effect of this implementation. For Suriname this was already stated as a factor of influence where teachers and students will need proper training. So E-learning can make a difference by providing appropriate training to

students such that their level of perceived ease of E-learning use increases [A. G. abdel-Wahab, 2008]. Administrative support also is an important aspect which has to be taken into account as well as Technical support, Staff development and Inadequate funds [L. Uden, Y.H. Tao, H.C. Yang and I.H. Ting, 2013], for example:

- ❑ Administrative support is critical to the successful integration of ICTs into teaching and learning processes. Administrators can provide the conditions that are needed, such as ICT policy, incentives and resources. But the administrators themselves must be competent in the use of the technology, and they must have a broad understanding of the technical, pedagogical, administrative, financial, and social dimensions of ICTs in education.
- ❑ Technical support includes issues like installation, operation, maintenance, network administration and security. This is an important part of the implementation and integration of ICT in education system. In most cases of developing countries however, technical support is not available, which implies that trainers and students require some basic troubleshooting skills to overcome technical problems when using ICTs. Appropriate strategies should be in place to ensure that integration of ICTs in teaching and learning process goes together with the recruitment and training of required staff.
- ❑ Staff development, which not only deals with the introduction of new hardware and software, but both trainers and the students have to adopt new roles, and change their ICT behaviors and ways of teaching and learning. Training and workshops are needed not only to improve the skills of the instructors, but also as a means of getting them involved in the process of implementing and integrating ICTs in teaching and learning.
- ❑ Inadequate funds which is needed for a successful implementation and integration of ICTs in education. Due to very high primary cost for infrastructural development and to increase public access to internet and other ICTs, the developing countries are still far behind from getting benefit from the E-learning.

Full exploitation of the potential of digital learning environments would drive-up both fixed and variable costs, but according to Hülsmann education would also lead to economic growth. In his research there was even an Average cost formula made ($AC = F/N + V$), where AC = average cost, F = fixed costs, N = numbers of students, and V = variable cost per student [T. Hülsmann, 2004].

The cost for maintenance of the building and classrooms will no longer be necessary if E-learning is fully integrated in the education system which results in more savings. But Jabli and Qahmash also say that successful E-learning programs require a lot of faculty involvement, which encourages online peer support among the students. Moreover, some researchers have expressed concerns over the high dropout rates experienced in E-learning systems as compared to traditional education systems [N. Jabli, A. Qahmash, 2013].

It is obvious that countries with higher financial resource bases stand a good chance than those with limited resources to reap benefits offered by ICTs. In addressing the problem of limited funds and sustaining donor funded projects, higher learning institutions can do the following:

- ❑ Adopt freeware and open source software for teaching and learning activities.
- ❑ Continuously press for more funds from their governments.
- ❑ Diversify sources of funds to have a wide financial base.

Another barrier of implementation is also that many institutions fail to integrate ICTs into teaching and learning because they are using ICTs to replicate their traditional practices, content and control. Their plans appear to be driven by ICTs and not by pedagogical rationale and focus. Some universities can even adopt to new technology with minor changes and adjustment, but it does require a revolution in thinking about teaching and learning [L. Uden, Y.H. Tao, H.C. Yang and I.H. Ting, 2013].

3 Methodology

The research approach is a literature study with the usage of a quantitative and qualitative research. The research instruments which will be used are literature review, interviews and a questionnaire. After the introduction phase and the exploratory literature review, Leiden University and AdeKUS will be assessed with their background and the findings of the literature review. In this chapter the findings of the literature review will be assessed from the perspective of Leiden University and Adekus. Furthermore, the literature review, interview and questionnaire will be assessed how they had been conducted. Below is a graph of the approach throughout the whole research study.

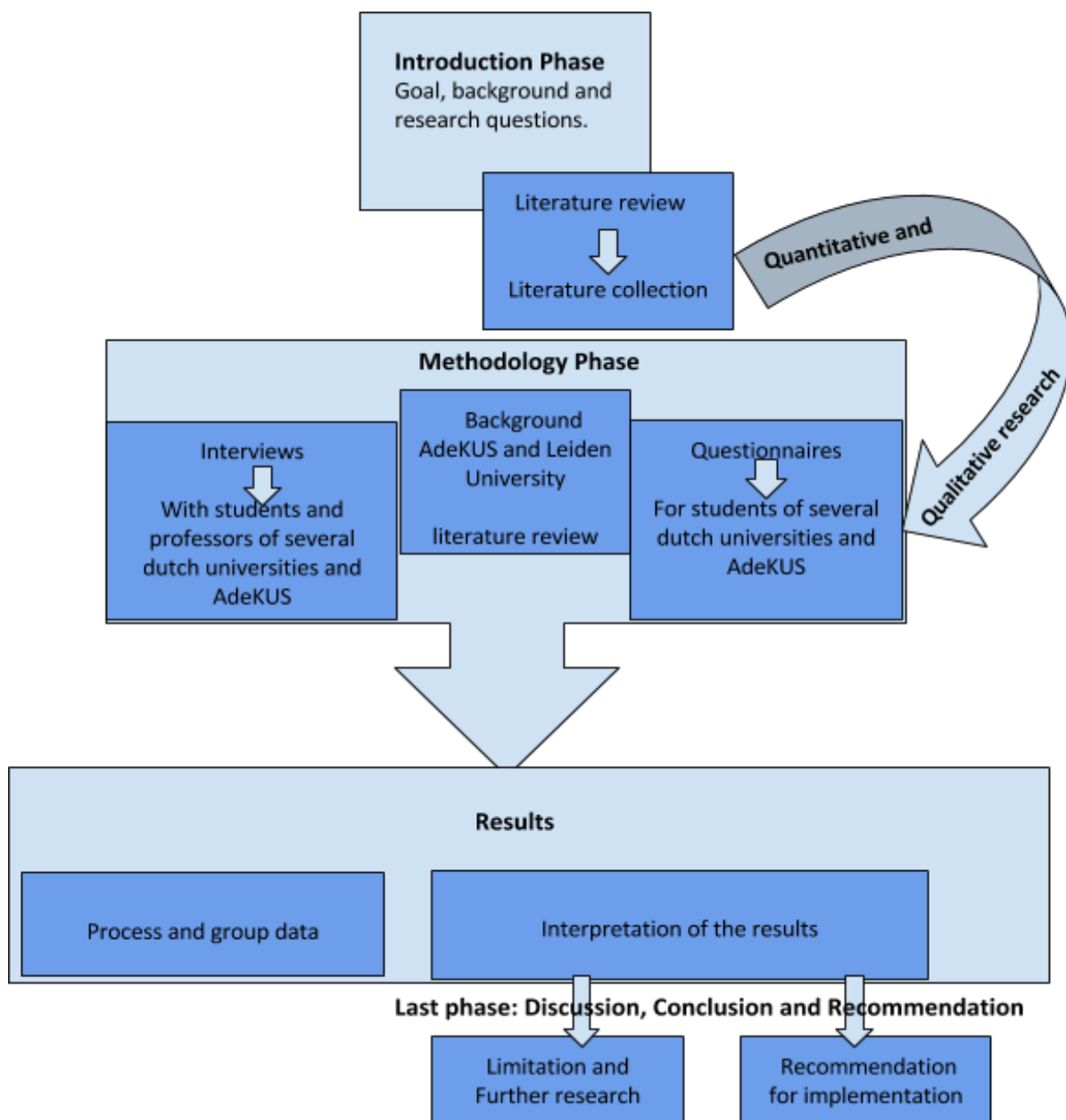


Figure 7: Research approach throughout the whole study.

3.1 Research scope

It is out of scope to examine all the dutch universities and universities in developing countries. So the following limitations have been set:

- ❑ Other universities in developing countries will be investigated only for their findings and implementation phase;
- ❑ Leiden University will be investigated thoroughly;
- ❑ AdeKUS will be investigated thoroughly;
- ❑ Professors and students of universities in the Netherlands will be interviewed. These professors and students will not have the same background and not all of them will be from an IT background. This is solely to get a broad view on the topic;
- ❑ Professors and students of AdeKUS in Suriname will be interviewed (in depth interviews). These professors and students will not have the same background. This is solely to get a broad view on the topic;
- ❑ The age and gender will be asked in the interview and also in the questionnaire. At the results this will be discussed as well to see if there are similarities.
- ❑ A questionnaire will also be conducted which will be sent for correspondence to students of universities (higher education) in the Netherlands as well as to AdeKUS. This questionnaire will give insight in the differences between the countries regarding the topic.

Also, as E-learning is a broad concept, not every aspect can be researched. In chapter five the limitations will be assessed and with the results of the interviews and questionnaires, the limitations will be further assessed in the 'limitation' chapter.

3.1.1 Background information of Leiden University

This research is conducted to give recommendation to Leiden University but also to make a comparison between Leiden University and AdeKUS on the topic 'E-learning integration'. Leiden University is researched thoroughly for this study to narrow down the scope of Dutch universities and to make the comparison with AdeKUS clearly. AdeKUS is taken as a case study to go in depth with the topic 'E-learning integration'.

Leiden University is the oldest university in the Netherlands and consisting of seven faculties about 24.500 students from 110 countries worldwide. The university offers a broad range of 46 bachelor's programs and 73 master's programs. Leiden has a strong international orientation and emphasis on teaching and research of the highest possible quality and ranking all over the world.

The motto of the University is: "*Praesidium Libertatis, Bastion of Freedom*".

As to technology Leiden University is learning from their students. They give student the freedom to explore what works best and how this can benefit the way of teaching. For example the use of Dropbox was introduced by students themselves Because Leiden University is internationally oriented, a lot of students are sometimes abroad and this helped with the communication during projects. Furthermore, Blackboard is used as a communication tool where the courses are being

communicated to the students and vice-versa. The part-time program of Leiden University, CAI, uses Moodle as a communication tool where the students have the ability to take online tests.

Leiden University, in particular the Leiden Institute of Advanced Computer Science (LIACS) department, adapt very quickly to new innovations. They often run 'trial courses' and with feedback and input of the student the course is being formed and given thorough content. E-learning at Leiden University is being used in various ways, for instance a teacher who is abroad gives information exchange via video conferencing through WebEx or a lecture through Skype. The students on the other hand use E-learning tools such as Skype, Google drive and Facebook to communicate with other students at home. As technology is constantly improving, Skype also improved their services. Skype business for example now makes it possible to meet with up to 250 people and these people do not even have Skype Business, but only the standard Skype version, a working internet connection and a (smart) phone. So giving lectures through Skype or online meetings could be more innovative and become more interactive. During the interview this is researched to explore whether Skype is already being used as an E-learning tool and if so, how extensively it is currently in use.

Leiden University has also a Center for Technology and Innovation Management (CeTIM) where they make innovation happen. With all the new technology which is being used for education, Leiden University also has to adapt to these changes. They already started with SPOCs and MOOCs, which is developed at the Centre for Innovation. The Centre for Innovation helps to prepare Leiden University for the digital future by identifying and exploring technological trends in education and research. The center for Innovation researches technology from the perspective of human beings by launching initiatives that are relevant to society by developing learning and innovation instruments.

So the SPOCs and MOOCs are currently already used for various courses. However at LIACS and CAI this has not yet been introduced. At LIACS lessons are given through lectures supported with powerpoint and Blackboard is being used as a communication and information platform for students and teachers.

3.1.2 Background information of AdeKUS

Suriname is my hometown which made it an obvious choice to choose this university, but also for the fact that they still live by the Dutch education system dating before the independence in 1975. It is a country of many contrasts, between the rich and the poor, also between potential development and real development. Suriname faces serious development challenges in the field of economics, political, educational and social. Suriname has only one university, the Anton de Kom University of Suriname (AdeKUS). AdeKUS is accessible for students who completed the VWO or have completed a one-year preparatory course of study at the university which leads to full admission for those who complete the course, after completion of HAVO stream and the technically-oriented senior secondary schools [Ministry of Education, Dutch written sector plan, 2004-2008]. The university has a population of 6000 students and consists of five faculties with several research institutes.

The education at AdeKUS is mostly provided through the traditional way with textbooks. Lessons are given by lectures supported with powerpoint as a presentation tool and most of their information comes from textbooks which are used year after year. So, compared to the Dutch

education system in general and with that of Leiden University, their education system is outdated. As a colony of the Netherlands, that's why the Dutch education system became a model. As already said their education system is still old-fashioned. The students of AdeKUS do not have a choice for an education program; studying abroad is expensive for the majority. To acquire information about how outdated the education system is or how teacher and students experience it, will be part of the interviews and questionnaire. At the 'data analysis phase' this will be researched to see what the variables could be.

AdeKUS also faces a distance barrier, which is already discussed in chapter one. The university is located in the district of Paramaribo, what makes it difficult for students living in the hinterland and rural areas to reach the university. Some of the students travel by boat and bus to reach their destination. Also the students from the district Nickerie have to travel four to five hours twice daily. They are most likely to move to the city to attend a bachelor or master program at AdeKUS. This problem was already assessed where teachers travelled to the district itself instead of the other way around. Teachers would get a subsidy for the travel costs, but due to to-days economic crisis this is no longer applicable.

As the world is becoming more and more digital, with all the upcoming new technology, as seen in the literature review, there be an easier and more effective way to address these two problems viz.: the distance barrier and the outdated education system. AdeKUS already made a lot of positive developments in their teaching models. For instance AdeKUS kept agreements with other universities (e.g. Erasmus University) and partners in the Netherlands and there are several institutions as well giving international lectures at the AdeKUS. There is also a collaboration with Belgium: annually an average of 30 teachers visit AdeKUS for exchange, an estimated 50-75 teachers primarily from the Netherlands, Belgium and the USA. AdeKUS even operates their Medical Faculty (Public Health) fully from distance through telephone conference. Beside from AdeKUS there are universities of applied sciences like Inholland (now FHR school for business) which are operating in Suriname. But these universities are out of scope, AdeKUS is seen as the only university in Suriname.

Suriname is a country that has proven itself to develop fast and it is a great country to invest in, especially for students, who are the future and models of Suriname. They have to contribute to the future and economic growth of Suriname, but only with a good education they can have the abilities to help Suriname evolve. There are good opportunities for scientific research in this country; first of all, in the field of health, education, gold mining, nowadays especially in financial economics, sociology, etc. But to contribute to these economic occasions, the performance of teaching and learning at AdeKUS has to improve radically. So this is an excellent opportunity to take a closer look at their education system, and prospectively how they can benefit from E-learning as soon as possible.

Also important in this particularly study case is to assess the various barriers which makes the implementation of E-learning in Suriname more difficult than in other countries. For example the internet quality in Suriname needs to be improved drastically and within a short term of years. At the moment 37.4% of the Surinamese population are using internet. Suriname stands at the 104th place, between two groups of islands, viz. the Cape Verde Islands and the Fiji Islands, and is more than three percent below the world average of 37.9%. Netherland is positioned on the 7th place of this list [Internet Society: Global Internet Report, 2014]. Thus, compared to the Netherlands and

other countries, this is for Suriname a challenging factor which will also be researched through the interviews and questionnaires.

3.2 Literature review

The literature review was conducted by first researching E-learning thoroughly, followed by the E-learning methods and E-learning applications will undergo the same research followed by the connectivity and the factors that influence the adoption of E-learning. And last but not least the various barriers will be assessed.

This literature review will consist of scientific journals, blogs, books, articles and several academic thesis research on the topic E-learning and on developing countries. The literature study will consist of existing academic literature and will be conducted to obtain input on the topic with relevant theories. The literature review will also give input for the questions of the interviews and questionnaire.

The literature of the literature review will be obtained through various search engines with a time span of approximately ten years starting in 2004.

The search engines which will be used to obtain journals, theses and research papers are:

- ☐ Google Scholar: Journals
- ☐ ERIC: Institute of Education Science
- ☐ EDICT: International Journal of Education and Development using Information and Communication Technology
- ☐ ScienceDirect
- ☐ UNPAN: United Nations Public Administration Network
- ☐ IRRODL: The international review of research in open and distributed learning
- ☐ IEEE Xplore, Digital Library
- ☐ ACM: Association for computing machinery

To assess whether a journal, theses or research paper were relevant and accurate, I looked at the journals which were used for obtaining the findings of the research and for which university the research was conducted. I've also checked whether it was published somewhere and which volume it was. Journals which were references in another journal were also used when the content had more information regarding the topic. In chapter twelve there is a list of all the literature which is used for this research alongside their publication and whether it is a book, journal or article.

After the right journal, paper, book or blog was found which was relevant to the topic 'E-learning integration in developing countries' the data was processed to create theoretical data for this research. Also valuable input was used for the interviews. This was mostly done with a statement or conclusion. The used keywords were related to the topic. In the abstract the keywords are given. From each literature the abstract and conclusion was read to get acquainted with the literature and after this the content was read to get an overview about the topics. Only the topics which were relevant were read. Also when I read something and thought I could be of relevance it was marked and noted with the reference literature. While processing the data these notes were incorporated or not. Only if it added additional information to the data it was used. While collecting the data, limitations were also set and the input for the interview was being shaped by using another color for the data.

As the Literature review is used for input, it is an exploratory research to discover ideas and insights regarding the topic, so not only to collect 'accurate' data. The literature review is used to define the various aspects and elements of the topic further to shape different 'sub topics' to define and shape the interview questions. The literature review and the interviews are the elements of the qualitative research approach.

3.3 Interviews

To answer the research questions an interview will be conducted as well as a questionnaire. The questionnaire is an element of the quantitative research approach, because it will have more measurements and numbers. Although there will be a few questions where an description can be given, but in a questionnaire the student will not always fill this in with a 100% concentration.

The interview which will gain qualitative information will be conducted first, followed by the questionnaire. At the interview I talk about qualitative data because there will be thorough description and also observation will be made to ask questions further. The interviews will be taken from ten to fourteen people divided in teachers and students. The teachers and students will be from various universities. These people will also be divided per countries, namely Netherland and Suriname. So as well in the Netherlands as in Suriname, interviews will be obtained. In Suriname the interviews will only be obtained from AdeKUS as it is the only university in Suriname.

The questions for the interviews are composed to measure various aspects which can give a thorough answer to the research questions. With these questions a comparison is made between the Netherlands and Suriname on the various methods and the way E-learning is currently being used in their education system.s With this comparison the differences in culture are also explored and a relationship is made to Hofstede's cultural dimensions. The interview questions are in the appendix alongside the results. The way the questions are measured is explained in the models below. The model below is a representation of research question one, and the variables that will be researched are given below.

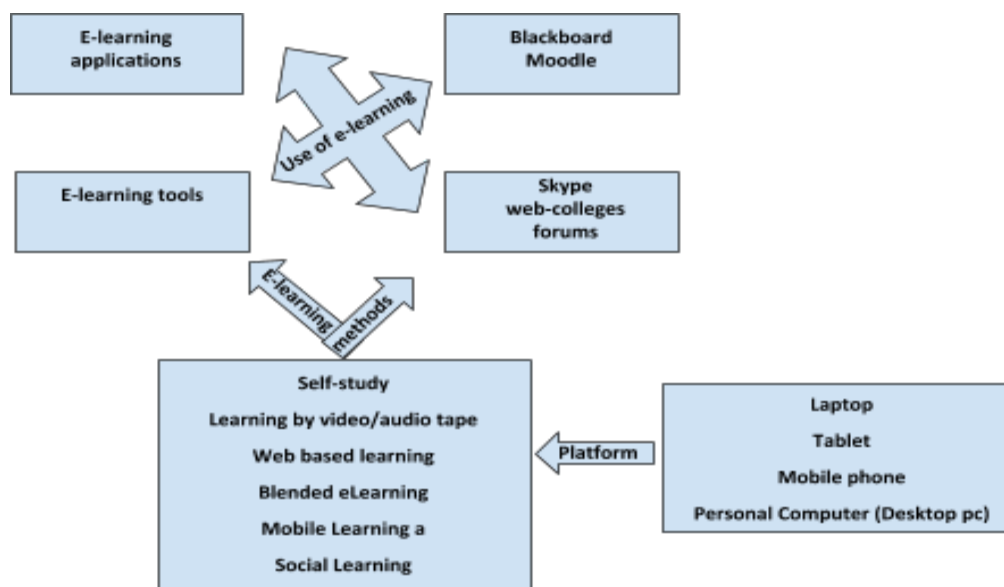


Figure 10: Variables for research question one.

This representation shows the variables which were incorporated in the research question. With E-learning applications and E-learning tools I looked at the use of E- learning and which methods are applied. And for the use of E-learning I also looked at which system (Blackboard/Moodle) and how lectures are supported. Furthermore I looked at which platform is mostly used.

To research this, the questions given below will be incorporated in the interview questions. After analysing the results of these questions, some of them will be incorporated in the questionnaire as well.

- ❑ Which platform is currently being used at school? (Laptop, Tablet, Mobile phone or Personal Computer). This questions will be asked to get information of how familiar people are with the platforms mentioned and for what they often use this. This question is also asked to see which of these platforms is commonly used.
- ❑ Give a description of how course information is being accessed? This questions is asked to get information about the various applications, tools and platforms which are currently being used to access course information.
- ❑ How is E-learning being used in the current courses? This questions is a follow-up of the question above and the goal is to explore how intensively E-learning is currently being used.
- ❑ Give an opinion on E-learning? This question is asked to explore the various opinions about how people think about E-learning.
- ❑ What is your take on E-learning methods? Are you familiar with any of them? This questions is a follow up of the question above and the goal is to get information about the various E-learning methods which are currently being used.
- ❑ How does the communication take place during courses? This question is to explore how people communicate and to get information whether this is via distance or face-to-face and/or which platforms are used.
- ❑ How are lectures supported, for e.g. are multimedia tools used (flash animations, simulations, videos, audios, etc.)? This question is asked to explore how intensively technology currently is used to support the lectures.

The model below is a representation of research question two. The various barriers for a successful introduction of E-learning applications will be researched with the variables given in the model below where the barriers are in general 'lack of knowledge', 'network access' and 'connectivity'.

The limitations have been set here as budget and costs which will not be assessed thoroughly. Furthermore the challenges will be assessed when there is a resistance to change when adopting E-learning. And as last part I will research if there are any benefits which make the adaption pleasant.

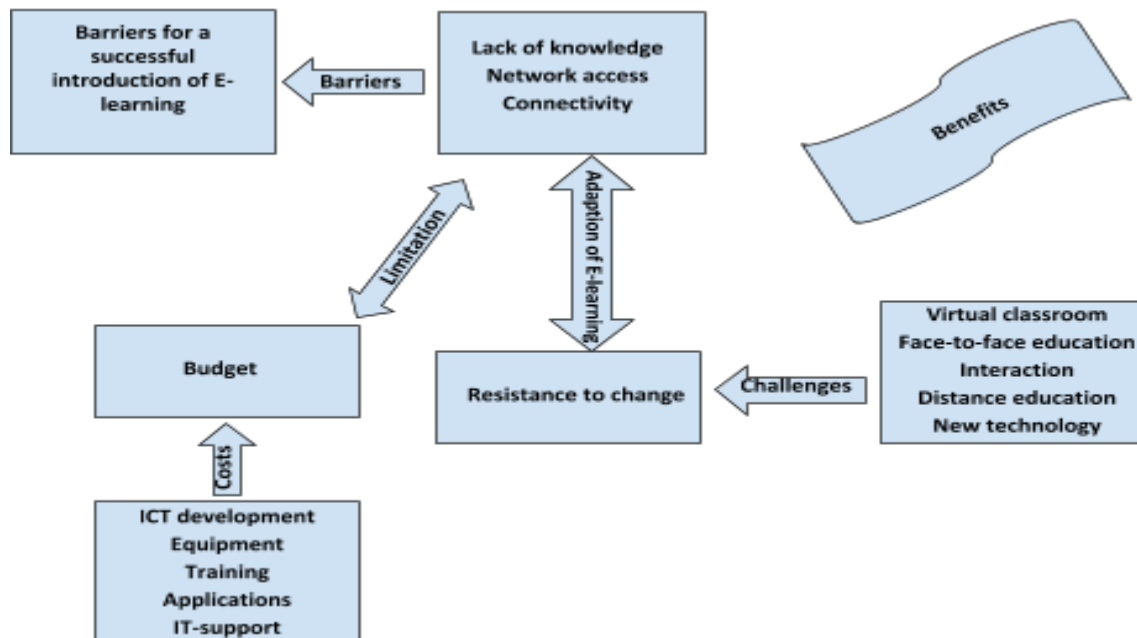


Figure 11: Representation of research question two.

This representation shows the variables which I assessed at this research question where at the three barriers visualized in the figure represent the barriers and the adaption for E-learning in relation to the limitation. Apart from the barriers I also looked into the benefits, if there are some, and the challenges.

To research this, the questions given below will be incorporated in the interview questions. After analysing the results of these questions, some of them will be incorporated in the questionnaire as well.

- ☐ Give a description of the connectivity of your university? This question is asked to research how connectivity plays a role in the usage of E-learning.
- ☐ How much influence has connectivity on the use of E-learning? This questions is a follow up of the question above and the goal is to see what the effects are of a good/bad connectivity.
- ☐ How much IT-support is currently being used for study? This question is asked to get information about the usage of IT-support. To research why people make use of IT-support and how frequently they use this.
- ☐ Which of the E-learning methods could really be a challenge (for e.g. because of lack of knowledge, network access problems and keeping up with technology)? This question is asked to research whether a method could also be a barrier when introducing or making use of E-learning.
- ☐ Some developing countries are living by the statement 'what is different, is dangerous' and maintain a resistance to innovation.

What is your take on this statement? This question is asked because there is a difference when it comes to introducing and implementing something different. The goal here is to research how people react to change and how they accept innovation.

- ❑ Face-to-face education or distance education, what do you prefer and why? This question is asked to research whether people prefer distance education or face-to-face education to explore how E-learning can be introduced or implemented regarding this outcome.
- ❑ How can your institution benefit from the E-learning methods mentioned above? This question is asked to research how people think that the education system of their institution can benefit from various E-learning methods.
- ❑ How can you benefit from E-learning? This question is a follow-up of the question above and the goal is to research how each individual can benefit from the usage of E-learning but also from the various methods, tools and applications.

For research question 3a the differences between Suriname and the Netherlands in relation to the introduction of E-learning will be researched. To give answer to this research question, the questions given below will be incorporated in the interview questions. After analysing the results of these questions, some of them will be incorporated in the questionnaire as well.

- ❑ According to the pyramid of Bethel Maine This is how 'we' learn. Can you describe the way of learning at your university? This question is asked to research how people learn and will lead to a description of how E-learning can be used regarding how most people learn. For this question I solely looked at the individualism part where practice doing will be assessed.
- ❑ How does your institution encourage you to incorporate technology? This question is asked to research how much technology a university used and what they offer to the teachers.
- ❑ Some developing countries are living by the statement 'what is different, is dangerous' and maintain a resistance to innovation.

What is your take on this statement? This question is asked because there is a difference when it comes to introducing and implementing something different. The goal here is to research how people react to change and how they accept innovation. This question can also lead to cultural differences. So for research question 3a I solely looked at the answers and if they were relevant to the variables mentioned in the model above.

- ❑ If E-learning methods would be implemented in your current study, how would you adapt to this change? This question is asked to say how people react to the implementation of E-learning in their current study.
- ❑ How do exams currently take place? Could this be different over three years or more? This question is asked to explore the different aspects of taking an examination and to explore how it could be in the future. For when E-learning will be introduced, it's handy to also explore this part.
- ❑ Virtual classroom can make it possible that a mass of students can be educated during the same time at different locations. What is your opinion on this? This question is asked to explore how E-learning can be introduced or implemented regarding the outcome of this question.

For research question 3b the differences between Suriname and the Netherlands in relation to the application of E-learning will be researched. To give answer to this research question, the questions given below will be incorporated in the interview questions. After analysing the results of these questions, some of them will be incorporated in the questionnaire as well.

- ❑ According to the pyramid of Bethel Maine This is how 'we' learn. Can you describe the way of learning at your university? This question is asked to research how people learn and will lead to a description of how E-learning can be used regarding how most people learn. For research question 3b it is about what kind of learning can be applied in relation to the application of E-learning.
- ❑ Some developing countries are living by the statement 'what is different, is dangerous' and maintain a resistance to innovation.

What is your take on this statement? This question is asked because there is a difference when it comes to introducing and implementing something different. The goal here is to research how people react to change and how they accept innovation. This question can also lead to behavioral differences. So for research question 3b I solely looked at the answers and if they were relevant to the variables mentioned in the model above.

- ❑ How much time do you spend on one course? This question is asked to research how important time is for each individual and how this affects the application of E-learning.

At question 3a and 3b exploratory research can be conducted to understand which of the variables from the results are the cause and which variables are the effect. At the results this will be further researched.

The interview results will shape the questions for the questionnaire, but the goal is the same. To research and gain more information on the adoption of E-learning in the education system and to get a clear view on what could be good methods for implementation.

3.3.1 Drafting the interview questions

Each of the research questions was drafted to acquire the right answer. These questions are explained in chapter 2.2; A full interview form is included in the appendix.

To acquire the information for 'research question one' the data used was mostly about E-learning applications. In the literature review it was stated that 'a simple lecture via Skype for instance should be a standard option to be used in case of ugly weather resulting in trainers out of operation. To assess this further, it was of relevance to research first how lectures are currently being supported as well in the Netherlands as in Suriname. With this input the question drafted is also to find out how technology is currently being used to support the lectures. In the literature review it was also stated that 'Skype is currently used at Leiden university, but not as a standard E-learning method'. For AdeKUS it is not clear whether or not they use Skype or other methods to that end. Therefore, the question was drafted concerning E-learning methods. Before this question could be put to the interviewee respectively to give answer to question one, research was also done to how people experience E-learning at this moment, how it's being used and their general opinion about it. And as an addition to this it was also stated that at Leiden University they use Blackboard and Moodle, but it isn't clear whether or not AdeKUS also has an E-learning

platform respectively how they make use of that; this was also a question. Furthermore, the question of how information is currently being accessed was drafted.

Another important statement was that 'students demand more technology in the courses to communicate and to have access to study material in a more expeditious way'. To research how communication is currently taking place was also drafted as a question.

To acquire the information for 'research question two' the data used, was mostly about the barriers E-learning integration brings for the Netherlands as well as for a developing country. In the literature review there were a lot of challenges given. The challenges about accessing information technology facilities still remains highly inadequate and unevenly distributed throughout the country. The challenge to focus on the internet range and the quality of the connection at the university to integrate E-learning questions, are incorporated to research what the quality of the connectivity of the universities is at the moment. Also was stated that technical support which includes issues like installation, operation, maintenance, network administration and security is an important part of the implementation and integration of ICT in education systems. Therefore research work is necessary whether teachers and students are using the IT support when the university has one.

Also some of the challenges mentioned, were that teacher and student do not have minimal adequate technical skills, and having aversion to using E-learning platforms is their problem. These challenges were acquired with the question which E-learning methods could really be a challenge.

Also is stated as a challenge in some developing countries in this case Suriname the cultural dimension 'what is different, is dangerous' contrasting the Netherlands, "what is different, is curious". Also in the cultural dimension 'Uncertainty Avoidance' is stated that in the Netherlands there is a tolerance for deviant and innovative ideas and behavior which is in huge contrast with Suriname where there is a scrupulousness about deviant ideas and behavior towards innovation. This was combined as one question giving answer to research question 2 as well 3a and 3b regarding the results.

Furthermore, stated in the literature review, that the developing countries are still far behind from benefiting from E-learning, so this question too was incorporated in the research as to how teachers and students look at the benefits, individually as well as how they see the benefits as university.

And also, stated: "geographical and physical obstructions can be removed", to enable students to select their path and time for the learning courses and that distance education is also a solution for developing countries; it can also deal with large numbers of students in a cost-effective manner'. So this was also incorporated in the research interview whether people prefer distance education or face-to-face education to explore how E-learning can be introduced or implemented, regarding the research outcome. As stated in the literature review it is important to have information as to how people do experience distance learning and how willing they are to adapt it, only then can they conclude whether or not to accept "distance learning'.

To acquire the information for 'research question 3a' the data used was mostly about the introduction of E-learning and regarding the cultural dimension 'Power Distance and Individualism' for the Netherlands as well as for a developing country.

As stated in the literature review 'discipline is not always favoured for the students, especially in Suriname, as they expect that the teacher will do everything'. To research this for the Netherlands as well as for Suriname the question was drafted to acquire information about how people would adapt E-learning methods implicated in the current study.

Also stated at Power distance that there is a difference in learning. This means the purpose of education is: learning how to do compared to that of the Netherlands where the purpose of education is learning how to learn. The diplomas are playing also an important role which can be stated as a huge difference in culture whereas a diploma of Suriname has no worldwide validity. To research this further, it was relevant to acquire information about students to compose an E-learning program. It is also of relevance to know how people are doing this learning. To this end the the pyramid of Bethel Maine is incorporated as a question.

The cultural dimension 'Power Distance' (where Suriname has a high score) stated that it is well known for the fact that teachers are expected to take all initiatives in the class, compared to the Netherlands. It is the other way around where teachers expect initiatives from students. To research this further, it is linked with the statement 'how universities are encouraging their faculty members and students nowadays to make use of more technology'.

In the literature review it was also stated that some universities even aims at replicating as far as possible the classroom model through the use of synchronous interactive technologies and relies heavily on lecturing and questions. To research this further, it was also incorporated in the interview for this research question regarding the adoption of E-learning. Also for this research question, there is a question about how exams currently take place. This question, to see if it has relevance to the adoption of E-learning when wanting to go fully online, although there was no data collected on this topic in the literature review.

To acquire the information for 'research question 3b' the data which was used, was mostly about the application of E-learning and regarding the cultural dimension 'Uncertainty Avoidance and Masculinity' for the Netherland as well as for a developing country.

As already mentioned, for this research question, 'what is different, is dangerous' will also be assessed here and also compared to Suriname; the Netherlands where there is a tolerance for deviant and innovative ideas and behavior which is in huge contrast with Suriname, where there is a suppression of deviant ideas and behavior and resistance to innovation. And also as well for Leiden University as for AdeKUS the pyramid of Bethel Maine which is stated in the literature review that this 'could be of good use of shaping an E-learning course' is also assessed for this research question. Also stated was 'often the students don't get all the knowledge during a three hours course, because the teacher mostly goes through a presentation and some slides followed by applying the theory to actual cases' and that there is also the difference at the cultural dimension on Uncertainty Avoidance that time is of importance. Therefore the question is shaped to research how much time teachers and students spend on one course regarding the application of E-learning.

3.3.2 Conducting the interviews

The interviews were held at AdeKUS, on the campus itself. Three teachers and three students were interviewed. The interviews, held in Netherlands, were conducted through Skype and Whatsapp. The universities in the Netherlands which were assessed were Leiden University, Erasmus University and The Hague University of Applied Science. From each of these universities

one student and one teacher were interviewed. For the interview the qualitative method is used and to meet rigour, trustworthiness, rich data and data that has value. It is of importance to hold twelve interviews at least. For this research I conducted precisely twelve interviews.

Below is the data of each university where the interviewee was from.

	Leiden University	Erasmus University	The Hague university of Applied Science	AdeKUS
Staff members	5.500	3.301	2.003	898
Student	25.800	23.196	25.000	6.000
Faculties	7	7	7	5
It support	Yes	Yes	Yes	Yes
Bachelor program	44	30	78	15
Master program	78	9	10	7

Before the interviews were conducted, a test interview was conducted from an Alumni student of AdeKUS to test if the questions were formulated clearly and if the required information was obtained. Thereafter the interview questions were formulated for the students and teachers.

At AdeKUS the teachers and students were selected on the campus itself. The campus is easily accessible so I approached students over there who were on a break and they were interested in the research. Via these students I got information about the teachers to come in contact with. The teachers and students were all willing to participate and were very interested in the research.

In the Netherlands the teachers and students were conducted in my own network. I've had easy access to The Hague University of Applied Science because I have my employment over there and of course Leiden University was also easy getting participants because I attend college there.

For getting participants at the Erasmus University I contacted the student organization Surinamese Students Abroad (SSA) which has 900 members and asked if they knew someone from Erasmus university and If they could help with finding a teacher as well who was willing to participate in the interview. Also the Centre for Innovation was asked if they have any contacts at Erasmus University in case my first approach might not be successful. They were willing to assist in seeking participants.

The participants with different backgrounds were selected to examine whether there is a difference regarding the topic.

Before conducting the interviews all participants were informed about the research and what they can expect from the questions. They were also informed that the interview would take up no more than half an hour of their time. The interview questions were all open questions to acquire

maximum information from the participants. Extra information was used for the preparation of the questions for the questionnaire.

The following experts from universities were interviewed:

University	Participant	Background
Leiden University	Student	Master ICT in Business
Leiden University	Teacher	Master ICT in Business
Erasmus university	Student	Master in International Economics
Erasmus university	Teacher	
The Hague University of Applied Science	Student	Safety Security Management
The Hague University of Applied Science	Teacher	Bachelor in Business IT and management
AdeKUS	Student	Bachelor program in Mechanical Engineering
AdeKUS	student	Bachelor in Medicine
AdeKUS	Student	Bachelor in Law
AdeKUS	Teacher	Bachelor and Master in Law
AdeKUS	Teacher	Bachelor in Economics and Business Economics
AdeKUS	Teacher	Master in Sustainable management of Natural Resources

3.3.3 Analysing the interviews

In order to process all the data of the interviews these interviews were transcribed and coded. Every interview was extensively noted to reflect the answers of the participant in a fully understandable and clear way. These notes were written on paper and everything the participant said, was also noted on the paper. After the interviews, the notes were processed within an hour at a quiet place. As Crawford stated in his book 'Marketing Research and Information Systems' half of the details from an interview will be forgotten within 24 hours, three-quarters can be lost within 2 days and after this only skeletal notes can be salvaged. Jotted notes will help prompt

memory later, but it is best to write up interview notes while they are still fresh in the interviewer's mind after the interview or at the end of the interviewing day [I.M. Crawford, 1997]. The notes on paper were processed online in Google Drive, so the interviews were accessible anywhere, anytime and anywhere. The participants were also given the information that they could always contact me if new information popped out which wasn't said during the interview.

For transcribing the interviews, the grounded theory approach is used, which is the idea of reading (and re-reading) the notes and "discover" or label variables and their interrelationships [G. J. Miller and K. Yang, 2008]. The label variables may be an abbreviation, a number, a letter, a color, a geometric shape, or anything else that is convenient for the process of summarizing, analyzing, storing, or retrieving the information [R. Gorden, 1992]. For transcribing the twelve interviews which were conducted, three forms of coding were applied. Namely Open coding, Axial coding and Selective coding.

Open coding is the part of the analysis concerned with identifying, naming, categorizing and reassembling the categories. Essentially each line and sentence is read in search of the answer to the repeated question "what is this about? What is being referenced here?" These labels refer to things like information gathering, course, methods, etc. The adjectives and adverbs are also being sought out, for example about a course I can ask its duration, and its hours, and its importance to learning. Whether these properties or dimensions come from the data itself, from respondents, or from the mind of the researcher depends on the goals of the research [G. J. Miller and K. Yang, 2008]. Open coding was applied by highlighting the important data which is relevant for this research.

In the table below the colors are described which were used at the open coding part. The findings of each interviewee was highlighted by different colors.

Color	Category
Pink	Associated with "group" or "individual".
Dark pink	Everything associated with "Face-to-face education" and "distance education".
Pastel purple	Basic information about "age", "gender" and "education background".
Light purple	Everything associated with "E-learning".
Purple	Everything associated with "reading", "discussions" and "books".
Pastel blue	Everything associated with "connectivity".
Bright blue	Everything associated with "online".

Pastel yellow	Everything associated with “ratings”.
Light yellow	Everything associated with “lectures” and “innovation”.
Bright yellow	Hours spent and everything associated with “school”.
Pastel orange	Everything associated with “benefits” of E-learning.
Orange	IT, for e.g. “support”, “laptop”, “beamer”, “technology” etc.
Light red	Describes which “platform” is used, “information” and the “way of learning”.
Red	Associated with “study material”, which can be “accessed anytime and anywhere”.
Dark red	“Resistance to innovation”, “adaption”, “change” and “acceptance” of E-learning (technology, methods and tools).
Green	Everything associated with “home”.
Dark Green	E-learning “methods” and “tools”.
Dark grey	Everything associated with “exams”.

Everything associated with the description in the category was given the corresponding color. Colors were given going through every interview twice and trying to mark the right color. Below you see an example of how sentences were scripted with color codes.

17. Which of the E-learning methods could really be a challenge for you or co-students?
 Social learning, because you cannot control it and weblearning because of the videos. The information has to be explained very well and students get distracted easily, so take this is also a challenge.
- a. Why is this? (for e.g. lack of knowledge, network access problems and keeping up with technology)
 Lack of knowledge
18. Virtual classroom can make it possible that a mass of students can be educated during the same time at different locations.
 What is your opinion on this?
 Good, but there has to be no distractions for the students. If it is from a distance, it has to be kept interesting so students won't drop out or become long-term students. You have to have all facilities if you want an E-learning course to work. You have to have the right equipment. Not everybody has the equipment at home, so giving lessons virtually can be a challenge.

After this Axial coding was applied. Axial coding is the process of relating codes (categories and properties) to each other, via a combination of inductive and deductive thinking. To simplify this process, rather than look for any and all kinds of relations, grounded theorists emphasize causal relationships, and fit things into a basic frame of generic relationships [G. J. Miller and K. Yang, 2008]. Axial coding was applied by looking at the highlighted data and see which categories can be grouped. The several highlighted statements were grouped and collected. To find relations the interviews were grouped in four parts, namely teachers of the Netherlands, teachers of Suriname, students of the Netherlands and students of Suriname. To analyze this, tables were made to collect the several findings which are grouped according to the categories mentioned above.

And at last selective coding was applied for the several findings. Selective coding is the process of choosing one category to be the core category, and relating all other categories to that category. The essential idea is to develop a single storyline around which all everything else is draped. There is a belief that such a core concept always exists. Grounded theory draws from literary analysis, and selective coding is about finding the driver that impels the story forward [G. J. Miller and K. Yang, 2008]. Selective coding was applied by making a storyline with the colored groups. To determine a good storyline, the interview results are only included when at least two of the three interviewees per category have the same statement about a certain code.

The observations of the interviews of the teachers and students of the Netherlands which are compared with those of Suriname are fully explained in the tables in the appendix. Here I will assess the findings by each research question viewed from the four perspectives, namely financial, organization, culture and quality.

In the interview standard question were asked regarding background, age and gender. In the table below the outcome is stated whereas there are no big differences. Although I can say that the teachers of Suriname are a bit older, but this is still generalizing, the outcome is based solely on three teachers.

Teachers of the Netherlands Suriname	VS	teachers of
Age variation between 24-49 years.		Age variation between 41-59 years.
For the interview one female and two male teachers were interviewed.		For the interview one female and two male teachers were interviewed.
Education Background consist of Economics, ICT and business and Business IT and management.		Education Background consist of Economics and Business Economics, Law and Sustainable management of Natural Resources.

Students of the Netherlands	VS	students of Suriname
Age variation between 19 and 30.		Age variation between 19 and 22.
For the interview one female and two male students were interviewed.		For the interview one female and two male students were interviewed.
Education Background consist of Economics, ICT and business and Safety and Security management.		Education Background consist of Mechanical Engineering, Medicine and Law.

3.4 Questionnaire

This questionnaire which is conducted is extensively set out on the target group which is discussed in Paragraph 3.2. 'Research scope'. So the goals is to let approximately 40 people, divided by teachers and students, fill in the questionnaire.

The teachers and students will be from various universities and they are reached through my own network, social media platforms like Facebook and LinkedIn and mailing lists. For e.g. on Facebook there is a group called 'Surinamese Students Abroad (SSA)' where all students who came from Suriname to follow a study here are connected with each other. It has over 1000 members on Facebook and the students are spread over the country and take part at different dutch universities. The Chairman of SSA was asked to distribute the questionnaire through their platform and contacts.

The questionnaire will also be divided by country, namely the Netherlands and Suriname. In Suriname the interviews and questionnaire will only be obtained from AdeKUS as it is the only university in Suriname.

The questions are mostly put in a way so that the results can be measured. The questionnaire is in the appendix; Some of the questions are not that different from the interview questions, because they have the same goal. The goal is of course to measure various aspects which can give a thorough conclusion on the research questions. Unlike the interviews, the questionnaire will make it possible to show measurements with figures which will later result in graphs. To explain this graphs I have also used the findings from the interviews to enable me to make comparisons and find similarities.

3.4.1 Drafting the questions

After processing the interview some of the variables needed more research. The interviews were based on statements of only twelve interviewees and that was also divided by six for Suriname and six for the Netherlands. The questionnaire was conducted by 41 students from universities of the Netherlands as well as students from AdeKUS. For this the random sampling' technique was used, which is the purest form of probability sampling. So each member of the population has an equal and known chance of being selected. For this research several Dutch universities have been

used and of course AdeKUS. When there is such a huge amount of people targeted, it is often difficult or impossible to identify every member of the population, so the pool of available subjects becomes biased.

In total 20 students of the Netherlands and 21 students of Suriname completed the questionnaire (of which 16 are female and 25 are male students with an age variation of 20-38).

3.4.2 Conducting the questionnaire

The questionnaire was open from the 22th of february until the 13th of March. The questionnaire was made on the website "<http://www.enquetemaken.be/>" which I used for my bachelor study and it worked well as the results could be monitored at anytime and the results could easily be extracted through graphs and also individual forms. This website was made by a student who graduated in 2007 and found it difficult to find a good working online questionnaire tool. I used the free section so it was not possible to put the Leiden University logo on the enquete which made it sometimes difficult to ask teachers of the Netherlands to forward it to their students. Also the goal of this research could not be fully described as a 'introduction text' so the students didn't have all the information of what they are contributing to. If these would be possible and incorporated the reach would definitely be better. The full questionnaire is in the appendix.

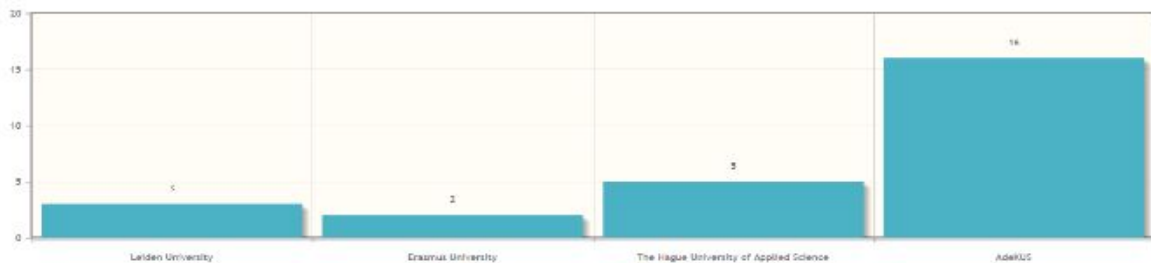
The questionnaire was published on the Facebook page of SSA (Surinamese Students Abroad) who have over 1000 followers of various universities in the Netherlands. The questionnaire was also posted on my own Facebook wall as well as that of other students who were willing to help. In Suriname it was sent by E-mail to teachers and students to pass it through to other students. The students from the Netherlands who filled in the questionnaire are from universities such as Leiden University, Erasmus University, the Hague University of Applied Science, Delft university, Amsterdam university of Applied Science and University Hasselt. From Suriname the students were only from the university of Suriname.

Below you can see the percentages of the most common universities where the students are from:

Leiden University	9.38%
Erasmus University	6.25%
The Hague University of Applied Science	15.63%
AdeKUS	50.00%

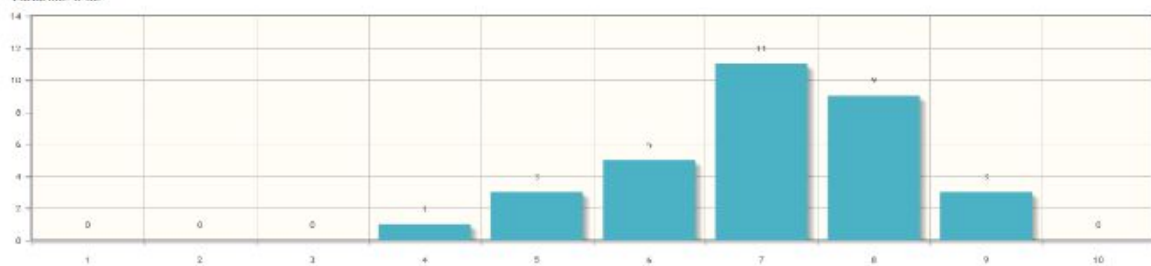
The average study rate of the university is at a 7.03 with a variance of 9.62. This study rate applies for both universities and was incorporated in the questionnaire to see whether there would be interesting anomalies in relation to the quality perspective assessed in the results of the literature review. In the graphs below the responses which were given are visualised.

Statistieken voor vraag 4 : Which University?



Statistieken voor vraag 5 : How high would you rate your current study?

Gemiddelde waarde: 7.03
Variantie: 9.62



3.4.3 Analysing the questionnaire

As stated above, the results could be easily extracted through graphs and also individual forms which made it easy to analyse the questions. The answers to the open questions were bundled together and presented in a storyline in chapter four. The bundling was performed by putting all the answers of one question into one textbox and excluding the repeated words/text to create a well structured answer. Furthermore I also compared the results with those of the interviews to see if there are any similarities and/or differences.

4 Results

4.1 Literature Review

The exploratory literature review had some interesting findings which has a research gap. For both universities there are interesting facts which need to be researched further. The following findings from the literature review will shape the questions for the interview.

In the literature review it was stated that E-learning enables students to pace their studies according to their needs, making learning accessible to people who do not have enough free time for studying, so they can program their lessons according to their available schedule; those far from a school. This could be a solution for the geographical issues for Suriname. Also stated was that in developing countries where there is shortage of human resources and available skills, particularly in the field of science and technology, there is an increasing need to implement E-learning due to increasing student numbers [N. Iahad, G.A. Dafoulas, M. Milankovic-Atkinson and A. Murphy, 2004]. So distance education is also a solution for developing countries as it can also deal with large numbers of students in a cost-effective manner. The argument here is different from the traditional rationale for distance education in terms of increased flexibility. For Suriname this can be a benefit as already said in the chapter above that there is currently an economic crisis in Suriname. So the cost-effective as well as the increased flexibility can be a great benefit. In the interviews this will be researched to see how teacher and students have a view on the cost and that studying will be flexible.

Also a finding in the literature review was a topic which is out of scope for this research, but is interesting for developing countries, especially Suriname. Under the right circumstances distance learning systems have proved that they can provide quality education and training to large numbers at lower unit costs than conventional education systems [A.W. Bates, 2005]. For developing countries like Suriname and other countries where students do not have access to education, this could be a solution. As Suriname is taken as a case study and also copes with issues which can be solved by distance learning, this will be examined with the interviews. At the limitation chapter this will be further assessed to see if there are interesting facts..

Another interesting finding is that with the use of E-learning, universities can improve the quality of their education and also produce technology-savvy graduates, which are able to use new technologies in the new economy. For AdeKUS this could really be a great advantage as their education system is outdated. The use of new technology with E-learning can help them bring their quality to an international level. This part is also out of scope as it isn't part of the research questions, but I incorporated it in the interviews to assess whether there are interesting findings on the current quality of the education level of AdeKUS.

In the literature review there were also findings about the platforms which are used like Moodle, which is known as an LMS has a good architecture, implementation, interoperability and internationalization. It has 400.000 registered users all over the world. AdeKUS is also making use of Moodle for their courses, but to what extent needs to be researched.

In the literature review there were also a lot of findings about challenges for developing countries when integrating E-learning. One of the big challenge which developing as well as developed countries is that they cope with the acceptance of any new technology as it largely depends upon

the supporting conditions and environment [S. Iqbal and I. A. Qureshi, 2012]. So taking Suriname for instance, the factors that can be of influence when adopting E-learning are:

- ☐ The hinterland and rural areas have limited internet connection.
- ☐ Internet connection in general is poor.
- ☐ No advanced technology at AdeKUS.
- ☐ Teachers and students are not technical and have limited knowledge of new technology, so they need training.
- ☐ Teachers and students are familiar with the traditional way and like it this way although it is outdated.

These factors will be researched with the interviews to see if the predictions are accurate and in the recommendation chapter I will try to give a recommendation of how to assess these factors.

Furthermore it was stated that although E-learning in the universities and educational institutes of the developed countries are getting popularity day by day, it is still a dream for the less developed countries because of poor ICT infrastructure and other socio-economic reasons [Md. T. Islam and A. S. Md. Selim, 2008]. In Suriname this is clearly visible on the field of education, but also at the government offices. Suriname lacks ICT infrastructure which also makes it not attractive for others to invest in Suriname.

In the exploratory research it was also stated that M-learning is the style of learning for the new millennium, it decreases in cost and increases in capabilities of mobile devices which made this medium attractive for the dissemination of knowledge [S. Iqbal and I. A. Qureshi, 2012]. This could be a benefit for AdeKUS as many people in Suriname have up to three mobile lines with different providers, pushing penetration figures upward to 190%. The mobile market supports three main players: Telesur (trading as TeleG), Digicel (a significant operator across the Caribbean), and Uniqua [Report on BuddeComm: 'Suriname - Telecoms, Mobile, Broadband and Digital Media - Statistics and Analyses', 2014]. For Suriname it is also important to acquire fast internet connection on a mobile (smart) phone.

The diversity and competing interests of different stakeholders in the institution should be recognized when developing ICT policy and a strategic plan [L. Uden, Y.H. Tao, H.C. Yang and I.H. Ting, 2013]. For developing countries the barriers and challenges are:

- ☐ The ICT infrastructure.
- ☐ The number of teachers and students.
- ☐ The skill level of the teachers and students.
- ☐ A proper cost-analysis.
- ☐ Making proper choices for their technology.

For e.g. in Suriname there were questions raised of how many teachers are qualified enough to teach at AdeKUS and after research the answer to that question was that currently 90% of the teachers are not qualified to teach. The chairman of the Educationalists Association stated that teachers from such AdeKUS must have obtained at least a doctorate degree. And still after obtaining that degree, the teachers have to work under the supervision of a professor. Currently this is not the case whereas most teachers MA's and cannot adequately supervise the 'scientific' work, so they are actually just instructors. This also raises a barrier for integrating E-learning at AdeKUS, but students must not bear the brunt of this.

In addressing the problem of limited funds and sustaining donor funded projects, higher learning institutions can do the following:

- ❑ Adopt freeware and open source software for teaching and learning activities.
- ❑ Continuously press for more funds from their governments.
- ❑ Diversify sources of funds to have a wide financial base.

So for developing countries, also Suriname, these could be good ways to take into account when integrating E-learning in their education system.

Leiden University already uses E-learning in their courses. For instance study material like web colleges are being used, which acts as additional courses on the current lessons in class. Simple said it is a video of a professor giving a lecture. The SPOCs and MOOCs which are designed at the Centre for Innovation uses these web colleges for their education programs. So here we already talk about courses which are given round the clock. In the literature review Hedge and Hayward talks about various E-learning methods and can only deliver value if the combination of these methods achieve the university's goals. For instance SPOCs and MOOCs, which are mentioned before in chapter three where Leiden University is experimenting with this because they see that the requirements for knowledge sharing is changing. Students demand more technology in the courses to get quicker access to study material, but also to communicate faster. Also often the students don't get all the knowledge during a three hour course, because the teacher mostly goes through a presentation and some slides followed by applying the theory to actual cases. This will be examined in the interviews and belongs to the part where there will be researched 'how people learn'. Leiden University as well as other universities have to adapt to this change of teaching, so they could offer their students the best opportunities and make learning more accessible.

Also stated before is that E-learning methods could also be the SPOCs and MOOCs which Leiden University is already experimenting with. The center of Innovation are now even offering fully online colleges where students from all over the world can attend these classes. They are still experimenting with it, as it officially started in 2014, but there has been successes already. This can also be seen as a result that E-learning has the benefit to share and teach knowledge without a distance barrier and it could be given at anytime, anyplace and anywhere. Hedge and Hayward mention this in their paper: 'learning environments to anyone, anyplace and anytime'. This will also be used as input for the interviews to research how different this factor is between the Netherlands and Suriname.

E-learning can provide the courses round the clock i.e. 7 days a week and 24 hours a day, which further attracts working peoples, students and even individuals [Md. T. Islam and A. S. Md. Selim, 2008]. This could be a benefit for Leiden University as well as for AdeKUS. But most of the universities can benefit from these and even the countries where education is poorly you can have access to courses with the use of E-learning. But how this could be integrated for Suriname as well as for Leiden University more research is needed of how people see this. Therefore it will be implemented in the interview questions as well.

The use of E-learning has developed itself further and further and is still being developed rapidly, but looking at Leiden University for example It is not fully being implemented in their education system yet. A lot of universities use parts of E-learning. Like AdeKUS where they also gain a lot of information from Google and other websites. This is also a form of E-learning, but not used by everyone. There are still a lot of more ways to implement E-learning methods at Leiden University

as well at AdeKUS which makes it simpler to transfer knowledge from a professor to the students. A simple lecture via Skype for instance should be a standard option which can be used in case of bad weather and when the trains do not ride. Geographical and physical obstructions can be removed, making it possible for students to select their path and time for the learning courses. This is what is called distance learning or in other words virtual learning, which will be assessed in the 'results' phase as it will be incorporated in the interviews.

Also stated in the literature review is that distance education also leads to lesser interaction between student and teacher with the use of technology. But with two-way communications media such as the Internet or video-conferencing, interaction could be enabled between the teacher who originates the instruction and the remote student [A.W. Bates, 2005]. At most universities you see that they use blended learning, which is a combination of face-to-face and online learning. The online learning part is mostly the initiative of the student whereas they get information from the web which acts as additional material to their current study material. This part is incorporated in the interviews and at the 'data analysis phase' where the results are gathered, I will discuss the outcome regarding interaction and how important this factor is in playing a role in the education system.

Video conferencing was also assessed, which is a system where two or more participants, based in different physical locations, can see and hear each other in real time for e.g. through Skype. This method can be either two-way (point-to-point) or multipoint, linking three or more sites with sound and video. It can also include data sharing such as an electronic whiteboard where participants can draw on, or text based real time 'chat' [A. S. Sife, R.T. Lwoga and C. Sanga, 2007]. Leiden University already uses Skype as a method, but not as a standard E-learning method. It is mostly used in case of an emergency where a teacher cannot attend the lecture physically or when teachers have meetings with student out of the campus.

For AdeKUS it is not clear how extensively they use Skype or other methods for that matter. To research the various E-learning methods, this will be incorporated in the interviews and in the 'results' phase it has to be clear how familiar the both Suriname as well as Netherland are with the use of E-learning methods.

Another interesting finding in the literature review was that some universities even aim at replicating as far as possible the classroom model through the use of synchronous interactive technologies and rely heavily on lecturing and questions. It offers no economies of scale, lacks flexibility for learners, and is expensive, but is popular because instructors do not have to change or adapt their classroom teaching methods to any extent. This however encourages or reinforces traditional approaches to teaching such as lecturing, rather than developing the new skills needed in knowledge-based economies [A.W. Bates, 2005]. This will be assessed in the 'data analysis phase' as it will be incorporated in the interviews to research how teachers and students experience virtual classrooms.

I stated before that I will research 'how people learn', but to research this and incorporate in in the interviews to research the different ways of learning. As said before i've chosen the 'pyramid of Bethel Maine'. For Leiden University as well as AdeKUS this pyramid could be of good use of shaping an E-learning course. For this research I will make a pyramid according to the findings in the interviews in the 'results' phase which will be assessed in the last phase of this research.

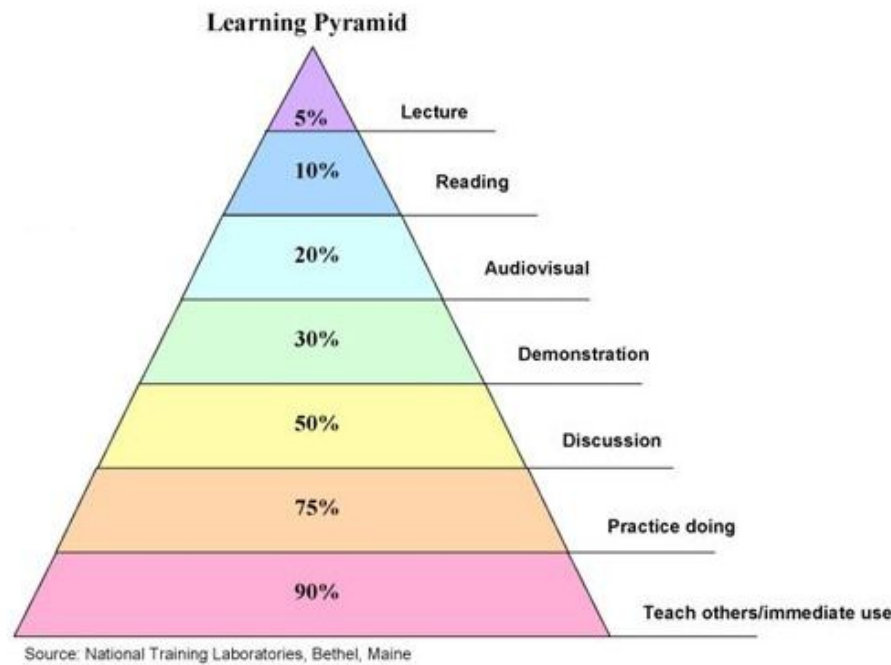


Figure 8: Pyramid of Bethel Maine.

Furthermore, the term behaviorism was explained and assessed where it is about teachers as well as students who should be told what the explicit outcomes of an online lesson are, so they can set expectations and judge for themselves whether or not they have achieved the desired outcome. So when setting up an online course, the instructors should break down the study material into parts with appropriate explanation before learners are expected to duplicate the desired behavior. This will be assessed in the 'data analysis phase' as it will be incorporated in the interviews as well to research how teachers and students will experience this change. The Cognitive theory is about 'knowing how', it is about learning how to observe, practice and adapt to the new technology. The cognitive approach holds in that when it comes to learning people cannot confine ourselves to observable behaviour, but must also concern ourselves with the learner's ability mentally to re-organize this psychological field in response to experience. The primary purposes of E-learning implementation is to achieve the objectives of instruction, and achieve retention and transfer of knowledge [T. O. Ajadi, I. O. Salawu and F. A. Adeoyee, 2008].

So the cognitivist approach means focusing on teaching teachers and students how to learn and on developing deeper and constantly changing understanding of concepts and ideas. According to Tony Bates the cognitive approaches to E-learning with a focus on comprehension, abstraction, analysis, synthesis, generalization, evaluation, decision-making and creative thinking, seem to fit much better with higher education than the behaviourism approach. For this research however the focus is more on the behaviourism approach as the interviews and questionnaire will be

analysed from point of view of each individual and their previous past experience can have an influence to the answers. Cognitive approach on the other hand doesn't focus on social factors and the reasons behind why people think, feel, and behave as they do. Regarding the topic 'E-learning integration' it is of importance to exactly look at these factors.

According to the research of Ozkan and Koseler interactivity is an essential component in both blended and online learning. E-learning applications provide opportunities for synchronous communication within distance education [V. Mehra and F. Omidian, 2011]. This will be assessed in the 'data analysis phase' as it will be incorporated in the interviews as well to research how teachers and students can make use of E-learning applications.

Moodle and Claroline are open source platforms which could be a benefit for universities in developing countries as they will have budget available for investing in the platform for e.g. specializing this and to maintain this. As stated before, Leiden University uses Blackboard and Moodle, in the interviews information will be acquired if AdeKUS also has an E-learning platform and how they use this.

In the interviews information will be gained regarding E-learning applications and to research whether universities already are making use of E-learning applications. If there is not enough information for a recommendation, this topic will be further assessed in the 'limitation' chapter.

The figure below which is discussed in the book 'E-Learning - Long-Distance and Lifelong Perspectives', demonstrates that there is an upward trend in the link between growth and internet penetration rates (both usage rates and fixed broadband) [E. Pontes, A. Silva, A. Guelfi and S.T. Kofuj, 2012]. In this figure it is also clearly visible how E-learning developed itself with the use of internet. From Face-to-Face to U-learning, which stand for Ubiquitous learning. Ubiquitous learning is almost like Mobile learning (M-learning), but more advanced, it is not only associated with mobile phone technology, but also with large numbers of small electronic devices which have computation and communication capabilities such as smart mobile phones.

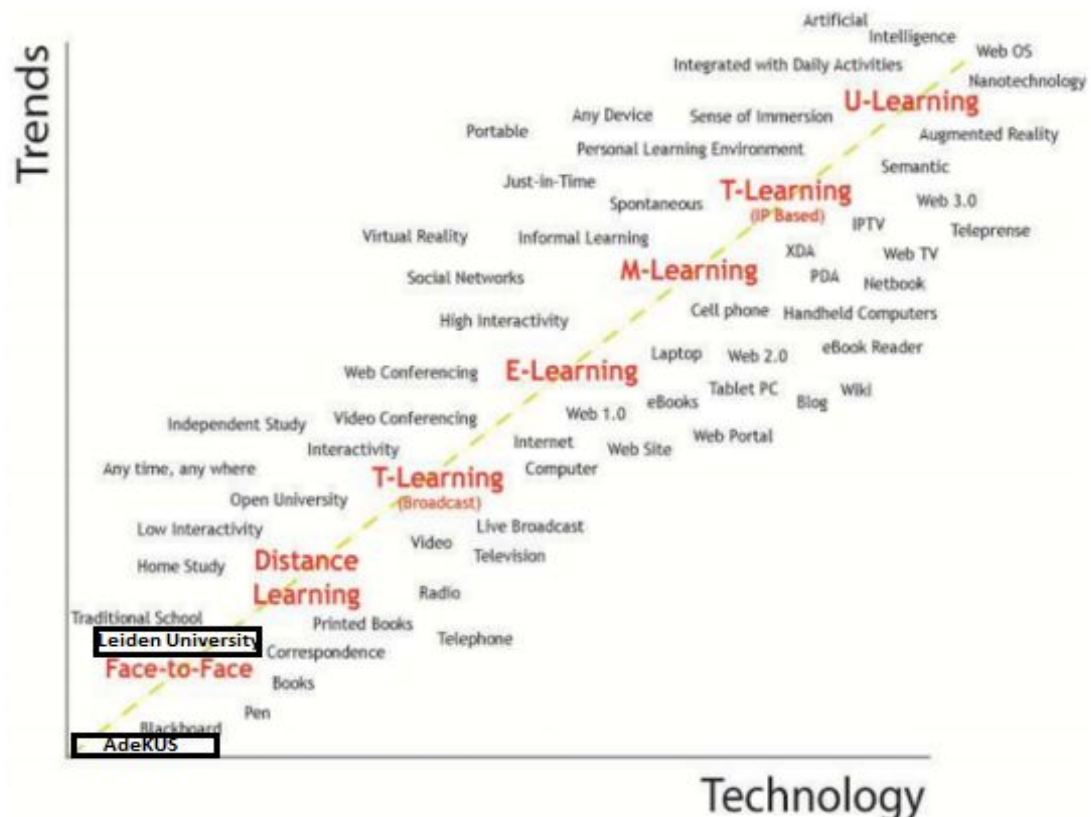


Figure 9: Link between growth and internet penetration rates.

From Face-to-Face to U-learning, which stand for Ubiquitous learning. Ubiquitous learning is almost like Mobile learning (M-learning), but more advanced, it is not only associated with mobile phone technology, but also with large number of small electronic devices which have computation and communication capabilities such as smart mobile phones. I've positioned AdeKUS at the start of the line and Leiden University right above 'distance learning', because Leiden University is making progress. With the interviews and questionnaire I will research if this is exurate, but my prediction is that it will not be that different as shown in the graph above.

Looking at Leiden University versus AdeKUS, Suriname has to make a lot of improvements with their internet connectivity for implementing E-learning. As stated in chapter 3.1.2, 37.4% of the population of Suriname uses internet compared to the Netherlands where 95.7% of the population uses internet. For Suriname this is really poor and looking at the countries around Suriname, it is in the lowest ranking with 0.2 million internet users.

Another interesting finding from the literature review which needs more research is that high quality Internet infrastructure and networking will help to deliver high quality courses [Md. T. Islam and A. S. Md. Selim, 2008]. In 2012 there were 12.4 million internet users in the Netherlands, that is 96 percent of all 12 to 75 year olds [CBS press release: further growth mobile Internet, 2012]. So it is of importance that both the Netherlands as Suriname have to focus on their internet range and the quality of their connection at the university to integrate E-learning. My prediction is that this is a crucial barrier for Suriname, because their connection is very poor. I will research with the interviews if this is also the case at AdeKUS and how the teachers and

students are currently managing. I will also research this for the Netherlands whether the connection in the Netherlands is stable and fast enough for E-learning. In the recommendation part this topic will be discussed further to assess the opportunities for Suriname as well as for the Netherlands if they can benefit from a good, reliable and fast internet connection.

Most of the communication nowadays is via internet and already mainly via mobile (smart) phone and mobile phones are not only an easy way for communicating, but also for obtaining information. Although the mobile (smart) phone is not yet being deployed and used for obtaining online courses, students do use it to check Blackboard or their U-mail from Leiden University. To research how extensively mobile (smart) phone is currently being used for school purposes, this will be incorporated in the interviews.

M-learning has the potential to become an effective partner for providing education along with traditional methods. Particularly, it can be a medium of interest in developing countries where the number of mobile users is far greater than the number of wire users [S. Iqbal and I. A. Qureshi, 2012]. To research if the number of mobile users is greater than wire users, this will be incorporated in the interviews. So at M-learning it is out of scope to research the implementation part, because I cannot say for sure that the statement of Iqbal and Qureshi is also applied for Suriname as a developing country and the Netherlands as a developed one. Although for the Netherlands there are already figures available where the growth of mobile users is increasing. This topic will be assessed further in the 'data analysis phase'.

This can also be associated with hybrid and blended learning, which are all terms used to designate a combination of face-to-face and online teaching [A.W. (Tony) Bates, 2005]. New skills must be learned by faculty members to meet the needs of quality distance education [Md. T. Islam and A. S. Md. Selim, 2008]. To research whether the teachers and students want this, it will be incorporated in the interviews. It is important to get information about how people experience distance learning and how open they are to adapt this. And how do the universities contribute to this, so to say how universities are encouraging their faculty members and students at the moment to make use of more technology will also be researched.

Also stated was that E-government technologies have a potential to improve the lives of 80% of the world's population that lives in developing countries [Y. N. Chen, H. M. Chen, W. Huang and R. K. H. Ching, 2006]. Major challenges for E-learning in developing countries are support, flexibility, teaching and learning activities, access, academic confidence, localization and attitudes [A. Andersson, 2008]. These challenges will be researched with the interviews.

And in conclusion the cultural dimension of Hofstede where general stated for Suriname as well as the Netherlands, but to assess how accurate this is, more research is needed. For e.g. looking at Leiden University I can say for a fact that the findings in Power Distance, are true, but for Suriname i'm uncertain whether this is accurate or not. For adapting the E-learning methods this has to be taken into account, that's why it will be researched with the interviews.

For Individualism when taking Suriname into account, this means the purpose of education is learning how to be compared to that of the Netherlands where the purpose of education is learning how to learn. Another comparison is that of the score of Suriname diplomas provide entry to higher status groups, compared to that of the Netherlands where diplomas increase economic worth and/or self-respect. So this can be stated as a huge difference in culture. This will be researched with the interviews and will be further assessed in the 'result' phase.

At the Masculinity dimension when looking further into the adoption of E-learning, this could be a challenge for Suriname. Discipline is not always favored by students as they expect that the teacher will do everything which is also stated at Power distance.

And lastly it was stated in Uncertainty Avoidance that the countries exhibiting high uncertainty avoidance maintain rigid codes of belief and behaviour and are intolerant of unorthodox behaviour and ideas. In these cultures there is an emotional need for rules (even if the rules never seem to work) time is money, people have an inner urge to be busy and work hard, precision and punctuality are the norm, innovation may be resisted, security is an important element in individual motivation.

For Suriname this means that 'what is different, is dangerous' compared to the Netherlands where what is different, is curious'. Introducing E-learning in the education system of Adekus is something different where students as well as teachers have to adapt to it. This factor could be an obstacle and will be researched through with the interviews. Also in the Netherlands, students are comfortable with open-ended learning situations and concerned with good discussions compared to the score of Suriname where students are comfortable in structured learning situations and are concerned with the right answers and teachers are supposed to have all the answers. For the Netherlands, time is a framework for orientation. For Suriname, time is money, so when implementing E-learning in the education system of AdeKUS, for example, this could be a huge benefit as it saves time for the students as well as the teachers when taking the geographical distance into account. Also one of the findings in this dimension is that in the Netherlands there is a tolerance for deviant and innovative ideas and behavior, in huge contrast with Suriname, where there is a suppression of deviant ideas and behavior and resistance to innovation. This last part is an interesting one for implementing E-learning in the education system of AdeKUS. Because if there is a resistance to innovation, integrating E-learning will be a huge challenge and the question can arise: do the teachers and students want this? In the 'data analysis phase' this will be further assessed. So all these four dimensions will be researched with the interview to assess whether the statements are accurate and what the relevance is regarding the integration of E-learning.

Also stated in the exploratory literature review was that some contemporary studies have argued that E-learning educational systems provide more instructor-student and student-student interaction than the traditional systems. This is also stated in the cultural dimension where Suriname as well as the Netherlands make use of the instructor-student approach. Appropriate strategies should be in place to ensure that integration of ICTs in teaching and learning process goes together with the recruitment and training of required staff. To research how IT support is currently being used in the Netherlands as well in Suriname, this will be researched with the interviews. Due to very high primary costs for infrastructural development and to increase public access to internet and other ICTs, the developing countries are still far behind from getting benefits from the E-learning. To research the various benefits this will be incorporated in the interview to make a proper analysis of the benefits which the integration of E-learning could bring.

Their plans appear to be driven by ICTs and not by pedagogical rationale and focus. Some universities can even adopt to new technology with minor changes and adjustment, but it does require a revolution in thinking about teaching and learning [L. Uden, Y.H. Tao, H.C. Yang and I.H. Ting, 2013]. This barrier will be further assessed at the recommendation chapter for Leiden University as well as that of Suriname.

The results of the literature review assess four perspectives which will address the research questions as well. So the research questions will be assessed from the following four perspectives:

- ❑ Financial: This research questions will also assess the current situation about equity and costs issues as known in educational environments. Especially in the developing countries there are diverse issues due to often economic instability. These often leads to investment issues in certain areas such as education due to priority of the leading governments. This research with the case study of AdeKUS will give insight on equity and cost issues and how this can be solved. This research will on restructure of the way of education in a developing market with main focus to make education accessible for a broader population that will stimulate the knowledge economy by lowering the cost of education. These savings on costs will elaborate on the following issues which in general do not apply for a developed country such as the Netherlands:

- lack of available classrooms;
- lack of teachers available as E-learning integration can educate a large numbers of students in a cost-effective manner;
- no outdated education programs;
- and logistic issues.

- ❑ Organization: With the insight of the current situation and looking at the differences and similarities between the Netherlands and Suriname a organizational structure and educational structure can be drawn. With the findings and this research it resulted in a new organizational structure with a new education structure and also address the issue of training the teachers when integrating E-learning.

- ❑ Culture: current barriers in the Netherlands as well in Suriname with their differences and similarities from the four cultural aspects of Hofstede.

- ❑ Quality: E-learning can have a positive effect on the quality of education. To research this further, more information is needed as the first step is to assess all the bottlenecks of the education quality. By identifying all the bottlenecks E-learning could be one of the solutions to reach an international education level. This is out of scope in this research, but this research does assess some of the bottlenecks which could be used for further research.

This research also gives insight in the quality of the Internet infrastructure and networking as this will help to deliver high quality E-learning courses.

4.2 Interviews

With the findings which are specified by category and divided into the color codes where the differences between teachers and students of the Netherlands and Suriname is clearly visible, the answer to research questions can be given starting with the first one “To what extent are E-learning applications a part of the education programs of institutes of higher education in both Suriname and the Netherlands?”.

The outcome of this research question will first give insight on how E-learning applications are currently part of the education programs in various developing countries. The variables which were taken into account are the various E-learning applications such as Blackboard, Moodle or systems that are alike and E-learning tools such as Skype, web-colleges, forums, etc. After this the extend of the use of E-learning will be assessed followed by communication, information and the use of Multimedia. To give answer to this questions the findings of the teachers as well as the students are bundled.

Use of E-learning applications:

In the Netherlands students and teachers are familiar with a lot of E-learning application, as seen in the table below, but they also attend seminars.

At AdeKUS the students and teachers are also familiar with E-learning application, but a lot less than the Netherlands. The major finding here was that AdeKUS also makes use of a platform, namely Moodle. At the literature review this was stated as ‘unknown’. With the use of Moodle at AdeKUS the teachers as well as the students believe that there could be more done with the way the lectures are supported now. The students for instance said there could be lectures from a distance and real time lectures. But there has to be a recording as well when a lecture is given in real time so that you can listen to it later when you missed something.

Use of E-learning:

It was made clear that with the use of E-learning you get more information and you can adjust your own learning time. For AdeKUS it means that with E-learning integration the students can get more benefits of the lectures given in class. At AdeKUS there are teachers who live by the statement ‘the way they've always have done it works’, they’re ‘old’ teachers who don’t want to innovate and are not open to it and lack good study material.

To solve this teachers of Suriname for example believe that with the integration of E-learning in their education system, teachers will be forced to adapt to this innovation. But also in the Netherlands they believe that integrating E-learning can have a positive effect on the quality of education. To research this further more information is needed as the first step is to assess all the bottlenecks of the education quality.

Applications	Netherlands	Suriname
Google	Web and G-drive for group	X
Websites	X	-
Blackboard	Schools Intranet. Available	-

	everywhere	
Moocs	Contains videos of the lecture	-
The university website	X	For literature
E-mail	U-mail	X
Dropbox	Group	Group
Facebook	Group	Social Media
Whatsapp	Web	Phone usage
ZIN online	X	--
Youtube	X	-
Forums	X	-
Moodle	Study material on Moodle	X
Powerpoint	Sheets in class	-

Communication:

In the Netherlands the desktop PC at school, mobile phone and tablet are most commonly used as a platform for school usage. Online usage is mostly for information and better research for e.g. a fully online library. In the Netherlands Everything is almost online, information is solely online and everything is going digital.

For AdeKUS The desktop PC at school, mobile phone, laptop and tablet are most commonly used as a platform for school usage. Their communication for school usage is mostly through laptop.

At the literature review data was collected about the way of communication and E-learning is still being developed rapidly. There was also stated that Skype as a communication application should be a standard option which can remove geographical and physical obstructions. None of the people I have interviewed mentioned Skype as an application. In the literature review the finding was also that most of the communication nowadays is via internet and already mainly via mobile (smart) phone and mobile phones are not only an easy way for communicating, but also for obtaining information. I stated there that although the mobile (smart) phone is not yet being deployed and used for obtaining online courses, students do use it to check Blackboard or their U-mail form Leiden University. With the findings of the interview it is clear that as well for the Netherlands as for Suriname, beside the desktop PC at school and tablet, the mobile phone is most commonly used as a platform for school usage. To research this further with more

responses, it will be incorporated in the questionnaire as well to find out how accurate this statement is.

Information:

Information for school courses at AdeKUS is in a very traditional way. The information and material is accessed via classmates (hardcopy material via other classmates) and the students as well as the teachers have to search for own literature. Also the information they obtain is not always up-to-date and everything is printed out. Teachers of the law program for example extract current information about Law online to get the attention of students on recent topics. This is one of the bottlenecks of the quality perspective.

But there is also information available which can be accessed 24/7 through mail, study links, Moodle (forums), libraries in foreign countries and from teachers from foreign countries. These information on the other hand is up-to-date, mostly to the use of Moodle, but this platform is not fully used yet. Moodle has to become easier with just one click. There should be enough information on it and there has to be clear instructions of how information is being used and uploaded. Literature is mostly extracted from the website of AdeKUS. So online usage is mostly for viewing law articles, finding books and reading, preparing mandatory literature for students, self-study online, exercises and searching information to fix problems/exercises. Moodle made it possible to post literature and downloading documents but is not used for course information. And it also made possible to have digital test.

Multimedia usage:

In the Netherlands there is a lot more multimedia used for school. The lectures are supported by video, audio, flash Powerpoint, Skype or a Webinar and PDF's. Audios and videos are incorporated within the presentation. Blackboard is mostly used for powerpoints articles and web colleges. But powerpoints are not often with multimedia.

Below in the table statements are shown of how the Netherlands think about E-learning in comparison to that of Suriname. Suriname sees a lot of opportunities with the use of E-learning. The findings of the Netherlands are succinctly whereas the teachers and students of AdeKUS went in depth with the benefits as they think that it must be implemented soon to make life easy. They addressed the cost savings issues such as:

- ☐ lack of available classrooms.
- ☐ lack of teachers available as E-learning integration can educate a large numbers of students in a cost-effective manner. Now a teacher has to come twice a day to AdeKUS while there is no need for, with the use of E-learning. In the literature study this was one of the predictions which is proven to be accurate. That distance education is a solution for developing countries as it can also deal with large numbers of students in a cost-effective manner.
- ☐ No outdated education programs, which proves the prediction accuracy in the literature study where it is said that with use of E-learning, universities can improve the quality of their education and also produce technology-savvy graduates.
- ☐ Logistic issues: not being physical at AdeKUS which saves fuel and electricity costs. And also a better infrastructure. Being in-class physically is time consuming.

The use of Skype is also seen as a great advantage here whereas it was not mentioned before at the 'use of applications'. E-learning methods have to be used in combination with physical contact

through Skype, so the internet needs to be used as a teaching aid. More students can attend lectures and can also reach the students who live in the districts which are difficult to reach. Giving lectures through Skype reaches more students and has great advantages

Netherlands	Suriname
<p>E-learning is naturally, growing everywhere, flexibility, more, freedom, access, good, necessary development, making the study more easier, easily getting access to information, easily asking questions, being embraced by most people, effective, a good idea and it has to be embraced, doing more research, the ability to reach a lot of people, complimentary for other learning standards, fun, making learning more fun, another way of learning, an efficient way of learning, in line with study material, course information via online websites, great, saving time, better quality and more opportunities.</p>	<p>E-learning is new, easier, easy way to get information, cheaper, the best there is, personal, becoming more interactive, offering the students more, investing more, already used, to be more innovative, theory gathered through E-learning equals to more time so time-saving, the teacher must have the option to give a response, reachable everywhere but with a working internet connection, better education level of the study material, making the material up-to-date, using digital material instead of hardcopy, up-to-date, watching colleges when you've missed one, no long distance, digital books, with a touch of a button you can get all the literature.</p>

Use of E-learning methods:

For the Netherlands the findings show that E-learning methods are familiar and consist of Youtube, self-study, weblearning (web based) and social learning (IT community), Facebook and video's about certain topics (video tells a lot more). E-learning methods are an addition to how we learn and are a good way for studying. In practice it is a mix: blended learning. This was also a prediction made during the literature study whereas at most universities blended learning is used, which is a combination of face-to-face and online learning.

In the literature study i positioned AdeKUS at the start of the line and Leiden University right above 'distance learning', because Leiden University is making progress. But according to these findings, both can be moved higher up the line.

For Suriname the findings show that E-learning methods are also familiar, but slightly different. Their E-learning methods consist of lectures at home through Skype (meetings), learning by video, web based learning (often used, although three of the 20 students use web based learning), 24h available of material, mobile learning, Forums in Moodle and self-study (common used). They see E-learning as a way that it is everywhere and at anytime. Their school mail isn't used but it should be with the use of moodle and an app for Moodle will make it more accessible.

As well in the Netherlands as in Suriname they favor interaction, so as mentioned in the literature study whereas distance education leads to lesser interaction between student and teacher, this factor is important and needs to be taken into account. In the questionnaire this will be further assessed.

And the last findings for this research question was that for both the Netherlands as Suriname, the university needs more electronics and equipment, there is a lack of facilities, especially in

Suriname. Addressing this from the cost perspective, it could be merged with the 'lack of classroom' issue.

Research question 2: What are the current barriers for the successful introduction of E-learning applications at institutes of higher education in both Suriname and the Netherlands?

As stated before E-learning has various barriers for a successful introduction of E-learning applications. To give answer to research question two, the various barriers are assessed in the interviews and the findings are bundled from the teachers as well of the students from the Netherlands compared to AdeKUS.

The current barriers for the successful introduction of E-learning application in the Netherlands are:

- ☐ Resistance to change
- ☐ Network access
- ☐ Connectivity

The current barriers for the successful introduction of E-learning application in the Suriname are:

- ☐ Resistance to innovation
- ☐ Resistance to change
- ☐ Cultural norms
- ☐ Lack of knowledge
- ☐ Network access
- ☐ Connectivity

These barriers are assessed through the four perspectives, by first assessing the barriers from the financial perspective as well for the Netherlands as for Suriname the findings implicate that investment in IT is heavily needed when wanting to integrate E-learning. For Suriname as a developing country this barrier is weighting higher than that of the Netherlands, as Suriname is now in an economic crisis. But also the costs here are higher than that of the Netherlands as Suriname lays behind on the investment in their internet connectivity for AdeKUS.

Looking at these barriers from the organization perspective, it is clear that change has to be initiated gradually. This applies for AdeKUS but also for the Netherlands. Implementation will be strange at first as there is a resistance to change, so first a test phase where it goes from partially online to fully online learning is the best strategy. Integrating E-learning is different, so people need to adapt first and the results shows that if people can get benefits out of it then they will want to adapt to this. For integrating E-learning a new educational structure is needed. In the literature study it was already stated that the learning pyramid of Bethel Maine will be applied. After collecting the results of the questionnaire a new structure for the pyramid will be made.

Looking at these barriers from the culture perspective this research shows a lot of differences between the Netherlands, but also similarities. This research shows that resistance to change and innovation is higher than in the Netherland when it is from the teacher point of view, but from the students point of view the resistance is low. Students want more innovation and they are pro E-learning. The main variable here which was put up for discussion was 'interaction' where this research shows that the Netherlands is more tolerant to this and already is innovating a lot, but Suriname still prefers face-to-face education. So when integrating E-learning this research shows that the culture of the Netherlands constantly improving whereas in Suriname the culture is that

the people want to innovate and have good ideas but due to the 'wait and see' attitude, they do not have the capability to innovate.

This also is connected with the barrier 'lack of knowledge' which applies more for the teachers of AdeKUS but also for the students. The teachers and students of the Netherlands believe that online models could explain education better but only good material online is not it, especially when there is no accurate study material. Interactive makes online stronger and also the intonation which has an affect on the brain activity. In the literature review A. W. Bates stated that distance education also leads to lesser interaction between student and teacher with the use of technology. But with two-way communications media such as the Internet or video-conferencing interaction could be enabled between the teacher who originates the instruction and the remote student. So here I can conclude that this is accurate and interactive makes online stronger. This was also briefly addressed at research question one.

The findings of the interview also stated that virtual classroom is good but there is also a risk because it is not known how students at home will fully participate. That students don't put a lecture via Skype or a Webinar on the background and just multitask with other not school related stuff. To research this further it will be incorporated in the questionnaire as well, as the response there is wider

At AdeKUS there is a culture of where teachers who are technology driven apply technology in their courses as they experience the benefits it brings versus the teachers who are laggards and like it that way. Training could be a solution here, but a change in culture could also be a solution whereas the technology driven teachers can guide the laggards onto the path of E-learning. Adaption was also given as a barrier for integrating E-learning. The findings conclude that people have to learn to work with E-learning first and adapt with a trial first. Not implementing it abruptly, because this will make the resistance harder and the acceptance of change harder. It is different in the beginning, but we are always adapting to new things. Different could be dangerous in a way but when you get familiar with it the adapting depends on what's being introduced.

Looking at these barriers from the quality perspective this research clearly indicates that a reliable internet connection is needed. This research shows that the Netherlands has a reliable internet connection according to the universities which were researched for this study, but that it is not 100% reliable. For Suriname the internet connection is crucial whereas the library of the university doesn't have a working internet connection as well as several classrooms and areas of the university. Without connectivity and network you are not available, so connectivity and internet is a weakness. For integrating E-learning in a developing country like Suriname this is a crucial factor, but as AdeKUS needs government funding for the investment in IT, E-learning can be integrated at the places where the internet connection is reliable.

For the Netherlands the connection is well reliable and there is no downtime, but at some of the places of the university the connection is slower. In conclusion, for both countries it is safe to say that a good connection gives a positive boost! But compared to the Netherlands, Suriname has to invest more in their connection to integrate E-learning. In the literature study it was stated that 'high quality Internet infrastructure and networking will help to deliver high quality courses'.

This research question also addresses the technical support stated in the literature study, which includes issues like installation, operation, maintenance, network administration and security is an

important part of the implementation and integration of ICT in education system. In Suriname it was concluded that there is not a lot of IT-support used, mostly for website uploading and software installation and when the beamer doesn't work. And IT-support cannot always help, they are not that technical but they know a lot about Moodle and mail. Teachers don't know how to work with new technology. So when wanting to integrate E-learning, AdeKUS will need a proper technical support team.

Research question 3a: What are the differences between Suriname and the Netherlands in relation to the introduction of E-learning in higher education institutes?

These findings give insight in the differences between a developing country as to that of a developed one regarding the introduction of E-learning in their education system. This research question will go in depth with the cultural aspects of Hofstede. When integrating E-learning the following aspects are applicable which are divided into the cultural aspects of Hofstede:

❏ Power Distance

-Difference in how people learn: In Suriname the main finding is that students are reserved and rely on the teachers whereas for the Netherlands this doesn't apply. For the Netherlands the purpose of education is learning how to learn. The findings here prove that this is accurate but the initiatives are also from the teachers, so with the use of technology the 'how to learn' concept is being fully used.

-Growing from small to large: The main finding here is that if E-learning is integrated it has to be stated clearly how the content will be changed and modified to an E-learning environment. The teachers of AdeKUS have to learn from the benefits and the disadvantages. And looking at challenges, nothing would really be challenging when you make it fun, for instance if self-study will become fun for the students. Instructions for change have to be clear, the training has to be given on time and by professionals (for e.g. in Suriname AdeKUS lacks professionals and experience) and it has to be integrated step by step. The step by step approach also applies for the Netherlands.

In the literature study Tony Bates addresses the behaviourist psychology is an attempt to model the study of human behaviour where teachers as well as students should be told what the explicit outcomes of an online lesson are so they can set expectations and judge for themselves whether or not they have achieved the desired outcome. So this prediction is also accurate for setting up an online course, the instructors should break down the study material into parts with appropriate explanation before learners are expected to duplicate the desired behavior.

-Use of technology: The main findings here is that in the Netherlands the students are being encouraged to use more technology and innovate whereas in Suriname this doesn't apply. In Suriname teachers are encouraging the university to incorporate technology and not the other way around like in the Netherlands. In both countries, teachers can learn a lot from students, and learning has to become more state of the art. also in-class students get familiar with searching fast and quick on the internet and coming up with an answer. Here it is also stated that

mobile phone usage is familiar and is also being used. Students of AdeKUS learn mostly via Youtube movies, research with mobile phone in-class, in-class exercises, problem-based learning technique and videos.

❏ Individualism

-Different is dangerous: The main finding here is that drawing one line for learning is still a challenge, but with the integration of E-learning, universities in developing countries as well in developed ones can reach more people from different countries and spread their education. So invest in human capital is important and as shown in the history that building a knowledge based economy helps a country to grow. Both universities have to invest a lot in their teachers, whereas in the Netherlands courses are given for teachers to get a view on learning. But teachers also have to find out on their own time how they will give a course. Teachers share their experiences with each other. Not everything is new or advanced, but the university keeps trying to incorporate technology like new idea's. Drawing one line for learning is still a challenge. The traditional way where a teacher tells the student what they have to learn isn't needed anymore, but collaboration can suffer from this. With a good E-learning platform it could all work, so create a good E-learning room. There has to be a good platform for this to make it all work with each other. Universities have to keep innovating. It is time to do other things during a lecture or workshop, for instance flipping the classroom. Especially for Suriname this can be beneficial as they address the issue of 'saving costs'. E-learning is effective if it is real time. It lets you reach more people from different countries as well and other cultures, so you get more out of a teacher!

-Form of education: The main finding here is that interaction is of great importance in developing countries as well in developed ones. There has to be physical contact and the ability to ask question directly and personally. In Suriname where Face-to-face education is preferable because it is familiar, people are already adapted to it for many decades, it is better interaction between student and teacher and there is physical contact where you can ask question directly and personal. The communication is also mostly via Face-to-Face, with only digital you cannot communicate. But it is also stated that if the digital becomes interactive the choice is definately distance learning. Teachers and students of Suriname are open for distance learning as long as it has an positive effect, because distance learning saves a lot of time. So for Suriname virtual learning is handy especially for the districts that are far away. Teachers who are on vacation can still give their lecture if it is virtually and the problem of shortage of teachers is solved with this.

A major finding of this research question is that there are more similarities between these two countries than differences. The pyramid of Bethel Maine was also applied here where there were also more similarities than differences. A new structure for a pyramid will be drawn after the results of the questionnaire.

The major similarities between the Netherlands and Suriname are:

1. The issue of the older teachers. Older teachers are not open for this process of integrating E-learning and mainly because they are not familiar with it. They have to learn to use it

which takes time and they like the old way better and easier. A solution which was given for this is, that it had to be made mandatory and they will have to do it. Teachers have to go along with the time and get training of how they can keep the lectures more fun.

2. The education has to be interactive.
3. Using E-learning more.
4. The issue of discipline where in the Netherlands the teachers are scared that the students will multitask during a distance lecture and the teachers of Suriname are scared that the students will drop out.
5. Self-study could be a challenge. Also social learning can be a challenge because you don't know if it is accurate and cannot control it. Also when you don't have enough knowledge.
6. Resistance to change and lack of knowledge, where for both countries it is stated that students adapt quicker than teachers. Change has to be initiated gradually and every change is different and uncertain. A trail course and after that the fully course. Let people adapt to the change first to get better results. people also should want to innovate.

In the table below the comparison is made from the Netherlands with that of Suriname on the various barriers. The cultural dimension individualism is mostly assessed here when looking at the findings.

Netherlands	Suriname
<ol style="list-style-type: none"> 1. Open to innovation and wanting to learn more, for instance more Moocs (from harvard) have to be incorporated. 2. Students should get the choice if you want to follow the lecture at school or online. 3. E-learning must not conflict with going to school. The idea of going to school has to be discussed how students will handle this, the education ethos. 4. Lectures with only an audio can be a challenge so no audio alone. 5. The connection to understanding what is being told. 6. Social norms and values could be a weakness. 7. Resistance against this vision of learning. 8. Technology could be a weakness so get to know more about the new technology. 	<ol style="list-style-type: none"> 1. When living in a developing country resistance to innovation and change is deep-rooted and cultural norms are weighing heavily. 2. At home people think more rationally. Students are mostly quiet and via electronical they would react less timidly. 3. Huge difference between Surinamese students and that of the Netherlands. 4. Facilities which AdeKUS misses at the moment which is crucial for a university. 5. Teachers are uncertain. 6. Implementation will be strange at first. Has to come from higher ground, people could be against being different but when you give a training. 7. Internet connection can be a barrier and especially for students at home. 8. No personal interaction.

Also an interesting finding here is that Suriname has a low education level so integrating E-learning has a positive effect to bring the education level to an higher one. In the literature review we saw that there is an emphasis on diploma's. Diploma's do not weigh a lot if the education level is low!

In the table below the it is stated what each country has to act on when wanting the benefits of E-learning introduction.

Netherlands	Suriname
<ol style="list-style-type: none"> 1. Introducing webcast more and present all the information available in various ways. 3. Making studying easier for instance to find the articles and information faster and getting information easier. 4. Making the information more brief. 5. Making it user friendly, faster, simpler and appreciating this development. 	<ol style="list-style-type: none"> 1. Taking into account for instance that there are no experts available and organisation is not that good 2. E-learning has to be accepted and initiated! 3. Technology makes studying easier but equipment is required. 4. There is a lot of software which is not being used and it is not enough.

In conclusion for both the Netherlands as well as Suriname, people will have to adapt to E-learning and it will happen as we live in a digital world! In the literature review it was stated that some universities even aims at replicating as far as possible the classroom model through the use of synchronous interactive technologies and relies heavily on lecturing and questions. The finding here is that E-learning can only 100% replace physical contact when you replicate the way the teachers teach right now.

Research question 3b: What are the differences between Suriname and the Netherlands in relation to the application of E-learning in higher education institutes?

The findings here will give insight in differences between a developing country as to that of a developed one regarding the application of E-learning in their education system. This research question will go in depth with the cultural aspects of Hofstede. When integrating E-learning the following aspects are applicable which are divided into the cultural aspects of Hofstede:

☐ Uncertainty Avoidance

-Time spent on education: The main finding here is that in Suriname time is of importance as 'time is money', so they favor the integration of E-learning. Looking at the Netherlands first study material accessed anytime and anywhere is handy because it makes it easier and is handy for distance learning. Learning has to be kept interesting so student won't drop out and become long-term students. For initiating virtual classroom you need good facilities. Don't implement if it's not really needed. For Suriname there is some contrast with that of the Netherlands. They do have in common that the strength of E-learning is that study material is available at any time. But as a cultural difference I can conclude that the teachers are challenging students with questioning via self-study. The lectures can be given through Skype or Adobe. Making use of these methods you could meet the demands of the students better, students like the methods and are curious.

Also the variable 'time' was taken into account during the interviews as for the Netherlands 'time is a framework for orientation' and for Suriname 'time is money'. For the Netherlands a variation of hours are spent for school which can be

divided into 20 hours for lectures at school, 5-25 hours for online usage, 5-25 hours at home, which comes to an average of 40 hours for school in total.

For Suriname 5-60 hours is spent on a course at home. Mostly on Laptop and PC. Marking topics at school to search them further at home because there is no connection in the library. Internet connection can also be a barrier when studying at home and following colleges from home. An average of 60 hours is spent on a course online. Since 2014 AdeKUS is more digital.

The time variation has not many differences, but I can state that in Suriname there is a lot more of hours spent on a course which is more at home and online. As well for the Netherlands as Suriname it is stated that integrating E-learning the right way will save time

-Resistance to innovation: For a developing country this can be an issue, but the main finding here when researching AdeKUS the result is that in Suriname the students as well as the teachers are open for new innovations if they know that it will bring benefits. The university itself could innovate a lot but the institution doesn't particularly let the students incorporate technology. E-learning consists of education which is reachable for people who live far away and have less resources, letting you finish the program in the acquired time, more classroom space and more time. Students get youtube instructions to work at home on the computer for fieldwork. Communication is mostly through laptop and laptop is the most used platform for school usage. Laptop and tablet is used for providing lectures and making slides. Laptop and beamer are used for presenting. So for Suriname as a developing country I wouldn't say that there is a big resistance to innovation and that this will be an issue when integrating E-learning. Innovation is good and you have to keep innovating!

❑ Masculinity

-Discipline: The main finding here is that with the integration of E-learning the discipline for the students will be higher and this research shows that this can be challenging for Suriname. But this research also indicates that students in the Netherlands find this challenging especially when using the method 'self-study'. Giving colleges online and still being able to keep the interactive part will save a lot of time but still teachers don't want to give all their lectures sitting down behind a laptop. But with this you can also give colleges in other countries. It will take a lot of concentration time but could be the future.

-Working in order to live: For Suriname this is the case as stated by Hofstede whereas this research also indicates that students want the flexibility to study on their own time so they can work besides it. Also stated before is that for Suriname face-to-face education is preferable because it is personal. The students like that lessons are more interactive, because contact with students is important. Teachers want to keep the contact. It is handy especially for the districts in the rural parts of Suriname, for instance a master via distance learning which was easier than in-class lectures. Distance learning only as an alternative. Lectures via home can be

more interactive. Also an option is recording of the in-class lectures but there has to be a classroom for recording the lectures.

In the literature study this is already assessed where E-learning can be used in two ways, 'at the same time' and 'not at the same time'. The first way involves interaction with the teacher via real time and the second way involves education which is available whenever the student needs this or want to access this.

In the table below it is stated what each country has to act on when wanting the benefits regarding the application of E-learning.

Netherlands	Suriname
<ol style="list-style-type: none"> 1. Attract more students. 2. Making learning more fun for students. 3. Explaining it better. 4. Giving colleges online and still keep the interactive part (Interactive makes online stronger). Everything is already online and easy accessible. 5. Having all the facilities and the right equipment. 6. Do not implement if it is not needed. 	<ol style="list-style-type: none"> 1. Making study material digital and updated, so students do not have to prepare a lot for the lecture. 2. Giving lectures without lack of time and still follow the course when being sick at home or when students cannot come to school. 3. Keeping lectures more fun so no plain lectures. 4. Allow teachers to shape their own lecture as they like (AdeKUS already does this). 5. Having all the facilities and the right equipment and invest more in IT and E-learning.

4.3 Questionnaire

To give answer to research question one "To what extend are E-learning applications a part of the education programs of institutes of higher education in both Suriname and the Netherlands?" The variables found in the interviews were incorporated in the questionnaire and used in question 6, 8, 9, 10, 14, 22 and 24. The outcome of these questions is described below.

To give an overall answer to this question, the data of the questionnaire have been bundled.

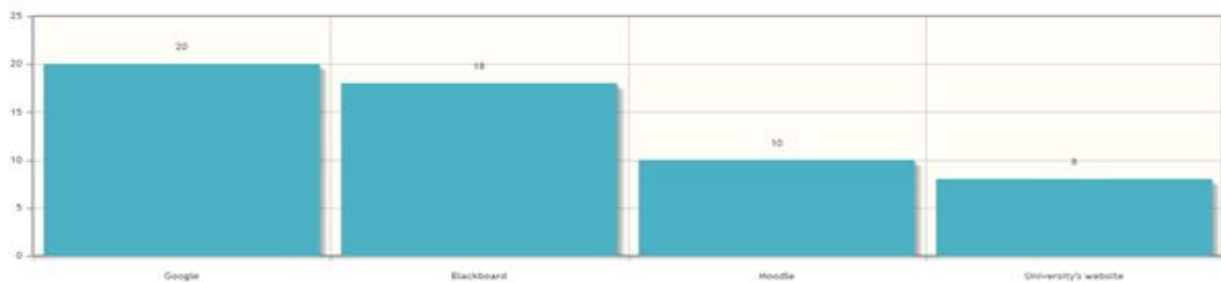
Use of E-learning applications:

An overall opinion on E-learning is that a course should undergo an evaluation of its curriculum and should look at subjects that could be taught online and subjects that should be given in person in classrooms. There will be a balance and you won't decrease socializing. The quality of the internet at crucial places should be checked, at students dorms, their house and university. Without good internet it is difficult to achieve E-learning. In Suriname this may be an issue to look at because it can definitely be useful for Adekus for the branches like economy, because the master isn't available there. Students have to travel to Europe for these courses. E-learning has to be made more familiar and the university to get better internet connectivity if they want this to work!

Depending on the course, video fragments or television fragments for analysis are sometimes used as E-learning. Internet for more research, even the teachers ask to do research because the extra information is needed. Information sharing through models. Online lectures from third parties. Live file sharing through applications such as dropbox. Some are already doing an online course, so everything is already fully online. But also stated is that eight of the 41 students currently do not use any of the E-learning methods/platforms mentioned above.

And in the graph below it is visible that people do not use that much of IT-support from their university with an average of 5.72 and a variance of 11.57.

Statistieken voor vraag 8 : How do you access your course information? (More answers can be checked)



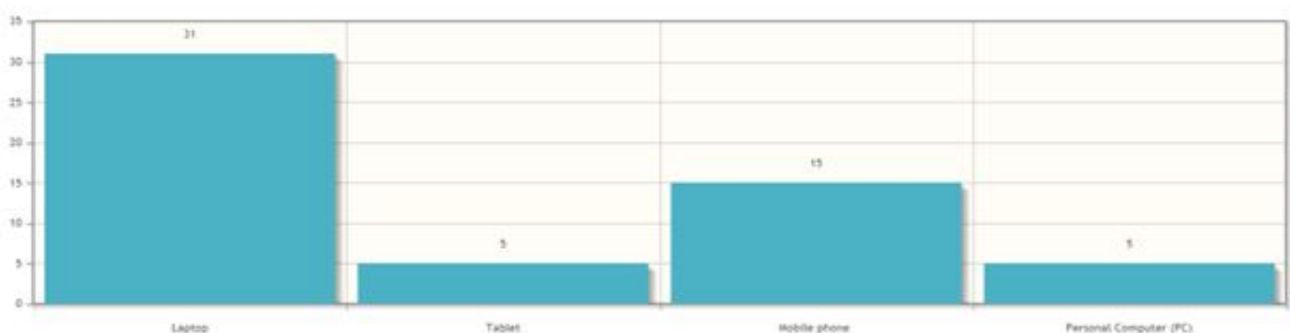
Communication:

The most common platform which is used for school is a laptop and after this the mobile phone. As stated in paragraph 5.2.1 mobile learning should be elaborated more, so it could be used for colleges. In the interviews which were held it was also stated that teachers are already doing this by inclass exercises and letting students use their mobile phones in classes so they can search articles. Below you can see the percentages:

Laptop	96.88%
Tablet	15.63%
Mobile phone	46.88%
Personal Computer (PC)	15.63%

Other answers that were given were Surface (hybrid) and Notebook.

Statistieken voor vraag 6 : Which device do you use for school? (More answers can be checked)



Information:

At the interviews there were a lot of answers given of how information is currently being accessed. With those answers the most common ones have been incorporated in a measurement question which we can see below in question eight.

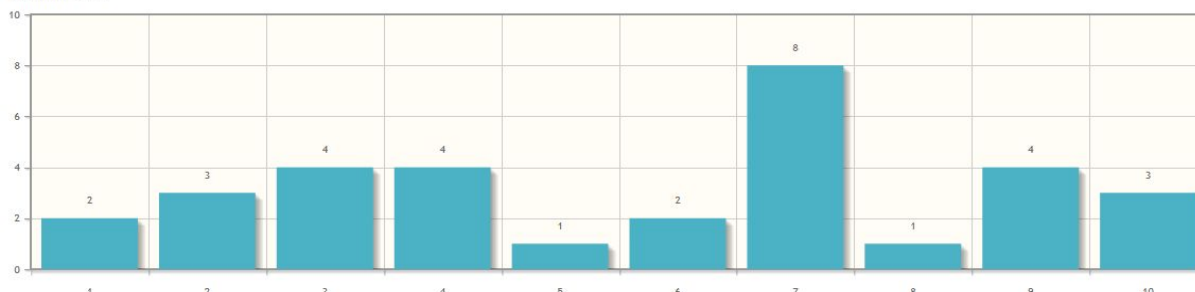
Here is clearly visible that most of the information is gathered through Google and Blackboard. Of course Blackboard only counts for the Netherlands as Suriname is using Moodle and the score there, is also high. In the interview this was also clearly visible that E-learning is already used extensively. Below you can see the percentages of the answers given:

Google	62.50%
Blackboard	56.25%
Moodle	31.25%
University's website	25.00%

Statistieken voor vraag 12 : Can you rate how much IT-support you currently use for your study?

Gemiddelde waarde: 5.72

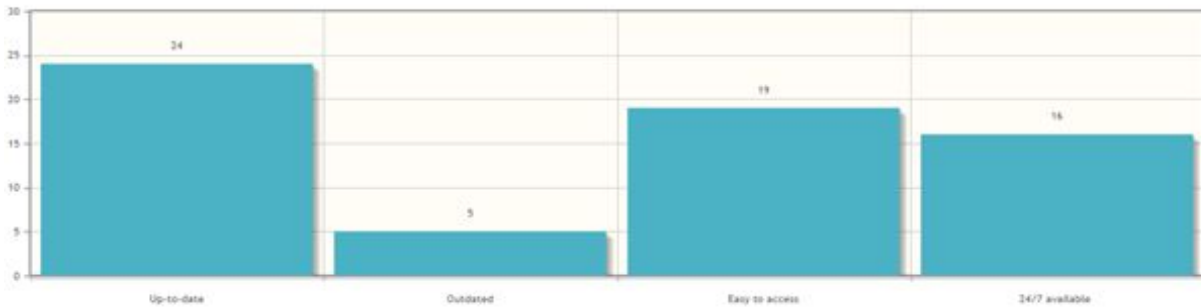
Variantie: 11.57



Other answers that were given were the use of Office365, information received from teacher/lecturer, E-mail, dropbox, course, purchased copies, Youtube, forums, E-books, books and information on memory sticks.

At question nine it is clearly visible that most of the information which is gathered through the platforms mentioned in the question above is up-to-date, easy access and 24/7 available. But there is also a part which is outdated which is crucial.

Statistieken voor vraag 9 : Can you describe the course information? (More answers can be checked)



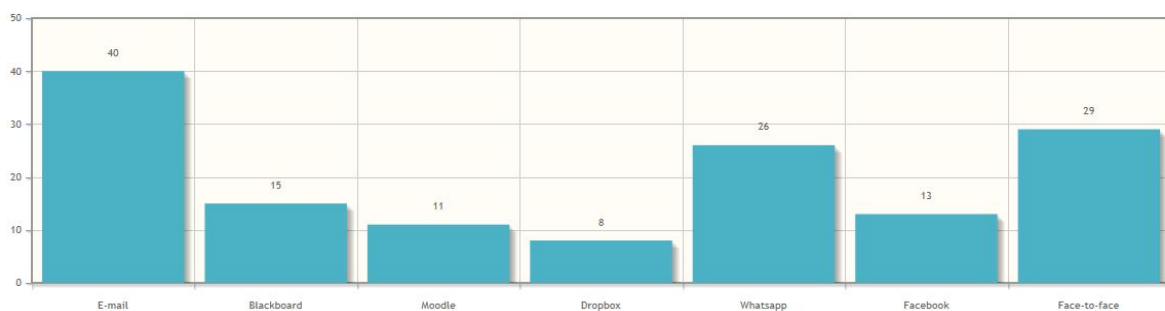
Below you can see the percentages of the answers given:

Up-to-date	75.00%
Outdated	15.63%
Easy to access	59.38%
24/7 available	50.00%

Multimedia usage:

In addition to question 22 it was also stated that technology makes communicating faster. The variables mentioned in question 24 were extracted from the findings of the interview. Communication with professors and other classmates is mostly through E-mail, Face-to-face, Whatsapp and Facebook. Other answers which are given are Office365 groups, Mobile phone for calling, Face-to-face when there are more students doing the same course, texting and through Skype.

Statistieken voor vraag 24 : How do you communicate with your professor and classmates? (More answers can be checked)



E-mail	100.00%
Blackboard	37.50%
Moodle	27.50%
Dropbox	20.00%
Whatsapp	65.00%

Facebook	32.50%
Face-to-face	72.50%

Use of E-learning methods:

Students mostly use E-learning methods like Internet (Google), books, paper, blackboard, Mobile phone for teacher -student interaction and YouTube for supporting material. Only through presentation and short movies during the lecture. After that the sheets are available on bsk-web. sometimes they use a poll during the lessons. Making use of the internet to look up articles and other sources for assignments. In addition the internet is also used to access practical information about my study program such as schedules etc.

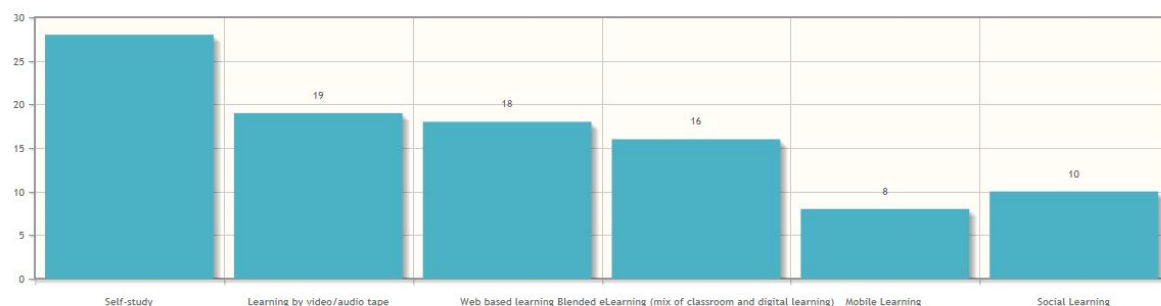
The most checked method is self-study which is discussed in the interviews as a challenge because students are on their own. And also stated in the literature review 'discipline is not always favored for the students, especially in Suriname, as they expect that the teacher will do everything'.

Other methods which ranked high is 'learning by video/audio tape, web based learning and blended learning. Blended learning was already thoroughly researched with the interviews and with these findings it is safe to say that it is true.

Below are the percentages given of the answers:

Self-study	84.85%
Learning by video/audio tape	57.58%
Web based learning	54.55%
Blended eLearning (mix of classroom and digital learning)	48.48%
Mobile Learning	24.24%
Social Learning	30.30%

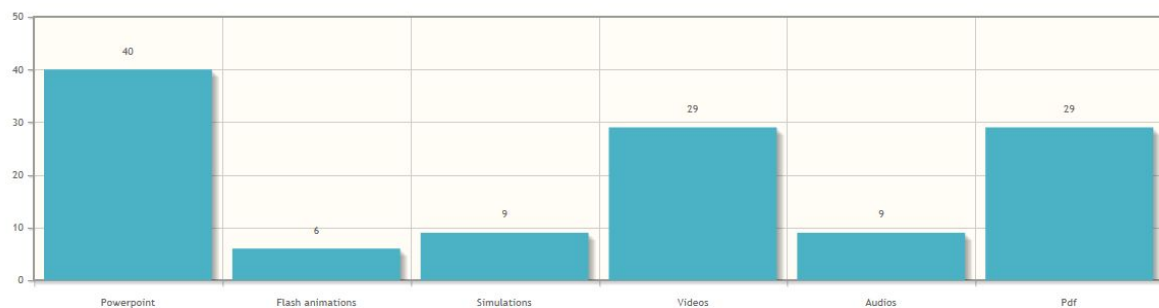
Statistieken voor vraag 14 : With which E-learning method are you familiar with? (More answers can be checked)



A statement which was given in the literature review was that ‘students demand more technology in the courses to get quicker access to study material’. This was also mentioned in the findings of the interviews. At question 22 it is clearly visible that this is accurate. The lectures are mostly supported by Powerpoint, PDF’s and videos.

Powerpoint	100.00%
Flash animations	15.00%
Simulations	22.50%
Videos	72.50%
Audios	22.50%
Pdf	72.50%

Statistieken voor vraag 22 : How are your lectures supported?



For research question two “What are the current barriers for the successful introduction of E-learning applications at institutes of higher education in both Suriname and the Netherlands?” the variables used in the questionnaire to give answer to this research question are extracted from the interviews.

These barriers are assessed through the four perspectives, by first assessing the barriers from the financial perspective where it is clear that Suriname must be keeping up with technology, but internet and devices are expensive and there is a lot of outdated hardware. There has to be invested more in IT. It is clear to say here that the methods are not the problem, but more the environment when there is slow or even no internet connection. But it has benefits when you cannot make it to a class or, that you can also find the information again when you're studying if it is a video. Also there has to be looked into security and privacy that the school isn't going to be hacked or lectures could be erased from the intranet.

E-learning is a must especially when it comes to preservation of valuable resources (gas, facility, time, etc). E-learning is environmentally friendly, because you don't have to print all the information, but only the needed ones. As stated in the literature review ‘geographical and physical obstructions can be removed, making it possible for students to select their path and time for the learning courses’ and in some districts ‘distance education is also a solution for developing countries as it can provide information from a single spot to large numbers of students in a cost-effective manner’.

Looking at these barriers from the organization perspective, it was stated in the literature study that the developing countries are still far behind from getting benefit from the E-learning. For Suriname according to the findings it can be stated that E-learning could be beneficial when implemented at the university, it can even be the best option to provide students who travels up & down from a distance.

A virtual classroom will make following education easier for the students, especially when they have to wait for teachers from abroad. Also too many times there are no teachers available to give a lecture. For Suriname this would solve the lack of teachers, but students will miss the social part. Useful and efficient but no face-to-face interaction on long term with negative effects on everyone, they can feel isolated. For disabled persons and students who live at a far distance it is beneficial but not as interactive as a real classroom.

For students in the Netherlands this somewhat contravenes with the findings of the interviews where the Netherlands were pro distance learning, it is said that it is better when there is face-to-face contact interaction between teacher and student. In addition to this it is also stated virtual classrooms not to be successful because of the distracted situation you will get unless there is a simulation program of any kind.

For Suriname it means also less overcrowded classrooms and the preservation of valuable resources which are unnecessarily used instead of allocation elsewhere. The lack of professors can be solved by this method, so in case of a shortage of teachers or teachers with a busy lecture schedule (often the case) one can use video transcripts or create a so called virtual classroom. Also when students can't join the classes due to health issues or traffic, it can be useful. You can do a lot more for e.g. by working more with Moodle because the exercises can be put in there and the communication as well and the fact that the university is now not actually using it a lot.

Looking at these barriers in the culture perspective: these results show that the English language could also be a barrier for Suriname students, as not every student speaks this language excellent and just waits for teachers' assistance (the waiting culture of the students, in this research known as the variable 'discipline'). Some of the E-learning methods could also be a challenge like Social-learning because the information is not accurate and Self-study because not everyone has the discipline. Using Self-study solely as a E-learning method affects the variable 'discipline', as students are mostly on their own and by lack of knowledge they don't know how to search for good articles. Social learning also affects the variable 'discipline' because all the students together online and sometimes discussions break out about who is right and who is wrong. Web-based learning, also a method of E-learning, can be used as a method to interchange knowledge from other universities.

Looking at these barriers from the quality perspective, connectivity is also an issue as addressed here. E-learning methods which could be a challenge for students of the Netherlands create good communication. E-learning such as (only) live webcasts can cause problems because of poor internet. And all the methods could be a struggle without the right knowledge. Not everyone is handy in technology, so keeping up with technology is definitely a challenge. Group study through internet could therefore also be a challenge.

The network access in Suriname is a major problem as well as the bad internet connectivity which could be a big challenge. Like for instance the impact it has on video and audio learning, because

of the insufficient internet connections Suriname has. The technology is also not up to date. Blended learning could also be a challenge and the fact that students don't have access to a Laptop or PC. So students of Suriname are positive about E-learning but Suriname has a minus point which is the internet connection, it fails often and especially when you need it the most. So it is impossible to use it on campus without proper internet speed.

With regard to the questionnaires there was also information accessed about exams, and if this will be different after three years or more? For the students of the Netherlands it would be the same as it is today with pen and paper, but some are already doing it online and practical in a way like computer exams. Technology might allow us at one point to take exams in a different way, but it is still the safest to do exam in a classroom or exam room. It would be a great idea if exams could take place on the PC for instance digital exercised, with programs such as AutoCAD.

For Suriname there are only written exams; After three years there will be no change because of the fraud inspection. At the moment students do get a take-home exam which then can be mailed to the teacher. Maybe after a couple of years there could be exams through augmented reality or in a digital form with other college student simultaneously around the world.

Research question 3a: What are the differences between Suriname and the Netherlands in relation to the introduction of E-learning in higher education institutes?

❏ Power Distance

-Difference in how people learn: In the Netherlands they explicitly allow innovative ideas and encourage it by suggesting options. For instance they learn how to make hydrological models and statistical models. They learn a lot by working with different models on pc, how to use it and interpret the output data in the model etc. Also by using laptop for paper, desktop, mobile phone for communication, R-program for statistic and matlab for engineering mathematics. They also have to get familiar with it, as in the beginning students weren't even supposed to use their mobile phones during class. In the interviews this was also the issue as teachers had to cave in and accepting the usage of mobile phones during class was better. But in the Netherlands they even have an own IT room where students can use the internet.

In Suriname it is mostly when there is a group project, so there is contact by phone and email and during these meetings information is being searched on the internet. Teachers also give exercise where you can solely find the information online. In Suriname they use Moodle and there is wifi at school but the connection isn't always that strong. The institution expects that the students are in possession of certain devices but they don't force them to use specific technology. Moodle is used by offering the moodle environment to each and every teacher to use for file/info sharing, submission of papers and grading. In Suriname they also use it in class during exercises but the internet doesn't always work.

❏ Individualism

-Different is dangerous: For the students in the Netherlands adapting to the implementation would be smooth as they would do as told and would use these

for remote learning. They would adapt in any way possible and would engage it because it would stimulate to learn more about E-learning. Adaption would be quite well as they already have a certain degree of independence and are already acquainted with the methods of E-learning and spending more time using electronics. It has a positive effect and adaption would be easy. Students are the most people who use E-learning more frequently than the teachers themselves. So adapting would be easy if the benefits are explained well, then the students would support it.

For Suriname: the students and the teachers would also adapt it easily, but experts should explain how to work with the change in a clear manner, and helping students to work with it before throwing it abruptly at them, like they usually do. For part time studying it would be helpful if more material was online and creating methods which inspire more students to learn on their own level. If it is the daily routine of gaining information, this wouldn't be a problem. But when studying at home this means more self-studying and pay more for better internet access at home. And as most of the study part is already through online, it wouldn't be that big of a change. Only when everything is from home, it would be new, and also it would mean less travel time. So adaption would be easy and good, as long as there is internet and electricity. There would also be a change in some of the schedules, as there will be a time difference when skypeing the exams through an E-program for example. So this is in contrast to the statement 'what is different, is dangerous' that goes for Suriname, in comparison to the Netherlands where there is a tolerance for deviant and innovative ideas and behaviour.

-Use of technology: In the literature review it was stated that to research the cultural dimension 'Power Distance' I would assess it with the question of 'how universities are encouraging their faculty members and students at the moment to make use of more technology'. Looking at the use of technology, 27 students said that the institution encourages them to incorporate technology and 14 said no. The use of technology is mostly with programs like the use of software to calculate certain statistics and putting documents online (uploading papers digital and asking questions with emails). Also, sometimes new programs are introduced and set as mandatory to explore the innovative idea of technology.

The students of the Netherlands as well as those of Suriname gave the following opinion about E-learning which is more or less the same as the findings from the interviews:

E-learning is needed, helpfull, amazing, efficient, a great way of self study and very useful especially due to the ICT developments nowadays. It is very practical and it makes it easier for student and teacher to transfer and access information. E-learning should be better and accessible for everyone because it is handy and fast, but it should also be used properly, so with updated information. Learning via electronic media is effective, you can study whenever you want and you have also the ability to watch a web lecture as many times as you want.

Research question 3b: What are the differences between Suriname and the Netherlands in relation to the application of E-learning in higher education institutes?

❑ Uncertainty Avoidance

-Time spent on education: As already stated in research question 3a for Suriname 'time is money' and for the Netherlands 'time is a framework for orientation'. Below there is a description of how many hours a student spends on a course where for interviews and group discussion it is about 2-5 hours. E-learning can also be beneficial because of the fact that you can study anytime and anywhere which can help when you are a working student. Also students in the Netherlands are already benefitting from these things, for e.g. giving classes to many more people than in a classroom.

10-20 hours at home	62.50%
20-40 hours at home	28.13%
10-20 hours at school	50.00%
20-40 hours at school	25.00%
10-20 hours online	31.25%
20-40 hours online	12.50%

❑ Masculinity

-Discipline: The main finding here is that with the integration of E-learning the discipline for the students will be higher and this research shows that this can be challenging for Suriname. But this research also indicates that students in the Netherlands find this challenging especially when using the method 'self-study'. Giving colleges online and still being able to keep the interactive part will save a lot of time but still teachers don't want to give all their lectures sitting down behind a laptop. But with this you can also give colleges in other countries. It will take a lot of concentration time but it could be the future.

-Working in order to live: the finding for Suriname is, that it is flexible to study by own time, especially for working students and students who can't travel everywhere. This is accurate when looking into the cultural dimension 'Masculinity' where for Suriname it is stated that 'time is money'. Independence of college time helps students achieve more in one day. So more can be done in one day, but students do miss personal explanations. E-learning is the Key for the Future, E-learning gives warranty, one can learn on his or her own level. It is a new and interesting method of learning in this digital time age. You can easily find projects and documents about specific subjects. There are a lot of examples given from the USA as well as Europe and the Caribbeans which you can relate to Suriname. So people should make use of it more often and it should also be promoted in a more efficient way to students.

For Suriname courses could be more friendly towards working students when they could allot themselves E-learning. And nothing is more fun than getting

information from teachers through videos during a college of usually is 2-3 hours, of which there is already too much information has been given. Students cannot search further in the information and teachers cannot elaborate to everything. Also qualified professionals from top universities the world over can give online courses or lectures to the students in Suriname. As mentioned before 90% of the teachers in Suriname are not qualified to teach at the university. So increase the level of knowledge and technology of students and reduce travelling for teachers, especially teachers from another country. The people of the institution (students/lecturers) can do research with improved quality.

Therefore the strengths of E-learning are obtaining information faster, capable to make your own schedule, a comfortable learning place, increased degrees, winning time and flexibility. There is more information online already of existing projects and how to do it, accessible everywhere, but the weakness is staying up to date with information. You can reach more and more people and distance no longer is a problem in this modern learning. It's attractiveness, you have a quick and easy access to knowledge and more accurate information. Also less traveling but you have to stay open for new ways of looking at problems and information. Communicating will be easy with the world as it makes the world smaller.

Weaknesses of E-learning are that there has to be someone to updating the E-learning platform and for Suriname, meaning that you are dependent on internet access. Not all the students are motivated, it is non social and not everyone can work with it as well as you would think. Also people might become less engaged as it is nice to discuss certain topics with classmates and a professor; for example self-based study takes away this interaction. Furthermore studying at a university will even become less personal than it already is. Students will avoid going to class with lack of motivation. There is also less face-to-face communication and interaction between students and teachers. And excessive use of laptops or computers may have bad effect on your health, for example your eyes. Students can become less cooperative. Also not everyone has up to date hardware to handle some applications. The option to participate in actual long distance courses is not promoted by AdeKUS. The options to participate in the final exam is usually not possible because AdeKUS does not have the needed facilities and E-learning means investing more and it take a lot of time to understand "new" technology.

5 Discussion

The results of this research are based on findings from the interviews and questionnaires. The findings are bundled and assessed per research question.

Research question 1: To what extent are E-learning applications a part of the education programs of institutes of higher education in both Suriname and the Netherlands?

In the Netherlands as well as in Suriname the teachers and students are quite familiar with various E-learning applications. E-learning is already used in both countries, in the Netherlands more frequently than in Suriname. And it is clear that both countries can benefit more from E-learning applications. E-learning means less use of paper so that the environment is not put under too much pressure. Evidently I learned from the outcome of the research that 80% of the students prefer distance learning and 20% face-to-face learning. Because of the rising quality of software such as Skype distance could work, preferable when used in a class. So when it comes to face-to-face or distance education the students of Suriname as well as of the Netherlands prefer face-to-face or a combination of both. You don't have to do everything in person; There will be a balance and you are able to ask questions immediately to a teacher and get the answers right away instead of waiting for a reply that can take days or even weeks.

The results of this research are 1, there are teachers who declare that 'the way they've always done it, works'; 2, 'old' teachers don't like and want to innovate and have no time and good study material. Such teachers of Suriname for example believe that with the integration of E-learning in their education system, they will be forced to adapt to this innovation. In the Netherlands they believe that integrating E-learning can have a positive effect on the quality of education. To research this further, more information is needed as to assess all the bottlenecks of the education quality. Identifying the bottlenecks, E-learning could be one of the solutions to attain an international education level. This is out of scope in this research, but this research does assess some of the bottlenecks such as the issue of assessing proper information and having a reliable internet connection.

Subjects with a lot of reading can be quite easy with the use of E-learning. Practical subjects on the other hand can be done with more calculations. So Both have their pros and cons, like for face-to-face the lecturer is actually there to provide additionally needed guidance. Distance education is self paced, does not actually force going to the campus and has more study options. It usually consists of a team of experts which in turn provides students with a better insight of the course. Also time management must be well stipulated. Distance learning: if you can't attend school for that reason you can follow the course, for working students it costs time, and for Suriname 'time is money'.

In the literature review it is stated that E-learning has the benefit to share and teach knowledge without a distance barrier and it could be given at anytime, anyplace and anywhere. The findings of the interviews as well as the questionnaire have proven this accurately and both Suriname as well as the Netherlands can benefit from it. Although students must have a choice whether or not they want to follow the course at home or at the university.

Also is stated in the literature review that for AdeKUS, integrating E-learning could really be a great advantage since their education system is outdated. Regarding the findings of the interviews

can be stated that these are accurate and can also help solving the problem of not having enough teachers, not having enough space in classrooms and that 90% of the teachers are not really qualified to teach at AdeKUS.

In this research the learning pyramid of Bethel Maine was applied and has resulted in the following pyramid which needs to be taken into consideration when integrating E-learning. This pyramid differs a lot from the pyramid visualized in the literature review.

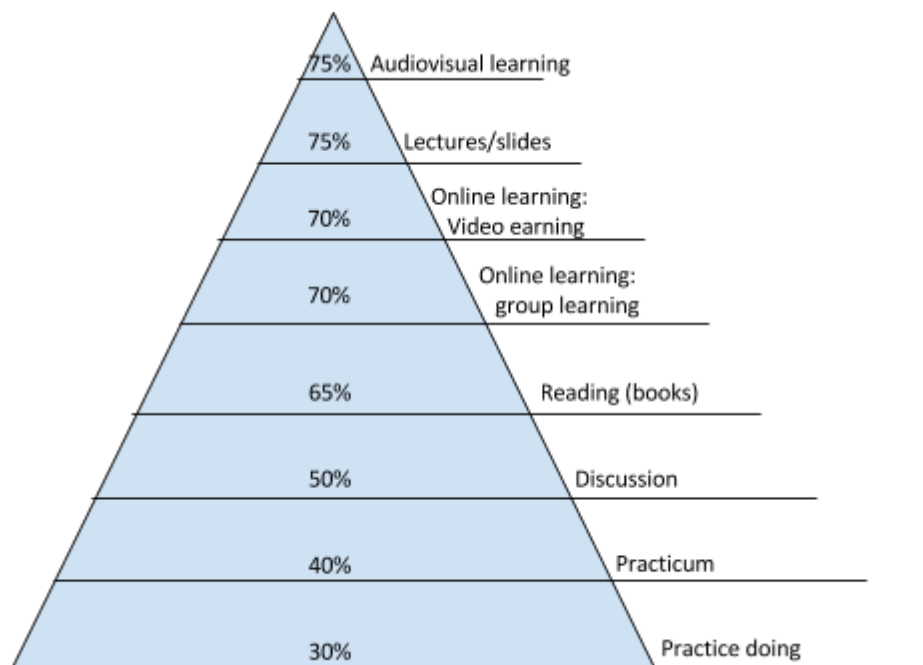


Figure 13: Applied Pyramid of Bethel Maine.

Research question 2: What are the current barriers for the successful introduction of E-learning applications at institutes of higher education in both Suriname and the Netherlands?

A lot of barriers were assessed in the interviews as well as in the findings of the questionnaires. Main findings for Suriname as a developing country is that resistance to innovation and change is deep-rooted, cultural norms are weighing heavily. The teachers should leave old methods and be open for it. Interaction is one of the important variables which have to be there and certainly to be taken into account. This also applies for the Netherlands. Also for both of the countries it was stated that change has to be initiated gradually, implementation will be strange at first, so start first with a test phase where it goes from partially online to fully online learning. Also is stated for both countries that integrating E-learning is different, so people need to adapt first and if they can benefit from it they will want to adapt to it as well.

Another factor of quality which was researched was the quality of the current education program where a lot of information is outdated. The results of the interviews and questionnaire show that by integrating E-learning this can help solve the problem because of the information available. With the integrating and use of E-learning, universities can reach more students and can be given from everywhere. Also for Suriname it means that it can also be given from other countries whereas Suriname can benefit from the information of the courses. But also for the Netherlands

this applies with the use of E-learning you can get a better education level (for instance Harvard Moocs). Knowing the advantages, will let you accept it and adapt to it easier. For instance teachers were strict with the use of telephone and laptop in class but after a while they had to cave in and the students could use the platforms. So students have a lot of influence when it comes to integrating E-learning.

This research shows that the students of AdeKUS are now already using E-learning in a way to get more in depth information because the current curriculum does not have all necessary information. Another result which is related to the quality of the education is that there are no experts available. The technology driven teachers are on their own and don't elaborate with each other. With the proper training and bringing the teachers together this problem can be solved as they are already willingly and open for innovation. Another result which relates to this is that teachers of Suriname are in contact with teachers in other countries like the Netherlands, Belgium, USA and Germany. So another solution for this could be the elaboration from teachers of these countries with that of Suriname where they not only can exchange information about the curriculum, but also exchange information about the use of technology towards E-learning. This could be an asset to improve the quality of the education curriculum of Suriname and this feature could also be embedded in the E-learning platform.

Lack of knowledge, resistance to change, network access and the connectivity of the university were the main variables which were assessed as barriers.

Also for Suriname it briefly came up in the findings that there has to be investment in IT, so the school's budget for ICT development could be a barrier here, because when looking at Suriname they have to make a lot of steps to the level where the Netherlands currently stand. Also connectivity is a crucial factor when integrating E-learning. Both countries cope with this, but mostly Suriname. E-learning trial was once already implemented, it was efficient but students had to adapt to it and due to the bad/slow connection this failed.

Creativity also lacks at most of the teachers of AdeKUS. For Suriname the internet connection is crucial whereas the library of the university doesn't have a working internet connection as well as several classrooms and areas of the university. For integrating E-learning in a developing country like Suriname this is a crucial factor, but as AdeKUS needs government funding for the investment in IT, E-learning can be integrated at the places where the internet connection is reliable. Students as well as teachers from Suriname need to adapt to this limitation until the connection and network is reliable.

For the Netherlands teachers are also skeptical about the focus of students on attending web colleges, because students can be distracted easily. So when integrating E-learning, there should also be taken into account the behaviour and adaption from students. Also for both countries it means that E-learning will never 100% replace physical contact. In the thesis review it was already stated that another barrier of implementation is also that many institutions fail to integrate ICTs into teaching and learning because they are using ICTs to replicate their traditional practices, content and control. So when integrating E-learning, do not implement it abruptly, because this will make the resistance and the acceptance of change harder. It is different in the beginning, but people are adaptable to new things. Different could be dangerous, in a way, but when you get familiar with it, depending on what is being introduced and how this takes place, it will succeed.

In the literature review it was stated that teachers as well as students should be told what the explicit outcomes of an online lesson are, so they can set expectations and judge for themselves whether or not they have achieved the desired outcome. So when setting up an online course, the instructors should break down the study material into parts with appropriate explanation before learners are expected to duplicate the desired behaviour. So according to the findings this is accurate.

Furthermore in the literature review it was stated that Ghana who adapted to the mobile technology still faced challenges. Pontes, Silva, Guelfi and Kofuj who addressed their main findings for other developing countries are not far off according to the findings of this research. M-learning is a challenge for Suriname as the access to information technology facilities still remains highly inadequate and unevenly distributed throughout the country. Also the capacity of teachers and educators to manage E-learning programs still remains low while some do not have the adequate skills, others are averse to using E-learning platforms. And there is insufficient equipment and slow Internet connectivity in most parts of the country. Furthermore there is also unreliable access to electricity which also is the case here.

Another crucial point which is already assessed briefly, is the 'discipline'. Teachers have to go along with the time and get training how they can keep the lectures more fun, but discipline must come from the students themselves. There is a huge difference between the students in Suriname and those in the Netherlands. For instance the ones who went to the Netherlands on their 17th can adapt quickly and 'do it', but the other ones who stayed in Suriname can't. Students of Suriname even have difficulties asking questions only let alone making fully use of E-learning or asking questions through Skype.

Furthermore, for integrating E-learning a new educational structure is needed where E-learning support and training need to be incorporated. With the results of this research I created the following structure which visualize what should be held into account for each phase when integrating E-learning. I've created three phases to integrate E-learning which are build up in 'connectivity and students', 'teachers' and a 'change program'. 'Connectivity' in phase one as it is one of the barriers which is of importance when wanting to integrate E-learning. 'Students' in phase one as it starts with their behaviour, knowledge and discipline. 'Teachers' in phase two as they have a knowledge gap and need proper training, but also their behaviour towards E-learning is of importance. This applies for both countries, but for Suriname the emphasis is more on phase one, where connectivity, the behaviour of the students and teachers as well as training of teachers is of importance. In the last phase i've put in a change program which needs to be incorporated in both countries where the emphasis is on which tools will be used, the content of the courses and of course the acceptance.

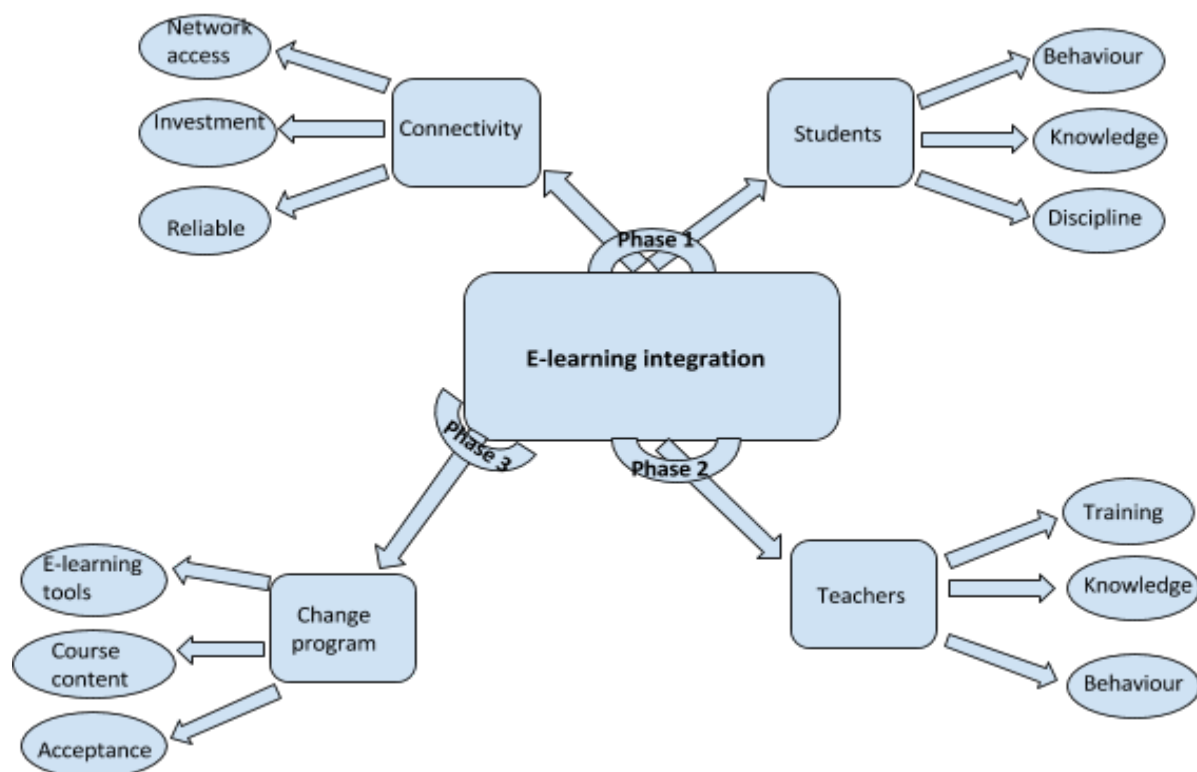


Figure 12: Structure for integrating E-learning.

Research question 3a: What are the differences between Suriname and the Netherlands in relation to the introduction of E-learning in higher education institutes?

At this question the cultural dimension 'Power Distance and Individualism' were assessed. For the Netherlands it was stated that you can give training to employees for how to use E-learning to gain knowledge and how to use E-learning to train or educate stakeholders like organizing webinars to reduce costs. For Suriname this could be interesting also. Here the statement applies where for Suriname this means the purpose of education is learning how to do compared to that of the Netherlands where the purpose of education is learning how to learn. At the cultural dimension 'Power Distance' Suriname has a high score and it is known for the fact that teachers are expected to take all initiatives in class compared to the Netherlands. With the findings of the interview and questionnaire this is an accurate statement.

For the Netherlands when looking further into the category individualism where "different is dangerous" the finding is that universities invest a lot in their teachers. There are courses given for teachers to get a view on learning. But teachers also have to find out in their own time how they will give a course. Teachers share their experiences with each other. Not everything is new or advanced, but the university keeps trying to incorporate technology like new idea's. Drawing one line for learning is still a challenge.

With blended learning (mix of classroom and digital learning), the benefits for the institution are that it is efficient (the combination of digital instruction and face to face explanation on the same time) for the teacher and the students. So for Suriname you can also incorporate a more blended learning system. In the literature review it was also stated that some universities can even adopt

to new technology with minor changes and adjustment, but it does require a revolution in thinking about teaching and learning. These findings how it works are not entirely accurate, because there are a lot of changes when it comes to integrating E-learning.

When a teacher tells the students traditionally what they have to learn is now superfluous. There has to be interaction and this applies to both the Netherlands as well as Suriname. With a good E-learning platform it could all work, a good E-learning room is therefore necessary. As universities are perpetually, it is time to do other things during a lecture or workshop for instance flipping the classroom.

Research question 3b: What are the differences between Suriname and the Netherlands in relation to the application of E-learning in higher education institutes?

At this question the cultural dimension 'Uncertainty Avoidance and Masculinity' were assessed. As a cultural difference I can conclude that the teachers are challenging students with questioning via self-study. The lectures can be given through Skype or Adobe. Making use of these methods you could meet the demands of the students better, students like the methods and are curious. Distance learning only as an alternative. Lectures via home can be more interactive. Recording of the in-class lectures is also an option but to that end a classroom for recording the lectures is demanded.

E-learning consists of education that is reachable for people who live a far distance and have less resources, letting you finish the program in the acquired time, more classroom space and more time. Students get youtube instructions to work at home on the computer for fieldwork. Communication is mostly through laptop and laptop is the most platform for school usage. Laptop and tablet are in use for providing lectures and making slides. For Suriname as a developing country I can't say there is a resistance to innovation.

For the students in the Netherlands adapting to the implementation, it would be smooth when they did as told and would use these for remote learning. They would surely adapt any way possible and engage it, because works like a stimulus to learn more about E-learning. As for students in Suriname they would also adapt easily, but the experts should explain how to work with the change in a clear manner and helping the teachers and students work with it before throwing it at them, like they usually do.

Also was stated that 'often the students don't get all the knowledge during a three hour course, because the teacher mostly goes through a presentation and some slides followed by applying the theory to actual cases' and that there is also the difference at the cultural dimension on Uncertainty Avoidance that time is of importance.

The time variation hasn't much differences, but I can state that in Suriname a lot of hours is spent on a course which is more at home and online. As well for the Netherlands as for Suriname it is stated that integrating E-learning the right way will save time.

6 Conclusion

It is obvious that E-learning should become an important factor in Suriname and the Netherlands. It will eventually eliminate the need for large campuses and classrooms where masses of people are traveling to each day, to listen to someone with a PhD talk for 90 minutes. Learning ought to be kept interesting so that students won't drop out and become long-term students. I believe that the current education level for the Netherlands as well as for Suriname, can be brought to a higher level with the use of E-learning. So this research contributes to the fact that universities should start integrating E-learning right away. We must focus on a future where we live in a digital world and have to be connected for gathering information through high quality E-learning applications and methods. Although E-learning or online learning can be a component of both classroom and distance learning, E-learning is not synonymous with distance education. Distance learning can exist without online learning, and online learning is not necessarily distance learning. Students who cannot or will not access a campus have very different needs from those who do, whether or not they are studying primarily by E-learning. As A.W. Bates discussed in his book, distance education is any longer a different or separate activity from classroom teaching [A.W. Bates, 2005]? E-learning becomes easy to use, and is time saving and human energy savings as well. Furthermore this research shows that students want to have the choice whether they want to attend a college from home or at the university itself. And this research also shows that E-learning makes information easily available because everything can be found at one single point with a reliable internet connection. For Suriname it also means saving a lot on resources which save costs as well.

E-learning will make it possible to study on your own schedule instead of fixed times and to stay at home for learning. Especially for a developing country like Suriname it means that it will stimulate the use of additional data and makes sure that students are able to learn on their own level. One more benefit is that you can learn from projects of other countries which they already have done and use it as a case study. You can work more efficiently and get any information very expeditiously. You also save money on paper, etc. and transportation to campus ait has benefits too the environment (less pollution). You can do E-learning at any time and any place if there is good internet. It is easier to trace information online, you don't have to struggle for a chair in an overpopulated class as you can follow the classes from a distance. E-learning can even help increasing the grades of the students because almost every student likes E-learning, it motivates students as to the freedom they get by using E-learning. It helps the students in their study thus also benefitting the institution. Schedule-wise it might be more practical to have certain courses be web-based learning or complete E-learning. Will be easier to access course material after the lessons are done; it will also be a great help if the teacher is willing to record the lessons.

7 Recommendation

The conclusion in the previous chapter is that students must get the choice whether they want to attend a college from home or at the university. For this there could be a nice solution: when you are late for class, an 'online' symbol appears on your mobile phone where you can log on, so you can follow the college from a distance and participate actively without bodily presence. When you are studying from home you are bounded to start the lecture also on time as the symbol will appear on your phone with that notification. E-learning is a more dynamic way of teaching and it is time to flip the classroom so all of the universities could have better results for visual thinkers and give learning different perspectives. So no more boring lectures; all information is always available anywhere and anytime, so information is easily shared, a real improvement of research. As stated in the literature review some universities even aim at replicating as far as possible the classroom model through the use of synchronous interactive technologies; they rely heavily on lecturing and questions. This is recommended for the Netherlands as well as for AdeKUS.

7.1 Recommendation for implementation

There is no doubt that ICTs keep bringing excitement into learning and communication. As stated before, a good E-learning platform is crucial to have when wanting full benefits from E-learning methods and E-learning applications for a successful integration of E-learning, especially in developing countries. When viewing this from the quality perspective, the quality of the contents of an E-learning program is important as to how this will be presented. To solve this an good E-learning platform is necessary whereas in this research the advice is given for Moodle, but further research is still needed when wanting to implement it fully. In the literature study it was already stated that there are open source platforms which could be a benefit for universities in developing countries, whereas Moodle has the highest features and capabilities compared to Caroline and Blackboard.

The factors which need to be taken into account when integrating E-learning in a developing country from the literature study were:

- ☐ Adopting freeware and open source software for teaching and learning activities.
- ☐ Continuously press for more funds from their governments.
- ☐ Diversify sources of funds to have a wide financial base.

With the findings of the interviews these factors have been assessed and when taking a look at AdeKUS, they do not have the resources to move freely when it comes to integrating E-learning. They are government dependant and with the current economic crisis it is difficult to integrate E-learning within the education system of AdeKUS. Also stated in the literature review was that Suriname lacks ICT infrastructure which also makes it not attractive for others to invest in Suriname. Therefore AdeKUS solely relies on the government.

7.2 E-learning school

One of the solution to eliminate this issue is to startup a E-learning school, but there are other dependencies such as politics, policies and a healthy investor's environment to get these project started. Big investments for internet infrastructure and digitizations are out of scope because of the investments that is needed to provide internet to the home. Therefore the focus is to create HUBS where currently internet connection is already stable. This is out of scope in this research and can be researched further as it can have interesting findings on the equity issues. Especially in the case of AdeKUS whereas they are dependant on government issues. This is the reason why I want to implement an E-learning school in Suriname without the dependance of government fundings. Also by initiating this E-learning school, Suriname can benefit from the knowledge of Dutch universities as it makes education accessible for a broader population.

The mission of this school would be that through this E-learning school the student will be provided with a rich academic experience in a digital environment in which the student is inspired by being involved through student-centered Dutch level education to contribute to Suriname with knowledge and abilities in the field of innovation, application and academic research.

The vision would be that the E-learning school, as the only one in Suriname, will stand up for the education rights of the Surinamese students. With this everyone in Suriname will get the opportunity to study and broaden his/her knowledge, regardless of age and this at an affordable price.

The short term goal is to set up an E-learning school for students in Suriname to give them the opportunity to study at an affordable rate (equivalent to that of AdeKUS or below) at the education level of the Netherlands with E-learning applications and methods which make it possible to study from a distance and when it suits them.

The long term goal is to set up an E-learning school for students in Suriname to give them the opportunity to study at an affordable rate (equivalent to that of AdeKUS or below) at the education level of the Netherlands, America and India with E-learning applications and methods which make it possible to study from a distance with the opportunity to realize their internship abroad and gain international experience.

The target group would be students with a HAVO/VWO degree who want to follow a specific course or module to broaden their knowledge in the field in which they operate as well as students who are just coming out of high school who want to study when it suits them, thus providing distance at the education level of the Netherlands.

To implement this E-learning school the first step is to analyse what the requirement of teaching will be, the learning objectives and the skill developments of the students in the learning process. After this the 'curriculum' can be designed/developed content can be selected with the right interactivity. For this a good E/learning platform is needed. For the E/learning school Moodle is chosen as it is an open/source platform. Moodle (Modular Object-Oriented Dynamic Learning Environment) is the most widely used open source learning management system in the world. Millions of users are using Moodle daily for online learning and teachers can monitor their students activities in their learning process. The user-friendliness combined with the many (digital) educational opportunities, makes Moodle a powerful learning system facilitated with E-learning. Also the price is cheap as it is only €1.05 when having 2000 students enrolled. Via Moodle you can have all the requirements done like taking an intake, check the diploma's, enrollment, studying,

grading etc. Hence the decision to choose this as the online platform for the E-learning school. After this the development phase can start followed by fully implementing it in Suriname. For this further elaboration is needed which can be provided within a business plan.

8 Limitations and opportunities for further research

As I reflect in doing this research work, I could say that this topic has taken me into challenging experiences. It was difficult narrowing down the scope as I wanted to contribute a lot to my hometown, especially because my supervisors forced me to rethink the scope and to follow the rules for rigorous, formal presentation and analysis of the findings. Sometimes this brought some major changes in how I had initially planned the approach of this research, but in the end it worked out quite well. One of the exciting experiences was conducting the interviews in Suriname itself, because it felt kind of like a field study, and gathering quite interesting facts about the topic and AdeKUS as well. Another challenge was doing this research alongside a full time job which I underestimated heavily. This research had a lot of frustrations, but also rewarding parts as it showed me how easy it can be when I as a researcher have a good grasp on the subject and the research questions.

The challenge was also keeping the scope in mind while processing the results. The shaping of the thesis was quite a frustrating process, but my supervisors encouraged and guided me through it. If I had to conduct this research again I would focus more on time management and putting my ideas more into this research making it my own. Another challenge was applying existing theories to new E-learning theories knowledge, which I tried mostly by keeping the research questions in my mind when analyzing the results. However this could have been done in a more structured way, making it easier for the reader. Furthermore, I think it would be a better research if I conducted an exploratory interview alongside the findings of the literature review to draft more specific questions for the interview and get more input on the topic. On reflection in connection to time management it is of importance to research the various methods for conducting such a research before jumping in straight away. When it is clear how such a research is conducted, it makes it easier to fulfill this in a structured way. And in the end it is all about good preparation which involves feedback from supervisors and family member followed by reading and re-reading to get all the details right.

E-learning with the use of the right methods will make it easier to align education better with the needs of business, which benefit both employees and employers. With this universities can contribute to delivering students who can directly apply their knowledge in companies or start their own business. As the information is gathered from some of the students of the universities in the Netherlands and Suriname there has to be taken into account that not every student has the same opinion. Although I can say that Internet connection is definitely a limitation for implementing and making full use of E-learning. For AdeKUS with the bad internet connection and the fact that not everyone can afford internet on their mobile phones is crucial. And not all the students have access to the internet at home (not all the students have adequate money) and at school the wifi internet access on the campus is very poor. So this is for developing countries like Suriname but also for the Netherlands. For further research there could be looked more into this category to see how there are other ways to make use of internet without the connection failure.

For a university wanting to go fully online there has to be a way to make learning interactive via a good working E-learning platform like working with Office 365 and Skype Business. Also there has to be training for teachers of how they use the facilities and how they can monitor their students. And of course what are the scenarios when there is a power outage or when there is no internet connection. As seen in the results students want the choice to go to the university or stay at home and attend the lectures. But also when there is no possibility to follow the course, it has to be recorded so they can watch it later. Also the various methods have to be taken into account. Which method will you use for which course. For instance the course medicine can never be fully online. So all these aspects have to be developed entirely for each individual course.

This research also shows that mobile phone usage is growing as well in the Netherlands as in Suriname. In both countries they use the mobile phone for in-class exercises whereas Netherlands uses various applications like Socratif. This could be a short-term solution but it needs further research when wanting to integrate E-learning as it needs to be suitable for the mobile phone technology. M-learning as it has the potential to become an effective partner for providing education along with traditional methods. Particularly, it can be a medium of interest in developing countries where the number of mobile users is far greater than the number of wire users. With the findings in the interviews and questionnaire this is accurate. And mobile phones are currently already used for in-class exercises as well for the Netherlands as in Suriname. The implementation part of M-learning was out of scope in this research, but I would definitely recommend it for further research as it can play a big role in E-learning and maybe later on it can also contribute the connectivity failure as it uses 4G data transfer speed.

Also researched in the interviews and questionnaires was information about exams. I looked the current situation of how exams are now conducted and if this will be different when it is after three years or more. For the students of the Netherlands it would be the same as it is now with pen and paper, but some are already doing it online and practical in a way like computer exams. Technology might allow us at one point to take exams in a different way, but it is still safest to do it in a classroom or exam room. Also it would be great if exams could take place on the PC for instance digital exercised with programs such as AutoCAD.

After three or five years it will be different through technology development, for instance like logging on a platform and make it online. But online exam is not safe and you have to go for the safest way when it is about taking exams. So maybe after ten years and with a better online system. For Suriname it is solely written exams and after three years there wouldn't be a change because of the fraud inspection. Students do get a take-home exam which then can be mailed to the teacher. Maybe after a couple of years there could be exams through augmented reality or in a digital form with other college students simultaneously around the world. For the master course presentations can be performed through Skype (which exceptionally). Practicum is not online as a matter of fact this cannot be online. Skype is also not preferable for exams, but Moodle on the other hand is used for exams. This was not researched thoroughly in this thesis research as it was out of scope but I saw the importance, especially when wanting to integrate E-learning with an E-learning school and when wanting to go fully online. So this could also be used as input for further research when looking into conducting exams online.

9 References

The citation of the references were conducted by the APA style. The search engines below, also mentioned in paragraph 5, Literature review, were used to find the journals:

- ❑ Google Scholar: Journals
 - ❑ ERIC: Institute of Education Science
 - ❑ EDICT: International Journal of Education and Development using Information and Communication Technology
 - ❑ ScienceDirect
 - ❑ UNPAN: United Nations Public Administration Network
 - ❑ IRRODL: The international review of research in open and distributed learning
 - ❑ IEEE Xplore, Digital Library
 - ❑ ACM: Association for computing machinery
1. Gorden, R. (1992). Basic interviewing skills. *Coding interview responses*. PDF article of Indiana University of Bloomington. Retrieved from http://www.indiana.edu/~educy520/sec5982/week_5/qual_data_analy_ex2.pdf
 2. Crawford, I.M. (1997). *Marketing research and information systems* [E-book version *Food and agriculture organization of the United Nations, Rome*]. Retrieved from <http://betuco.be>, ISBN 92-5-103905-4.
 3. Iahad, N., Dafoulas, G.A., Milankovic-Atkinson, M., & Murphy, A. (2004). E-learning in developing countries: suggesting a methodology for enabling computer-aided assessment. *Advanced Learning Technologies, 2004. Proceedings. IEEE International Conference on*, 2004, pp. 983-987, doi: 10.1109/ICALT.2004.1357734.
 4. Hedge, N. & Hayward, L. (2004). Redefining roles: university E-Learning contributing to lifelong learning in a networked world? *E-Learning journal*, 1(1), doi: 10.2304/elea.2004.1.1.3. (A version of this article was presented at the 21st World ICDE (International council for open and distance education) conference, 'Lifelong learning in the networked world', Hong Kong, February 2004).
 5. Ministry of Education (2004-2008). Sector plan of the education from Suriname. *Final concept of the sector plan of the education sector*. Retrieved from http://www.gov.sr/media/176009/sectorplan_onderwijs_2004-2008_finaal_concept.pdf
 6. Hülsmann, T. (2004) Low cost distance education strategies: the use of appropriate information and communication technologies. *The International review of research in open and distributed Learning*, 5(1), ISSN: 1492-3831.
 7. Bates, A.W. (Tony) (2005). *Technology, E-learning and distance education* [E-Book version second edition]. Retrieved from http://samples.sainsburysebooks.co.uk/9781134453436_sample_516019.pdf

8. Hofstede, G. (2005). *Cultures And organizations: Software of the mind* [Book 2nd Edition McGraw-Hill USA], ISBN 0-07-143959-5.
9. Chen Y.N., Chen, H.M., Huang, W. & Ching, R.K.H. (2006). Strategies in developed and developing countries: An implementation framework and case study. *Journal of global information management*, 14(1), 23-46, doi: 10.4018/jgim.2006010102. Retrieved from <http://unpan1.un.org/intradoc/groups/public/documents/APCITY/UNPAN028242.pdf>
10. Sife, A., Lwoga, E., & Sanga, C. (2007). New technologies for teaching and learning: Challenges for higher learning institutions in developing countries. *International Journal of Education and Development using ICT*, 3(2). Retrieved from <http://ijedict.dec.uwi.edu/viewarticle.php?id=246>.
11. S. Ssemugabi, S. & Villiers de, R. (2007). A comparative study of two usability evaluation methods using a web-based e-learning application. *Proceedings of the 2007 annual research conference of the South African institute of computer scientists and information technologists on IT research in developing countries*, 226(1), pp. 132-142, doi: 10.1145/1292491.1292507. Retrieved from https://www.researchgate.net/publication/200553122_A_comparative_study_of_two_usability_evaluation_methods_using_a_web-based_e-learning_application
12. Andersson, A. (2008). Seven major challenges for E-learning in developing countries: Case study eBIT, Sri Lanka. *international journal of education and development using ICT*, 4(3). Retrieved from <http://ijedict.dec.uwi.edu/viewarticle.php?id=472>.
13. Islam Md., T. & Selim Md., A.S. (2008). Current status and prospects for E-learning in the promotion of distance education in Bangladesh. *Turkish online journal of distance education-TOJDE*, 7(1), doi: 10.3329/jard.v4i1.765 . Retrieved from <http://tojde.anadolu.edu.tr/yonetim/icerik/makaleler/240-published.pdf>
14. Motlik, S. (2008). Mobile learning in developing nations. *The international review of research in open and distributed learning*, 9(2). Retrieved from <http://www.irrodl.org/index.php/irrodl/article/view/564/1039>
15. Ajadi, T.O., Salawu, I.O. & Adeoyee, F.A. (2008). E-Learning and distance education in Nigeria. *International Journal of Science and Technology*, 2(2). Retrieved from http://www.journalofsciences-technology.org/archive/2013/feb_vol_2_no_2/919888135221482.pdf
16. Abdel-Wahab, A.G. (2008). Modeling students' intention to adopt e-learning: A case from Egypt. *The Electronic Journal of Information Systems in Developing Countries*, 34(1). Retrieved from: <http://www.ejisd.org/Ojs2/index.php/ejisd/article/view/355>

17. Miller, G.J. & Yang, K. (2008). *Handbook of research methods in public administration* [E-book edited version, 2nd edition]. CRC Press: Taylor and Francis Group. Retrieved from [http://www.untag-smd.ac.id/files/Perpustakaan_Digital_2/PUBLIC%20POLICY%20\(Public%20Administration%20and%20public%20policy%20134\)%20%20Handbook%20of%20Research%20Methods%20in%20Publ.pdf](http://www.untag-smd.ac.id/files/Perpustakaan_Digital_2/PUBLIC%20POLICY%20(Public%20Administration%20and%20public%20policy%20134)%20%20Handbook%20of%20Research%20Methods%20in%20Publ.pdf)
18. Ozkan, S. & Koseler, R. (2009). Multi-dimensional students' evaluation of e-learning systems in the higher education context: An empirical investigation. *Computers & education journal*, 53(4), pp. 1285–1296, doi: 10.1016/j.compedu.2009.06.011. Retrieved from <http://edsc11uvm.wikispaces.com/file/view/Multi+dimensional+students+evaluation+of+elearning+systems.pdf>
19. Rhema, A. & Miliszewska I. (2010). Towards E-learning in higher education in Libya. *Issues in informing science and information technology journal*, 7(1), pp. 423-437. Retrieved from <http://www.iisit.org/Vol7/IISITv7p423-437Rhema735.pdf>
20. Ahonen, T. (2010). Interesting mobile statistics. *Upside learning blog, a leading provider of learning technology solutions*. Retrieved from <https://www.upsidelearning.com/blog/index.php/2010/07/07/interesting-mobile-statistics-by-tomi-ahonen-mlearncon/>
21. Baer, J. (2010). Lectures may be more effective than you think: The learning pyramid unmasked. *The international journal of creativity and problem solving*, 20(2), pp. 7-21. Retrieved from <http://users.rider.edu/~baer/LearningPyramid-Baer002.pdf>
22. CBS (2011). Substantial growth mobile Internet usage. *Central bureau for statistics, press release*. Retrieved from <https://www.cbs.nl/en-gb/news/2011/43/substantial-growth-mobile-internet-usage>
23. Mehra, V. & Omidian, F. (2011). Examining students' attitudes towards E-learning: A case from India. *Malaysian journal of educational technology*, 11(2). Retrieved from <http://www.mjet-meta.com/resources/V11N2%20-%202%20-%20MJET%20-%20Vandana%20-%20eLearning%20India%20-%20ONLINE.pdf>
24. Bhuasiri, W., Xaymoungkhoun, O., Zo, H., Rho, J.J. & Ciganeck, A.P. (2012). Critical success factors for E-learning in developing countries: A comparative analysis between ICT experts and faculty. *Computers & education journal*, 58(2), pp. 843-855, doi: 10.1016/j.compedu.2011.10.010 Retrieved from https://www.researchgate.net/publication/220140120_Critical_success_factors_for_e-learning_in_developing_countries_A_comparative_analysis_between_ICT_experts_and_faculty
25. Pontes, E., Silva, A., Guelfi, A. & Kofuj, S.T. (2012). *E-Learning, long-distance and lifelong perspectives* [E-Book, edited version]. InTech: CC BY 3.0 license. Doi: 10.5772/2467.

Retrieved from

<http://www.intechopen.com/books/e-learning-long-distance-and-lifelong-perspectives>

26. Iqbal, S. & Qureshi, I. (2012). M-learning adoption: A perspective from a developing country. *The international review of research in open and distributed learning*, 13(3), 147-164. Retrieved from <http://www.irrodl.org/index.php/irrodl/article/view/1152/2213>
27. CBS (2012). Mobile internet use continues to grow. *Central bureau for statistics, press release*. Retrieved from <https://www.cbs.nl/en-gb/news/2012/43/mobile-internet-use-continues-to-grow>
28. Jabli, N. & Qahmash A. (2013). The benefits and barriers of E-learning in higher education in Saudi Arabia. *Journal of emerging trends in computing and information sciences*, 4(11). Retrieved from http://www.cisjournal.org/journalofcomputing/archive/vol4no11/vol4no11_8.pdf
29. Uden, L., Tao, Y.H., Yang, H.C. & Ting, I.H. (2013). *The 2nd international workshop on learning technology for education in cloud* [E-book]. Springer. ISBN: 978-94-007-7308-0.
30. Qteishat, M., Alshibly, H., Alqatawna, J. & Al-Ma'aitah, M. (2013). Factors Influencing the Adoption of E-Learning in Jordan: an Extended TAM Model. *European journal of business and management*, 5(18), doi:10.13140/RG.2.1.3106.4481. Retrieved from https://www.researchgate.net/publication/275653388_Factors_Influencing_the_Adoption_of_E-Learning_in_Jordan
31. Lancaster, H. (2014). Suriname - Telecoms, Mobile, Broadband and Digital Media - Statistics and Analyses. *Executive summary of Suriname's insufficient international bandwidth capacity keeping pricing high*. Retrieved from <http://www.budde.com.au/Research/Suriname-Telecoms-Mobile-and-Broadband-Statistics-and-Analyses.html>.
32. Wang, M., Chen, Y., & Khan, M. (2014). Mobile cloud learning for higher education: A case study of Moodle in the cloud. *The International Review Of Research In Open And Distributed Learning*, 15(2). Retrieved from <http://www.irrodl.org/index.php/irrodl/article/view/1676>
33. Goldstein, J. (2014), The internet "access trap" in developing countries. *Freedom to tinker blog, research and expert commentary on digital technology in public life*. Retrieved from <https://freedom-to-tinker.com/blog/goldstein/the-internet-access-trap-in-developing-countries/>
34. Kende, M., (2014). Internet society: Global internet report. *The internet society (ISOC)*. Retrieved from https://www.internetsociety.org/sites/default/files/Global_Internet_Report_2014.pdf

35. CBS (2014). One in nine employed work less than twelve hours a week. *Central bureau for statistics, press release*. Retrieved from <http://research-methodology.net/personal-reflection-sample-on-completing-a-dissertation-on-csr/>
36. CBS (2014). Most young people online with smartphone. *Central bureau for statistics, press release*. Retrieved from <http://jeugdmonitor.cbs.nl/en-gb/indicators/publications/2014/most-young-people-online-with-smartphone/>
37. IUGG (2015). List of developing countries. *The International Union of Geodesy and Geophysics*. 26th General Assembly June 22-July 2 Prague, the Czech Republic. Retrieved from <http://www.iugg2015prague.com/list-of-developing-countries.htm>

10 APPENDICES

10.1 Interview questions

The interview questions are drawn from the literature review and give answer to the research questions.

Basic questions

Name

Male/female

Age

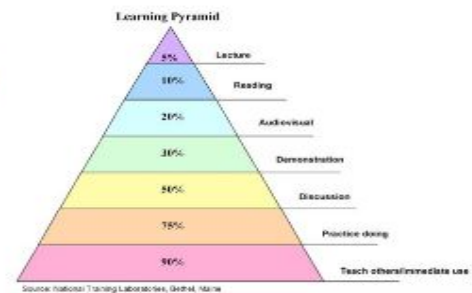
Profession: Bachelor or Master program and which field of study? (country and institution name)

Specific questions

1. Which platform do you use for school? (Laptop, Tablet, Mobile phone or Personal Computer).

2. How much time do you spend on one course? (home/school or online / individually or group work).

3. According to the pyramid of Bethel Maine This is how 'we' learn. Can you describe the way of learning at your university? (Give this a rating like given in the pyramid).



4. Can you describe how you access your course information? (up-to-date, easy to access and 24/7 available).

E-learning explained the easiest way is 'the use of electronic media (the Internet, DVD, CD-Rom, videotapes, television, cell phones, etc.) for teaching and learning at a distance [Engelbrecht, 2005]'. Due to the use of the internet, study material can be accessed anytime and anywhere.

5. How do you use E-learning in your current courses, can you give an example?

6. What is your opinion on E-learning?

In the literature study it is discussed that access to the technology is an enabling or disabling factor, but access also refers to the quality of the connectivity.

7. Can you describe the connectivity of your university? |

8. Going back to question 4, how much influence does this have on the access of your course information?

9. How much IT-support do you currently use for your study? And how is this being used?

10. How does your institution encourages you to incorporate technology?

E-learning methods could be self-study, learning by video/audio tape, web based learning, Blended eLearning, which is mix of classroom and digital learning, mobile Learning and social Learning.

11. What is your take on these methods? Are you familiar with any of them?

Some contemporary studies have argued that, E-learning educational systems provide more instructor-student and student-student interaction than the traditional systems.

12. Face-to-face education or distance education, what do you prefer and why?

a. Do you see this as a barrier for adapting e-learning?

13. How can your institution benefit from the e-learning methods mentioned above?

14. How can you benefit from E-learning?

Some developing countries are living by the statement 'what is different, is dangerous' and maintain a resistance to innovation.

15. What is your take on this statement?

In the Netherlands there is a tolerance for deviant and innovative ideas and behavior according to Hofstede's cultural dimension. This finding is in huge contrast with Surinam where there is a suppression of deviant ideas and behavior and resistance to innovation.

16. If E-learning methods would be implemented in your current study, how would you adapt to this change?

Successful E-learning programs require a lot of faculty involvement, which encourages online peer support among the students.

17. Which of the E-learning methods could really be a challenge for you or co-students?
- a. Why is this? (for e.g. lack of knowledge, network access problems and keeping up with technology)
18. Virtual classroom can make it possible that a mass of students can be educated during the same time at different locations.
What is your opinion on this?
19. How do you communicate during courses, which platform do you use?
20. How are the lectures supported, for e.g. are multimedia tools used (flash animations, simulations, videos, audios, etc.), can you give an example?
21. How do your exams take place?
- a. Do you see this in a different way after 3 years or more?
22. How high would you rate your institution, and why?
Organisation:
Content:
23. How high would you rate your current study, and why?

24. As final question can you sum up for me in bullet points what could be the strengths and weaknesses of E-learning?

25. Do you have any observations and/or comments you want to leave regarding this topic?

26. Do you want to receive the results of this research? (Mail address)

10.2 Raw Interview Data

Basic questions

Name Anil Manraj

Male/female

Age 24

Profession: Bachelor or Master program and which field of study? (country and institution name)

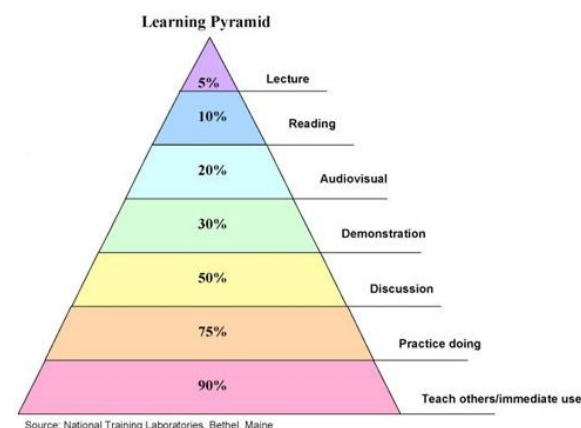
Bachelor program in Business IT and management at The Hague University in Netherland.

Specific questions

1. Which platform do you use for school? (Laptop, Tablet, Mobile phone or Personal Computer). Laptop and tablet.
2. How much time do you spend on one course? (home/school or online / individually or group work). 24 hours per week for lectures and 12 hours online at home. Individually.

3. According to the pyramid of Bethel Maine This is how 'we' learn. Can you describe the way of learning at your university? (Give this a rating like given in the pyramid).

30% lectures
20% reading
20% practice doing
10% discussion



4. Can you describe how you access your course information? (up-to-date, easy to access and 24/7 available).

Through Blackboard and books. Sometimes via online websites. On Blackboard everything is up-to-date and 24/7 available. Although not every information is on there, so I have to access online websites.

E-learning explained the easiest way is 'the use of electronic media (the Internet, DVD, CD-Rom, videotapes, television, cell phones, etc.) for teaching and learning at a distance [Engelbrecht, 2005]'. Due to the use of the internet, study material can be accessed anytime and anywhere.

5. How do you use E-learning in your current courses, can you give an example?

Blackboard and I use videos in powerpoint

6. What is your opinion on E-learning?

It is great, but it is not being used at the moment, not much. If we make use of e-learning more, learning will be more simplified.

In the literature study it is discussed that access to the technology is an enabling or disabling factor, but access also refers to the quality of the connectivity.

7. Can you describe the connectivity of your university?

It is good. Everywhere in the building I have good connectivity. The network has it down-time sometimes, but this is 4 times a year and it mostly takes up to half an hour.

8. Going back to question 4, how much influence does this have on the access of your course information?

Yes because when the network is down, I can do nothing at that moment at school. I cannot even access my mail, blackboard or the portal.

9. How much IT-support do you currently use for your study? And how is this being used?

Not a lot of IT-support, mostly when the beamer doesn't work or the desktop computer in the college room are acting up, I call IT-support and someone will come to look at it.

10. How does your institution encourages you to incorporate technology?

When there is a new feature or online application which makes teaching easier, the teachers share their experiences. The university also lets us work with new advanced equipment, although not everything is new or advanced. But they try and they like new idea's.

E-learning methods could be self-study, learning by video/audio tape, web based learning, Blended eLearning, which is mix of classroom and digital learning, mobile Learning and social Learning.

11. What is your take on these methods? Are you familiar with any of them?

I see that my students get their information on the web and sometimes via youtube. Learning by video makes it easy to understand something that is difficult. Also social learning through Facebook is popular and mostly used right before an exam to get information from each other.

Some contemporary studies have argued that, E-learning educational systems provide more instructor-student and student-student interaction than the traditional systems.

12. Face-to-face education or distance education, what do you prefer and why?

Face-to-face, because the interaction is important. Students have to be able to ask me questions during my lectures. If you watch an video (webcollege), you cannot do that right away. And by e-mail is not personal.

a. Do you see this as a barrier for adapting e-learning?

Not really. Maybe with a blended learning concept E-learning still could work.

13. How can your institution benefit from the E-learning methods mentioned above?

A lot if they invest in equipment which makes it easier to use E-learning. But yes they can do more. Our Blackboard isn't even being fully used like for discussion groups etc.

14. How can you benefit from E-learning?

If I can give colleges online and still keep the interactive part it could be a benefit for saving time. But also if the study material is digital and updated, i do not have to prepare a lot for the lecture. If everything is already online and easy accessible, it is an advantage.

Some developing countries are living by the statement 'what is different, is dangerous' and maintain a resistance to innovation.

15. What is your take on this statement?

You have to innovate, you have to be open for it. This is becoming a digital world. And yes different could be dangerous in a way, but you have to adapt. We are always adapting to new things and it is hard and difficult in the beginning, but when you are familiar with it, it is ok.

In the Netherlands there is a tolerance for deviant and innovative ideas and behavior according to Hofstede's cultural dimension. This finding is in huge contrast with Surinam where there is a suppression of deviant ideas and behavior and resistance to innovation.

16. If E-learning methods would be implemented in your current study, how would you adapt to this change?

It depends on what will be introduced. A skype lecture could be handy, but standing before class is still the best way to give a lecture. I do not want to give all my lectures sitting down behind my laptop. But I would adapt and make the methods to my likings.

Successful E-learning programs require a lot of faculty involvement, which encourages online peer support among the students.

17. Which of the E-learning methods could really be a challenge for you or co-students?

Social learning and Self-study

- a. Why is this? (for e.g. lack of knowledge, network access problems and keeping up with technology)

Social learning, because you don't know if it is accurate. Self-study because of the discipline, not every student has it in them.

18. Virtual classroom can make it possible that a mass of students can be educated during the same time at different locations.

What is your opinion on this?

It is good, because you can also give colleges in other countries, but it also takes concentration time and a good connectivity. But yes this could be the future.

19. How do you communicate during courses, which platform do you use?

I communicate with my students via blackboard and mail. Mostly my Laptop and sometimes my phone.

20. How are the lectures supported, for e.g. are multimedia tools used (flash animations, simulations, videos, audios, etc.), can you give an example?

Powerpoint with sometimes a video embedded in them.

21. How do your exams take place?

Traditional on paper.

a. Do you see this in a different way after 3 years or more?

No not really.

22. How high would you rate your institution, and why?

6

23. How high would you rate your current study, and why?

7.5, It has good facilities and the content is broad enough.

24. As final question can you sum up for me in bullet points what could be the strengths and weaknesses of E-learning?

Weaknesses: Connectivity, interaction between student and teacher, not accurate study material.

Strengths: Saves time, better quality, various ways to learn

25. Do you have any observations and/or comments you want to leave regarding this topic?

E-learning has to be incorporated more in the studies and usually you see that some of the teachers or using it and some swear by books. There has to be one line drawn and that is still a challenge.

26. Do you want to receive the results of this research? (Mail address)

Yes, anilmanraj@gmail.com

Basic questions

Name Bas Kruiswijk

Male/female

Age 49

Profession: Bachelor or Master program and which field of study? (country and institution name)

Master program in ICT Architecture, Business in ICT at Erasmus University in Netherland. Part-time program as well as the full-time program.

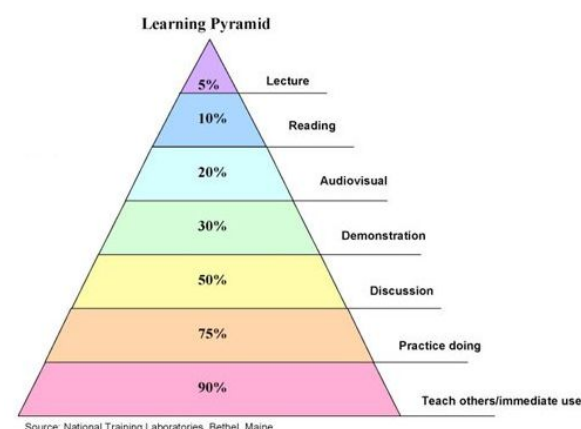
Specific questions

1. Which platform do you use for school? (Laptop, Tablet, Mobile phone or Personal Computer). Laptop and Mobile for Blackboard and Online quiz for in-class.

2. How much time do you spend on one course? (home/school or online / individually or group work). 48 hours per course for lectures and also at school and 16 hours for consultation. At home online 80 hours. Individually and at school in group.

3. According to the pyramid of Bethel Maine This is how 'we' learn. Can you describe the way of learning at your university? (Give this a rating like given in the pyramid).

50% reading
30% lectures
10% practice doing
20% discussion



4. Can you describe how you access your course information? (up-to-date, easy to access and 24/7 available).

Practice doing and own experience. The literature which consist of books and online articles.

E-learning explained the easiest way is 'the use of electronic media (the Internet, DVD, CD-Rom, videotapes, television, cell phones, etc.) for teaching and learning at a distance [Engelbrecht, 2005]'. Due to the use of the internet, study material can be accessed anytime and anywhere.

5. How do you use E-learning in your current courses, can you give an example?

Sheets in the class and videos on internet. Also there is additional material on Blackboard available for the students. At the part-time program the study material is on Moodle. I also use Socratif as a questionnaire tool during in-class lectures.

6. What is your opinion on E-learning?

Pro e-learning, but it will never 100% replace physical contact. It is another way of learning. The traditional way where a teacher tells the student what they have to learn

isn't needed anymore with the use of E-learning. It is time to do other things during a lecture or workshop. Flipping the classroom.

In the literature study it is discussed that access to the technology is an enabling or disabling factor, but access also refers to the quality of the connectivity.

7. Can you describe the connectivity of your university?

Good. Eduroam is everywhere and makes it easy to connect.

8. Going back to question 4, how much influence does this have on the access of your course information?

Yes because Socretif was down so I couldn't give a quiz that day.

9. How much IT-support do you currently use for your study? And how is this being used?

Nothing.

10. How does your institution encourages you to incorporate technology?

Limited, you have to find it out on your own time.

E-learning methods could be self-study, learning by video/audio tape, web based learning, Blended eLearning, which is mix of classroom and digital learning, mobile Learning and social Learning.

11. What is your take on these methods? Are you familiar with any of them?

Yes but I do not use it for my course. Only video learning, but as an additional to the study material. Mostly is out of the books and the powerpoint sheets.

Some contemporary studies have argued that, E-learning educational systems provide more instructor-student and student-student interaction than the traditional systems.

12. Face-to-face education or distance education, what do you prefer and why?

Face-to-face, because of the interaction.

- a. Do you see this as a barrier for adapting e-learning?

Yes and no. Skype could be an method but you have to have good equipment. I wouldn't give a lecture just sitting down, so you have to replicate the way I teach right now.

13. How can your institution benefit from the E-learning methods mentioned above?

They have to invest more in it. They have to create a good E-learning room with IT training and good facilities. There has to be more IT available at the university to set up everything and make it possible.

14. How can you benefit from E-learning?

Online colleges and more digital material. Online models which are also interactive could help me explain it better.

Some developing countries are living by the statement 'what is different, is dangerous' and maintain a resistance to innovation.

15. What is your take on this statement?

The one that stand for the class is mostly older and wants it the way it always has been, but they have to adapt to this and not see this as a barrier. It is different in the beginning and you have to adapt to it, but it can be fun also.

In the Netherlands there is a tolerance for deviant and innovative ideas and behavior according to Hofstede's cultural dimension. This finding is in huge contrast with Surinam where there is a suppression of deviant ideas and behavior and resistance to innovation.

16. If E-learning methods would be implemented in your current study, how would you adapt to this change?

You have to be open for it, I'm open for it.

Successful E-learning programs require a lot of faculty involvement, which encourages online peer support among the students.

17. Which of the e-learning methods could really be a challenge for you or co-students?

Only good material online is not it and not everything can be interactive. With a good E-learning platform it could all work.

a. Why is this? (for e.g. lack of knowledge, network access problems and keeping up with technology)

Keeping up with technology

18. Virtual classroom can make it possible that a mass of students can be educated during the same time at different locations.

What is your opinion on this?

Good, when there is good equipment. It save a lot of time, but I wouldn't only give colleges from home. Not if it isn't necessary are really needed.

19. How do you communicate during courses, which platform do you use?

Blackboard and Moodle with my Laptop.

20. How are the lectures supported, for e.g. are multimedia tools used (flash animations, simulations, videos, audios, etc.), can you give an example?

Powerpoint, videos and flash animations. I sent the students a link for an video or I post it on Moodle or Blackboard.

21. How do your exams take place?

Traditionally on paper.

a. Do you see this in a different way after 3 years or more?

No.

22. How high would you rate your institution, and why?

Organisation: 7.

23. How high would you rate your current study, and why?

7.

24. As final question can you sum up for me in bullet points what could be the strengths and weaknesses of E-learning?

Weaknesses: Interaction and collaboration can suffer from this, resistance against this vision of learning and people can drop off, but it will happen as we live in an digital world.

Strenghts: More learning methods and opportunities, in line with study material, efficient way of learning and it is fun.

25. Do you have any observations and/or comments you want to leave regarding this topic?

E-learning will happen as we live in a digital world. People will have to adapt and there has to be a good platform for this to make it all work with each other and that the study material is in line with everything that is available.

26. Do you want to receive the results of this research? (Mail address)

Yes, bkr@tg.nl

Basic questions

Name Ish Ramautarsing

Male/female

Age 21

Profession: Bachelor or Master program and which field of study? (country and institution name)

Master program in International Economics at Erasmus University in the Netherlands.

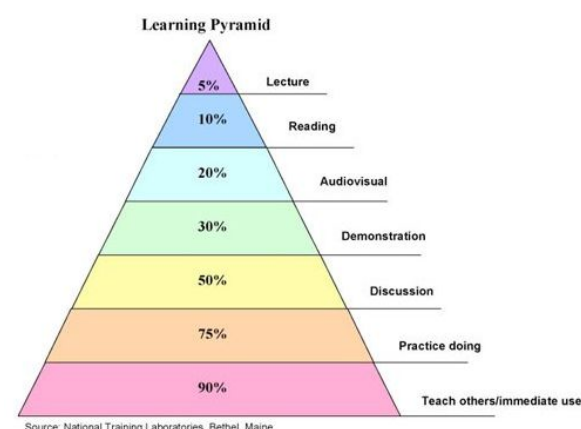
Specific questions

1. Which platform do you use for school? (Laptop, Tablet, Mobile phone or Personal Computer). Laptop for school.
2. How much time do you spend on one course? (home/school or online / individually or group work). 20 hours lectures at school, 20 hours at home and 15 hours online. Individually.

3. According to the pyramid of Bethel Maine This is how 'we' learn. Can you describe the way of learning at your university? (Give this a rating like given in the pyramid).

75% slides/lectures

25% reading books



4. Can you describe how you access your course information? (up-to-date, easy to access and 24/7 available).

Blackboard and Google.

E-learning explained the easiest way is 'the use of electronic media (the Internet, DVD, CD-Rom, videotapes, television, cell phones, etc.) for teaching and learning at a distance [Engelbrecht, 2005]'. Due to the use of the internet, study material can be accessed anytime and anywhere.

5. How do you use E-learning in your current courses, can you give an example? Blackboard which is everywhere and ZIN online which is a closed system within Erasmus University. At ZIN you can see which course you are following, feedback from teachers and you can see the statuses. Also Moocs, where only the video's of the lecture are given.
6. What is your opinion on E-learning? It is naturally but you do need an sharp internet connection. It has to grow everywhere and there is more flexibility. Hopefully it doesn't conflict with going to school.

In the literature study it is discussed that access to the technology is an enabling or disabling factor, but access also refers to the quality of the connectivity.

7. Can you describe the connectivity of your university?

Eduroam which is everywhere on campus and also at other universities. At some of the places of the university the connection is slower, but it is still okay.

8. Going back to question 4, how much influence does this have on the access of your course information?

No.

9. How much IT-support do you currently use for your study? And how is this being used?

Internet and laptop, but no support of what sort.

10. How does your institution encourage you to incorporate technology?

Yes like Whatsapp for web so you can communicate during the slides. Sometimes five groups are busy at a time. Also they encourage you with cheaper software and Dropbox discount.

E-learning methods could be self-study, learning by video/audio tape, web based learning, Blended eLearning, which is mix of classroom and digital learning, mobile Learning and social Learning.

11. What is your take on these methods? Are you familiar with any of them?

I'm familiar with everyone of them. In practice it is a mix, so blended learning. interactive makes online stronger, you have to be in contact with your teachers.

Some contemporary studies have argued that, E-learning educational systems provide more instructor-student and student-student interaction than the traditional systems.

12. Face-to-face education or distance education, what do you prefer and why?

Face-to-face, because it is personal. If it is personal it is interactive and also about the intonation which has an affect on the brain activity..

a. Do you see this as a barrier for adapting E-learning?

No, E-learning methods are an addition to how we learn.

13. How can your institution benefit from the E-learning methods mentioned above?

Introducing webcast more, no lectures. Get the choice if you want to follow the lecture at school or online.

A person who has a chance to go to school, still has to have the ability.

14. How can you benefit from E-learning?

More Moocs and doing more research. Moocs from harvard to get an better education level.

Some developing countries are living by the statement 'what is different, is dangerous' and maintain a resistance to innovation.

15. What is your take on this statement?

True, when living in a developing country resistance to innovation and change is deep-rooted, cultural norms are weighing heavily.

In the Netherlands there is a tolerance for deviant and innovative ideas and behavior according to Hofstede's cultural dimension. This finding is in huge contrast with Surinam where there is a suppression of deviant ideas and behavior and resistance to innovation.

16. If E-learning methods would be implemented in your current study, how would you adapt to this change?

If you know the advantages, you will accept it and adapt to it.

Successful E-learning programs require a lot of faculty involvement, which encourages online peer support among the students.

17. Which of the E-learning methods could really be a challenge for you or co-students?

Lectures with only an audio can be a challenge. There has to be visual footage as well with an professor.

a. Why is this? (for e.g. lack of knowledge, network access problems and keeping up with technology)

The connection to understanding what is being told, so no audio alone.

18. Virtual classroom can make it possible that a mass of students can be educated during the same time at different locations.

What is your opinion on this?

You can reach more people from different countries as well and other cultures. You do need an good internet connection though and with this you can get more out of a teacher such as the Harvard Moocs which brings the education level to an higher one.

19. How do you communicate during courses, which platform do you use?

Mail, Whatsapp, Facebook group through laptop.

20. How are the lectures supported, for e.g. are multimedia tools used (flash animations, simulations, videos, audios, etc.), can you give an example?

Video, Audio, flash, Powerpoint and PDF's.

21. How do your exams take place?

On paper.

a. Do you see this in a different way after 3 years or more?

No online exam is not safe, you have to go for the safest way when it is about taking exams.

22. How high would you rate your institution, and why?

Organisation: 8

Content: 9

23. How high would you rate your current study, and why?

8

It is organized professionally.

24. As final question can you sum up for me in bullet points what could be the strengths and weaknesses of E-learning?

Weaknesses: Social norms and values like the idea of going to school and how you handle this and the education ethos.

Strengths: Flexibility, freedom, access.

25. Do you have any observations and/or comments you want to leave regarding this topic?

E-learning is good, necessary development. But you need a strong wifi. In surinam for instance they need to develop E-learning more and rapidly.

26. Do you want to receive the results of this research? (Mail address)

Yes, I_s_h.ramautarsing@hotmail.com

Basic questions

Name Laura Hering

Male/female

Age 36

Profession: Bachelor or Master program and which field of study? (country and institution name)

Bachelor and Master program in Economics at Erasmus University in Netherland.

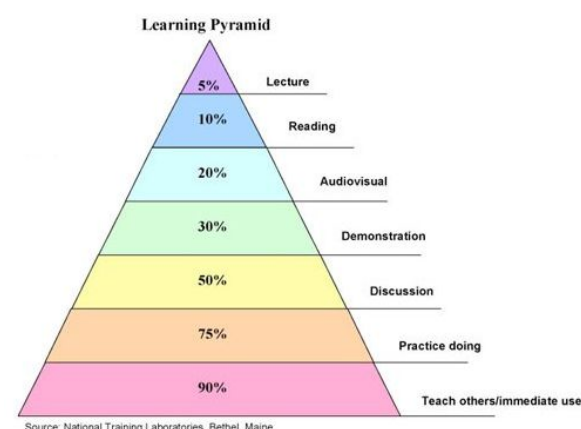
Specific questions

1. Which platform do you use for school? (Laptop, Tablet, Mobile phone or Personal Computer). Desktop PC at home and Laptop.
2. How much time do you spend on one course? (home/school or online / individually or group work). 15 hours per week for the master and 24 hours preparation at home, online and at school. Individually.

3. According to the pyramid of Bethel Maine This is how 'we' learn. Can you describe the way of learning at your university? (Give this a rating like given in the pyramid).

60% reading

40% lectures



4. Can you describe how you access your course information? (up-to-date, easy to access and 24/7 available).

The school's Intranet, Blackboard, books, seminars and researching articles online and reading news articles to find current topics. Reading a lot and picking up a lot which could be relevant for the study.

E-learning explained the easiest way is 'the use of electronic media (the Internet, DVD, CD-Rom, videotapes, television, cell phones, etc.) for teaching and learning at a distance [Engelbrecht, 2005]'. Due to the use of the internet, study material can be accessed anytime and anywhere.

5. How do you use E-learning in your current courses, can you give an example?

I use Shakespeak to vote in class through mobile phone during my lectures. Students can vote through an internet browser or send an text. Digital in-class test in real-time for all the groups. Also some of the textbooks have an website which includes multiple choice questions.

6. What is your opinion on E-learning?

The voting quiz is nice and the quiz of the books are also handy, but behind a computer can also be a distraction.

In the literature study it is discussed that access to the technology is an enabling or disabling factor, but access also refers to the quality of the connectivity.

7. Can you describe the connectivity of your university?

Very good. Wherever on Campus, there is Wifi on any advice.

8. Going back to question 4, how much influence does this have on the access of your course information?

No because the connection is okay.

9. How much IT-support do you currently use for your study? And how is this being used?

Nothing.

10. How does your institution encourages you to incorporate technology?

Teaching qualification like learning with internet. Courses for teachers from Erasmus to get an view of teaching. Online quizzes for homework.

E-learning methods could be self-study, learning by video/audio tape, web based learning, Blended eLearning, which is mix of classroom and digital learning, mobile Learning and social Learning.

11. What is your take on these methods? Are you familiar with any of them?

Video's in the lectures. Social learning can be good for exchange of questions. Web colleges also, but skeptical on the focus of students on this.

Some contemporary studies have argued that, E-learning educational systems provide more instructor-student and student-student interaction than the traditional systems.

12. Face-to-face education or distance education, what do you prefer and why?

Face-to-face, because of the interaction with students.

a. Do you see this as a barrier for adapting e-learning?

Yes, because you learn more form interaction, so there has to be interaction if you want E-learning to work.

13. How can your institution benefit from the E-learning methods mentioned above?

Save time and attract more students. Using methods like Skype, etc.

14. How can you benefit from E-learning?

If you use Skype to give lectures from home, you are not obliged to be there at the university and you make it more fun for the students, the methods attracts the students more and keep it interesting for them.

Some developing countries are living by the statement 'what is different, is dangerous' and maintain a resistance to innovation.

15. What is your take on this statement?

Not accurate. because for universities you have to keep innovating, you have to adapt.

In the Netherlands there is a tolerance for deviant and innovative ideas and behavior according to Hofstede's cultural dimension. This finding is in huge contrast with Surinam where there is a suppression of deviant ideas and behavior and resistance to innovation.

16. If E-learning methods would be implemented in your current study, how would you adapt to this change?

First resistance of course, but when the benefits are clearly explained you will learn to work with it and adapt to it. Maybe a trial first, if you implement it abruptly it will take more resistance to accept the change.

Successful E-learning programs require a lot of faculty involvement, which encourages online peer support among the students.

17. Which of the E-learning methods could really be a challenge for you or co-students?

Social learning, because you cannot control it and weblearning because of the videos. The information has to be explained very well and students get distracted easily, so take this is also a challenge.

- a. Why is this? (for e.g. lack of knowledge, network access problems and keeping up with technology)

Lack of knowledge

18. Virtual classroom can make it possible that a mass of students can be educated during the same time at different locations.

What is your opinion on this?

Good, but there has to be no distractions for the students. If it is from a distance, it has to be kept interesting so students won't drop out or become long-term students. You have to have all facilities if you want an E-learning course to work. You have to have the right equipment. Not everybody has the equipment at home, so giving lessons virtually can be a challenge.

19. How do you communicate during courses, which platform do you use?

Blackboard and e-mail with my Laptop.

20. How are the lectures supported, for e.g. are multimedia tools used (flash animations, simulations, videos, audios, etc.), can you give an example?

Powerpoint, videos and PDF slides.

21. How do your exams take place?

On paper in a big room.

a. **Do you see this in a different way after 3 years or more?**

No.

22. How high would you rate your institution, and why?

Organisation: 8 because of the good facilities.

23. How high would you rate your current study, and why?

7, because the study can be more optimized.

24. As final question can you sum up for me in bullet points what could be the strengths and weaknesses of E-learning?

Weaknesses: Immediate feedback and you need good equipment and also a lot of equipment which could be expensive for the university. Also the distraction of students, they get easily distracted.

Strengths: Complementary to other learning standards.

25. Do you have any observations and/or comments you want to leave regarding this topic?

When implementing E-learning, there are a lot of factors which you need to take into account, like the behaviour and adaption from students and how you can make learning more fun with the use of E-learning.

26. Do you want to receive the results of this research? (Mail address)

Yes, hering@ese.eur.nl

Basic questions

Name Nitesh Soekhai

Male/female

Age 22

Profession: Bachelor or Master program and which field of study? (country and institution name)

Bachelor program in Law of the faculty social sciences at AdeKUS in Surinam.

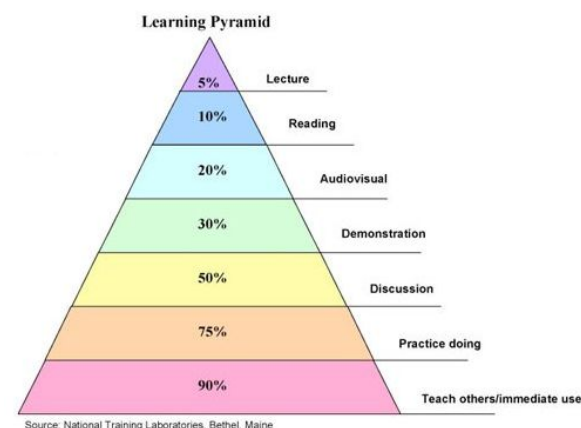
Specific questions

1. Which platform do you use for school? (Laptop, Tablet, Mobile phone or Personal Computer). Laptop and mobile to find summaries.
2. How much time do you spend on one course? (home/school or online / individually or group work). 5 hours at home and 30 hours at school. Individually.

3. According to the pyramid of Bethel Maine This is how 'we' learn. Can you describe the way of learning at your university? (Give this a rating like given in the pyramid).

25% reading

25% lectures



4. Can you describe how you access your course information? (up-to-date, easy to access and 24/7 available).

Hardcopy material via other classmates, e-mail and website from AdeKUS itself. Not everything is up-to-date.

E-learning explained the easiest way is 'the use of electronic media (the Internet, DVD, CD-Rom, videotapes, television, cell phones, etc.) for teaching and learning at a distance [Engelbrecht, 2005]'. Due to the use of the internet, study material can be accessed anytime and anywhere.

5. How do you use E-learning in your current courses, can you give an example?
Not often used. The internet is used as a teaching aid but that's all.

6. What is your opinion on E-learning?

It makes the material up-to-date and it saves costs. But you have to have access to the internet. And you can use digital material instead of hardcopy.

In the literature study it is discussed that access to the technology is an enabling or disabling factor, but access also refers to the quality of the connectivity.

7. Can you describe the connectivity of your university?

Bad and slow connection. Can be better, it has to be, the university has to be reachable.

8. Going back to question 4, how much influence does this have on the access of your course information?

Yes because to get information which takes up to 4 hours, takes now days.

9. How much IT-support do you currently use for your study? And how is this being used?

Nothing.

10. How does your institution encourages you to incorporate technology?

You get the study material and that's it, you are on your own with self-study.

E-learning methods could be self-study, learning by video/audio tape, web based learning, Blended eLearning, which is mix of classroom and digital learning, mobile Learning and social Learning.

11. What is your take on these methods? Are you familiar with any of them?

Handy as you can study at home. I'm familiar with self-study and mobile learning.

Some contemporary studies have argued that, E-learning educational systems provide more instructor-student and student-student interaction than the traditional systems.

12. Face-to-face education or distance education, what do you prefer and why?

Face-to-face education because you can ask question directly.

- a. Do you see this as a barrier for adapting E-learning?

No, but there has to be physical contact.

13. How can your institution benefit from the E-learning methods mentioned above?

You can give more students lectures, even the students who live in the districts which are difficult to reach. Like myself, if i could follow a lecture at home through Skype or an other medium I would make use of that because when there is traffic it takes me 1.5 hour to reach the campus.

AdeKUS needs to expand their education to other location, but without moving to those locations. There is also a shortage of teachers, so giving lectures through Skype which reaches more students can be beneficially for AdeKUS.

14. How can you benefit from E-learning?

No long distance travel and more time for studying.

Some developing countries are living by the statement 'what is different, is dangerous' and maintain a resistance to innovation.

15. What is your take on this statement?

It is true because change leads to adaption but it is not dangerous as the statement indicates. You have to be open for innovation and the change has to be initiated gradually.

In the Netherlands there is a tolerance for deviant and innovative ideas and behavior according to Hofstede's cultural dimension. This finding is in huge contrast with Surinam where there is a suppression of deviant ideas and behavior and resistance to innovation.

16. If E-learning methods would be implemented in your current study, how would you adapt to this change?

It would be strange at first, especially when it is abrupt. But when it is gradually initiated like first the exercises and then the lectures and then fully online.

Successful E-learning programs require a lot of faculty involvement, which encourages online peer support among the students.

17. Which of the E-learning methods could really be a challenge for you or co-students?

If you go fully online, because people are used to the current way.

- a. Why is this? (for e.g. lack of knowledge, network access problems and keeping up with technology)

It is different, people need to adapt first.

18. Virtual classroom can make it possible that a mass of students can be educated during the same time at different locations.

What is your opinion on this?

If you get benefits out of it, you will want to adapt to this. Great advantage, but there has to be a recording as well when it is real time, so that you can listen to it later when you missed something. Internet connection though can be a barrier, especially for students at home. So in the districts which are far away there could be a room made so that the students can attend the virtual college there.

19. How do you communicate during courses, which platform do you use?

Face-to-face with the teachers and with students and through Whatsapp, Dropbox and face-to-face.

20. How are the lectures supported, for e.g. are multimedia tools used (flash animations, simulations, videos, audios, etc.), can you give an example?

Powerpoint with Youtube videos.

21. How do your exams take place?

On paper, presentations, take home test as an exercise.

- a. Do you see this in a different way after 3 years or more?

Yes, digital test area.

22. How high would you rate your institution, and why?

Organisation: 5

Content: 4

23. How high would you rate your current study, and why?

5

This is because of the lack of facilities which is about the information of the course and how the lessons are given.

24. As final question can you sum up for me in bullet points what could be the strengths and weaknesses of E-learning?

Weaknesses: Waiting attitude of students.

Strengths: Up-to-date, better education level of the study material, more information, videos, colleges from home, watching colleges when you've missed that one, distance and it saves time.

25. Do you have any observations and/or comments you want to leave regarding this topic?

E-learning is new, but it can help with the costs and saving time. Also you can adjust your own studytime.

26. Do you want to receive the results of this research? (Mail address)

Yes, nitesh@caritso.com

Basic questions

Name Petra Okot

Male/female

Age 30

Profession: Bachelor or Master program and which field of study? (country and institution name)

Master program ICT in Business at Leiden University in the Netherlands.

Specific questions

1. Which platform do you use for school? (Laptop, Tablet, Mobile phone or Personal Computer). Laptop, PC at school and mobile phone.

2. How much time do you spend on one course? (home/school or online / individually or group work). 40 hours of which 25 hours at home online. Individually.

3. According to the pyramid of Bethel Maine This is how 'we' learn. Can you describe the way of learning at your university? (Give this a rating like given in the pyramid).

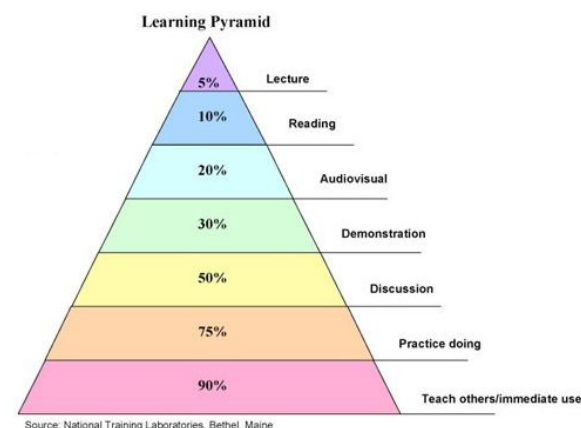
70% online learning, better research

55% lectures

60% discussion

75% audiovisual youtube

65% reading books



4. Can you describe how you access your course information? (up-to-date, easy to access and 24/7 available).

Internet through the university website, Blackboard and mail. Also via Google, G-drive group and Dropbox.

E-learning explained the easiest way is 'the use of electronic media (the Internet, DVD, CD-Rom, videotapes, television, cell phones, etc.) for teaching and learning at a distance [Engelbrecht, 2005]'. Due to the use of the internet, study material can be accessed anytime and anywhere.

5. How do you use E-learning in your current courses, can you give an example?

Youtube, Google web, phone, forums. It makes it easier.

6. What is your opinion on E-learning?

Easily getting information and asking questions. It makes the study more easier.

In the literature study it is discussed that access to the technology is an enabling or disabling factor, but access also refers to the quality of the connectivity.

7. Can you describe the connectivity of your university?

Good reliable. No downtime. Also at the library the connection is good.

8. Going back to question 4, how much influence does this have on the access of your course information?

No it is good, it gives a positive boost.

9. How much IT-support do you currently use for your study? And how is this being used?

A lot, but most of the problems i fix myself. When there is something major, you just call them and they come right away..

10. How does your institution encourages you to incorporate technology?

Everything is almost online. For instance if you want to know what is going on, you can get that information solely online.

E-learning methods could be self-study, learning by video/audio tape, web based learning, Blended eLearning, which is mix of classroom and digital learning, mobile Learning and social Learning.

11. What is your take on these methods? Are you familiar with any of them?

Good ways to study. I'm familiar with Youtube, Self-study, web based and social learning for instance through an IT community.

Some contemporary studies have argued that, E-learning educational systems provide more instructor-student and student-student interaction than the traditional systems.

12. Face-to-face education or distance education, what do you prefer and why?

Face-to-face education because it has involvement. But distance education could be a an advantage for busy people to save time when having a good connectivity.

- a. Do you see this as a barrier for adapting e-learning?

No, E-learning is being embraced by most people.

13. How can your institution benefit from the E-learning methods mentioned above?

Information could be accessible in a easier and centralized way. A more organized system.

14. How can you benefit from E-learning?

When studying you want all the information available in various ways to succeed for instance an fully online library.

Some developing countries are living by the statement 'what is different, is dangerous' and maintain a resistance to innovation.

15. What is your take on this statement?

Everything is going digital and there is a lot of more there. People have to adapt to it. Something different could be scary, but when explained good in baby steps, resistance will go away.

In the Netherlands there is a tolerance for deviant and innovative ideas and behavior according to Hofstede's cultural dimension. This finding is in huge contrast with Surinam where there is a suppression of deviant ideas and behavior and resistance to innovation.

16. If E-learning methods would be implemented in your current study, how would you adapt to this change?

It would take a while to adapt, because it is different. I appreciate this development and how it can be beneficial for e.g. skype classes to save time.

Successful E-learning programs require a lot of faculty involvement, which encourages online peer support among the students.

17. Which of the E-learning methods could really be a challenge for you or co-students?
Connectivity could only be a challenge because without that, you are not available.

- a. Why is this? (for e.g. lack of knowledge, network access problems and keeping up with technology)
Network access.

18. Virtual classroom can make it possible that a mass of students can be educated during the same time at different locations.

What is your opinion on this?

Effective if it is real time. There has to be involvement. There has to be a availability for asking questions.

19. How do you communicate during courses, which platform do you use?

Blackboard, Dropbox, U-mail, Whatsapp, Facebook via Laptop and mobile phone.

20. How are the lectures supported, for e.g. are multimedia tools used (flash animations, simulations, videos, audios, etc.), can you give an example?

Powerpoint, audios, videos within the presentation.

21. How do your exams take place?

Traditional way on paper in class.

- a. Do you see this in a different way after 3 years or more?

Yes different way through technology development for e.g. log-on on a platform and make it online like the ICT-A test.

22. How high would you rate your institution, and why?

Organisation: 8

Content: 7,5

23. How high would you rate your current study, and why?

8

Because they innovate a lot.

24. As final question can you sum up for me in bullet points what could be the strengths and weaknesses of E-learning?

Weaknesses: Technology and connectivity.

Strengths: Effective, saves time, the resistance will take away because people are encourage more through the use of E-learning.

25. Do you have any observations and/or comments you want to leave regarding this topic?

E-learning is a good idea and it has to be embraced. It is beneficially and makes studying really easier. No libraries anymore.

26. Do you want to receive the results of this research? (Mail address)

Yes, ppemps@gmail.com

Basic questions

Name Raveen van Oldenmark

Male/female

Age 19

Profession: Bachelor or Master program and which field of study? (country and institution name)

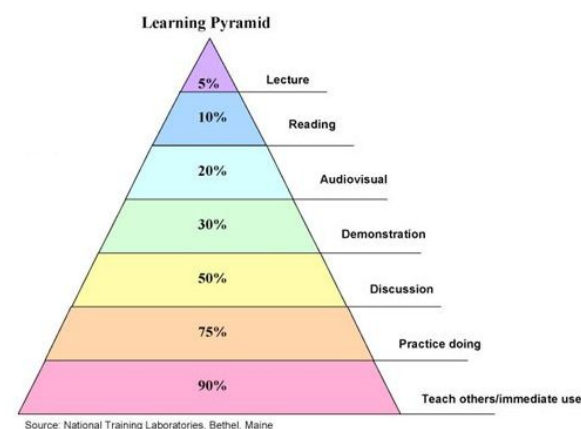
Bachelor program in Safety and Security management at The Hague University in Netherland.

Specific questions

1. Which platform do you use for school? (Laptop, Tablet, Mobile phone or Personal Computer). Laptop and Telephone.
2. How much time do you spend on one course? (home/school or online / individually or group work). 5 hours per week at home and 5 hours online. Individually This is exclusive the lectures and classes.

3. According to the pyramid of Bethel Maine This is how 'we' learn. Can you describe the way of learning at your university? (Give this a rating like given in the pyramid).

60% reading
20% lectures
5% discussion



4. Can you describe how you access your course information? (up-to-date, easy to access and 24/7 available).

Blackboard and E-mail and most of the information is up-to-date. E-mail is more for the teachers to get more information on a topic or when they send more information.

E-learning explained the easiest way is 'the use of electronic media (the Internet, DVD, CD-Rom, videotapes, television, cell phones, etc.) for teaching and learning at a distance [Engelbrecht, 2005]'. Due to the use of the internet, study material can be accessed anytime and anywhere.

5. How do you use E-learning in your current courses, can you give an example?

Blackboard for powerpoints articles and web colleges.

6. What is your opinion on E-learning?

The E-learning process must be faster. It had to be integrated faster because the information can be accessed easier.

In the literature study it is discussed that access to the technology is an enabling or disabling factor, but access also refers to the quality of the connectivity.

7. Can you describe the connectivity of your university?

Good and there are various computers to work on at school. We also have an schedule application which makes it easier to access the schedules. But there are sometimes computers that don't work in an computer classroom or that your laptop doesn't receive the Wifi very good at some places.

8. Going back to question 4, how much influence does this have on the access of your course information?

Yes especially when you are busy with a project or when you are working with an group in Dropbox and you have to wait because your laptop doesn't receive the Wifi or that there are no computers available.

9. How much IT-support do you currently use for your study? And how is this being used?

Only when I need facilities like an camera.

10. How does your institution encourages you to incorporate technology?

Yes and No. At first when we started the teachers were strict with the use of telephone and laptop in class, but after a while they had to cave in and we could use the platforms.

E-learning methods could be self-study, learning by video/audio tape, web based learning, Blended eLearning, which is mix of classroom and digital learning, mobile Learning and social Learning.

11. What is your take on these methods? Are you familiar with any of them?

Social learning when using Facebook for a certain topic with a group or facebook page. Also weblearning, I visit websites for information and Youtube for video's about certain topics. The information is much better. Teacher only tell a little bit out of the books, but they don't go in detail. A video tells a lot more.

Some contemporary studies have argued that, E-learning educational systems provide more instructor-student and student-student interaction than the traditional systems.

12. Face-to-face education or distance education, what do you prefer and why?

Face-to-face, because you get the chance to personally ask questions and it is interactive. Plus you can learn a lot from a group, cause you learn from each other.

a. Do you see this as a barrier for adapting e-learning?

No it is not a barrier.

13. How can your institution benefit from the E-learning methods mentioned above?

Introducing more social learning. More websites for learning, because you can find the articles and information faster. Also the information is often more brief.

14. How can you benefit from E-learning?

If it is faster it is simpler and therefore user friendly. Getting information easier.

Some developing countries are living by the statement 'what is different, is dangerous' and maintain a resistance to innovation.

15. What is your take on this statement?

Innovation is good and you have to keep innovating, especially at this time.

In the Netherlands there is a tolerance for deviant and innovative ideas and behavior according to Hofstede's cultural dimension. This finding is in huge contrast with Surinam where there is a suppression of deviant ideas and behavior and resistance to innovation.

16. If E-learning methods would be implemented in your current study, how would you adapt to this change?

Easily, but I would prefer a test phase to get to know more about the new technology and get familiar with it. Like a trail course and after that the fully course. There is time needed for adaption, so no abrupt changes.

Successful E-learning programs require a lot of faculty involvement, which encourages online peer support among the students.

17. Which of the e-learning methods could really be a challenge for you or co-students?

Self-study when this is given as one E-learning method and Social learning, because you don't know if the information is really valid.

a. Why is this? (for e.g. lack of knowledge, network access problems and keeping up with technology)

Social learning, when you don't have enough knowledge.

18. Virtual classroom can make it possible that a mass of students can be educated during the same time at different locations.

What is your opinion on this?

Good, but there is also a risk. Because there is not knowing how students at home will fully participate and how do you know if they don't put a lecture via Skype or a Webinar on the background and just multitask with other not school related stuff.

19. How do you communicate during courses, which platform do you use?

Face-to-face, Mail, Whatsapp and Facebook with my Laptop, telephone or an PC.

20. How are the lectures supported, for e.g. are multimedia tools used (flash animations, simulations, videos, audios, etc.), can you give an example?

Powerpoint without multimedia, although not often multimedia. It depends on the professor if he/she likes to put videos in the powerpoints.

21. How do your exams take place?

On paper.

a. **Do you see this in a different way after 3 years or more?**

No not within three years, maybe after ten years and with a better online system.

22. How high would you rate your institution, and why?

Organisation: 7

Content: 8

23. How high would you rate your current study, and why?

6, because the study is bad organized.

24. As final question can you sum up for me in bullet points what could be the strengths and weaknesses of E-learning?

Weaknesses: Internet, you have to have a good connection. Not everybody has a good internet connection and at the school it isn't perfect either.

Strengths: Staying at home when there is bad weather and still attend a college/lecture, you can reach a lot of people.

25. Do you have any observations and/or comments you want to leave regarding this topic?

Keep innovating!

26. Do you want to receive the results of this research? (Mail address)

Yes, raveen112@msn.com or raveenvano@gmail.com

Basic questions

Name Riad Nurmohamed

Male/female

Age 41

Profession: Bachelor or Master program and which field of study? (country and institution name)

Master program in Sustainable management of Natural Resources at AdeKUS in Surinam.

Specific questions

1. Which platform do you use for school? (Laptop, Tablet, Mobile phone or Personal Computer). Laptop and personal computer.

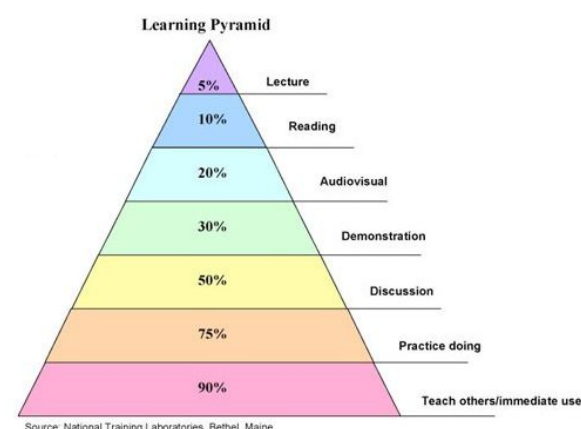
2. How much time do you spend on one course? (home/school or online / individually or group work). 30 hours per week at AdeKUS, 15 hours at home and 15 hours online. Individually

3. According to the pyramid of Bethel Maine This is how 'we' learn. Can you describe the way of learning at your university? (Give this a rating like given in the pyramid).

75% lectures

20% reading

50% practice doing in computer classroom



4. Can you describe how you access your course information? (up-to-date, easy to access and 24/7 available).

Online for finding books. Making use of libraries in foreign countries and also teachers from foreign countries. Also online for readings and mandatory literature to prepare work for students.

E-learning explained the easiest way is 'the use of electronic media (the Internet, DVD, CD-Rom, videotapes, television, cell phones, etc.) for teaching and learning at a distance [Engelbrecht, 2005]'. Due to the use of the internet, study material can be accessed anytime and anywhere.

5. How do you use E-learning in your current courses, can you give an example?

Videos in powerpoint, also voice recordings in powerpoint and putting all the readings on Moodle so students have access to them.

6. What is your opinion on E-learning?

It is great that it here, possible to study from a distance, but still there has to be taken steps towards recording lectures. And there has to be a classroom for recording the lectures with given instructions. Already did a trial on the current course and students

were having difficulties with asking questions. It was efficient, but students needed to adapt to it.

In the literature study it is discussed that access to the technology is an enabling or disabling factor, but access also refers to the quality of the connectivity.

7. Can you describe the connectivity of your university?

Reasonably good when you've connected through cable. The Wifi is bad..

8. Going back to question 4, how much influence does this have on the access of your course information?

Yes because sometimes you are not even reachable for posting message on Moodle or receiving this messages. Online projects fail because of this. The connection is an limitation.

9. How much IT-support do you currently use for your study? And how is this being used?

For Moodle, mail, website uploading and software installation. I just call them and they come to help.

10. How does your institution encourages you to incorporate technology?

No I'm the one that is encouraging them because i've seen a lot of how it can be better and easier. Also you can learn a lot from students, but learning has to become more state of the art.

E-learning methods could be self-study, learning by video/audio tape, web based learning, Blended eLearning, which is mix of classroom and digital learning, mobile Learning and social Learning.

11. What is your take on these methods? Are you familiar with any of them?

Forums in Moodle are used also by students. Self-study is also common used. Also via video students learn, but i'm always using small videos, because the big ones are almost impossible.

Some contemporary studies have argued that, E-learning educational systems provide more instructor-student and student-student interaction than the traditional systems.

12. Face-to-face education or distance education, what do you prefer and why?

Distance education mostly, but you have to have an hour for questioning which has to be face-to-face. There has to be physical contact.

a. Do you see this as a barrier for adapting e-learning?

No because lessons via Skype could be an option, but students need to adapt to this.

13. How can your institution benefit from the e-learning methods mentioned above?

No classrooms and it saves costs. Elektra is becoming expensive and also fuel, so we do not have to go to AdeKUS for lectures. But here has to be a good connection and this also

involve internet costs. And Moodle has to become easier with just one click and more people have to work with it.

The university is trying but it is not working out because a lot of teachers are uncertain, but it has to come from higher ground.

14. How can you benefit from E-learning?

It saves time and with this you can use this time more efficient.

Some developing countries are living by the statement 'what is different, is dangerous' and maintain a resistance to innovation.

15. What is your take on this statement?

People could be against being different, but when you give an training and let people adapt to the change first, you get better results. People also should want to innovate. Creativity lacks at most of the teachers of AdeKUS.

In the Netherlands there is a tolerance for deviant and innovative ideas and behavior according to Hofstede's cultural dimension. This finding is in huge contrast with Surinam where there is a suppression of deviant ideas and behavior and resistance to innovation.

16. If E-learning methods would be implemented in your current study, how would you adapt to this change?

It would take long for other people to adapt. A new generation of staff could help or give better training to the current teachers. AdeKUS could try more pilots and learn from the benefits and the disadvantages and work on that. Students already are using E-learning in their own way by recording in-class lectures so they can watch or listen to it at home.

Successful E-learning programs require a lot of faculty involvement, which encourages online peer support among the students.

17. Which of the E-learning methods could really be a challenge for you or co-students?

Reading of the books and pdf's have to become easier. And missing physical contact will be a challenge.

a. Why is this? (for e.g. lack of knowledge, network access problems and keeping up with technology)

To ask questions and through video is not personal enough, but it could work when it is proper recorded.

18. Virtual classroom can make it possible that a mass of students can be educated during the same time at different locations.

What is your opinion on this?

Skype is already used for individual questioning, but could work for a mass of students and maybe an lecture also. Although Skype is not an medium of AdeKUS. There is a lot of software which is not being used. Also group presentation could work and colleges in video form.

19. How do you communicate during courseS, which platform do you use?

Moodle and e-mail.

20. How are the lectures supported, for e.g. are multimedia tools used (flash animations, simulations, videos, audios, etc.), can you give an example?

Simulations, videos and audios. Sometimes students get youtube instructions to work at home on the computer for fieldwork.

21. How do your exams take place?

Orally and on paper. Exercises are online and orally is in the classroom not through Skype. Practicum is also not online.

a. Do you see this in a different way after 3 years or more?

Maybe over 5 years or more with the use of Moodle. Moodle needs to be used more for exams. Moodle with a Skype extension or such.

22. How high would you rate your institution, and why?

Organisation: 5

Content: 7

23. How high would you rate your current study, and why?

Organisation: 8

Content: 7,5

24. As final question can you sum up for me in bullet points what could be the strengths and weaknesses of E-learning?

Weaknesses: Investment, not enough equipment, organisation is not that good, physical contact and training the teachers.

Strengths: More classroom space, better infrastructure, not physical at AdeKUS, teaching more students, cheaper, more time, efficient and you can offer the students more.

25. Do you have any observations and/or comments you want to leave regarding this topic?

For E-learning you should have enough information and there has to be clear instructions of how information is being used and uploaded. It has to be up-to-date like Moodle is now, but more. There has to be a good security for communication. With practicum this doesn't work.

26. Do you want to receive the results of this research? (Mail address)

Yes, riad.nurmohamed@uvs.edu

Basic questions

Name Rinette Djokarto

Male/female

Age 48

Profession: Bachelor or Master program and which field of study? (country and institution name)

Bachelor and Master program in Law at AdeKUS in Surinam.

Specific questions

1. Which platform do you use for school? (Laptop, Tablet, Mobile phone or Personal Computer). Mobile, laptop and tablet.

Mobile phone to be in contact with students and other teachers. Laptop and tablet is used for providing lectures and making slides.

2. How much time do you spend on one course? (home/school or online / individually or group work). 35 hours per week at school, 20 hours at home and 15 hours online. Individually and group work is only done by mail and not that often.

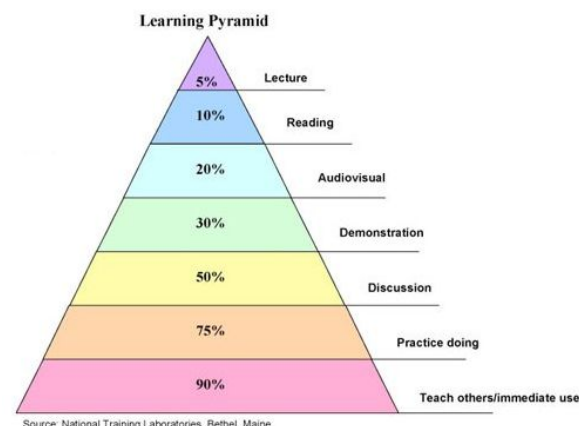
3. According to the pyramid of Bethel Maine This is how 'we' learn. Can you describe the way of learning at your university? (Give this a rating like given in the pyramid).

20% lectures

60% practice doing

20% discussion

Lectures are given by the problem-based learning technique.



4. Can you describe how you access your course information? (up-to-date, easy to access and 24/7 available).

Literature from the website of AdeKUS itself and online to get current information about Law to get the attention of students to perform in-class discussions.

E-learning explained the easiest way is 'the use of electronic media (the Internet, DVD, CD-Rom, videotapes, television, cell phones, etc.) for teaching and learning at a distance [Engelbrecht, 2005]'. Due to the use of the internet, study material can be accessed anytime and anywhere.

5. How do you use E-learning in your current courses, can you give an example?

Youtube movies and research with mobile phone in-class when the students get in-class exercises they can view the law articles online.

6. What is your opinion on E-learning?

It is the best there is. Already has personal experience with E-learning as I followed an master via distance learning and it was easier than in-class lectures. There were Skype meetings and 24h available of material.

In the literature study it is discussed that access to the technology is an enabling or disabling factor, but access also refers to the quality of the connectivity.

7. Can you describe the connectivity of your university?

Very poor which is a pity because it limits your way of learning. Even an youtube video is a question if it will play or not.

8. Going back to question 4, how much influence does this have on the access of your course information?

Yes because it limits you a lot and my students do like the classes more when it has a multimedia touch in it.

9. How much IT-support do you currently use for your study? And how is this being used?

Not a lot of IT-support, mostly when the beamer doesn't work. But not every classroom has beamer equipment.

IT-support cannot always help, they know a lot about Moodle and can help with that. But they are not that technical.

10. How does your institution encourages you to incorporate technology?

No it lies within yourself. There are a lot of older teachers who still give lectures by book. I've incorporated E-learning in my classes because I like it and because the students like that it is more interactive and that it is not a plain lecture. AdeKUS does allow you to shape your own lecture as you like.

E-learning methods could be self-study, learning by video/audio tape, web based learning, Blended eLearning, which is mix of classroom and digital learning, mobile Learning and social Learning.

11. What is your take on these methods? Are you familiar with any of them?

Web based learning is familiar and often used. Also Facebook is used by the students as a medium for communication.

Also mobile learning is being used as in-class as well. And self-study via online, searching for information to fix problems/exercises and students also sometimes get an studylink where they can gather information.

Some contemporary studies have argued that, E-learning educational systems provide more instructor-student and student-student interaction than the traditional systems.

12. Face-to-face education or distance education, what do you prefer and why?

Face-to-face, because contact with my students is important and want to keep that. I would use distance learning only as an alternative, for when I cannot come to school. For e.g. I already gave an Skype lecture for the students in Nickerie, because I wouldn't make the 4 hour drive and this worked well.

a. Do you see this as a barrier for adapting E-learning?

Not really. But options for online discussion have to be used. If E-learning becomes more interactive, then there is no problem.

13. How can your institution benefit from the E-learning methods mentioned above?

The Law faculty can benefit from these methods, because they do not have enough teachers so lectures can be given through Skype or Adobe. Like they did for my Master which works with the University of Tulaine USA. But the problem is that the older teachers are not open for this process and don't know how to work with this new technology.

14. How can you benefit from E-learning?

It saves a lot of time. Being in-class physically is time consuming. With E-learning you can give lectures without lack of time.

It also saves costs as the fuel prices are up and sometimes a teacher has to come twice a day to AdeKUS which there is no need for with the use of E-learning.

Some developing countries are living by the statement 'what is different, is dangerous' and maintain a resistance to innovation.

15. What is your take on this statement?

This is true, because they are not familiar with it. For them E-learning is time consuming while it is the other way around. But because they have to learn to use it, this takes time and they like the old way better and easier. Make it mandatory and they will have to do it and see the benefits.

In the Netherlands there is a tolerance for deviant and innovative ideas and behavior according to Hofstede's cultural dimension. This finding is in huge contrast with Surinam where there is a suppression of deviant ideas and behavior and resistance to innovation.

16. If E-learning methods would be implemented in your current study, how would you adapt to this change?

The more, the better. Making use of these methods, you could meet the demands of the students better. You can arouse their interest by using more ICT in the education for e.g. I let them search in-class on the internet so they get familiar with search fast and quick on the internet and coming up with an answer.

Successful E-learning programs require a lot of faculty involvement, which encourages online peer support among the students.

17. Which of the E-learning methods could really be a challenge for you or co-students?

Students like the methods and are curious. Until the secondary grade school students are not permitted to use their phone in class and here it the university I encourage them to use it to find articles faster and coming with an answer.

a. Why is this? (for e.g. lack of knowledge, network access problems and keeping up with technology)

Students are open to new technology and accept these better and faster. For e.g. I give them an training for publisher to make their presentations with that and they liked it and experimented with it. Students are eager to learn when you make it more fun.

18. **Virtual classroom** can make it possible that a mass of students can be educated during the same time at different locations.

What is your opinion on this?

Positive, because it saves time. But there has to be a good connectivity. A lifelong investment when you focus on the connectivity and getting more benefit out of it.

19. How do you **communicate** during courses, which **platform** do you use?

Through **Whatsapp** and **mail**.

20. How are the lectures supported, for e.g. are multimedia tools used (flash animations, simulations, videos, audios, etc.), can you give an example?

Video's in Powerpoint. I don't have time to make the presentation more equipt with video's and animation, but students do want it.

21. How do your **exams** take place?

Traditional on paper and at the master they have to do a presentation which exceptionally can be performed through **Skype**.

- a. Do you see this in a different way after 3 years or more?

No, the group is too big to adjust it to **online**. Maybe over 10 years or so.

22. How high would you **rate your institution**, and why?

Organisation: 6

Content: 7

23. How high would you **rate your current study**, and why?

7, because it **can be more online**.

24. As final question can you sum up for me in bullet points what could be the strengths and weaknesses of E-learning?

Weaknesses: **no physical contact**

Strengths: **Available at any time**, to finish the program in the acquired time, giving a lecture when being sick at home and it saves a lot of time.

25. Do you have any observations and/or comments you want to leave regarding this topic?

Teachers have to develop themselves and **E-learning** has to be accepted and initiated. Invest on time to save costs. You can reach the students better because their interest is induced.

26. Do you want to receive the results of this research? (Mail address)

Yes, rinettedjokarto@gmail.com.

Basic questions

Name Shivanni Matau

Male/female

Age 19

Profession: Bachelor or Master program and which field of study? (country and institution name)

Bachelor program in Medicine, second year, at AdeKUS in Surinam.

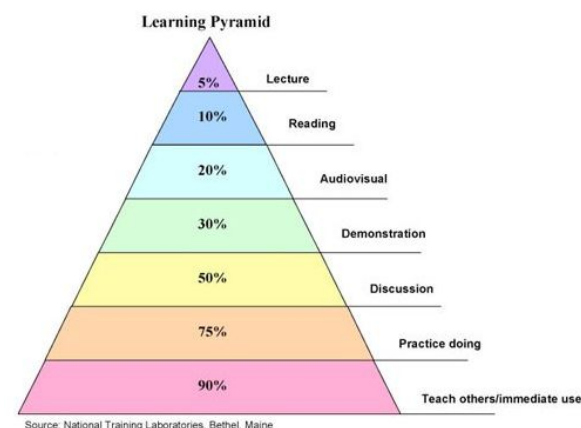
Specific questions

1. Which platform do you use for school? (Laptop, Tablet, Mobile phone or Personal Computer). Tablet, mobile and at home PC.

2. How much time do you spend on one course? (home/school or online / individually or group work). 34 hours at home. Individually. This is without the lectures at school.

3. According to the pyramid of Bethel Maine This is how 'we' learn. Can you describe the way of learning at your university? (Give this a rating like given in the pyramid).

60% lectures
40% practicum
30% reading
20% audiovisual
20% demonstrations



4. Can you describe how you access your course information? (up-to-date, easy to access and 24/7 available).

E-mail, facebook, dropbox, moodle but not for course information.

E-learning explained the easiest way is 'the use of electronic media (the Internet, DVD, CD-Rom, videotapes, television, cell phones, etc.) for teaching and learning at a distance [Engelbrecht, 2005]'. Due to the use of the internet, study material can be accessed anytime and anywhere.

5. How do you use E-learning in your current courses, can you give an example?

Google is useful when I don't understand an topic then I can get a better example. But most of the information is gathered through books. Moodle is used for exams.

6. What is your opinion on E-learning?

It makes your life easy and you do not have to carry all the books to class.

In the literature study it is discussed that access to the technology is an enabling or disabling factor, but access also refers to the quality of the connectivity.

7. Can you describe the connectivity of your university?

Bad, some floors don't even have internet and this is also at the campus at the hospital.

8. **Going back to question 4, how much influence does this have on the access of your course information?**

Yes because like here now in the library there is no internet. When i'm studying I mark the topics and at home can search further because the internet is not accessible.

9. **How much IT-support do you currently use for your study? And how is this being used?**

Moodle as an online platform to download documents, but i'm not always online on Moodle. And you don't always know when there are new things posted online.

10. **How does your institution encourages you to incorporate technology?**

Not really, they mostly work with books and articles and everything is printed out.

E-learning methods could be self-study, learning by video/audio tape, web based learning, Blended eLearning, which is mix of classroom and digital learning, mobile Learning and social Learning.

11. **What is your take on these methods? Are you familiar with any of them?**

This is handy, especially the digital learning because then you do not always have to attend the university. Mobile learning i'm already using to gather more information while i'm studying.

Some contemporary studies have argued that, E-learning educational systems provide more instructor-student and student-student interaction than the traditional systems.

12. **Face-to-face education or distance education, what do you prefer and why?**

Face-to-face education because it is interactive. With only digital you cannot communicate.

- a. **Do you see this as a barrier for adapting E-learning?**

No because if the digital becomes interactive my choice is definately distance learning.

13. **How can your institution benefit from the E-learning methods mentioned above?**

No practicum online, but lectures with powerpoint etc. can be given digital through Skype perhaps. Everything that is not interactive has to become online, so all of the theory.

14. **How can you benefit from E-learning?**

Theory colleges online.

Some developing countries are living by the statement 'what is different, is dangerous' and maintain a resistance to innovation.

15. **What is your take on this statement?**

It is true for most people but not for me. With theory gathered through E-learning I have more time.

In the Netherlands there is a tolerance for deviant and innovative ideas and behavior according to Hofstede's cultural dimension. This finding is in huge contrast with Surinam where there is a suppression of deviant ideas and behavior and resistance to innovation.

16. If E-learning methods would be implemented in your current study, how would you adapt to this change?

Yes because you win time. I'm open for new innovations especially when a lecture is given from another country through Skype because now we have guest teachers as well from e.g. Belgium.

Successful E-learning programs require a lot of faculty involvement, which encourages online peer support among the students.

17. Which of the E-learning methods could really be a challenge for you or co-students?

Self-study alone can be a challenge, because students will drop out.

- a. Why is this? (for e.g. lack of knowledge, network access problems and keeping up with technology)

E-learning methods have to be used in combination with physical contact through Skype for e.g., as long as the teacher can give an response.

18. Virtual classroom can make it possible that a mass of students can be educated during the same time at different locations.

What is your opinion on this?

Time-saving, it can make the education level higher and teachers who are on vacation can still give their lecture if it is virtually.

19. How do you communicate during courses, which platform do you use?

E-mail, personal with the teachers and students and through Facebook and Whatsapp.

20. How are the lectures supported, for e.g. are multimedia tools used (flash animations, simulations, videos, audios, etc.), can you give an example?

Powerpoint and videos only.

21. How do your exams take place?

On paper, presentations, papers, practicum and digital test via Moodle.

- a. Do you see this in a different way after 3 years or more?

Yes, fully digital with the use of Moodle.

22. How high would you rate your institution, and why?

Organisation: 7

Content: 6

23. How high would you rate your current study, and why?

Organisation: 5

Content: 7,5

The organisation is bad, because of the internet connection in my building. They have a real bad connection there which makes it difficult to follow the courses optimally.

24. As final question can you sum up for me in bullet points what could be the strengths and weaknesses of E-learning?

Weaknesses: There are no if it becomes interactive.

Strengths: Reachable everywhere but with an working internet connection, time-saving and easy as you don't have to attend school.

25. Do you have any observations and/or comments you want to leave regarding this topic?

No.

26. Do you want to receive the results of this research? (Mail address)

Yes, mataushivanni@gmail.com

Basic questions

Name Vishaal Ramessar

Male/female

Age 20

Profession: Bachelor or Master program and which field of study? (country and institution name)

Bachelor program in Mechanical Engineering, 3th year, at AdeKUS in Surinam.

Specific questions

1. Which platform do you use for school? (Laptop, Tablet, Mobile phone or Personal Computer). Laptop for usage at home and at school, everything is on my Laptop.
2. How much time do you spend on one course? (home/school or online / individually or group work). 60 hours at home online. Individually.

3. According to the pyramid of Bethel Maine This is how 'we' learn. Can you describe the way of learning at your university? (Give this a rating like given in the pyramid).

100% self-study which includes reading

4. Can you describe how you access your course information? (up-to-date, easy to access and 24/7 available).

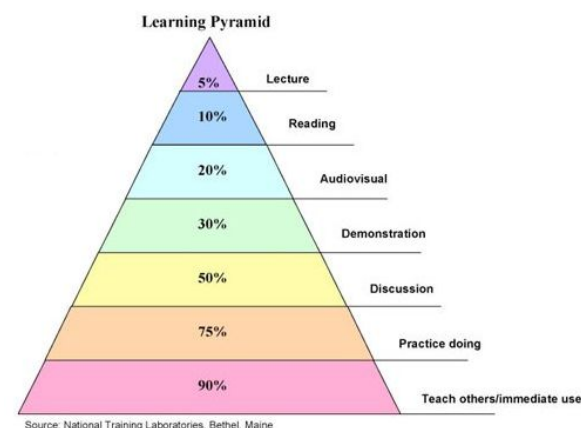
Study material via other classmates, Google and science websites.

E-learning explained the easiest way is 'the use of electronic media (the Internet, DVD, CD-Rom, videotapes, television, cell phones, etc.) for teaching and learning at a distance [Engelbrecht, 2005]'. Due to the use of the internet, study material can be accessed anytime and anywhere.

5. How do you use E-learning in your current courses, can you give an example?
I use my laptop for reading the online PDF's.
6. What is your opinion on E-learning?
It is easier, no books and it is always reachable.

In the literature study it is discussed that access to the technology is an enabling or disabling factor, but access also refers to the quality of the connectivity.

7. Can you describe the connectivity of your university?
Two years ago it was bad and now it is bad to acceptable bad.



8. Going back to question 4, how much influence does this have on the access of your course information?

Yes because only opening a page is sometimes difficult when the reach is bad.

9. How much IT-support do you currently use for your study? And how is this being used?

Nothing.

10. How does your institution encourages you to incorporate technology?

Literature is provided by AdeKUS and to deepen more into the material you can access science website, such as science direct, web pages of other universities as long as it isn't Wikipedia.

E-learning methods could be self-study, learning by video/audio tape, web based learning, Blended eLearning, which is mix of classroom and digital learning, mobile Learning and social Learning.

11. What is your take on these methods? Are you familiar with any of them?

Yes since 2014 more digital. Moodle for instance made it possible to post literature online and also exam results. School mail isn't used, but it should be with the use of moodle. There has to be an app for Moodle to make it more accessible.

Some contemporary studies have argued that, E-learning educational systems provide more instructor-student and student-student interaction than the traditional systems.

12. Face-to-face education or distance education, what do you prefer and why?

Face-to-face education because it is familiar, i'm already adapted to it for years.

- a. Do you see this as a barrier for adapting e-learning?

No, i'm open for distance learning as long as it has an positive effect. It is an issue of adapting to it.

13. How can your institution benefit from the E-learning methods mentioned above?

Easy way to get information, more digital books, with a touch of a button you can get all the literature, moodle app and better interaction between student and teacher. Faster internet connection, more electronics and the teachers should work with new methods and leave the old ones. Powerpoint and exercises could be via Moodle, but you do not get any notifications when something new is published.

14. How can you benefit from E-learning?

No carrying books anymore, cheaper and it is everywhere and at anytime.

Some developing countries are living by the statement 'what is different, is dangerous' and maintain a resistance to innovation.

15. What is your take on this statement?

E-learning is already used, but it has to be more innovative. You have to be open for it, and interaction has to be there. There has to be a moment for asking questions.

In the Netherlands there is a tolerance for deviant and innovative ideas and behavior according to Hofstede's cultural dimension. This finding is in huge contrast with Surinam where there is a suppression of deviant ideas and behavior and resistance to innovation.

16. If E-learning methods would be implemented in your current study, how would you adapt to this change?

If it has an positive effect to bring the education level to an higher one, then people will be open for this, but you have to get used to it.

Successful E-learning programs require a lot of faculty involvement, which encourages online peer support among the students.

17. Which of the E-learning methods could really be a challenge for you or co-students?
Distance learning because you save a lot of time.

- a. Why is this? (for e.g. lack of knowledge, network access problems and keeping up with technology)
Students as well as teachers will have to adapt to this.

18. Virtual classroom can make it possible that a mass of students can be educated during the same time at different locations.

What is your opinion on this?

Handy especially for the districts that are far away such as Nickerie.

19. How do you communicate during courses, which platform do you use?

Face-to-face, social media and Dropbox.

20. How are the lectures supported, for e.g. are multimedia tools used (flash animations, simulations, videos, audios, etc.), can you give an example?

Powerpoint and videos.

21. How do your exams take place?

On paper with two surveillants.

- a. Do you see this in a different way after 3 years or more?
No.

22. How high would you rate your institution, and why?

Organisation: 4

Content: 4

Because everything is badly organized, like for example that i have to search for my own literature. There is no support and the lack of content of course.

23. How high would you rate your current study, and why?

5

If i'm graduated my paper means nothing, I do not have a great job after my graduation, because of the low education level.

24. As final question can you sum up for me in bullet points what could be the strengths and weaknesses of E-learning?

Weaknesses: personal interaction, power outage when there is an real-time lecture, but you can record this for later, change and adaptedness.

Strengths: No long distance, easier and it can get the niveau to an higher level.

25. Do you have any observations and/or comments you want to leave regarding this topic?

Hopefully it will be implemented soon.

26. Do you want to receive the results of this research? (Mail address)

Yes, vishaalrv@hotmail.com and noershiv@hotmail.com

Basic questions

Name Winston Ramautarsing

Male/female

Age 59

Profession: Bachelor or Master program and which field of study? (country and institution name)

Bachelor program in Economics and Business Economics at AdeKUS in Surinam.

Specific questions

1. Which platform do you use for school? (Laptop, Tablet, Mobile phone or Personal Computer). Laptop and beamer.

2. How much time do you spend on one course? (home/school or online / individually or group work). 16 hours lectures at school and 5 hours at home. Individually.

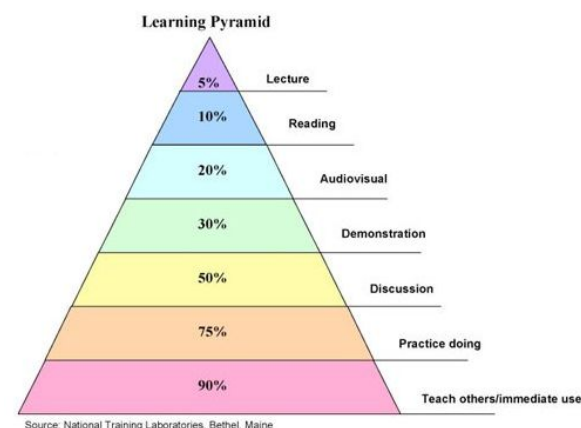
3. According to the pyramid of Bethel Maine This is how 'we' learn. Can you describe the way of learning at your university? (Give this a rating like given in the pyramid).

20% audiovisual

50% discussion

10% lectures

10% reading



4. Can you describe how you access your course information? (up-to-date, easy to access and 24/7 available).

Moodle, but this is not fully being used. 24/7 through mail.

E-learning explained the easiest way is 'the use of electronic media (the Internet, DVD, CD-Rom, videotapes, television, cell phones, etc.) for teaching and learning at a distance [Engelbrecht, 2005]'. Due to the use of the internet, study material can be accessed anytime and anywhere.

5. How do you use E-learning in your current courses, can you give an example?

I want to use it, but at my classrooms the internet is not accessible. If there would be an option to give lectures at home through Skype, I would do that. it can be more interactive.

6. What is your opinion on E-learning?

There are no experts available and the initiatives are never from the students itself.

In the literature study it is discussed that access to the technology is an enabling or disabling factor, but access also refers to the quality of the connectivity.

7. Can you describe the connectivity of your university?

Some of the places at campus have good internet, but my area doesn't.

8. Going back to question 4, how much influence does this have on the access of your course information?

Yes private internet is now being used. There is also a closed intranet for teachers.

9. How much IT-support do you currently use for your study? And how is this being used? Beamer for presenting the lectures.

10. How does your institution encourages you to incorporate technology?

They don't, you have to take your own initiatives.

E-learning methods could be self-study, learning by video/audio tape, web based learning, Blended eLearning, which is mix of classroom and digital learning, mobile Learning and social Learning.

11. What is your take on these methods? Are you familiar with any of them?

Learning by video and three of the 20 students use web based learning. I'm challenging them with questioning which takes up to 5 hours of self-study.

Some contemporary studies have argued that, E-learning educational systems provide more instructor-student and student-student interaction than the traditional systems.

12. Face-to-face education or distance education, what do you prefer and why?

Technology make it easier, but face-to-face education makes it personal.

- a. Do you see this as a barrier for adapting E-learning?

No, when internet connection is 100% reliable and accessible.

13. How can your institution benefit from the E-learning methods mentioned above?

Teachers have to be prepared and than E-learning can be implemented to benefit the lectures.

14. How can you benefit from E-learning?

It is handy as i can give a lecture when i'm in trinidad for a guest lecture or i can give them both at the same time. Students can work faster and sent their exercises earlier and be productive. It is a opening for other universities to give lectures.

Some developing countries are living by the statement 'what is different, is dangerous' and maintain a resistance to innovation.

15. What is your take on this statement?

Every change is different and uncertain, but not dangerous. There is a resistance but it is not dangerous and students adapt quicker than teachers.

In the Netherlands there is a tolerance for deviant and innovative ideas and behavior according to Hofstede's cultural dimension. This finding is in huge contrast with Surinam where there is a suppression of deviant ideas and behavior and resistance to innovation.

16. If E-learning methods would be implemented in your current study, how would you adapt to this change?

Not everyone is tolerant for new idea's. And only talking back to an teacher can lead to an quarrel. But students are mostly quiet and maybe via electronical they would react less timidly. At home you can think more rationally instead of when there is an in-class discussion.

Successful E-learning programs require a lot of faculty involvement, which encourages online peer support among the students.

17. Which of the E-learning methods could really be a challenge for you or co-students?

Nothing would really be challenging, you have to make it fun.

- a. Why is this? (for e.g. lack of knowledge, network access problems and keeping up with technology)

If self-study will become fun for the students, the wouldn't be that reluctance.

18. Virtual classroom can make it possible that a mass of students can be educated during the same time at different locations.

What is your opinion on this?

Handy especially for the districts, the rural parts of surinam. Resistance to this would be easy as the advantages are bigger. Teachers have to go along with the time and get training of how they can keep the lectures more fun.

19. How do you communicate during courses, which platform do you use?

Face-to-face and Moodle. Moodle has to raise more discussions.

20. How are the lectures supported, for e.g. are multimedia tools used (flash animations, simulations, videos, audios, etc.), can you give an example?

Powerpoint.

21. How do your exams take place?

On paper.

- a. Do you see this in a different way after 3 years or more?

It could be, but the discipline lies within the students itself. There is a huge difference between surinamese students and that of the netherlands. The one who went to the netherlands on their 17th can do it, but the ones who stayed in Surinam can't.

22. How high would you rate your institution, and why?

Organisation: 6

Content: 4,5

23. How high would you rate your current study, and why?

7, I organize it to my likings.

24. As final question can you sum up for me in bullet points what could be the strengths and weaknesses of E-learning?

Weaknesses: Additional training is required and the equipment as well.

Strengths: Education is reachable for people who live far away and have less resources.

25. Do you have any observations and/or comments you want to leave regarding this topic?

Discipline will be higher for the students. With the proper use of E-learning you will force the teachers into improving the quality and also the quality of the lessons. There are also facilities which AdeKUS misses at the moment which is crucial for an university.

26. Do you want to receive the results of this research? (Mail address)

Yes, proplan@sr.net

10.4 Questionnaire

E-learning integration in developing countries

* Please fill in your Name + Surname

* Please fill in your age + gender.

* How high would you rate your current study?

Bad 1 2 3 4 5 6 7 8 9 10 Great

* Which University?

- ☐ Leiden University
- ☐ Erasmus University
- ☐ The Hague University of Applied Science
- ☐ AdeKUS
- ☐ Anders, namelijk:

Ander antwoord

* Study: Bachelor or Master program and which field of study?

* What is your opinion on e-learning?

* Can you rate how much IT-support you currently use for your study?

Not a lot 1 2 3 4 5 6 7 8 9 10 A lot

* Does your institution encourages you to incorporate technology?

If yes, how do they do this?

* With which E-learning method are you familiar with? (More answers can be checked)

- ☐ Self-study
- ☐ Learning by video/audio tape
- ☐ Web based learning
- ☐ Blended eLearning (mix of classroom and digital learning)
- ☐ Mobile Learning
- ☐ Social Learning

* How can your institution benefit from the e-learning methods mentioned above?

* If e-learning methods would be implemented in your current study, how would you adapt to this change?

* Which device do you use for school? (More answers can be checked)

- ☐ Laptop
- ☐ Tablet
- ☐ Mobile phone
- ☐ Personal Computer (PC)
- ☐ Anders, namelijk:

Ander antwoord

* How much time do you spend on one course? (More answers can be checked)

- ☐ 10-20 hours at home
- ☐ 20-40 hours at home
- ☐ 10-20 hours at school
- ☐ 20-40 hours at school
- ☐ 10-20 hours online
- ☐ 20-40 hours online
- ☐ Anders, namelijk:

Ander antwoord

* How do you access your course information? (More answers can be checked)

- ☐ Google
- ☐ Blackboard
- ☐ Moodle
- ☐ University's website
- ☐ Anders, namelijk:

Ander antwoord

* Can you describe the course information? (More answers can be checked)

- ☐ Up-to-date
- ☐ Outdated
- ☐ Easy to access
- ☐ 24/7 available
- ☐ Anders, namelijk:

Ander antwoord

* E-learning explained the easiest way is 'the use of electronic media (the Internet, DVD, CD-Rom, videotapes, television, cell phones, etc.) for teaching and learning at a distance (Engelbrecht, 2005)'. Due to the use of the Internet, study material can be accessed anytime and anywhere.

How do you use e-learning in your current courses?

* What is your opinion on e-learning?

* Can you rate how much IT-support you currently use for your study?

Not a lot 1 2 3 4 5 6 7 8 9 10 A lot

* Does your institution encourages you to incorporate technology?

If yes, how do they do this?

* With which E-learning method are you familiar with? (More answers can be checked)

- ☐ Self-study
- ☐ Learning by video/audio tape
- ☐ Web based learning
- ☐ Blended eLearning (mix of classroom and digital learning)
- ☐ Mobile Learning
- ☐ Social Learning

* How can your institution benefit from the e-learning methods mentioned above?

* If e-learning methods would be implemented in your current study, how would you adapt to this change?

* Which of the e-learning methods could really be a challenge for you or co-students?

Why is this? (for e.g. Lack of knowledge, Network access problems, Bad internet connectivity and Keeping up with technology)

* How do your exams take place? And do you see this in a different way after 3 years or more?

* How can you benefit from e-learning?

* In your opinion, what could be the strengths and weaknesses of e-learning?

* Face-to-face education or distance education, what do you prefer and why?

* How are your lectures supported?

- ☐ Powerpoint
- ☐ Flash animations
- ☐ Simulations
- ☐ Videos
- ☐ Audios
- ☐ Pdf
- ☐ Anders, namelijk:

Ander antwoord

* Virtual classroom can make it possible that a mass of students can be educated during the same time at different locations. What is your opinion on this?

* How do you communicate with your professor and classmates? (More answers can be checked)

- ☐ E-mail
- ☐ Blackboard
- ☐ Moodle
- ☐ Dropbox
- ☐ Whatsapp
- ☐ Facebook
- ☐ Face-to-face
- ☐ Anders, namelijk:

Ander antwoord

* Do you have any observations and/or comments you want to leave regarding this topic?

And if you want to receive the results for this research, you can fill in your mail address here.

Thank you for your time!

10.5 Raw Questionnaire Data

In totaal legden **41** mensen deze enquête af.

Statistieken voor vraag 1 : Please fill in your Name + Surname

Deze antwoorden werden gegeven:

- Jen Yung
- Jeanique Ngadimin
- Kavish Partiman
- Daniel Pitti
- stacy ramsaran
- Vishaal Ramdat
- Inarda Ajeremi
- Shana Atangana Bekono
- Amit Alakhramsing
- Karan Ramdhiansing
- Tahirah straal
- RH
- Roberto Augustuszoon
- Raquel
- Sabira Moktari
- Joël Frijde
- Paloeng Consuela
- Andjinie
- Jaddoe Bindia-Roy + Suriname
- Ashwinie Hemai
- Soekinta Amatsamsoe + Suriname
- Vasishtha Madari
- Nick H.
- Fardeen Murad
- Nazneen Alibaks
- Raúl Bhoendie
- Lawrence van Dijk
- Rukzana Soeltan
- Bhugoea Shalini
- Cindy Asmoredjo
- Ruby Roesmin

Statistieken voor vraag 2 : Please fill in your age + gender.

Deze antwoorden werden gegeven:

- 26 Female
- 21, female

- Male 27
- 20 Male
- 23 vrou
- 26 male
- 26, female
- 26 Female
- 32 male
- 24, male
- 26-2-1994 22 jaar V
- 26 M
- 24 male
- 23 female
- 25 + vrouw
- 25 m
- 29 Female
- 22 & female
- 24 + female
- 38 Female
- 35, male
- 27 male
- 20 Male
- 21 M
- 21
- 21 male
- 23 M
- 25 V
- 25 woman
- 25 Female
- 22, Female

Statistieken voor vraag 3 : Study: Bachelor or Master program and which field of study?

Deze antwoorden werden gegeven:

- Msc ICT in Business
- Bachelor, medical technology
- Master
- Bachelor; Bedrijfeconomie
- master, bestuurskunde
- Master in Accounting and Finance
- Master , suriname law
- Master of European Union Studies
- Bachelor IT
- Bachelor Management & Human Resources
- BSc Milieuwetenschappen
- BSc infrastructure

- ICT in business
- Bachelor. Delfstofproductie
- Masters+Business information sciences
- Bachelor of Science: Electrical Engineering - Information Technology
- Master opleiding SMNR (Sustainable Management of Natural Resources)
- Master in Biostatistics
- Master program Field of study: Sustainable Management of Natural Resources
- MSc sustainable management of natural resources
- master program SMNR
- Bachelor, applied physics
- Bachelor Communication and Multimedia Design
- Bachelor Management Economie en Recht
- Bachelor Economy
- Bachelor medicine
- Bachelor in economics
- Master of Science Land and Water Resources
- Bachelor Economy
- MSc in Sustainable Management of Natural Resources
- Bachelor in economics
- Bachelor in Law

Statistieken voor vraag 4 : Which University?

4.1	Leiden University	9.38%
4.2	Erasmus University	6.25%
4.3	The Hague University of Applied Science	15.63%
4.4	AdeKUS	50.00%

Andere antwoorden:

- Delft university
- TU Delft
- Amsterdam university of Applied Science
- Vrije Universiteit Amsterdam
- University Hasselt
- Anton de kom universiteit van Suriname

Statistieken voor vraag 5 : How high would you rate your current study?

Gemiddelde waarde: 7.03

Variantie: 9.62

Statistieken voor vraag 6 : Which device do you use for school? (More answers can be checked)

6.1	Laptop	96.88%
6.2	Tablet	15.63%
6.3	Mobile phone	46.88%
6.4	Personal Computer (PC)	15.63%

Andere antwoorden:

- Surface (hybrid)
- note book

Statistieken voor vraag 7 : How much time do you spend on one course? (More answers can be checked)

7.1	10-20 hours at home	62.50%
7.2	20-40 hours at home	28.13%
7.3	10-20 hours at school	50.00%
7.4	20-40 hours at school	25.00%
7.5	10-20 hours online	31.25%
7.6	20-40 hours online	12.50%

Andere antwoorden:

- per week
- for interviews and group discussion it is 2-5 hours

Statistieken voor vraag 8 : How do you access your course information? (More answers can be checked)

8.1	Google	62.50%
8.2	Blackboard	56.25%
8.3	Moodle	31.25%
8.4	University's website	25.00%

Andere antwoorden:

- Office365

- received from teacher/lecturer
- Email, dropbox, course
- purchase copies / books and information on memory stick
- Youtube & forums & ebooks
- Books
- Dictaten of boeken
- From the lecturer. eg powerpoint presentations. From books.

Statistieken voor vraag 9 : Can you describe the course information? (More answers can be checked)

9.1	Up-to-date	75.00%
9.2	Outdated	15.63%
9.3	Easy to access	59.38%
9.4	24/7 available	50.00%

Andere antwoorden:

Geen andere antwoorden gegeven

Statistieken voor vraag 10 : E-learning explained the easiest way is ‘the use of electronic media (the Internet, DVD, CD-Rom, videotapes, television, cell phones, etc.) for teaching and learning at a distance [Engelbrecht, 2005]’. Due to the use of the internet, study material can be accessed anytime and anywhere. How do you use e-learning in your current courses?

Deze antwoorden werden gegeven:

- Internet, books, papers
- All of the above
- I don't
- blackboard
- only thru presentation and short movies during the lecture. After that the sheets are available on bsk-web. sometimes they use a poll during the lessons.
- I make use of blackboard & the internet.
- I use the internet to look up articles and other sources for my assignments. In addition, I also use the internet to access practical information about my study program such as schedules etc. Depending on the course we sometimes use video fragments or television fragments for analysis
- We do not use e- learning
- Through the internet By accssing blackboard.
- In stead of attending courses in a classroom, I open the powerpoint presentations on Blackboard
- Voor alle vakken heb ik extra informatie nodig dan die we krijgen op school...de docenten geven het zelf ook aan doen jullie veel meer research op het net want wat er wordt verstrekt tijdens de college zijn meer opsommingen die uitgebreid uit gelegd worden

- For research
- Cellphones for teacher -student interaction, YouTube for supporting material
- I Google everything
- Every course
- Information sharing through model. Online lectures from third parties. Live file sharing through applications such as dropbox.
- not yet e-learning in courses
- I do an online course so everything is done using electronic media
- Slide information and books of the course are put on my tablet and laptop to study. Further I use the tablet, laptop and mobile phone for the internet to check my mails, moodle, and to search information about the lectures. To download study material I make use of the internet on my tablet and laptop
- for collection of information, for illustration of topics
- mostly through moodle I got klas information and studymateriaal. For information on topics I use google to find research work. There are skype session if a teacher is not in the country. We frequently use the mail for information.
- Aanvullend en in sommige gevallen voor bevestigingen (cross reference)
- We use Blackboard mostly and we also have an Apple Lab where we learn on sight how to work with various programs like Photoshop.
- Not so much. We use Blackboard for exercises, but that's it.
- Not using it. But could be easy
- Not that much, because I'm always at school or at home.
- Not at all. The lectures are online and sometimes we have to look something up on the web, but that's it.
- Through internet, cd-rom.
- Currently I am not using e-learning
- By sharing course material through e-mail, dropbox, google drive and moodle. Use youtube videos and google to make assignments. Use ub.uvs.edu. Find literature on ScienceDirect, Jstor, Springer etc.
- We get links to watch a video at home and get exercises where the information is on the web which we have to search for ourselves
- We get to search for law rules online in class when we have discussions about a case

Statistieken voor vraag 11 : What is your opinion on e-learning?

Deze antwoorden werden gegeven:

- It's needed
- Great way of self study
- It could be helpful
- amazing and efficient
- very useful, especially due the ICT developments nowadays.
- Great! Makes it flexible to study by your own time. Independence of college time helps me achieve more in one day.
- It is very practical and it makes it easier for student and professor to transfer and access information

- I think it's a great way to learn without being present at a certain place. U can learn at anytime and anywhere
- It can be done at anytime, but I miss personal explanation.
- it is key for the future, because it makes sure one can learn on his or her own level
- Projecten, verslagen over specifieke onderwerpen kan je makkelijk vinden vooral over de meeste landen...er worden dus niet alleen voorbeelden gegeven over VS maar ook over de Caraïbische eilanden, Europa waarbij makkelijker een correlatie kunnen leggen met Suriname dan met VS waarmee we heel veel verschillen
- It should be better and accessible for everyone
- Usefull, if used properly
- It's handy and fast
- Great, Its the future
- E-learning is a must for efficient studying, especially when it comes to the preservation of valuable resources (gas, facility, time, etc)
- can be good and updated information
- Learning via electronic media is effective. I can study whenever I want. I can watch a weblecture several times. But a minus point is the internet connection, it fails often and especially when you need it the most.
- E-learning is easy. It is environmentally friendly, because you don't have to print all the study material, only the information you need the most can be print.
- As a working student, it makes studying easier. I can study at my own time and own pace
- It is a new and interesting method of learning in the digital time age.
- Heel goed zolang je maar de juiste bronnen raad pleegt en of toetst op juistheid. Zeer efficient indien het bovenstaande is bevestigd.
- It is good, it makes studying easy and everything is accessible.
- It is good, but it isn't used a lot.
- Can be really handy. Can be easy for every student who can't travel everywhere
- Its useful
- It is good and it could be beneficial if it would be implemented at my university
- A very good alternative to get a lot of information.
- Can be the best option to provide students who travels up & down from a distance
- Helps me find/get literature/course material easily. People should make use of it more often. Should be promoted in a better way to students. Impossible to use it on campus without proper internet speed.
- it is great, it makes studying easier
- it is good, but not visible at my study course

Statistieken voor vraag 12 : Can you rate how much IT-support you currently use for your study?

Gemiddelde waarde: 5.72

Variantie: 11.57

Statistieken voor vraag 13 : Does your institution encourages you to incorporate

technology? If yes, how do they do this?

Deze antwoorden werden gegeven:

- not that i know of
- Yes, programs
- Yes, by having us use software to calculate certain statistics
- yes. putting documents online
- - upload papers digital - ask questions with emails
- Yes. Sometimes new programs are introduced and set as mandatory to explore the innovative idea of technology.
- We often have to do group projects so we contact each other by phone or email. Plus we have to search for some information on the internet
- Not specifically, they expect that we are in possession of certain devices but they don't force us to use specific technology
- No, not enough
- no
- Yes...er worden opdrachten gegeven waarbij echt alleen op het net informatie kan vinden
- No
- Not really
- Yes, kinda.. there's wifi at school but the connection isn't always that strong..
- Yes, they explicitly allow it and encourage it by suggesting options. Sometimes it's the only option
- Yes, by offering the moodle environment to each and every teacher to use for file/info sharing, submission of papers, grading.
- Moodle
- no
- Yes
- yes, We learn how to make hydrological models. Also how to make statistical models, and how to interpretate the output. We learn a lot to work with different models on pc, how to use it, how to put the data in the model etc.
- no
- yes, by using laptop for paper, desktop, mobile phone for communication, R-program for statistic, matlab for engineering mathematics.
- Op het gebied van onderwijs hoeft ons instituut geen verwijzingen te maken naar online bronnen, mede omdat de docenten genoeg aandacht besteden aan de studenten. Dictaten zijn beschikbaar indien nodig op blackboard.
- No not really.
- No not really, we weren't even supposed to use mobile phones in the beginning.
- Using the internet for research Using the laptop for papers
- Not really
- No
- To search for information at the internet.
- Yes, they have their own IT room where students can use the internet etc.
- Yes, with using different software. That is not enough though
- yes with the exercises i guess
- yes with the use of internet in class, but the internet doesn't always work

Statistieken voor vraag 14 : With which E-learning method are you familiar with? (More answers can be checked)

14.1	Self-study	84.85%
14.2	Learning by video/audio tape	57.58%
14.3	Web based learning	54.55%
14.4	Blended eLearning (mix of classroom and digital learning)	48.48%
14.5	Mobile Learning	24.24%
14.6	Social Learning	30.30%

Statistieken voor vraag 15 : How can your institution benefit from the e-learning methods mentioned above?

Deze antwoorden werden gegeven:

- Makes it easier to study
- Uh
- It could be beneficial for students who don't have enough time to go to lectures
- putting every course online
- it can help increase the grades of students, because almost every student likes e- learning
- Motivate students with the freedom they get by e-learning.
- It can help the students in their study thus it also benefits the institution.
- Schedule-wise it might be more practical to allow certain courses to be web-based learning or complete e-learning
- I think the courses would be more friendly towards working students if they could do e-learning.
- It Will be easier to access course material is after the lessons are done. It would be a big help if the teacher recorded the lessons.
- More students will acknowledge the information which is published on Blackboard, so their commitment with the course will be better
- Niets is leuker dan informatie krijgen van docenten en ook direct concerten voorbeelden middels video, tijdens een college van 2-3uren kan heus niet zoveel informatie verschaft worden waarbij docenten de info opsommen en als jij als student niet erin gaat verdiepen mis je andere info die wel uitgebreid uitgelegd is geworden op het net
- Qualified professionals from top universities in the world can give online courses or lectures to the students here in Suriname
- web based learning, blended e learning and video learning
- Dont know
- Beter grades for exams
- Al eerder aangegeven.
- Results
- Misschien monetizing met advertenties? Verder ontstaan er minder overvolle lokalen.

- As mentioned before, preservation of valuable resources which are being used unnecessarily and can be allocated elsewhere.
- Results
 - lack of professors or time can be replaced by this method
 - when there is a shortage of teachers or a teacher has a busy schedule to lecture (which is often the case) one can use video transcripts or create a so called virtual class room
 - by training of employees: how to use e-learning to gain knowledge and how to use e-learning to train or educate stakeholders. Organizing webinars to reduce costs.
 - n/a
 - Blended eLearning (mix of classroom and digital learning) The benefits for the institution are: - it's efficient (the combination of digital instruction and face to face explanation on the same time is efficient for the teacher and the students)
 - Increase the level of knowledge and technology of students
 - They are already benefitting from these things. eg. They can give classes to much more people than in the classroom..
 - by reducing travelling for teacher, especially teacher from another country. by staying up to date with developments around the world.
 - Lectures opnemen en deze delen op blackboard. En blackboard vaker gebruiken voor Q&A discussies
 - Maybe incorporating more blended learning system?
 - Implementing it more and some of the lectures could be skipped, because the information is online.
 - Can be useful, because I can study from home instead of traveling to school
 - My institution is ok the way it is
 - If they would work more with Moodle and put more theory online.
 - Very much, but it is already incorporated in some ways.
 - It can be useful in case instructors are out of town. Or in case students can't join the classes.
 - The people of the institution (students/lecturers) can do research with improved quality
 - a lot more if they work more with Moodle, because the exercises can be put in there and the communication as well
 - a lot, because now they actually don't use it a lot

Statistieken voor vraag 16 : If e-learning methods would be implemented in your current study, how would you adapt to this change?

Deze antwoorden werden gegeven:

- Do as told
- Uh see previous answer
- I would use this for remote learning
- adapt in any way possible
- I would engage it and would stimulate me to learn more about e- learning
- Easy
- I think they should explain how to work with the change in a clear manner and helping us work with it before throwing it at us, like they usually so.
- Quite well in my opinion. We already have a certain degree of independence

- Easily
- For part time studying it would be helpful if more material was online.
- Creating methods which give more students the access to learn on their own level.
- Dit is al inbegrepen in mijn dagelijkse routine als het gaat informatie verschaffen voor school dus dat zal helemaal geen probleem zijn
- Great, easier for me
- I would have to do more self studying. And pay more for better internet access at home.
- Doesnt bother me. Im doing a ICT in business master.
- I would work on reliability of information
- 3 kwart is bestaat al uit e-learning. Zou dus geengrote verandering zijn en zou me makkelijk kunnen aanpassen.
- inapplicable
- Het gebeurt nu in feite al, ik ben er al aan gewend en vind het wel prettig werken. Als je bedoelt dat ik straks alle colleges vanuit huis online kan volgen, dan is het iets nieuws. In dat geval zou ik minder geld hoeven besteden aan OV. Verder zou ik een uur langer kunnen uitslapen, omdat ik dan geen reistijd zou hebben.
- Smoothly, thanks to my current studies.
- Good
- adapt quite easily
- easily, Because i'm already acquainted with the methods of e-learning.
- I would spend more time using electronics
- n/a
- I would look for beter internet access oppertunities
- easily as long as there is internet and electricity
- I am already adapted.
- I would have to gain acces to hardware and software programs and information on everything that is needed to use e-learning. I would have to change some of my shedules. There will be a time difference when skypeing and the exams through e-program.
- Ik ga dan minder vaak reizen naar mijn school.
- I would adapt fine to it. It has a positive effect, so yes adaption would be easy. And mostly we are the most people who use more e-learning than the teachers themself
- Easily if the benefits are explained well
- First is sure to get used to it. than gradually it would become easy
- I would adapt quickly
- Ok i guess
- Very well.
- Easily
-
- easily
- ok i guess, i would support it

Statistieken voor vraag 17 : Which of the e-learning methods could really be a challenge for you or co-students? Why is this? (for e.g. Lack of knowledge, Network access problems, Bad internet connectivity and Keeping up with technology)

Deze antwoorden werden gegeven:

- Keeping a good communication, due to differences in classes
- Uh
- network access problems and bad internet connectivity
- i don't know
- group study thru internet
- E learning such as (only) live webcasts can become a problem because of poor internet.
- All the methods could be a struggle without the right knowledge. Not everyone is as handy in technology.
- None in particular
- Video, audio learning because of the insufficient internet connections we have. Our technology is also not very up to date
- It is an IT course, I think none.
- Blended learning
- Not having a laptop or pc. De Engelse taal zelf want de meeste studenten zijn niet sterk in Engels waarbij ze liever gewoon studeren wat de docent geeft dan moeite nemen om het te vertalen
- Keeping up with technology
- I think blended e-learning, because of bad internet connectivity and keeping up with technology. that's a barrier in Suriname.
- Network access.
- Bad internet connection
- Voor mij zou het een challenge zijn op het gebied van het gebruiken van technology, ben daar onhandig in. Technology apparaten zijn vaak duur. Internet verbinding is niet stabiel.
- Non
- Deze methoden vormen in principe geen probleem. Maar wanneer de verbinding uitvalt, het intranet traag of onbereikbaar is wordt het een probleem. Maar het voordeel van online colleges is dat wanneer je ze mist, je deze zou kunnen terugvinden wanneer de verbinding het weer doet. Want alles staat online opgeslagen. Een groter probleem is slechte beveiliging. Zo zou de school gehackt kunnen worden waardoor er problemen ontstaan qua privacy van medewerkers en studenten en lesmateriaal dat kan worden gewist.
- Web- and mobile based e-learning, due to lack of knowledge and or outdated hardware. Bad internet connectivity can be an issue in case of live applications.
- Bad internet connectivity
- Network access problem
- Maybe acquiring videos of the lectures (these tend to be big) and the internet in Suriname is not something to be proud of.
- self study (online courses) because we have bad internet connectivity
- I guess for most people the access to network is a problem and a bad internet connectivity.
- Network access problems and bad internet connectivity, because not all the students have internet access at home. Another problem is that the internet of the provider is also weak and sometimes there is no internet.
- bad internet connectivity keeping up with technology
- sometimes the network stops working or the site stops working
- Sometimes bad internet connectivity
- Online exams. Uitdagend om de resultaten te interpreteren. Klas interacties zullen worden vermindert en zal les geven minder intiem zijn.

- Self study I think, because of the knowledge i think. Not everyone has the knowledge.
- Social learning, because it is not accurate.
- web because of network access problems & the connectivity
- None
- selfstudy because not everyone has the discipline. I do a lot of selfstudy at home. Maybe this could be because of the lack of knowledge and ofcourse the connectivity. Our university has bad to no connectivity.
- Sometimes bad internet connectivity can be a big challenge.
- Web based learning. It can be used to interchange knowledge from other universities.
- Distance learning, web based learning. Network access problems, Bad internet connectivity (Keeping up with technology...maybe)
- I think selfstudy, because you are on your own mostly and yeah maybe with the lack of knowledge, because you don't how to search for good articles
- maybe social learning, because that is all students and sometimes we get discussions about who is right and who is wrong. So that is not accurate. Also the internet has to be ok

Statistieken voor vraag 18 : How do your exams take place? And do you see this in a different way after 3 years or more?

Deze antwoorden werden gegeven:

- Pen and paper. I think it'll stay the same after 3 years
- Online and paper or practical
- written exams, I don't see this changing within 3 years
- at school and no
- in person, written exams
- We make our exams on paper in a classroom. After 3 years I expect exams still to be made in classrooms because of the fraud inspection but digitally instead of written
- Most of my exams I have to make on paper. I don't think this way of taking your exams will change in 3 years.
- In a class room. No, I don't, I think that even though technology might allow us at one point to take exams in a different way it is still safest to do it in a class room or exam room
- By group/individual papers en tests.
- These are computer and verbal exams. No not in 3 years
- in the classroom; Yes i see a different way, for example a security system which has a camera and can check the student.
- Schriftelijk...het kan zou blijven voor mij part.
- Handwritten exams, But I don't see any online tests in 3 years from now
- by letter at the university. maybe after a longer time it will change.
- In a class room. This Will always be there.
- It would be great if exams could take place on the pc ... digital exercised with programs such as autocat etc..
- Schriftelijke tentames, verslagen en take homes, verslagen en take homesmoeten meestal ook gemaild worden. Over 3 jaar zie ik dat we tentames ook online kunnen maken.
- Physical attendance, yes. online
- Misschien dat we binnen 3 of meer jaar gebruik maken van augmented reality en tentamens

virtueel geprojecteerd worden binnen een wearable heads up display. Bijvoorbeeld Microsoft Hololens. Of dat we les krijgen in een virtuele 3D omgeving met avatars waarbij we gebruik maken van Virtual Reality met bijvoorbeeld bril van een PlayStation VR, Oculus Rift of HTC Vive.

- Mostly on paper. Some exams in my third year of IT take place online. Maybe in 10 years we will have something more efficient.
- On paper. And no.
- can also be online
- My exams as in SMNR: written or/plus oral exam combined with reports, papers, field work or presentations.
- Maybe, after 3 years, we will be able to take a computer based exam
- Mostly not electronic or internet I do not think it will be otherwise after 3-5 years.
- Eventhough the course is an online study, the exams don't take place online. The quizzes do.
- My exams are written exams (paper based). After 3 years it is also paperbased, I see no difference
- written and oral exams yes , by webinars, Skype etc.
- we take exams the old fashioned way. On paper. I don't think that that will change in the next 3 years
- It takes place at IGSR at AdekUS under supervision of a teacher or administrator of SMNR with pen and paper. It can be different after 3 years, maybe in digital form with other college student simultaneasely around the world.
- In een klaslokaal. Nee
- On paper and we have exercises as well. No it will be the same, I do not see this in a different way or online.
- On paper
- By papers. Don't see any change in it. Can be online.
- Exams sometimes do take place electronically
- On paper in class
- Mostly on paper. I don't know, seeing the current economically situation.
- Often it's written exams. Some are oral examination. Don't see any change in these.
- oral and written exams, presentations, project reports. no
- on paper, excercises and presentations. No it will be a same i think.
- On paper in an classroom

Statistieken voor vraag 19 : How can you benefit from e-learning?

Deze antwoorden werden gegeven:

- Easy access
- Do things in my own time
- By being able to study on my own schedule instead of fixed times
- stay at home learning
- it is easier and will stimulate to use additional data
- I think I've to repeat my answer. Adjusting study time to my own schedule is a huge advantage.
- You can benefit from it because things get more accesible.
- Leaves me more time to do other things...
- I could have more time to do other things than be at school from 14.00-20.00

- Because of online availability of course material.
- as i said before, it makes sure i am able to learn on my own level
- Leren uit de fouten van andere landen met projecten die ze al hebben uitgevoerd en natrekken hoe beter kan dat wij in sur niet de zelfde fouten maken
- Easier for me
- you can work efficiently and get information you need faster. you also save money on use of paper, pens and transportation to campus. this also has it's benefits on the environment. (less pollution)
- Easy way to refresh your memory
- You can do e-learning at any time and any place if there is internet because that is een problem in suriname
- Eerder aangegeven
- Knowledge
- Het is gemakkelijker om online de juiste informatie te vinden. Het kan prettiger zijn dan vechten om zitplaatsen in overvolle hoorcollege zalen wanneer het mogelijk is om colleges online op afstand te volgen. Wanneer je te laat bent voor een les is het minder storend voor anderen als een er een log-in notificatie of online symbool verschijnt in plaats van iemand die de deur van de klas opent en naar binnen loopt.
- Save time and money (resources). More dynamic way of teaching. Can have better results for visual thinkers.
- Give learning a different perspective
- on your own time doing the course
- 1. you do not have to invest in the printing or copying of books.
- 2. 24/7 available and usually up to date
- 3. Distance learning such as EdX. e.g. you learn something (a course) from the experts of TU Delft or University of Adelaide (Australia) .
- It is time effective, cost effective and environment friendly if course materials are not printed. Also less space is needed to store documents and books if this is electronically
- n/a
- No heavy books to carry to school No books to print, We can save money
- better time management
- much spare time (multiple choices for the self study tasks), anywhere and anytime free access
- by travelling less, hereby saving money for other stuff. by staying up to date with the program and developments. reaching a lot of people quickly for answers.
- Verbreed je perspectieven door bv forums en discussies aan te gaan. Ondemand informatie is beschikbaar.
- A lot. If my study would implement it more, there wouldn't be boring Lectures where everyone isn't paying attention because the slides are on Blackboard already.
- A lot, because it can let you learn from home or when you are on vacation. All the information is available everywhere.
- Enough time for self study
- Better access to the courses and all the information I need to organize my schedule
- A lot, because it would save me time going to school i guess. And ofcourse the theory would be more online and easy to access.
- Very much. Information is more easily available and in a bigger amount.
- Anytime or anywhere join the lectures.
- information is easily shared, saves time in many ways, improvement of research
- a lot more, for e.g. the powerpoint lectures can just be online and the discussion of the

- A lot, because it will save me time eventually. Sometimes i come to school and it is just an powerpoint lecture, that could have been online or maybe in an video

Deze antwoorden werden gegeven:

- Strength: obtain information faster Weakness: someone has to update the e-learning platform
- Uh
- strength: being able to make your own schedule weakness: being dependant on internet access
- strengths: comfortable learning place Weakness: not motivated
- strengths: increase degrees weakness: fraud, students will not attend classes
- Strengths: time winning, flexibility Weaknesses: non social, reliability on internet.
- Strength: It makes information more accessible. Weakness: Not everyone can work with it as well as you would think.
- Weakness is that people might become less engaged. It is also nice to discuss certain topics with classmates and a professor and for example self-based study takes away that interaction. Furthermore, studying at a University will then become even less personal than it already is. Its strength is that it is more practical
- Students will avoid going to class.
- strengths: access, commitment Weaknesses: lack of motivation to visit the courses in the class.
- Meer informatie dan hoe het vroeger was...meer mensen plaatsen hun projecten op het net waarbij je ook kan zien hoe dat aan toe is gegaan, maar eenmaal op het net krijg ik snel de neiging om op social media's(fb, etc) te gaan
- Strengths, it is accessible everywhere but the weakness is staying up to date with information
- strengths = see previous question weakness= - less face to face communication and interaction between students and teachers. Socializing is also important for people everywhere. - excessive use of laptops or computers may have bad effect on your health. for example on eyes.
- Strengths: distant education Weakness: misinterpretation not being able to ask questions.
- Strength: explore more
- Eerder aangegeven, de challenges
- Inapplicable
- Sterkste punt is gemak. Zwakte is de afhankelijkheid van stabiele internetverbinding en gevaar van hackers.
- Students can become less cooperative if they don't get direct teaching. And maybe lazy also. On the other hand like I already said .e-learning would be great for me as a working student
- Strength: As stated many times before, saving of resources. Also the ability to reach a larger amount of people. Distance plays no role in this. Weakness: Not everyone has access to internet. Not everyone has up to date hardware to handle some applications.
- Strength: learn things in another way/method Weakness: students will likely not attend the lessons at campus
- strengths: modern learning/ own time attending/ weakness: No personal contact with professor and sharing experiences
- strengths: e-learning = self paced learning 24/7 available easy to access notes and

lectures\r\n\r\nweakness:\r\n\r\nlong waiting periods for questions to be answered or additional/more in-depth explanation (if this is a possibility)\r\n\r\nthe option to participate in actual long distance courses is not promoted by the AdeKus. The options to participate in the final exam is usually not possible because AdeK does not / did not had the needed facilities or does not / did not participate \r\n

- strengths: it's attractiveness, availability of network weakness: lack of knowledge, lack of fund for electronics
- Already mentioned
- strengths of e-larning: - cheaper -Environmentally friendly - Efficiently Weaknessess of e-learning: - not all the students have the access to the internet at home and at school - the wifi internet access on the campus of the university in Suriname is very poor. - not all the students have money
- quick and easy access to knowledge weakness is that the commitment of the students to really study can not be influenced.
- the strengths are, I think, the benefits. Weaknesses are bad network, not everyone has e-access and sometimes the sites do not work
- strenght: is fast learning with less travelling. Open up new ways of looking at problems and information. communicating will be easy with the world. "The world will be a small place". weakness: If there is no internet or power, the lessons or communication will be broken en we will mis a lot.
- -Goedkoop en overall toegankelijk -minder gereis -herhaling is ondemand beschikbaar. - examens uitvoeren en de resultaten interpreteren zal een uitdaging zijn.
- Strenghts: It saves time, it is faster, makes your life easier and studying more fun.
- Strenghts is that it is good and it is the future and weakness is that not everyone will adapt to this.
- Strengths: easy for learning Weaknesses: it can cost alot
- Easy access
- Strenghts: Saves time and is up to date and fast Weaknesses: connectivity makes it almost impossible
- The strengths are that you have a lot of information, the weaknesses are, that it can be out of dated, you can't always control the right source.
- Strength: Vast knowledge, Weakness: Maybe it can't have strict obedience from the students.
- weaknesses: more investments, takes time to understand "new" technology. strenghts: Makes information easily available because everything can be found at one point, eg. on a laptop with internet connection. Once understood it becomes easy to use and saves a lot of time, saves human energy (most of the time not a good thing, also a weakness)
- strenghts: saving time, more information, accurate information, more knowledge weaknesses: internet maybe, because not everyone has internet at home
- strenghts: it saves time i guess and you can get more information like in class searching, it is handy weakness: we have bad internet connection and not everyone can afford internet on their mobile phones, not attending school just for an lecture

Statistieken voor vraag 21 : Face-to-face education or distance education, what do you prefer and why?

Deze antwoorden werden gegeven:

- distance, because i don't like traveling
- Face to face
- face to face, because it is easier to ask questions and interact with students and teachers
- face to face
- both, both are usefull
- I've always preferred face to face education. I can better understand a topic explained by someone I see live because of the interaction. However, I expect this to change because of the rising quality of softwares such as Skype (but then it would have to be one on one and because of the class sizes I don't think this would be applicable).
- Face-to-face, I get less distracted and focus on what they are teaching me.
- Face-to-face....exactly for the reason mentioned above.
- Blend would be best
- I would prefer both, because for example some subjects may need some more information given by a teacher.
- Face to face
- A mix of both
- a combination of both. you don't always need to do everything in person. there must be a balance I think. and you must also be able to ask questions immediately to a teacher and get answers immediately. instead of waiting for reply that can take days or even weeks. subjects with lots of reading can be done by elearning and practical subjects with more calculations can be done face to face then it is easy to ask questions at once if something is not understood. E learning means once more less use of paper etc so the environment is not put under too much pressure.
- Face to face. Is more personal.
- Face to face is always better because distance education can be a bit boring and student can't loose controle fast
- Face-to-face, goed voor de socialisatie.
- Distance. No travel required
- Ik denk dat een combinatie van beiden het beste zou zijn. Dus 80% distance education en 20% face-to-face education in een gemiddelde week. Online op afstand is gemakkelijk en je verliest niets qua kennisoverdracht vergeleken met fysieke lessen van nu. Het wegvallen van reistijden betekent meer tijd die vrijkomt om elders te besteden. Face-to-face is nog steeds wel belangrijk zodat je weet wie je medestudenten, groepsleden en docenten in het echt zijn. Het zorgt er ook voor dat studenten eraan worden herinnert dat het geen spelletje is, maar een serieuze studie. Verder bereid de studie je voor op hoe het werk na je studie bij een bedrijf er aan toegaat. Daar zal je ook fysiek met collega's moeten samenwerken. Met face-to-face educatie worden deze vaardigheden ontwikkeld. Vandaar dat ik denk dat een combinatie van beide het beste resultaat gaat opleveren. Wanneer in het bedrijfsleven online op afstand werken op een dag de geaccepteerde norm is, zou distance education face-to-face volledig kunnen vervangen.
- I have to say face to face education because i have never done distance education so a dont really know the practical situation there.
- I prefer a hybrid of both. For lectures on basic theory distance education should be sufficient, but some subjects the more interactive and personal/comfortable environment that face-to-face education offers.
- Face to face. Its easier to ask questions
- I prefer combination of both.

- A combination of both. Both have their pros and cons.
Face to face learning: the lecturer is actually there to provide additional needed guidance.
Distance education: self paced, does not force on to actually go to the campus etc.
More study options/ fields to chose from.
Does not limit to one lecturer for the course. Usually consists of a team of experts, this in turn provides me with a better insight of the course.
- face to face education, I feel obliged to make time for lecture and I feel better interaction with the lecturer and other students
- Actually both, both has pros and cons. Face to face education then you are "forced" to be present during the sessions. Distance education then you can study the weblectures at the times you want, but you should be someone who can manage it all. Time management has to be very good.
- I prefer face to face education, because the wifi connection is not always optimal in Suriname. And I understand the explanation of the information face to face better and I can asked immediately questions about the information if something is unclear.
- blend/ mix not all skills can be taught by e learning
- I like both. Distance education is good if you can't come to school for a reason and face to face education is good because you can ask your questions directly to the professor
- I think both. face to face in the beginning and if goes well then distance education. If there help on uneasy questions needed that cannot be done through distance than face to face solution is needed.
- Beide. Face to face kan in sommige situatie zorgen voor een efficiëntere opname van educatie. Maar vaak een docent belasten met het herhalen van een uitleg kan makelijker opgelost worden met een opname. En het posten van online vragen gaat makkelijker omdat het minder persoonlijk is
- Face-to-face because I want interaction with my teacher and the other students as well. Some courses can be individual off course, but mostly face-to-face.
- Face-to-Face. I want interaction en de mogelijkheid om vragen te stellen.
- Both, face to face can be easier in understanding Distance, can be easy if you busy studying than any moment you can ask a question
- Both
- Distance because I work and going to school cost time and time is money
- Face-to-face education is easier. You can get answers at your questions immediately. Distance education can be more difficult. It makes communication somehow more difficult.
- Face to face, because it's easier in questioning the teacher & understanding.
- Both are equally important. Depends on the type of course. and on the difficulty level.
- Both. Face-to-face for discussion and distance for powerpoint presentations
- face-to-face because it is personally. From distance you can not ask questions directly

Statistieken voor vraag 22 : How are your lectures supported?

22.1	Powerpoint	100.00%
22.2	Flash animations	15.00%
22.3	Simulations	22.50%
22.4	Videos	72.50%

22.5	Audios	22.50%
22.6	Pdf	72.50%

Andere antwoorden:

- Literature or websites.

Statistieken voor vraag 23 : Virtual classroom can make it possible that a mass of students can be educated during the same time at different locations. What is your opinion on this?

Deze antwoorden werden gegeven:

- That would be great. But be aware of hackers
- Idk
- It could be beneficial en time efficient
- efficient!
- good idea minus point: no interaction with the student on distance
- It probably wouldn't be as interactive as a real classroom. But overall I wouldn't have any objection against it.
- I think some people will benefit of this, especially people that live far away from school or are dissabled.
- I would like to experience it, but I still have a strong preference for attending a class room in person
- It gives the option for more students to follow the course
- I agree
- Goed idee, maar ik wil altijd aanwezig zijn en niet via een pc of op een andere manier. Ik ga niet geconcentreerd kunnen luister/ de info kunnen verwerken
- Good
- it's useful and efficient but again, no face to face interaction. on long term this can have negative effects on people. they can isolate themselves from the outdoors.
- Dont like it. Less interaction with other students
- Like a said, it's always better if there is face to face because then there is interaction between the "teacher" and the student. On the onther side i don't think that virtual class rooms would be succesfull because of the distracted situation you wil get.. unless there is simmulation program
- Als onderwijs moeilijk toegankelijk is kan het wel maar nog een keer de socialisatie is zeer belangrijk voor mij.
- Great, no travel required
- Ik ben er een voorstander van. Ik denk dat er meer voordelen dan nadelen zijn.
- Sounds very interesting
- I think it's a good idea. For the many reasons/benefits I mentioned earlier.
- Thats nice to hear. Seems positive
- indeed
- A virtual class room will make things a lot easier for the students. especially when we have to wait for teacher from another country
- This is very good solution especially for hinterland or rural areas, where it is difficult or

expensive to reach

- A very good method, already in use at IGSR i guess for the MSc. in Renewable Energy Technology
- This is good, because sometimes there are no teachers to give or to teach the lessons. So students from different locations can follow the lessons during the same time from the same teacher.
- it is good that level of knowledge can be increased
- I like virtual classrooms. We sort of use this method already and it comes in very handy. Many people can access the same class at once.
- Is a good option. But when it becomes difficult in the program, the lessons will not reach many students that are not so fast.
- Effecient en effectief.maar wat er erna gebeurd is eveneens belangrijk.
- It is a great idea, but as I said what about the interaction?
- It could be good. There has to be interaction as well, but this will make it possible not to visit the school.
- I support A lot of people can't afford the travel to college, so for these people it can be an option
- Its great
- It is good, very good. But there has to be a good connectivity
- Yes. It is true.
- True. It can save peoples travel from one point to another. Even if one study isn't available in your university you can follow it from E-learning.
- Very good idea, especially if there are no specialist in your own country.
- It could work, but how will you follow the course?
- I guess this could work, if it has the ability to ask questions directly

**Statistieken voor vraag 24 : How do you communicate with your professor and classmates?
(More answers can be checked)**

24.1	E-mail	100.00%
24.2	Blackboard	37.50%
24.3	Moodle	27.50%
24.4	Dropbox	20.00%
24.5	Whatsapp	65.00%
24.6	Facebook	32.50%
24.7	Face-to-face	72.50%

Andere antwoorden:

- Office365 groups
- Bellen met de telefoon
- Calling
- Face to face, because there are more Surinamese students doing the same course.
- telephone, sms and skype

Statistieken voor vraag 25 : Do you have any observations and/or comments you want to leave regarding this topic? And if you want to receive the results for this research, you can fill in your mail address here. Thank you for your time!

Deze antwoorden werden gegeven:

- -
- No bad survey
- no
- no
- stamasha_14@hotmail.com
- Is this field mandatory?:(
- No comments.
- No I dont
- Give a free meal to everybody. a.w.Alakhramsing@hhs.nl
- kramdhiansing@gmail.com
- Succes!! :)
- No
- I think that a course should undergo an evaluation of it's curriculum and should look at subjects that could be thought online and subjects that should be given in person in classrooms. there will be a balance and you won't decrease socializing. The quality of the internet at crucial places should be checked, at students dorms, their house and university. because without good internet it is difficult to achieve elearning. In Suriname this may be an issue to look at. my email: haaf_20@hotmail.com
- Raugustuszoon@gmail.com
- Succes with the research and i would like feedback on this
- Ik hoop dat mijn antwoorden duidelijk zijn. Sommige vragen waren vaag gesteld. Zijn er onduidelijkheden mag je mij ook contacteren, kajalbhageloe@hotmail.com
- No thank you
- Succes met je enquêtes! fabianautar@hotmail.com
- Success :D Emailadress: Inardajeremi@hotmail.com
- E-learning should become an important factor in education, to eventually eliminate the need for large campuses and classrooms where masses of people travel to each day to listen to some guy with a PhD. talking for 90 minutes. joelfrijde@gmail.com
- Raoulcd93@hotmail.com
- No further comments. Email adress: rachelsaman@yahoo.com
- consuela_paloeng@hotmail.com
- email address: pooja.ramawadh@gmail.com
- maitjag@mail.com
- shalinie14@hotmail.com
- I want to receive results of this research. Emailadres: bindia10@hotmail.com
- ashwinieh@yahoo.com
- yashvini15@gmail.com
- soeksam@gmail.com
- V.madari@gmail.com

- E-learning should be implemented more!
- Good luck!
- It can be useful for Adekus for the branches like economy cause the master isn't available here. students have to travel to the Europe for these courses.
- No
- Good luck with the study!
- m.jubithana@swm.sr
- rukzanasoeltan@hotmail.com
- shalinibhugoea@gmail.com
- E-learning has to be made for familiar and the university has to get better internet connectivity if they want this to work!
- No

