Hanze University of Applied Sciences Groningen

MASTER'S THESIS REPORT

"The Impact of E-learning Tools on Internationalisation within Hanze University of Applied Sciences"

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Student name	: Seymen Berk Kaykanat
Student number	: 358930
Cohort	: 2016-2018
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Supervisor	: Mariusz Soltanifar
Assessor	: Dr. Diedrich Bakker
Co-Assessor	: Dr. Xiaoyan Xu
Number of words	: 21.776
Email	: s.b.kaykanat@st.hanze.nl

ABSTRACT

Since technology is an on-going developing process, universities endeavour to benefit from it and try to find alternative ways for internationalising their study programmes. Considering universities within the EU, the importance of internationalisation has boosted even more regarding the EU criteria for quality assurance and accreditation, and also the Bologna Process which created a standard of achieving the increase of more digitalised and technological tools in the EU higher education. Thus, it is crucial to understand firstly, what internationalisation refers to and how E-learning tools can have an impact on internationalisation. In this research, the impact of E-learning tools on the internationalisation within Hanze UAS was examined. The gap in this process was identified as the lack of liaison between the domestic (Dutch-taught) and international (English-taught) programmes which limits the internationalisation of the students from domestic programmes. In addition, the lack of the utility of digitalised and modern tools in traditional programmes was another fact which is a criterion of the Bologna Process. To collect data, a survey was distributed randomly via participants from students within Hanze UAS with the aid of the literature utilised from previous empirical studies and papers in order to investigate on the impact of E-learning tools on internationalisation.

The research is concluded that students' positive attitudes towards the features of E-learning tools indicated a positive impact on their willingness to use E-learning and their (students from domestic-Dutch-taught and international-English-taught programmes) willingness to interact with each other via E-learning in conjunction with their traditional programmes. Nonetheless, the possible barriers to E-leaning were investigated as a discouraging factor for students' willingness to use E-learning and interact with each other via E-learning tools. However, since students' attitudes towards the features of E-learning had a positive impact on their willingness to use E-learning and to interact with each other (domestic and international students) via E-learning tools, there were three recommendations given regarding 1) to avoid possible barriers in the process of the implementation, 2) to provide a digital platform and where these students can interact and share course materials and 3) training for the staff and students in regards to E-learning tools.

Keywords

Internationalisation, E-learning, traditional learning methods, modern learning methods, features of E-learning tools, possible barriers of E-learning, EU higher education, Hanze University of Applied Sciences

List of Abbreviations

VR – Virtual Reality

N/d – No Date

Std – Standard

Et al. – et alia

Subq – Sub question

H – Hypothesis

Hanze UAS – Hanze University of Applied Sciences

It is hereby stated that in the entire report, Hanze UAS refers to Hanze University of Applied Sciences.

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Chapter 1: Introduction

In the last decade, internationalisation has become an important objective for Dutch universities. The most important reason for this being the EU criteria that Dutch universities have to meet such as; quality assurance, accreditation, international collaborations and partnerships in research, and the Bologna process for the EU higher education (De Wit, 2011; Amirault and Visser, 2010). There are multiple ways to increase the internationalisation of higher education institutions such as; E-learning (De Wit, 2011; Amirault and Visser, 2010). E-learning tools provide customisation in terms of students' different demands and learning speeds, such as; flexibility, accessibility and selectable learning content which are suggested to have a positive influence on the internationalisation of higher education institutions (Smedley (2010; Schuwer and Kusters (2014). In the same studies, the use of interactive E-learning tools is suggested as a way to increase communication between domestic (domestic programmes) and international students (English-taught international programmes) and also with partner universities with the ultimate goal of increasing internationalisation at home (Smedley (2010; Schuwer and Kusters, 2014).

From an economic perspective, internationalisation can broaden students' job prospects in international markets (Stier, 2004). It can encourage students to think outside of the box and explore new facilities, for instance, interacting with students with different demographic backgrounds, dealing with cultural and language differences and an international educational career may accelerate the employment of graduates (Stier, 2004). The same study proposes that higher education institutions should firstly broaden their facilities in terms of increasing the interaction between domestic and international students which can be provided through E-learning tools to increase internationalisation at home. Specifically, it is also discussed that a digital platform where students can have access to course materials online, communicate with lecturers, watch video recordings of lectures and listen to audio recordings of lectures related to their subject and also communicate with students through E-learning tools in order to share ideas can increase internationalisation of universities at home (Mason and Rennie, 2013). Furthermore, using E-learning tools in a traditional method to increase interaction between domestic and international students is suggested as a way to increase

internationalisation at home. Broadly speaking, Koster (2018) states that one of the most significant issues preventing international students from interacting with domestic students is having different languages of instruction and studying in a programme which is constituted of predominantly international students.

Koster (2018); Mason and Rennie (2013) discusses that E-learning, in this case, provides sufficient facilities for higher education institutions to avoid the lack of liaison between international students and domestic students. By implementing E-learning tools within international and domestic study programmes, this liaison can be improved and not only within the same university but home students can interact with students at partner universities as well. (Koster, 2018; Mason and Rennie, 2013).

Moreover, it is suggested by Jauregi and Banados (2008) that video-web communication with partner universities can increase the internationalisation of higher education institutions as domestic universities are able to interact with their international counterparts which as a result increases internationalisation at home within universities (Jauregi and Banados 2008).

The present research focusses on the use of E-learning as an internationalisation tool within Hanze UAS which is situated in Groningen, the Netherlands and offers various international bachelor's and master's programmes, as well as certificate programmes, exchange courses, summer schools, and preparatory courses (Hanze website, n/d). Additionally, it has partnerships with a wide variety of universities worldwide, in countries such as; Argentina, Austria, Brazil, China, Turkey, Norway, the United Kingdom and so forth (Hanze Website, n/d). In addition, according to the Hanze website (n/d), there is a total of 28.432 students of which 8.1 % are international students. Furthermore, there are 220 lecturers and 50 professors and 54 bachelor's programmes and 14 of them are English or German-taught. Moreover, 19 master's programmes are offered by the university, 11 of which are English-taught.

The strategic aim of this research is to increase internationalisation within Hanze University of Applied Sciences to fulfil its achievements and business goals and to increase its competitiveness not only within the Netherlands but also abroad. Specifically, this is also specified in the strategic plan of Hanze UAS for 2016-2020 as increasing innovations in an international environment is the key factor of business achievements (Hanze UAS, 2015). In addition, it is stated in the strategic plan of Hanze UAS that it is planned to increase IT projects, for example, the implementation of virtual classrooms and online learning facilities (Hanze UAS, 2015).Therefore, increasing the internationalisation within Hanze UAS by broadening the variety and use of E-learning tools is the focal point of this research with the ultimate goal of increasing the profit of Hanze UAS. Based on this, the problem in the area which created an opportunity for the use of E-learning tools to increase the internationalisation within Hanze UAS is discussed under the problem statement in more detail and the objective of this research is discussed further under the research objective.

This research was initiated via a professorship by Marcel van der Poel. Thus, the present research topic was previously known and concentrates on how to implement E-learning as a tool in order to increase internationalisation within Hanze UAS. Therefore, the impact of the use of E-learning tools on internationalisation needs to be investigated. In this research, E-learning was considered as a tool in terms of contributing to the internationalisation within Hanze UAS effectively and consequently, the importance of E-learning tools is considered as an opportunity which could have a positive impact on internationalisation at home for Hanze UAS. The primary target audience of the research is considered as the management of Hanze UAS, since it has a decisive power over whether using the learning method offered is beneficial or not for the institution based on the outcome of this research. E-learning tools are to be implemented within Hanze UAS in conjunction with traditional classrooms, including all of the departments as a tool to increase internationalisation. Furthermore, the survey was conducted, regardless of the department, to study the students' interest level in E-learning tools within Hanze UAS. In this manner, increasing the use of E-learning tools can be efficient within all of the departments of Hanze UAS. Moreover, students from other universities and other higher education institutions may also benefit from this study.

1.1 Problem Statement

In this section, the main problems are discussed, taking into consideration the importance of internationalisation in higher education. Furthermore, the influence of technology on the increase of internationalisation regarding Hanze UAS, are addressed by answering the questions: ''What are the EU regulations must higher education institutions adhere to, how does the use of technology in higher education affect the universities in the Netherlands? And what are the effects of these problems on Hanze UAS?

In the 21st century, the role internationalisation plays in higher education has increased even more than in previous centuries. According to Maringe and Foskett (2012) the increasing utility of technology in these fields plays a significant role in the increase of internationalisation. Considering higher education in the EU, there are several criteria and agreements which universities have to meet, such as; the Bologna Process and the EU accreditation criteria.

Firstly, according to Gaebel (2015), the Bologna Process is based on an agreement signed by 47 countries, including the Netherlands, which is designed to increase the quality of higher education by increasing the use of digital technologies in higher education. Furthermore, it is stated that higher education institutions within the EU should adopt the newest digital technologies in learning and teaching in order to increase the quality of higher education. Secondly, regarding the EU accreditation policy, universities within EU have to meet internationalisation standards in order to achieve accreditation. According to Huang (2013), the Bologna Process and the EU accreditation policy put pressure on Dutch universities to increase the use of E-learning and the internationalisation of their curricula in order to be able to meet the EU higher education criteria.

Considering Hanze UAS as a higher education institution within EU, the Bologna Process and the EU accreditation policy demand the institution adopts newer, digitalized tools for learning and teaching in order to meet the EU higher education standards. Hanze UAS, already utilises several E-learning tools such as Blackboard, Kaltura, Mentimeter, Prowise, Questionmark, Socrative, Camtasia, and Presentations2Go (Hanze Website, n/d). However, in view of the variety of E-learning tools used by other universities and the criteria of the Bologna Process with reference

to E-learning, this variety can still be improved as a way to satisfy students' different demands.

In the studies conducted by Kumar, Ravi and Srivatsa, (2011); Sursock, (2016) it is discussed that the Bologna Process and EU accreditation policy have a significant impact on internationalisation and the use of E-learning within EU higher education institutions. As a result, several universities in the Netherlands such as; Inholland University of Applied Sciences, Radboud University, University of Leiden, University of Amsterdam and the University of Groningen, enlarged their international study programmes and internationalisation activities by combining traditional method with E-learning tools (Inholland Website, n/d; Radboud University Website, n/d; University of Groningen Website, n/d; University of Leiden Website, n/d; Huang, 2013).

Within Europe, the Netherlands offers the largest variety of international study programmes and courses with 1,500 international programmes and courses (Hanze Website, n/d). Moreover, the Netherlands is known for its high quality of education delivered using the latest, most innovative technologies in higher education and research facilities for students which consequently increase the competition between Dutch universities. This, in relation to the use of E-learning and increasing internationalisation activities has a negative impact on Hanze UAS. More specifically, the increasing competition between Dutch universities boosts the standards in higher education even more so in the Netherlands (Huang, 2013).

Moreover, Bates (2005) states that students are not a homogenous group in higher education. Therefore, their demands differ depending on their demographic backgrounds. However, in the same study, it is discussed that traditional education tools cannot be customised to suit students' learning styles, learning speeds, educational backgrounds, demographics and learning material preferences which creates challenges within universities in which from a wide variety of demographic backgrounds.

Additionally, Schuwer and Kusters (2014) affirm that the lack of customisation of education tools causes problems for international students when studying in an international environment, since students have different educational backgrounds, learning tool preferences and learning styles which all link to their country of origin.

Furthermore, according to the study conducted by Koster (2018) language of instruction has a connecting effect on domestic and international students. The same study also studied several Dutch universities with the largest international student population such as the University of Groningen, Hanze UAS, University of Amsterdam and Utrecht University in order to find out the strength of the liaison between domestic and international students. Specifically, it is revealed that domestic students studying in Dutch-taught programmes cannot interact with international students in English-taught programmes easily. The same study demonstrates that international students are mostly put together in an international environment where there are only international students whereas, Dutch students studying in Dutch-taught programmes are surrounded by only Dutch/Dutch-speaking students which cuts off the interaction between domestic and international students and as a result, this limits the internationalisation of the domestic programmes.

Considering this, the E-learning tools used by Hanze UAS are not fully utilised to increase internationalisation. Thus, the liaison between domestic and international students within Hanze UAS is the gap in the internationalisation process within Hanze UAS. More specifically, the E-learning tools utilised by Hanze UAS are not used sufficiently to encourage domestic students from Dutch-taught courses to interact with international students which consequently decreases the internationalisation of domestic students who are following a Dutch-taught programme. Figure 1 below indicates the lack of interaction between domestic programmes (Dutch-taught) and international programmes (English-taught) within Hanze UAS.

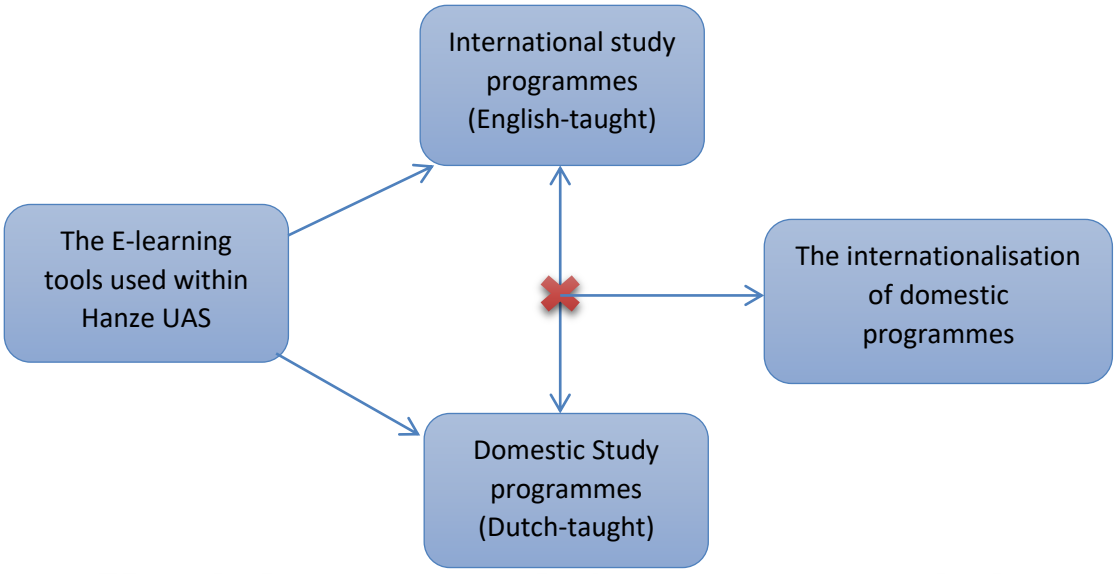

Figure 1. The lack of liaison between domestic and international programmes

Based on the utility of E-learning tools, it is claimed that E-learning tools may bring simplicities in terms of studying and new possibilities to increase the internationalisation of higher education institutions. However, this may cause a lack of motivation for students since implementing E-learning tools in traditional programmes, means that students can make use of these tools whenever and wherever required. Arguably, this may increase tardiness (Mihhailova, 2005; Artino, 2008; Keller, 2008). Moreover, the lack of communication between lecturers and students and technical problems that may occur during the use of E-learning tools are also discussed as possible barriers to the use of E-learning (Baruque and Brazil, 2014). Considering these possible barriers of E-learning tools, the students at Hanze UAS may also be negatively affected after the implementation of E-learning tools in traditional programmes as they will be able to make use of the E-learning tools regardless of where they are.

1.2 Research Objective

The aim of this research and the importance of the topic are presented and discussed in this section.

E-learning is considered as an effective tool for higher education institutions in an educational context for business expansion in international markets (Susman, 2007; Egron-Polack and Hudson, 2014; Wächter, 2004). The focus of this research is internationalisation opportunities of E-learning for Hanze UAS. The research is based on the customisable features of E-learning tools which enable students to tailor E-learning tools to suit their learning preferences and learning speeds. Since students have different demands from learning tools regarding their demographics, E-learning tools provide customisable features which offer flexibility and accessibility of digitalised tools and also selectable learning content (textual, virtual, audio, graphical) that are used in combination with traditional programmes (Schuwer and Kusters, 2014; Smedley, 2010). The aim of this research is thus, to study the ways of implementing E-learning tools in traditional programmes to increase internationalisation within Hanze UAS.

The importance of the use of E-learning tools refers to the customizable features such as; flexibility, accessibility and selectable learning content (Arabasz and Bake, 2003; Madar and Willis, 2014; Schuwer and Kusters, 2014). More specifically, E-learning tools can be used at any time, regardless of place to support traditional programmes. Besides, since E-learning tools can be customised to meet students' demands, students might become more willing to complete courses which can act as good advertising of Hanze UAS abroad and this may increase the intake of international students.

Moreover, as discussed by (Schuwer and Kusters, 2014) the interaction between domestic and international students can be developed by connecting them via E-learning tools and also the home students can interact with students at partner universities which as a result, can increase internationalisation at home within Hanze UAS. Birzina et. al. (2009) discussed the use of E-learning tools in a way to encourage students from domestic programmes to work collaboratively with students from international programmes. Specifically, a common platform where students can

share their notes, opinions and documents of lectures is suggested to be an effective way of increasing the interaction between these programmes with different languages of instruction.

Although in this research, the advantages of E-learning as an internationalisation tool are studied for the most part, numerous possible barriers such as; a lack of motivation, lack of communication and technical problems which may occur during the use of E-learning tools, are also discussed in terms of avoiding them and taking actions beforehand when the implementation of E-learning tools takes place within Hanze UAS.

In conclusion, the effective implementation of E-learning tools has a strategic importance for Hanze UAS. E-learning as an increasing trend in the EU higher education has caused the criteria of the EU accreditation and the Bologna Process to become more demanding in terms of the use of E-learning and internationalisation. Therefore, the use of E-learning can increase internationalisation at home, the internationalisation of domestic students from Dutch-taught courses, partnerships, and co-operations with foreign higher education institutions which can also increase the competitiveness and profit of Hanze UAS. Internationalisation does not only refer to partnerships and student mobility but also to internationalisation at home namely, the teaching and learning processes which include all international students from all of the faculties and improving the interaction between domestic and international students which is one of the crucial aspects of increasing internationalisation of higher education institutions at home. Additionally, in order to meet the EU higher education criteria regarding accreditation and internationalisation standards and the strategic plan made by Hanze UAS for 2016-2020, increasing the use of E-learning tools has a core aspect to be a growing and dominating higher education institution in the international markets (Hanze UAS, 2015). In this case, E-learning is to be studied as an alternative internationalisation tool within Hanze UAS.

1.3 Research Questions

In this section, considering the aim of this research and the problem statement, first the main research question and then the sub-questions of this research are presented as follows:

Q1) How can the use of E-learning tools impact the increase of the internationalisation within Hanze UAS effectively?

In the following section, the sub-questions are conducted and they are identified in detail.

1.3.1 Sub-questions

This research includes three sub-questions which are divided into two parts, namely 'a' and 'b'. The reason for this refers to the two dependent variables to be studied which are students' willingness to use E-learning and their (students from domestic and international programmes) willingness to interact with each other via E-learning. In this section, these sub-questions and the purpose of these questions are discussed.

Subq1a: How do the features of E-learning tools impact the willingness of students to use E-learning within Hanze UAS?

Sub-question 1a aims to investigate students' attitudes towards the features of E-learning tools and how their attitudes affect their willingness to use E-learning. Thus, what do students within Hanze UAS think about the features of E-learning tools and how this impacts their willingness to use E-learning within Hanze UAS in combination with their traditional courses are aimed to be investigated.

Subq1b: How do the features of E-learning tools impact domestic and international students' willingness to interact with each other via E-learning tools within Hanze UAS?

Sub-question 1b studies the impact of students' attitudes towards the features of E-learning tools but on this occasion towards their (domestic and international students) willingness to interact with each other via E-learning in combination with their traditional study programmes. This is also stated in the problem statement as one of the most significant issues as the interaction between Dutch-taught (domestic programmes) and English-taught (international programmes) is weak. Therefore, this question aims to investigate the impact of the features of E-learning tools and these students' from both international and domestic programmes willingness to interact with each other via E-learning.

Subq2a: What is the impact of the possible barriers to E-learning on students' willingness to use E-learning within Hanze UAS?

Sub-question 2a concentrates on the possible barriers that can be discouraging to students' willingness to use E-learning within Hanze. Therefore, the aim of this question is to investigate students' attitudes towards the possible barriers of E-learning and if this affects their willingness to use E-learning. This question has an importance as knowing the impact of possible barriers can allow to plan what pre-cautions should be taken during the implementation of E-learning tools within Hanze UAS.

Sub2b: What is the impact of the possible barriers to E-learning on domestic and international students' willingness to interact with each other via E-learning tools within Hanze UAS?

This question is a continuation of sub-question 2a, thus, after investigating the impact of students' attitudes towards the possible barriers of E-learning on their willingness to utilise E-learning, their willingness to interact with each other (domestic and international programmes) is aimed to be investigated.

Subq3a: Is there a significant difference between the students' demographics regarding their willingness to use E-learning within Hanze UAS?

Since students may have different demands regarding their demographic backgrounds, this question focusses on the difference between students willingness to use E-learning regarding their different demographic backgrounds. It is significant

to investigate this since E-learning enables students to choose learning content the way they demand and they can customise the E-learning tools to suit their learning speeds and learning types as well.

Subq3b: Is there a significant difference between students' demographic factors regarding their willingness to interact with each other via E-learning tools within Hanze UAS?

This question aims to study if there is a difference between students' willingness to interact with each other via E-learning tools regarding their different demographic backgrounds. The importance of this question is to explore whether students who come from different nations (i.e. EU, Non-EU), languages of instruction and their gender and age range create a difference in regards to their willingness to interact with each other (international and domestic programmes).

Chapter 2: Literature Review

In this section, internationalisation and E-learning are discussed. Most notably, what factors affect internationalisation, what are the benefits of E-learning tools for students, and what is the impact of E-learning tools on internationalisation? Finally, the conceptual model is presented in terms of the literature review.

2.1 Internationalisation

In this section, several papers that include various definitions of internationalisation are discussed in order to study the meaning of internationalisation and to be able to understand the context in an efficient manner. Table 1 below gives an overview of papers used in internationalisation section.

Table 1. Overview of papers used in the Internationalisation section

Authors	Factors	Context
Susman, (2007); Knight (1994); Knight and De Wit, (1997); Egron-Polack and Hudson (2014)	Activities of firms and higher education institutions in international markets such as: global alliances, co-operations and the mobility of international staff in the institution.	Factors of internationalisation
Goddard, (2006); Huisman and van der Wende (2005)	Competitiveness of higher education institutions in foreign markets	Factors of internationalisation
Toval et. al., (2012); Rostan (2011); Altbach and Knight (2007); Schluep, Ravasio and Schär 2003	The use of languages and different cultural backgrounds of students to increase internationalisation of higher education institutions	Factors of internationalisation
Altbach and Knight (2007)	Differences between globalisation and internationalisation	Globalisation versus internationalisation
Teekens (2004)	The lack of knowledge about internationalisation of higher educations	Lack of knowledge about the ways of internationalisation of education is the key aspect of the diversity of internationalisation possibilities

Fırstly, internationalisation is considered as a process which allows various organisations such as firms and higher education institutions to increase their benefits and to be active in foreign markets (Susman, (2007). According to Knight (1994), internationalisation can be defined as a method of activities including

intercultural and international aspects for institutions. Specifically, the entire process including global alliances, co-operations, and international staff in the institution can be defined as the internationalisation of institutions.

In an educational context, internationalisation means a significant process for higher education institutions to increase their competitiveness by getting involved in international markets (Goddard, 2006). One of the significant factors internationalisation of education contains can be described as the availability of learning content in different languages. Mainly, the content can be understood world-wide. Another factor is that the content is country-independent, namely regulations and policies on internationalisation of higher education institutions (Schluep, Ravasio and Schär 2003). Another study describes internationalisation as a context of adopting various languages and cultures of students to the learning environment universally (Toval et. al., 2012). Regarding these definitions from different authors, internationalisation can be confused with globalization. To make it clear, the differences between globalization and internationalisation are discussed below.

Considering the differences between globalization and internationalisation, Altbach and Knight (2007) defined internationalisation as a process that focuses on policies and practices that take part in an international academic context, whereas globalization contains economic, political and academic trends in today's world. As internationalisation is a process of getting involved in international markets, the role language plays in this process should also be considered. According to Rostan (2011), English is considered as "Lingua Franca" of the 21st century. Regarding the study, higher education institutions involved in international markets pay attention to their educators and students English language skills. Another study also includes the importance of the English language as a key factor of developing an internationalized learning method. Specifically, it is suggested that implementing English-taught courses will increase the internationalisation of higher education institutions since English is spoken worldwide and is considered as a universal language (Altbach and Knight, 2007).

Another study which covers the definition of internationalisation refers to a process of the combination of international and intercultural aspects in education, research and service facilities of institutions (Knight and De Wit, 1997).

Furthermore, the study conducted by Egron-Polack and Hudson (2014) demonstrates that the importance of internationalisation still has an on-going increase in higher education. Thus, internationalisation is a key factor of a positive change in higher education. This is discussed in the study as the requirements of international policies, curriculum, and the number of international students and exchange programmes that higher education institutions have to meet. Furthermore, Huisman and van der Wende (2005) addressed another factor which refers to increasing expectations about rankings and quality of higher education institutions since competitiveness between higher education institutions increases day by day.

Teekens (2004) stated that the definition of the internationalisation of higher education is not clear. It is discussed in the paper that the meaning of Internationalisation may vary in different contexts. Although the definition of internationalisation differs, in this research, the following definition is used. "Internationalisation is a process of the multiple activities, programs and services that fall within international studies, international educational exchange, and technical cooperation" (Arum and van de Water, 1992, p. 202). Furthermore, it is discussed in the next sections that the main purpose of internationalisation focuses on numerous dimensions in order to deal with accreditation, the quality of higher education, partnerships and mobility and most importantly, student mobility.

2.1.1 Factors affecting internationalisation

In this section, the factors affecting internationalisation are discussed.

Since the importance of internationalisation in higher education institutions increases day by day considering accreditation, partnerships, intake of international students and lecturers etc. internationalisation started to be practised by higher education institutions even more (Kehm and Teichler, 2007). In this section, numerous papers from different authors will be discussed. Table 2 illustrates the overview of the factors affecting internationalisation that are used in this section,

Table 2. Overview of the papers used in the Factors affecting internationalisation

Authors	Factors	Context
Kehm and Teichler, (2007); Altbach and Knight, (2007).	Internationalisation criteria of curriculum	Factors affecting internationalisation
Wächter (2004)	On-going change in the demand of lifelong learning, the increase of the importance of internationalisation, impact of E-learning tools on internationalisation of higher education institutions	Factors affecting internationalisation
Van Damme (2001)	Quality of higher education institutions	Factors affecting internationalisation
Fielden (2008); Wachter (2004)	Student mobility and international student and staff recruitment, strategic allliances co-operations and partnerships with external higher education institutions	Factors affecting internationalisation
Altbach and Knight (2007).	To learn different cultures, languages, and dynamic decision making in a cross-cultural environment	Factors affecting internationalisation

To start with, Wächter (2004) studied multiple factors that may affect internationalisation such as; the on-going change in the demand of lifelong learning, the increase of countries seeking to be more internationalized, partnerships and alliances with foreign companies, and the change of global financing policies in

education which caused a decrease of financial support in education provided by governments and in turn caused an increase of tuition fees in higher education institutions. Therefore, in the study, the use of E-learning tools is indicated as one of the factors that may likely create an impact on internationalisation since the change of curriculum to be more internationalized but also the increase of tuition fees as a result of that created a new opportunity for courses provided via E-learning tools (Wächter, 2004).

Furthermore, Van Damme (2001) stated that increasing the quality of higher education institutions can be possible by the increase of internationalisation of higher education. Specifically, if the increase of internationalisation in higher education can be managed, this will also affect the increase of the quality of higher education institutions in international markets. In addition, according to Fielden, (2008) student mobility and international student and staff recruitment are considered as a factor of internationalisation that affects strategic alliances, co-operations, and partnerships with external higher education institutions. Furthermore, international curriculum in higher education institutions can create opportunities for students to learn different cultures, languages, and dynamic decision making in a cross-cultural environment (Altbach and Knight, 2007).

According to Kehm and Teichler (2007), the Bologna process is considered as one of the crucial factors that affects the importance of internationalisation in higher education institutions. The study indicates that, because of the Bologna process and knowledge transfer with other countries, higher education institutions need to modernise their curriculum and meet the internationalisation criteria. Moreover, it is discussed that an international programme may increase students' employability since they will be experienced in a multi-national environment, learning methods, multi-cultural context, and language requirements that are necessary in international markets (Kehm and Teichler, 2007).

2.2 E-learning

In this section, E-learning is introduced and its role within the internationalisation is discussed.

To start with, technological changes started to play a significant role in implementing a business strategy and this affected the demand of internationalisation with new goals to higher education institutions, namely, competitiveness and the involvement in the international markets (Susman, 2007). Therefore, the change of the use of digitalized tools in Internationalisation has affected the requirements and goals of higher education institutions as well. In another study, it is suggested universities to increase their internationalisation in terms of being competitive and meeting the requirements (Egron-Polack and Hudson, 2014). Furthermore, E-learning is studied as an impact on Internationalisation within higher education institutions to meet the internationalisation requirements such as; the Bologna process (Wächter, 2004). In order to see the impact of E-learning on Internationalisation of higher education institutions, firstly the definition of E-learning should be studied. To start with, E-learning can be defined in multiple ways. In this section the definition of E-learning from various authors is given. Table 3 contains an overview of papers used in this section.

Table 3. Overview of the papers used in the E-learning section

Authors	Factors	Context
Susman, (2007); Egron-Polack and Hudson, (2014); Wächter, (2004)	The role of E-learning on internationalisation namely, the requirements that higher education institutions have to meet	The use of E-learning tools in order to meet the requirements of internationalisation of firms and higher education institutions
Cantoni, Cellario and Porta, (2004); Kelly and Bauer, (2004); Arabasz and Bake (2003); Madar and Willis (2014)	The main differences between traditional and E-learning method, benefits of E-learning tools	Physical attendance in traditional method vs. online accessibility without physical attendance via E-learning tools and other benefits
Arabasz and Bake, (2003); Madar and Willis (2014)	Types of modern learning materials and their role in internationalisation of higher education institutions	Video and audio recordings of lectures, virtual classroom are considered as the types of modern learning materials and their benefits are related to the increase of internationalisation of universities
Engelbrecht (2003); Cantoni, Cellario and Porta, (2004); Kelly and Bauer, (2004)	The increase of the benefits of E-learning tools considering the students' individualized demands – Customization	Customization of E-learning tools depending the capability and demands.
Hanze Website, (n/d)	E-learning tools provided by Hanze UAS	The E-learning tools used at Hanze.

According to Arabasz and Bake (2003), E-learning refers to a variety of modern learning method including virtual, audio and virtual reality materials that takes place mostly online with the courses mainly followed online via digitalised tools such as online platform, video and audio recordings of lectures, virtual classroom etc. Therefore, face-to-face meetings between students and lecturers are not required. In other words, it is a digitalised and modernised version of traditional learning without the requirement of physical presence which is suggested by Arabasz and Bake (2003) as an opportunity to increase internationalisation at home regardless of place and time limitations.

Madar and Willis (2014) state E-learning is a part of information technology, most importantly the internet, mobile, and computer-based systems and tools used in higher education namely, virtual materials via school platforms. Thus, E-learning is a digitalised version of traditional education where learners are able to attend study programs on an online platform anytime, anywhere, and without the requirement of going to classrooms which is discussed by Madar and Willis (2014) as the possibility of increasing internationalisation within higher education institutions.

Other studies demonstrate that E-learning is an educational tool that changes the traditional educational approach where teachers have the main role (Cantoni, Cellario & Porta, 2004; Kelly & Bauer, 2004), Thus, E-learning shifts from a lecturer to a student-centred approach. Additionally, E-learning has been an effective educational method for higher educational institutions, companies developing software, and other business-related organizations that consider benefits to; cost, flexibility, accessibility, consistency, and convenience (Cantoni, Cellario & Porta, 2004; Kelly & Bauer, 2004). However the benefits of E-learning were covered in more detail under the section of the same name. According to Engelbrecht (2003) the benefits of E-learning tools can also be increased by using a customised content based on students' demands.

Considering the E-learning tools provided by Hanze University of Applied Sciences, there are multiple E-learning tools such as; Blackboard, Kaltura, Mentimeter, Prowise, Questionmark, Socrative, Camtasia, and Presentations2Go. Blackboard is a portal which acts as the learning management system of Hanze UAS. Kaltura is an application which provides the possibility of utilising and downloading media files and also being able to make use of them on Blackboard. Mentimeter is another application which is used for a more interactive environment for courses. Prowise is

an application to arrange the location of the classrooms and other similar activities. Questionmark is a digital system for the exams of Hanze UAS. Socrative is an application to gives lecturers the possibility to make a quiz in order to see if they are able to start giving lecturers. Camtasia is a helping tool of Kaltura which is used to record videos and edit them. Furthermore, Presentations2Go is a tool which gives students possibility to watch lecturers later if the required materials are set in the classroom (Hanze Website, n/d). All of these E-learning tools discussed above constitute a blended-learning method.

2.2.1 Benefits of E-learning tools

As discussed earlier in the literature review, E-learning consists of new possibilities and easiness to educational methods that affect two groups namely, students and lecturers. In this section, the advantages E-learning tools bring in a higher educational concept will be discussed considering lecturers and students separately, regardless of their demographic factors. Students' demographic factors are discussed as an influencing factor of the interest level of students in E-learning in a separate section. There are several papers from different authors about the benefits of E-learning tools in higher education institutions in terms of increasing internationalisation. Afterwards, the possible barriers of the use of E-learning are also discussed. Table 4 gives an overview of the papers investigated about the benefits of E-learning tools for students.

Table 4. Overview of the papers used in the Benefits of E-learning tools for students section

Authors	Benefits	Context
Smedley (2010); Gilbert, Morton and Rowley (2007); Kumar, Ravi and Srivatsa (2011); Schuwer and Kusters (2014)	Customizability of E-learning tools: Accessibility, flexibility and selectable learning content	Benefits of E-learning for students
Lin and Yin (1997); Smedley (2010)	Language barriers for students and the link between the easiness of communication via E-learning tools	Benefits of E-learning for students.
De Jong et. al. (2012); Wagner et. al. (2008); Cantoni, Cellario and Porta (2004)	Interaction problems in traditional classrooms and E-learning as an interactive tool	Benefits of E-learning for students

2.2.2 Benefits of E-learning tools for students

In this section, the benefits E-learning tools provide to students are discussed.

According to Smedley (2010), E-learning brings flexibility to education. Specifically, students are able to choose the location and time which suits them best (Gilbert, Morton and Rowley, 2007). Therefore, students can use E-learning tools to revise their courses and interact with fellow students whenever needed. Thus, courses provided via E-learning tools open the doors for more international students and helps the process of internationalisation (Smedley, 2010). Additionally, the study of Smedley (2010) includes the accessibility and flexibility of E-learning tools regardless of the place. Since E-learning tools are web-based namely, the digitalised version of traditional learning method, it is easier for international students to access the tools. The tools can be accessed whenever required as everything is online in courses provided via E-learning tools. Moreover, it is suggested in the same study that E-learning tools build up a good relationship between lecturers and students. Numerous examples are given in the study such as; reducing the fear of talking to lecturers, language barriers and increasing the interaction between students.

Firstly, Smedley (2010) claimed that by using E-learning tools in higher education, students will feel more comfortable with communicating with lecturers. Based on the survey conducted by Lin and Yin (1997), students mostly suffer from language difficulties when studying in a second language.

Secondly, according to De Jong et al. (2012); Walker (2009) mainly the interaction problems in the classroom occur due to the lack of classroom management and understanding the difference in the capability of students regarding their nationalities and cultural backgrounds. Thus, the studies conducted by Smedley (2010); Wagner et al. (2008) suggest the utilisation of E-learning tools in order to increase the interaction level between lecturers and students which can be done regardless of the place and one-by-one with lecturers based on students' learning capacities.

According to Cantoni, Cellario and Porta (2004), E-learning courses can be followed from anywhere and they can be easily updated as it is easy to update the courses by uploading the materials to the system. Moreover, E-learning provides education with a combination of video, audio, games and quizzes etc. which make the courses more

interactive and easier to follow, compared with traditional courses. It is discussed in the study that combining these materials in a course increases the attention of students. Additionally, E-learning is considered as a tool in higher education which provides instantaneous feedback which can be supplied via chat rooms, e-mail, discussion boards etc. (Cantoni, Cellario and Porta, 2004).

Moreover, it is discussed by Schuwer and Kusters (2014) that students' demands may differ regarding their demographic factors. Thus, their learning speed and demands might be different. Regarding this, the customisable features of E-learning tools such as; flexibility, accessibility and selectable learning content are discussed as an efficient way to approach learners regarding their needs and expectations in higher education. Furthermore, the flexibility is defined as the ability to make use of E-learning tools whenever needed and the accessibility is introduced as the possibility of having an access to E-learning tools regardless of the place. Besides, selectable learning content refers to the possibility to choose the learning content (i.e textual, virtual, audio, graphical etc.) In the same study, it is concluded that E-learning tools can increase willingness of students with different cultural background to complete courses.

Considering the study conducted by Kumar, Ravi and Srivatsa (2011), barriers to participation in a full-time traditional international programme were defined such as; "time barrier, norm barrier, analog-digital barrier, and space barrier" (Kumar, Ravi and Srivatsa, 2011, p. 2). Time barrier refers to the flexibility E-learning brings to education, norm barrier includes the individualised learning possibility which is designed based on the demand and abilities of students, analog-digital barrier covers the variability of virtual materials in learning provided via E-learning, and space barrier contains the accessibility of the E-learning materials. (Kumar, Ravi and Srivatsa, 2011).

2.2.3 Demographic factors impacting the use of E-learning tools

In this section of the literature review, the demographic factors affecting the interest level of E-learning tools are discussed. Table 5 first gives an overview of this section.

Table 5. Overview of the papers used in the Demographic factors section

Factors	Authors	Context
Gender	Schodt (2002); Ong and Lai (2006); Lu and Chiou (2010); Cuadrado-García, Ruiz-Molina and Montoro-Pons (2010); Chu (2010); Hung et al. (2010); Van Seters et al. (2012)	The impact of gender on the interest level of E-learning tools
Age	Chung et al. (2010); Jung et al. (2010); Gilbert (1996); Mungania (2003)	The impact of age on the interest level of E-learning tools
Nationality	Mungania (2003); Eklund, Kay and Lynch (2003); Van Seters et al. (2012); Huang (2013)	The impact of nationality on the interest level of E-learning tools
Language of instruction	Kukulska-Hulmeet et al. (2009):Koster (2018)	The impact of language of instruction on internationalisation and the impact of the use of E-learning

2.2.3.1 Gender

According to Schodt (2002), there is a relationship between gender and the interest level in E-learning tools. It is claimed in the study that male students are more interested in traditional methods of higher education whereas female students showed more interest when a moderate amount of technology was used during lectures. Unlike these findings, the study conducted by Ong and Lai (2006) revealed that the interest level in E-learning tools, the use of computers, and the accessibility of virtual materials are higher for male students than female students.

Furthermore, the study conducted by Lu and Chiou (2010) indicated that male students are more satisfied and valued E-learning than female students and the reasoning for this is demonstrated in the same study as men in the society work more than women. Thus, it is concluded that they are more interested in the flexibility and accessibility of E-learning than women. However, there are multiple studies denying the effect of gender on the interest level towards E-learning or students' grades (Cuadrado-García, Ruiz-Molina and Montoro-Pons, 2010; Hung et al. 2010; Chu, 2010; Van Seters et al. (2012).

2.2.3.2 Age

According to the study of Chung et al. (2010) age plays a significant role in the interest level of the acceptance of technology. However, a further study did not conclude the impact of age on the interest level on E-learning tools. Furthermore, according to Jung et al. (2010), older students show less interest in the utilization of technological tools in education than younger students. It is observed in their study that age affects the interest level of using computer and internet-based tools negatively. In other words, the older the student is, the more difficult it gets to be motivated for Internet-based study courses.

In addition, Gilbert (1996) stated that younger people tend to have faster perceptual learning than older people. Furthermore, Mungania (2003) found out that learners using E-learning tools who are middle-aged have the quickest learning approach via an outcome of 80% E-learning tool users who are younger than 45 years old in the research.

2.2.3.3 Nationality

Considering nationality, Mungania (2003) stated that E-learning tools are mostly used by EU countries. Another study defined this reason as a possibility of the accessibility of technology, education facilities, government support, and policies in EU countries might be the reason why E-learning tools are mostly used by Europeans (Eklund, Kay and Lynch, 2003). On the other hand, it is discussed by Huang (2013) that students in EU countries mostly prefer to study via textual learning material and Non-EU students are investigated to be more interested in virtual learning materials. To conclude, it is suggested that the use of E-learning tools can be customized as the selectable learning content enables students to choose the content and material they are eager to study depending on their learning speed and learning tyoe.

According to the study conducted by Van Seters et al. (2012), students have different capability of learning and learning material preference. Moreover, it is investigated in the study that E-learning tools are efficient to manage the different demands from students in a traditional programme.

2.2.3.4 Language of instruction

One of the main factors affecting internationalisation in higher education is language of instruction. According to Koster (2018), language of instruction is a significant tool to increase the interaction between domestic and international students. However, in the same study it is stated that due to the language of instruction difference between domestic and international students this is difficult. Considering this, it is studied by Kukulska-Hulmeet et al. (2009) that the use of E-learning tools can help domestic and international students study in the same environment with a shared language of instruction. Specifically, it is suggested in the study that some of the courses for domestic students can be provided via E-learning tools in English which can be used to connect domestic and international students.

2.3 The impact of E-learning tools on internationalisation

In this section, several papers about the impact of E-learning tools on internationalisation of higher education institutions are discussed. This report considers two groups that get affected by the impact of E-learning tools, namely, students and lecturers. Thus, the literature review contains papers that are focused on both groups. However, the main focus of the research is to find out the interest level of students in E-learning tools to increase internationalisation. Therefore, lecturers were used as a supportive factor to study the interest level of students. Below Table 6 contains an overview of the papers studied in this section.

Table 6. Overview of the papers used in the impact of E-learning tools on internationalisation section

Authors	Factor	Context
Amirault and Visser (2010)	Five factors identified in the internationalisation process of higher education institutions: features of E-learning, students' willingness to use E-learning, the impact of students' demographics on their willingness to use E-learning, possible barriers to E-learning and students' willingness to interact with each other via E-learning	How these five factors of E-learning affect internationalisation of higher education institutions
Zhu, (2012); Nurbiha, Zaidatun, and Jamalludin, (2012); Lee, and Lim, (2012); Kabilan, Adlina, and Embi, (2011); Bartz	Co-operation between students and lecturers, the sustainability and learner engagement, quality measurement of higher	Factors of E-learning tools in higher education institutions to increase internationalisation

(2010); Aguayo, Cochrane and Narayan (2017); Cook and Santos (2016)	education	
Axia and Wang, (2011); Kukulska-Hulme, Sharples, Milrad, Arnedillo-Sanchez, and Vavoula, (2009); Parsons, (2012)	Sharing and controlling the existing data online	The facilities of E-learning tools
Aguayo, (2016); Knight, Gunawardena, and Aydin, (2009); Pachler et al., (2010)	Cultural differences and different capabilities of learning and benefits of E-learning tools for that	The facilities of E-learning tools
Baruque and Brazil, (2014); Mihhailova, (2005); Artino, 2008; Keller, (2008)	Motivational issues and concerns about E-learning tools	Main issues that can be faced in the implementation of E-learning tools
McKenny et al. (2015); Kali et al. (2011)	The role of lecturers in the implementation process of E-learning tools	Utilization of E-learning tools
Sursock (2016)	Lack of knowledge about the link between E-learning tools and internationalisation of higher education institutions	Understanding of E-learning as a tool to increase internationalisation.

The study of Amirault and Visser (2010) explained five important factors based on E-learning which affected internationalisation in higher educational institutions. In the same study, the role of E-learning in internationalisation includes following five factors; features of E-learning tools, students' willingness to use E-learning, the impact of student demographics on their willingness to use E-learning tools, possible barriers of the use of E-learning and domestic and international students' willingness

to interact with each other via E-learning. These factors were based on how students demographic impact their willingness to use E-learning considering their individual demands and learning speed, the possible barriers that may occur during the use of E-learning and how to avoid them and how focusing on these factors contribute to increase internationalisation in higher education. The results demonstrated that these indicators play an important role in delivering E-learning contents to traditional education in order to increase the liaison between domestic and international students to increase internationalisation within universities.

Furthermore, if applied with discipline, these five factors will build effective E-learning tools (Amirault and Visser, 2010). It is suggested in the study that lecturers should have the ability to understand cultural differences, linguistic backgrounds, effective communication, and writing skills in order to increase internationalisation via E-learning tools. Therefore, if these factors conducted in the study are understood clearly, difficulties and barriers of the implementation of E-learning tools can be reduced as the role of lecturers is crucial in order to make courses via E-learning tools more attractive to students.

It is also suggested in several studies that blended learning via E-learning tools brings new opportunities and advantages to higher education such as; collaboration, communication skills, the improvement of academic performance, quality assurance and so forth (Zhu, 2012; Nurbiha, Zaidatun, and Jamalludin, 2012; Lee, and Lim, 2012; Kabilan, Adlina, and Embi, 2011). The impact of E-learning tools on internationalisation was also studied by Baruque and Brazil, 2014; Mihhailova, 2005; Artino, 2008; Keller, 2008 which includes the effects of E-learning tools and how E-learning tools impact learners depending on the content and some concerns about lack of motivation, lack of communication between lecturers and students and technical problems in order for students to be able to complete the course when students are able to follow virtual classes worldwide.

Additionally, Bartz (2010) studied that the influence of learners is very effective in the process of applying the E-learning project development. Furthermore, it was discussed that applying E-learning tools helps the engagement of the learners and, in turn, the achievements of the institutions increase. It was added that the factors of the increase in the institutions are time, cost, and scope. Moreover, sustainability and learner engagement in order to provide quality measurement of higher education

should be considered by project managers in terms of involving learners in every step of the international project management process. This can be summarised as the sustainability and effectiveness of E-learning tools should always be measured regularly and it should be applied properly in order to keep students motivated. Considering the implementation of E-learning tools in order to increase internationalisation, involvement of learners will increase learners' motivation since they will follow the courses even from different countries and thus, co-operation between students and lecturers are important to maintain effective courses via E-learning tools (Bartz, 2010).

2.4 Virtual Reality, an alternative E-learning tool

In this section, virtual reality (VR) tools and their use in education to increase internationalisation of higher education will be discussed. Table 7 below gives an overview of the papers used for this section.

Table 7. Overview of the papers used in the Virtual Reality section

Authors	Content	Key Findings
Choi, SangSu, Jung, and Do Noh, (2015).	Experiment of physical environments including voice, realistic images and simulations via tools	VR refers to virtual environment where people can have a realistic experience via VR tools.
Kolo (2017)	Educational aspect of Virtual Reality	VR tools can be used to increase internationalisation of higher education institutions

As an overall definition, virtual reality refers to a computer-based technology which allows people to experience physical environments including voice, realistic images

and simulations via tools. These tools provide people with a realistic environment where people can look around and experience artificial world created by VR tools (Choi, SangSu, Jung, and Do Noh, 2015).

This research is focused on E-learning tools and virtual reality tools are thus, not the main focus of the study. However, in order to gain knowledge about VR and how it can be used as an E-learning tool, a brief study was conducted. Therefore, even though Virtual Reality might increase internationalisation, it is not the focus of the research**.**

In an educational context, Kolo (2017) stated that Virtual Reality is mostly known for an entertaining purpose, namely, gaming or virtual media. However, VR is considered as an opportunity to improve the connection between students and lecturers. As an example, EON Reality collaborated with Oral Roberts University which is a higher education institution that specializes in the utilization of Virtual Reality in education (Kolo, 2017). The use of VR tools in education gives the opportunity to students to be able to test their course-related abilities, the opportunity to record their work, and to be able to strengthen the interaction between lecturers and fellow students. Moreover, VR is seen as a beneficial E-learning tool for students to experience what they learned and to bring a unique virtual experience to provide a more fun and easier learning process. This is considered to increase internationalisation of higher education institutions since by using VR tools students can interact with fellow students and lecturers from different countries as well. Lastly, although it is believed that VR costs a lot of money to implement in education, the study demonstrates that the costs of VR tools decrease and are expected to decline even more by 2018 (Kolo, 2017).

In conclusion, although the implementation of VR might increase internationalisation of higher education institutions as an alternative E-learning tool, it is not the center of interest of this research.

2.5 The use of E-learning tools

Furthermore, Axia and Wang (2011) also studied the utilization of an E-learning platform which provides learners to share and control the existing data whenever it is required. The system works as follows; firstly, filling the main platform controlled by the management which includes educational sources, tools, and applications based on e-learning. Moreover, all of these facilities were aimed to create an efficient environment where learners are able to learn by themselves and this environment is provided in terms of creating a new perspective of learning which can be described in this study (Axia and Wang, 2011) as a created environment where learners are able to interact and represent data by applying knowledge based on a cooperation of teachers and students. This contribution indicated an effective and interactive way of implementing an E-learning tool.

Considering the outcome of the study conducted by Axia and Wang (2011) an effective method for the implementation of E-learning tools might increase internationalisation of higher education institutions. Furthermore, the cooperation between students and lecturers can be sustained anywhere since physical attendance is not required. Thus, the results demonstrate that E-learning tools might bring internationalisation and educational sources, data, and applications can be shared and accessed anywhere and anytime they are needed.

Implementing an effective E-learning tool was studied by the both studies conducted by Aguayo, Cochrane and Narayan (2017) and Cook and Santos (2016). The studies illustrate that there are three significant factors for implementing a successful E-learning tool, namely social media and practice should be integrated in order to connect students, the content and context should be based on students' demands in higher education and the guidance of online learning implementation in order to utilize design research.

E-learning tools make it easier to apply new methods of social learning in a transformative manner via digital tools (Cook and Santos 2016). It creates a learning atmosphere where the learning process occurs regardless of the place and time via cooperation with students and lecturers (Kukulska-Hulme, Sharples, Milrad, Arnedillo-Sanchez, and Vavoula, 2009; Parsons, 2012). Nevertheless, not everyone has the same understanding or knowledge about E-learning. Thus, it varies

depending on the socio-cultural characteristics of learning environments (Aguayo, 2016; Knight, Gunawardena, and Aydin, 2009; Pachler et al., 2010).

In addition**,** McKenny et al. (2015) considered teachers as ''designers'' who operate the process in courses provided via E-learning tools. The educational sources in the programme are also largely designed by teachers in order to create an effective virtual classroom for students. Lecturers were addressed in their study as designers and it was explained why they addressed teachers in that manner. Since teachers are considered as designers, they are the ones who should focus on improving the effectiveness of E-learning tools, creating the content of courses and the way the courses can be followed easily and effectively by learners with different nationalities and cultural backgrounds online. Furthermore, the study conducted by Kali et al. (2011) emphasises the importance of understanding how teachers are able to use technology, pedagogy, knowledge, perspective, and content in order to find out their design capability. To be clearer, the study is regarding teachers' utilization of technology and the combination of using knowledge, content, pedagogy, knowledge, and their other personal skills (Kali et al. 2011).

Lastly, the study of Sursock (2016) consists of an outcome which refers to the fact that the link between E-learning and internationalisation in universities is not strong yet. Based on the survey made in the study, the number of institutions utilizing E-learning tools in terms of increasing internationalisation indicates only 9% which proves that only the minority of higher education institutions utilize E-learning as a tool to increase internationalisation. Notably, only 44% of the institutions offer E-learning programmes. Furthermore, it is discussed in the study that the reason why the link between E-learning and internationalisation is still weak is a result of the E-learning development process being made by faculties and lecturers, whereas internationalisation strategy is conducted by institutional leadership. Moreover, it is stated by Sursock (2016) that a large number of learners are not able to participate in higher education institutions namely international students, because of costs, effort, time, and standard entry requirements. Thus, it is suggested that connecting E-learning tools with internationalisation can be the only solution for those who are internationals and have difficulties to follow a study program abroad (Sursock, 2016).

In this research, the model of Amirault and Visser (2010) regarding E-learning tools to increase internationalisation within universities was chosen. Specifically, the features of E-learning tools, possible barriers of the use of E-learning and the student demographics regarding the students' willingness to use E-learning are used in the research to study their effects on the use of E-learning and as an outcome to increase internationalisation in higher education institutions. The features are considered as a core element of E-learning tools in the internationalisation process of higher education institutions to attract students in terms of increasing their willingness to use E-learning tools besides their traditional education. Furthermore, the possible barriers indicate the problems that may occur during the use of E-learning tools are also discussed as it is significant to identify the possible barriers to avoid them. Besides, it is stated by Amirault and Visser (2010) that the student demographics should also be studied as their study reveals that the willingness of the use of E-learning and the willingness to interact with each other via E-learning differ regarding students' demographics. If each variable studied by Amirault and Visser (2010) can be understood clearly, the difficulties of the implementation of E-learning tools will be able to be reduced and the most efficient E-learning tools for students can be implemented within Hanze UAS to accelerate internationalisation. Below, Figure 2 presents the conceptual model considering the model suggested by Amirault and Visser (2010) after reviewing the literature review and later the variables are discussed.

2.6 Conceptual Model

In this section, the conceptual model for this research is presented.

Considering the study of Amirault and Visser (2010), the conceptual model is designed. The conceptual model includes the student demographics (age, gender, nationality, and language of instruction) that may differ regarding students willingness to use E-learning and their (students from domestic and international programmes) willingness to interact via E-learning tools. Specifically, as studied in the literature review, students' willingness to use E-learning and their interest level of interacting with each other via E-learning differ regarding students different demographics.

Furthermore, the possible barriers of the use of E-learning refer to the lack of motivation, lack of communication and technical problems that may occur during the use of E-learning tools within Hanze UAS. Therefore, it is suggested by Amirault and Visser (2010) that these possible barriers may decelerate the internationalisation process of higher education institutions. The possible barriers are thus, to be studied in order to avoid them in the implementation process of E-learning tools within Hanze UAS whereas, the features of E-learning contain the benefits which students are interested in the most in higher education, regarding the study conducted by Amirault and Visser (2010). These features may have a positive impact on students that encourage students to utilise E-learning tools which can enhance domestic and international students' willingness to interact with each other as an outcome of the increasing internationalisation within Hanze UAS. Figure 2 demonstrates the conceptual model for this research.

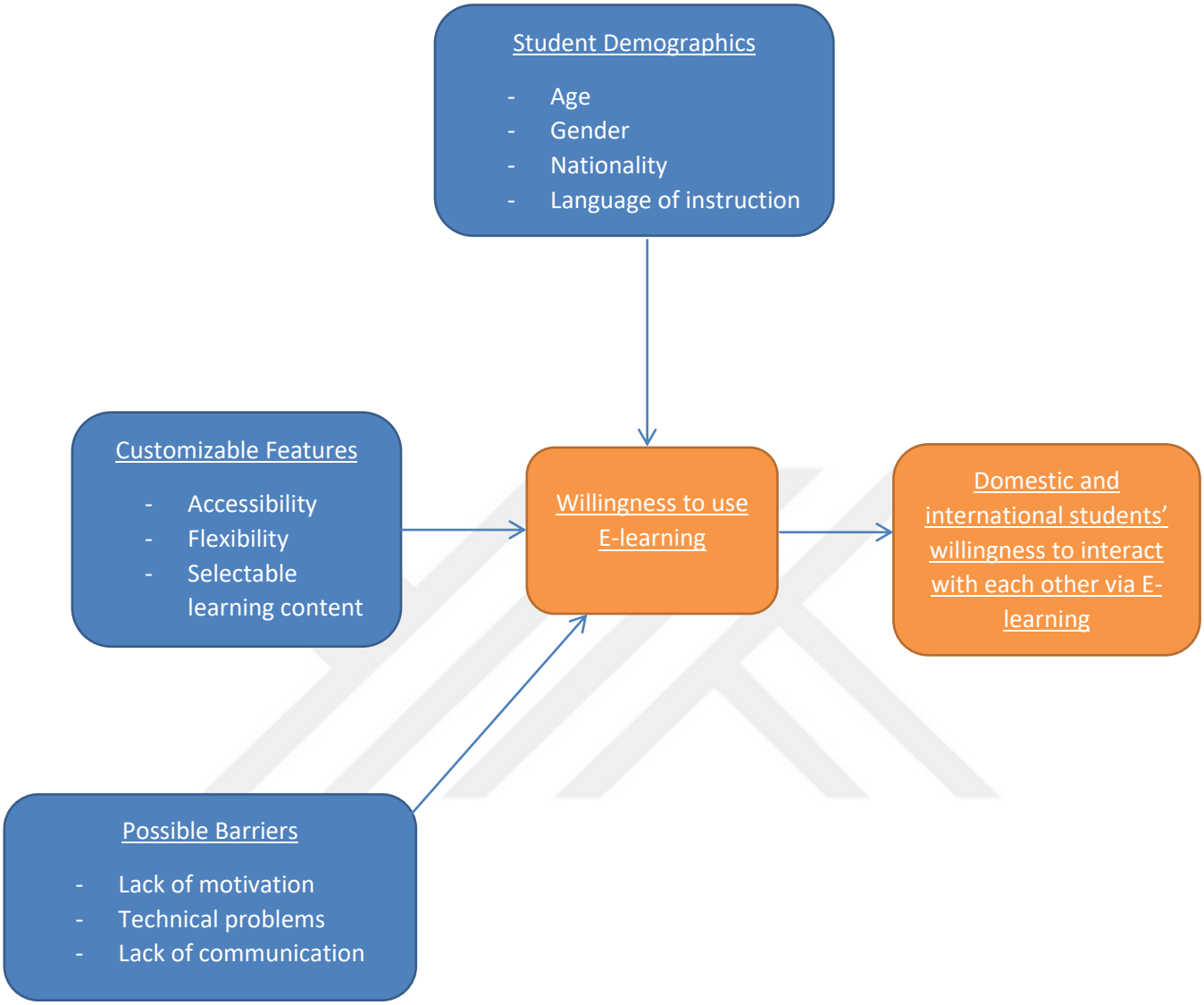

Figure 2. Conceptual Model

Considering the design of the conceptual model, the pictorial representation is chosen which includes a representation of the conceptual model with a diagram and it is also considered as a successful and effective method as it makes it easier to illustrate the variables. It is also defined as the most commonly used representation method for conceptual models (Onggo, 2010; Larkin and Simon 1987).

2.7 The Hypotheses

There are three hypotheses proposed below based on the literature review and the research questions. Thus, these three hypotheses were constructed to test in this research and they were discussed further. The hypotheses are separated into two categories namely 'a' and 'b'. The reason for this refers to the two dependent variables to be tested which are; students' willingness to use E-learning and their (domestic and international students) willingness to interact with each other via E-learning. The first two hypotheses (H1a, H1b and H2a, H2b) are one-tailed which refers to the fact that the direction of the association between variables can be predicted. Besides, the third hypothesis (H3a, H3b) is two-tailed, which only tests the significant difference without neither a positive nor a negative direction. Moreover, the hypotheses were formulated by following the steps suggested by Collis and Hussey (2013).

H1a: There is a positive association between students' attitudes towards the features of e-learning tools and their willingness to use E-learning within Hanze UAS.

The features of E-learning tools will increase students' willingness to use E-learning within Hanze UAS.

H1b: There is a positive association between students' attitudes towards the features of E-learning tools and their (domestic and international students') willingness to interact with each other via E-learning tools within Hanze UAS.

Students' positive attitudes towards the features of E-learning tools will increase their (domestic and international students) willingness to interact with each other via E-learning within Hanze UAS.

H2a: There is a negative association between students' attitudes towards the possible barriers to E-learning and their willingness to use E-learning within Hanze UAS.

Students' positive attitudes towards the possible barriers of E-learning will decrease their willingness to use E-learning within Hanze UAS.

H2b: There is a negative association between students' attitudes towards the possible barriers of E-learning and their (domestic and international students) willingness to interact with each other via E-learning tools within Hanze UAS.

Students' attitudes towards the possible barriers to E-learning will decrease their (domestic and international students) willingness to interact with each other E-learning within Hanze UAS.

H3a: There is a significant difference between students' demographic factors and their willingness to use E-learning within Hanze UAS.

Students' willingness to use E-learning differs regarding their demographic factors.

H3b: There is a significant difference between students' demographic factors and their willingness to interact with each other (domestic and international students) via E-learning tools within Hanze UAS.

Domestic and international students' willingness to interact with each other via E-learning differs regarding their demographic factors within Hanze UAS.

Figure 3 below demonstrates the variables in this research and the hypotheses to be tested.

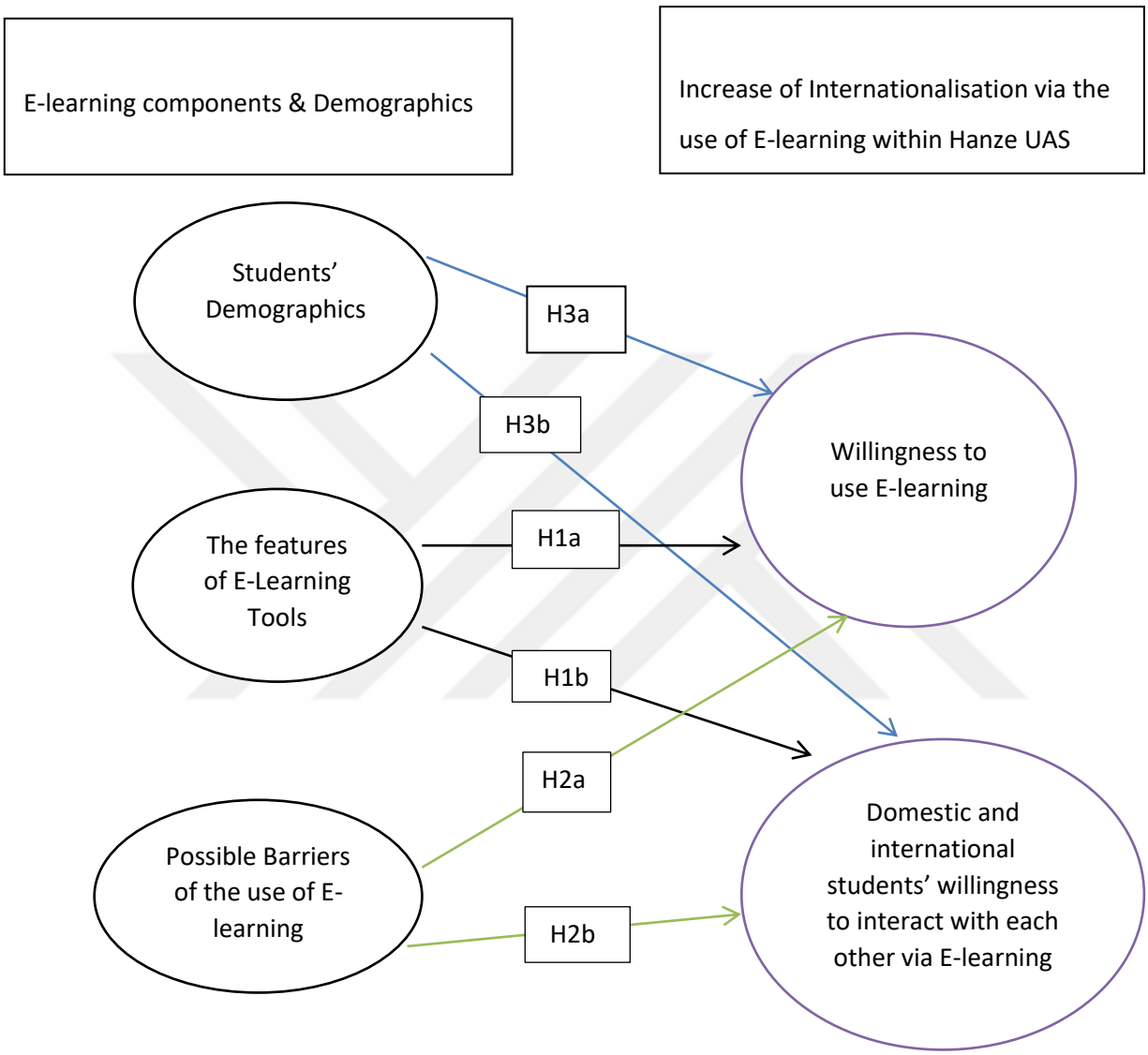

Figure 3. Relationship between the hypotheses and variables

Chapter 3: Methodology

In this section, the methodology, primary and secondary data collection and sources are discussed. Moreover, how this research was conducted, what methods were used considering the research and sub-questions, what type of research instrument was used; the survey design, population and sampling for the research and also the analyses utilized for the quantitative research and the data collection process are discussed including the validity and reliability of the data collected.

3.1 Research Approach

Fırstly, the quantitative method was implemented in this research. Furthermore, the quantitative data was collected via a survey and analysed via IBM SPSS Statistics 25. The reasons why the quantitative method was chosen are, namely the possibility of generalising a sample which refers to the research questions and representativeness in other conditions which addresses whether the outcome of the research can be the same under different conditions. Quantitative methods are suggested as an efficient method to reach a successful outcome (Teddlie and Yu, 2007; Johnson and Onwuegbuzie, 2013). In addition, the method used to collect data was chosen as the quantitative method since this method is used to measure statistical, mathematical analysis based on the data collected via surveys in an objective manner (Babbie, 2010). Besides, it is stated that quantitative studies usually have a high reliability which means that similar results can be collected if the research is conducted again (Babbie, 2010).

Moreover, according to Collis and Hussey (2013), it is significant to choose the right paradigm for the research. In this research, a positivist approach was implemented. A positivist paradigm contains the following approaches in a research: ‘‘quantitative, objective, scientific and traditionalist’’ (Collis and Hussey, 2013, p.46). Additionally, the reasons why this approach was used are discussed by Collis and Hussey (2013) as the accuracy and generalisability of the findings regarding the validity and reliability.

Furthermore, the research approach utilised for this research focuses on the deductive approach which contains the development of hypotheses regarding an existing theory and conducting a research in terms of testing the hypotheses whether they can be accepted or rejected (Wilson, 2010). According to Crowther and Lancaster (2008), positivist approach generally implements a deductive approach in quantitative researches. Therefore, adopting a deductive approach for this research matched with the nature of this research. Specifically, a deductive approach is based on reasoning from a particular to a general extent thus, it is tested via hypotheses, whether the results can indicate an association with a particular theory and the results can be valid under different circumstances which demonstrate that a particular theory can be generalised (Gulati, 2009). The reasons why this approach was chosen for this research are discussed below.

According to Snieder and Larner (2009), the main reasons why the deductive approach should be implemented are; the measurability of deductive approach via quantitative data, generalizability of research findings based on a particular theory and the possibility to study causal relationships between concepts and variables. Considering the advantages of the deductive approach, the generalisability of the findings can be high and by deducting the hypotheses from a theory, an existing theory can easily be applied and later it can be studied whether the concept can be applied under different circumstances. Therefore, this increases the generalisability of this research.

3.2 Research Instrument

For this research, a survey was used as an instrument in order to collect quantitative data from the participants. Since approaching a large population in a short time was required for this research, the survey helped the researcher to collect responses from a required number of participants in an easy and quick manner. According to Bailey (1982) the main advantages of conducting a survey are; a large number of participants can be reached easily, economically and in a shorter time than interviews. Also, the answers collected from surveys can be measured and analysed easily. The validity of conducting a survey as a research instrument is discussed under the validity and reliability section.

3.3 Survey Design

The survey was provided as a multiple choice format and the 5 point Likert Scale was used as well. The reason why the Likert Scale was used is because it is the most universal method, easy to analyse and it is easily understood. Additionally, it is appropriate to use the required statistical analyses in terms of testing the association between the variables studied in the survey to test the hypotheses. Moreover, the answers are not based on yes or no, which does not put a pressure on participants as they can answer the questions in a degree of agreement or disagreement (Collis and Hussey, 2013).

In the survey, participants' demographic factors were included. More specifically, the age diversity and gender difference were studied whether the interest level of students in E-learning changed regarding their age and gender difference referring to the customization facility of E-learning tools. Moreover, the nationality question was used to study if the interest level of E-learning tools differs between the EU and Non-EU students within Hanze UAS. Regarding the customisable features of E-learning tools such as; accessibility, flexibility and selectable learning content as studied in the literature review, might vary depending on the different regulations within EU. Therefore, nationality as a demographic factor helped study if the interest of E-learning tools differs considering the features of E-learning tools. Furthermore, the survey took place in English since the focal point of this research was internationalisation and thus, English is a shared language between international and domestic students.

In addition, students were asked whether they agree/disagree the possible barriers for them if they ever participated in courses provided via E-learning tools to study the possible barriers in terms of avoiding them during the implementation process. Furthermore, the participants were asked to rate the statements about the features of E-learning tools on a scale of 1 to 5. Moreover, their level of agreement/disagreement on ''E-learning tools to improve the interaction between domestic and local programmes within Hanze UAS'' was asked to study their attitudes towards the features of E-learning tools and their agreement/disagreement on the possibility to accelerate the internationalisation within Hanze UAS via the use of E-learning tools.

In order to conduct an efficient survey the following steps were followed that were suggested by Diem (2002) such as; determining the reason of the research, identifying the aimed population, choosing a relevant data collection method, deciding whether the survey will be anonymous or confidential, using plain and understandable language, being straight to the point, asking the questions which are relevant for the research to be made and organising them appropriately, including a brief explanation of the questions to facilitate answering, provide enough, asking only one question at a time, using a cover letter in order to give a brief explanation on the purpose of the research.

In this research, the survey took place anonymously since the respondent's name in this research was not a relevant factor and it is discussed by Diem, (2002) that anonymous surveys make participants feel more comfortable when answering the question which increases the response rate. Table 8 below indicates the secondary data used to formulate the survey questions.

Table 8. Secondary Data used to write the survey questions

Questions	Secondary Data
Question 1	Schodt (2002); Ong and Lai (2006); Lu and Chiou (2010); Cuadrado-García, Ruiz-Molina and Montoro-Pons (2010); Chu (2010); Hung et al. (2010); Van Seters et al. (2012)
Question 2	Mungania (2003); Eklund, Kay and Lynch, (2003); Van Seters et. al. (2012)
Question 3	Chung et al. (2010); Jung et al. (2010); Gilbert (1996); Mungania (2003)
Question 4	Cantoni, Cellario and Porta (2004); Kelly and Bauer (2004); Arabasz and Bake (2003); Madar and Willis (2014)
Question 5	Baruque and Brazil (2014); Mihhailova (2005); Artino, (2008); Keller (2008)
Question 6	Gilbert, Morton and Rowley (2007); Kumar, Ravi and Srivatsa (2011); Amirault and Visser (2010)
Question 7	Cantoni, Cellario and Porta, (2004); Amirault and Visser (2010)
Question 8	Wächter (2004); Fielden (2008) ; Amirault and Visser (2010)
Question 9	Schuwer and Kusters (2014)
Question 10	Arabasz and Bake, 2003; Madar and Willis 2014
Question 11	Smedley (2010); Wagner et. al. (2008)
Question 12	Koster (2018)
Question 13	Smedley (2010); Kumar, Ravi and Srivatsa (2011)
Question 14	Amirault and Visser (2010); Smedley (2010
Question 15	Madar and Willis (2014); Schuwer and Kusters (2014)
Question 16	Amirault and Visser (2010)
Question 17	Schuwer and Kusters (2014); Amirault and Visser (2010)
Question 18	Amirault and Visser (2010); Smedley (2010
Question 19	Amirault and Visser (2010)
Question 20	Koster (2018)
Question 21	Sursock (2016); Amirault and Visser (2010)

3.4 Population and sampling for the research

The general population of this research is the students at Hanze University of Applied Sciences which is 28,432 students regardless of demographic factors and all of the faculties (Hanze website, n/d), which is the interest of this research. Considering the general population, 380 participants were aimed to be chosen randomly regardless of their demographic factors, study year, and their fields as the target population of this research to study the representativeness of the general population. The method used to determine the required number of participants for this research is discussed in the data analysis section.

3.5 Respondents Profile

In total, 299 students participated in the survey within Hanze UAS which means 299 valid responses were collated. Out of the 299 answers, there were 140 male (46.8%) and 159 (53.2%) female participants. Furthermore, 169 (56.5%) of the students were from within EU and out of 299, 130 (43.5%) of them were non-EU. Considering the age diversity, students between 18-24 years old were the majority with 233 students (77.9%) whereas, students between 25-35 years old were 20.4 % and 35-44 years old students were the minority with 1.7 %. Considering the languages of instruction of participants, 60 % of the students indicated that they followed an English-taught programme and 24% studied in a Dutch-taught programme whereas, 14.7 % of the students followed a German-taught programme within Hanze UAS. Table 9 indicates the demographics of the survey respondents.

Table 9. Demographics of the survey respondents

Demographics		N	%
Gender	Male	140	46,8
	Female	159	53,2
	Total	299	100,0
Nationality	EU	169	56,5
	Non-EU	130	43,5
	Total	299	100,0
Age range	18-24	233	77,9
	25-35	61	20,4
	35-44	5	1,7
	Total	299	100,0
Language of instruction	English	182	60,4
	Dutch	73	24,4
	German	44	14,7
	Total	299	100,0

Demographics of the participants

3.6 Data Analysis

To start with, IBM SPSS Statistics 25 was used to analyse the primary data collected via the survey, which is software that provides with the utility of various statistical analyses. According to Paura and Arhipova (2012) SPSS provides fifteen modules and it is easy to use. Furthermore, the data can be easily analysed and it includes filters, various charts, testing hypothesis possibilities and it works well in complex statistical analyses (Paura and Arhipova, 2012). In addition, SPSS can facilitate the exploration of the link between answers to different questions (Babbie, Halley and Zaino, 2003).

Firstly, the collected responses were imported to SPSS. Afterwards, the variables that were also studied in the literature review were analysed via various statistical analyses which were discussed in the table 9.

In order to come up with a successful outcome for the survey, margin of error was set to 5% and confidence level was set as 95% since this is suggested by numerous studies (Sekaran and Bougie, 2016; Cohen, Manion and Morrison, 2007). By using the confidence level as 95 % and the margin of error as 5 % it is found out that there were 380 participants needed for a successful outcome in this research. Figure 4 demonstrates the steps taken to conduct a survey.

Figure 4. The process of making a survey for the research

Table 10 below shows the analyses used to answer the primary data collected.

Table 10.Analyses used to answer primary data - survey questions and hypotheses

Variables	Analysis
Features of E-learning + Willingness to use E-learning	Single Linear Regression
Features of E-learning + Domestic and international students' Willingness to interact with each other via E-learning	Single Linear Regression
Possible Barriers of E-learning + Willingness to use E-learning	Single Linear Regression
Possible Barriers of E-learning + Domestic and international students' Willingness to interact with each other via E-learning	Single Linear Regression
Demographic Factors (Gender, Nationality) + Willingness to use E-learning	Independent samples t Test
Demographic Factors (Gender, Nationality) + Domestic and international students' Willingness to interact with each other via E-learning	Independent samples t Test
Demographic Factors (Age, Language of instruction) + Willingness to use E-learning	One-way Anova
Demographic Factors (Age, Language of instruction) + Domestic and international students' Willingness to interact with each other via E-learning	One-way Anova

To answer the research and sub-questions the association between the variables indicated in Table 9 were tested by conducting Single Linear Regression. Furthermore, to compare the gender and nationality on willingness to use E-learning and domestic and international students' willingness to interact with each other via E-learning, an independent samples t-test used as both variables contain two independent groups. That was the reason why for other demographics (age and language of instruction) there was one-way Anova used since these variables included three independent groups. In age variable, the fourth group – older than 44

years old was not included in any of the tests since none of the participants were older than 44 years old. Besides, in gender groups, the answer of '' I would prefer not to answer'' was also excluded since it was not chosen by any of the participants.

3.7 Data Collection Procedure

In this section, how the survey was distributed and how the data was collected are discussed.

Firstly, the survey was created via Google Forms and five random students from Hanze UAS were found for the pilot testing and by considering their feedback, the survey was adjusted afterwards. The survey mostly took place online with the combination of the printed survey. Firstly the link was sent to the participants via e-mail and also social media. However, after a while it was found out that only this approach was not enough for a high response rate. Therefore, a direct approach was also used. For the data collection, five lecturers were asked to share the survey link with their current/previous students at Hanze UAS. Moreover, some of the participants helped sharing the survey with the fellow students and also students at Hanze UAS were approached face-to-face to collect responses via both printed survey and also by sharing the link. Moreover, the survey link was published by Hanze UAS website. Specifically, 200 responses were collected online and 99 responses were gathered via printed surveys. Once the responses collected via printed surveys were completed, they were first entered and coded on Excel manually and then entered on SPSS with the combination of the responses collected via the online survey. The combination of these data collection techniques contributed to the data collection process and in a short time the required number of responses was managed to collect.

There was twenty four days decided in order to collect responses from the participants in terms of having enough time to analyse the data afterwards. Below Table 11 includes the planning and the process of conducting the survey.

Table 11. Conducting the survey and data collection

Steps	The process of conducting the survey	Date
1	Designing the survey questions	10/05/18-15/05/18
2	Discussion with the commissioner and the supervisor about the survey questions	16/05/18
3	Pilot testing	17/05/18
4	Data collection	18/05/18-10/06/18
5	Data analysis	10/06/18-15/06/18

Moreover, primary data collection occurred including the process of ''selecting a relatively large number of units from a general population, or from specific Sub-groups (strata) of a population, in a random manner where the probability of inclusion for each member of the population is determinable'' (Tashakkori and Teddlie, 2003, p. 713). The reason surveys should be distributed randomly in quantitative studies can be discussed as the possibility of higher achievement of representativeness which refers to the fact that the target population represents the general population correctly (Tashakkori and Teddlie, 2003).

3.8 Validity and Reliability

According to Cooper and Schindler (2006), validity refers to the measurement of the relevance of the findings in the research to be the same as the researcher wants to measure. In other words, it provides researchers to figure out if the data collected for the research is accurate and reliable. According to Oliver (2010), validity plays a significant role in a research since it indicates the requirements and methods to be used in the research. The data collected can be reliable if the research can be repeated under different conditions thus the same results should be gathered in a different time. In order to see if the findings are reliable and accurate, validity and reliability were tested.

In terms of increasing the internal validity, the following steps were followed:

1) Pilot test: A pilot study was conducted in order to increase the validity of the questionnaire. The reasons why a pilot study is required before starting the survey were explained by Teijlingen, Hundley and Graham (2001) which are; the ability of assessing whether the frame and technique are efficient, feasibility of the study, collecting preliminary data, evaluating if the research protocol is realistic and so forth. Regarding the validity of this research, the pilot test was used to increase the validity of the research. Considering content validity, the questions were reviewed by five random students from Hanze UAS which created an opportunity to receive feedback about the survey and making adjustments. Furthermore, internal validity was provided by using various sources related to the research topic to confirm the findings. Additionally an easy language was used to avoid misunderstandings for the participants.

2) Guidance of an expert: In order to gain knowledge about the requirements of conducting a survey with a high validity, a guidance of a supervisor and commissioner were followed. During the process of designing the questions of the survey, the assistance of the commissioner of this research was followed. In this manner, it was assured that the questions met the requirements of the research in order to be able to achieve the goals of this research. Therefore, by following the guidance of the commissioner, it was ensured that the questions were relevant and related to the research and sub-questions. Moreover, a detailed feedback from the supervisor was received to conduct the survey in a most efficient manner.

3) Grammar-check for the survey: In order for the survey to be understood by non-native English speakers easily, the grammar-check of the survey was done by a native English speaker to avoid wrong-wording and grammar mistakes. In this way, it was assured that the questions measured what they

were supposed to measure by using the right words and making it easy to understand for everyone to collect relevant responses.

4) Time given for the data collection: The duration of the data collection took 24 days. Thus, there was sufficient time used to collect data from the number of participants needed for the research. Moreover, since the survey took place mostly online there was no time limitation for the participants to fill in the survey. More specifically, there was no time pressure on the participants to complete the survey in a limited time. This means that they were able to take their time and think about their answers. Therefore, this strengthened the internal validity of this research.

For a high external validity, there were also numerous factors used such as:

1) Population characteristics: Due to the fact that the diversity of the population plays a significant role in the strength of the external validity, the survey took place regardless of nationality, gender and age to increase the representativeness of the population.

2) The method used for the data collection: According to Mathers, Fox and Hunn (2009), using a survey has numerous advantages such as; efficiency, internal and external validity, a possibility to focus on geographically spread samples, and flexibility. Firstly, the results taken from surveys from a specific group can be considered as representative of the entire population studied. Secondly, surveys can be used regardless of the location. Thus, in case of not reaching out the participants needed for a research, an online survey can be conducted. Considering the goals to be achieved in this research, a large number of participants was required in order to study the impact of E-learning tools within Hanze UAS. Thus, it is significant that the outcome can be generalised and this can be possible by collecting responses from a large population. Therefore, survey can be used in order to collect more primary

data which has a potential of increasing the generalizability, validity and reliability (Mathers, Fox and Hunn, 2009).

3) Response rate: Out of 380 participants, 299 of them filled out the questionnaire thus the response rate is considered high with approximately 80% which refers to a high response rate.

Additionally, it is discussed by Collis and Hussey (2013); Babbie, Halley and Zaino, (2003) that reliability refers to the repeatability of the results in a different time thus, the same results should be received under different conditions.

In order to increase the reliability, the following actions were taken:

1) Cronbach's Alpha was used in terms of testing the reliability. Moreover, 0.70 was used as an acceptable value for the reliability which refers to the factors that were accepted as reliable if they were greater than 0.70 which was also suggested by Nunnally (1978) for a research to be conducted. The Cronbach's Alpha values of the variables of the survey are listed below.

3.8.1 Cronbach's Alpha – Variables of the survey

Table 12 shows the Cronbach's alpha values regarding each variable. Demographic factors were excluded since the validity of demographics cannot be measured as getting different answers from the same participants in different time regarding demographic factors is not possible (Swanson, 2004). Table 12 below shows the Cronbach values of the variables in the survey.

Table 12. Cronbach's Alpha values of the variables

	Cronbach's α	Number of Items	Questions
Variable 1 – Features of E-learning tools	0.859	4	Q19,Q18,Q17,Q16
Variable 3 – Possible Barriers of E-learning	0.917	6	Q26,Q25,Q24,Q13,Q12,Q11
Variable 4 – Willingness to use E-learning	0.939	3	Q27,Q15,Q14
Variable 5 – Domestic and international students' willingness to interact with each other via E-learning tools	0.941	4	Q23,Q22,Q21,Q20

After checking the Cronbach Alpha values of each variable, multiple questions measuring the same variable were computed into one. Thus, new variables were created by computing the questions which measured the same variables.

3.9 Secondary Data – Papers, books, journals

In order to be able to gain knowledge about the context of the research, numerous papers, books, and previous empirical studies were reviewed. The papers were based on the impact of E-learning as a tool on internationalisation of higher education institutions including possible barriers, advantages, and suggestions for an efficient E-learning implementation process. The papers were obtained from the library, E-libraries, and books. Moreover, the aim was to use contemporary sources of secondary research. However, there are also several old papers in terms of supporting the current studies. Below, Table 13 shows the secondary data used to answer the research questions in combination with analysing the primary data.

Table 13. Secondary data used to answer the research questions

Research & Sub-questions	**Secondary data used to answer the research & Sub-questions**
Research Question: How can the use of E-learning tools impact the increase of the internationalisation within Hanze UAS effectively?	Arabasz and Bake (2003); Madar and Willis (2014), Mihhailova (2005)
Subq1a: How do the features of e-learning tools impact the willingness of students to use E-learning within Hanze UAS? Subq1b: How do the features of E-learning tools impact domestic and international students' willingness to interact with each other via E-learning tools within Hanze UAS?	Smedley (2010); Gilbert, Morton and Rowley (2007); Kumar, Ravi and Srivatsa (2011); Lin and Yin (1997); Schuwer, R. and Kusters, R. (2014)
Subq2a: What is the impact of the possible barriers to E-learning on students' willingness to use E-learning within Hanze UAS? Sub2b: What is the impact of the possible barriers to E-learning on domestic and international students' willingness to interact with each other via E-learning tools within Hanze UAS?	Baruque and Brazil (2014); Mihhailova (2005); Artino (2008); Keller (2008)
Subq3a: Is there a significant difference between the students' demographics regarding their willingness to use E-learning within Hanze UAS?	Mungania (2003); Eklund, Kay and Lynch (2003); Van Seters et. al. (2012); Arabasz and Bake (2003); Madar and Willis (2014)

Subq3b: Is there a significant difference between students' demographic factors regarding their willingness to interact with each other via E-learning tools within Hanze UAS?	

Chapter 4: Findings and analyses

In this section, the survey questions were analysed to test the hypotheses. The interpretation of the analyses was made as suggested by Cronk (2012).

Table 14 includes the demographic variables (independent), students' attitudes towards the features of E-learning tools variable (independent), students attitudes towards the possible Barriers to use E-learning variable (independent) and, students' willingness to use E-learning and domestic and international students' willingness to interact with each other via E-learning as both of them being the dependent variables.

Table 14 Descriptive Statistics (N=299)

Variables	M	SD
Gender [a]	1.53	0.50
Nationality [b]	1.43	0.50
Language of instruction [c]	1.54	0.74
Age [d]	1.24	0.46
Possible Barriers to use of E-learning	22.78	3.45
Features of E-learning tools	13.11	2.01
Willingness to use E-learning	8.82	3.06
Domestic and international students' willingness to interact with each other via E-learning	10.84	3.06

[a] Gender: 1 = *male*, 2 = *female*. [b] Nationality: 1 = *EU*, 2 = *Non-EU*. [c] Language of instruction: 1 = *English*, 2 = *Dutch, 3*= *German.* [d] Age: 1 = *18-24*, 2 =25-34, 3=35-44.

Below, the results of testing the hypotheses for this research based on the findings are presented.

4.1 Testing Hypothesis 1a

In order to answer sub-question 1a, ''How do the features of e-learning tools impact students' willingness to use E-learning within Hanze UAS?',' hypothesis 1a was proposed: There is a positive association between students' attitudes towards the features of E-learning tools and their willingness to use E-learning within Hanze UAS. To test the hypothesis, a simple linear regression analysis was used in order to predict participants' attitudes towards the features of E-learning tools and their willingness to use E-learning. Table 15 below shows the Pearson correlation coefficient between the attitudes of students' towards the features of E-learning tools and their willingness to use E-learning within Hanze UAS with $r= 0.541$, $p<0.05$ which indicates a significant and positive high association between the students attitudes towards the features of E-Learning tools and their willingness to use E-learning.

Table 15 Correlations between the features of E-learning tools and willingness to use E-learning

		Features of E-learning tools
Willingness to use E-learning	Pearson Correlation	0.541
	Sig. (1-tailed)	0.000

Table 16 below indicates that the adjusted R^2 is equal to 0.290 which represents the effect size. Specifically, approximately 29% of the variance of the willingness to use E-learning is accounted for in relation to the variation of the features of E-learning tools.

Table 16 Model Summary (the features of E-learning tools and willingness to use E-learning)

Model	R	R^2	Adjusted R^2
1	0.541	0.293	0.290

a. Predictors: (Constant), Features of E-learning tools

Furthermore, Table 17 below displays the results of the F test, which are as follows; F (1,297) = 122.953, $p<0.05$ which indicates a significant association between features of E-learning tools and willingness to use E-learning. Participants predicted attitudes on willingness to use E-learning is equal to 1.555 + 0.554 (attitudes on the features of E-learning tools). The participants' scores of willingness to use E-learning increased by 0.554 in the scores of their attitudes on the features of E-learning (see Appendix 3).

Table 17 ANOVA (the features of E-learning tools and willingness to use E-learning)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	370.853	1	370.853	122.953	.000[b]
Residual	895.818	297	3.016		
Total	1266.672	298			

a. Dependent Variable: Willingness to use E-learning

b. Predictors: (Constant), Features of E-learning tools

4.2 Testing Hypothesis 1b

In order to answer sub-question 1a, ''How do the features of E-learning tools impact domestic and international students' willingness to interact with each other via E-learning tools within Hanze UAS?'', hypothesis 1b was proposed: There is a positive association between students' attitudes towards the features of E-learning tools and their (domestic and international students) willingness to interact with each other via E-learning tools within Hanze UAS. To test the hypothesis, a simple linear regression analysis was used in order to predict participants' attitudes towards the features of E-learning tools and domestic and international students' willingness to interact with each other via E-learning. Table 18 below shows the Pearson correlation coefficient between the attitudes of students' towards the features of E-learning tools and their willingness to use E-learning within Hanze UAS with $r= 0.322$, $p< 0.05$ which is a positive moderate association.

Table 18. Correlations between the features of E-learning tools and domestic and international students' willingness to interact with each other via E-learning

		Features of E-learning tools
Willingness to interact via E-learning	Pearson Correlation	0.322
	Sig. (1-tailed)	0.000

Table 19 below shows that the adjusted R^2 is equal to 0.101 which represents the effect size. Specifically, approximately 10.1% of the variance of the domestic and international students' willingness to interact via E-learning is accounted for by the variation of students attitudes towards the features of E-learning tools.

Table 19. Model Summary (the features of E-learning tools and domestic and international students' willingness to interact with each other via E-learning)

Model	R	R^2	Adjusted R^2
1	0.322[a]	0.104	0.101

a. Predictors: (Constant), Features of E-learning tools

Table 20 below shows the F test conducted as follows; F (1,297) = 34.433, $p<0.05$ which indicates a significant association between students' attitudes towards the features of E-learning tools and domestic and international students' willingness to interact with each other via E-learning. Participants' predicted attitudes towards their willingness to interact via E-learning are equal to 4.431 + 0.489 (attitudes towards the features of E-learning tools). The participants' attitudes towards their willingness to interact with each other via E-learning increased by 0.489 in their attitudes towards the features of E-learning (see Appendix 3).

Table 20. ANOVA (the features of E-learning tools and domestic and international students' willingness to interact with each other via E-learning)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	289.277	1	289.277	34.433	.000[b]
Residual	2495.117	297	8.401		
Total	2784.393	298			

a. Dependent Variable: Domestic and international students willingness to interact via E-learning

b. Predictors: (Constant), Features of E-learning tools

4.3 Testing Hypothesis 2a

In order to answer sub-question 2a, ''What is the impact of the possible barriers to the use of E-learning on students' willingness to use E-learning within Hanze UAS?'', hypothesis 2a was proposed: There is a negative association between students' attitudes towards the possible barriers to E-learning and their willingness to use E-learning within Hanze UAS. To test the hypothesis, a simple linear regression analysis was used in order to predict participants' attitudes towards the possible barriers to use E-learning and their willingness to use E-learning. Table 21 below displays the Pearson correlation coefficient between the attitudes of students' towards the possible barriers to use E-learning and their willingness to use E-learning within Hanze UAS with r= -0.160, p< 0.05 which can be defined as a negative weak association.

Table 21. Correlations between the possible barriers to use E-learning tools and willigness to use E-learning

		Possible Barriers to the use of E-learning
Willingness to use	Pearson Correlation	-0.160
E-learning	Sig. (1-tailed)	0.003

Table 22 below indicates that the adjusted R^2 is equal to 0.022 which represents the effect size. Specifically, approximately 22% of the variance of the students' willingness to use E-learning is accounted for by the variation of their attitudes towards the possible barriers of E-learning.

Table 22. Model Summary (the possible barriers to use E-learning tools and willigness to use E-learning)

Model	R	R^2	Adjusted R^2
1	0.160[a]	0.026	0.022

a. Predictors: (Constant), Possible Barriers to the use of E-learning

Table 23 below indicates the F test results as follows; F (1,297) = 32.543, $p<0.05$ which indicates a significant association between students' attitudes towards the possible barriers to E-learning and their eagerness to use E-learning. Participants' predicted attitudes towards willingness to use E-learning is equal to 10.999 -0.096 (attitudes towards the possible barriers of E-learning). The participants' attitudes towards the willingness to use E-learning decreased by 0.096 in their attitudes towards the possible barriers to use E-learning tools (see Appendix 3).

Table 23. ANOVA (the possible barriers to use E-learning tools and willigness to use E-learning)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	32.543	1	32.543	7.832	.005[b]
Residual	1234.129	297	4.155		
Total	1266.672	298			

a. Dependent Variable: Willingness to use E-learning

b. Predictors: (Constant), Possible Barrier to the use of E-learning

4.4 Testing Hypothesis 2b

In order to answer sub-question 2b, ''What is the impact of the possible barriers to the use of E-learning on domestic and international students' willingness to interact with each other via E-learning tools within Hanze UAS?'', hypothesis 2b was proposed: There is a negative association between students' attitudes towards the possible barriers of E-learning and domestic and international students' willingness to interact with each other via E-learning tools within Hanze UAS. To test the hypothesis, a simple linear regression analysis was used in order to predict participants' attitudes towards the possible barriers to use E-learning and domestic and international students' (participants) willingness to interact with each other via E-learning. Table 24 below shows the Pearson correlation coefficient between the attitudes of students' towards the features of E-learning tools and their willingness to use E-learning within Hanze UAS with $r = -0.147$, $p < 0.05$ which refers to a negative weak association.

Table 24. Correlations between the possible barriers to use E-learning tools and domestic and international students' willingness to interact with each other via E-learning

		Possible Barriers of E-learning
Willingness to interact via E-learning	Pearson Correlation	-0.147
	Sig. (1-tailed)	0.005

Table 25 below indicates that the adjusted R^2 is equal to 0.018 which represents the effect size. Specifically, approximately 18% of the variance of the domestic and international students' willingness to interact via E-learning is accounted for by the variation of their attitudes towards the possible barriers of E-learning.

Table 25. Model Summary (the possible barriers to use E-learning tools and domestic and international students' willingness to interact with each other via E-learning)

Model	R	R^2	Adjusted R^2
1	0.147[a]	0.022	0.018

a. Predictors: (Constant), Possible Barriers to the use of E-learning

The F test is conducted as follows; F (1,297)=6.572, p<0.05 which is also indicated in Table 26 as a significant association between students' attitudes towards the possible barriers of E-learning and their (students from domestic and international programmes) willingness to interact via E-learning. Participants predicted attitudes towards the willingness to interact with each other via E-learning is equal to 13.814 - 0.130 (attitudes towards the possible barriers to E-learning) The participants' attitudes towards the willingness to interact with each other (domestic and international students) via E-learning decreased by 0.130 in their attitudes towards the possible barriers to E-learning (see Appendix 3).

Table 26. ANOVA (the possible barriers to use E-learning tools and domestic and international students' willingness to interact with each other via E-learning)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	60.278	1	60.278	6.572	.011[b]
Residual	2724.115	297	9.172		
Total	2784.393	298			

a. Dependent Variable: Domestic and international students' willingness to interact with each other via E-learning

b. Predictors: (Constant), Possible Barrier to the use of E-learning

4.5 Testing Hypothesis 3a

To answer sub-question 3a, ''Is there a significant difference between the students' demographics regarding their willingness to use E-learning within Hanze UAS?',' hypothesis 3a was proposed: ''There is a significant difference between students' demographic factors and their willingness to use E-learning within Hanze UAS.'' In order to test this hypothesis an independent samples t-test analysis was conducted to test the effect of participants' gender and nationality on their willingness to use E-learning. Table 27 below demonstrates the independent t-test to test the effect of gender and nationality on their willingness to use E-learning within Hanze UAS. The results indicated that there was a significant difference in the scores for male (M=8.12, SD=2.35) and female (M=9.43, SD=1.54) conditions; t (297) = -5.764, p= .000. Considering nationality, there was also a significant difference in the scores for EU (M=8.55, SD=2.10) and Non-EU (M=9.16, SD=1.97) conditions; t (297) = -2.576 , p=0.010 (see Appendix 3).

Table 27. Independent Sample t-Test for Gender and Nationality (willingness to use E-learning)

	t	df	Sig.
Willingness to use E-learning	-5.764[a]	297[a]	.000[a]
	-2.576[b]	297[b]	.010[b]

[a] Gender (1=Male, 2=Female), [b] Nationality (1=EU, 2=Non-EU)

A one-way Anova was conducted to compare the effect of language of instruction and age on the willingness to use E-learning. An analysis of variance indicated that the effect of age on the willingness to use E-learning was significant, F (2,296) = 5.582, p= .004 conditions; 18-24 years old (M=8.69, SD=2.07), 25-34 years old (M=9.46, SD=1.74) and 35-44 years old (M=7.00, SD=3.25). Also to compare the effect of language of instruction on the willingness to use E-learning a one-way Anova was used and an analysis of variance for this showed that the effect of language of instruction on the willingness to use E-learning significantly differs with F

(2,296) = 13.361, p= .000 conditions; English (M=9.14, SD=1.94), Dutch (M=7.78, SD=2.24) and German (M=9.22, SD=1.66) (See Appendix 3). Table 28 below indicates an effect of language of instruction and age on willingness to use E-learning.

Table 28. Anova for for Language of instruction and Age (willingness to use E-learning)

	Sum of Squares	df	F	Sig.
Between Groups	104.884[a]	2	13.361[a]	.000[a]
Within Groups	1161.788[a]	296		
Total	1266.672	298		
Between Groups	46.037[b]	2	5.582[b]	.004[b]
Within Groups	1220.635[b]	296		
Total	1266.672	298		

[a] Language of instruction (1=English, 2=Dutch, 3=German), [b] Age (1=, 18-24, 2=25-34, 3= 35-44)

4.6 Testing Hypothesis 3b

To answer sub-question 3b ''Is there a significant difference between students' demographic factors regarding their willingness to interact with each other via E-learning tools within Hanze UAS?'', hypothesis 3b was proposed: ''There is a significant difference between students' demographic factors and their willingness to interact with each other via E-learning tools within Hanze UAS.'' In order to test this hypothesis an independent samples t-test analysis was conducted to compare students' gender and nationality on their (domestic and international students) willingness to interact with each other via E-learning. Table 29 demonstrates the independent sample t-test to compare male and female and EU and Non-EU students on their willingness to use E-learning within Hanze UAS. Regarding the results it can be seen that there was a significant difference in the scores for male

(M=10.20, SD=3.58) and female (M=11.41, SD=2.38) conditions; t (297) = -3.484, p= .01. Considering nationality, there was also a significant difference in the scores for EU (M=10.23, SD=2.94) and Non-EU (M=11.64, SD=3.04) conditions; t (297) = -4.060, p=.000 (see Appendix 3).

Table 29. Independent Samples t Test for Gender and Language of instruction (domestic and international students' willingness to interact with each other via E-learning)

	t	df	Sig.
Willingness to interact via E-learning	-3.484[a]	297[a]	.01[a]
	-4.060[b]	297[b]	.00[b]

[a] Gender (1=Male, 2=Female), [b] Nationality (1=EU, 2=Non-EU)

A one-way Anova was conducted to compare the effect of language of instruction and age on the willingness to interact via E-learning. An analysis of the variance indicated that the effect of language of instruction on willingness to interact via E-learning was significant, F (2,296) = 5.240, p= .006 conditions; English (M=11.30, SD=3.16), Dutch (M=10.20, SD=2.93) and German (M=10.05, SD=2.49). Moreover, to compare the effect of age on willingness to interact via E-learning a one-way Anova was used and an analysis of variance for this demonstrated that the effect of age on willingness to interact via E-learning significantly differed with F(2,296) =2.807, p= .062 conditions; 18-24 years old (M=10.63, SD=3.08), 25-34 years old (M=11.56, SD=2.86) and 35-44 years old (M=12.25, SD=3.24) (see Appendix 3). Table 30 below indicates the effects of language of instruction and age on their (domestic and international students) willingness to interact with each other via E-learning.

Table 30. Anova for language of instruction and age (domestic and international students' willingness to interact with each other via E-learning)

	Sum of Squares	df	F	Sig.
Between Groups	95.214[a]	2	5.240[a]	.006[a]
Within Groups	2689.180[a]	296		
Total	2784.393	298		
Between Groups	51.830[b]	2	2.807[b]	.062[b]
Within Groups	2732.563[b]	296		
Total	2784.393	298		

[a] Language of instruction (1=English, 2=Dutch, 3=German), [b] Age (1=, 18-24, 2=25-34, 3= 35-44)

Table 31 displays the results of the hypotheses of this research based on the findings.

Table 31. The Results of the Hypotheses

Hypotheses	**Accepted**
Hypothesis 1a	✔
Hypothesis 1b	✔
Hypothesis 2a	✔
Hypothesis 2b	✔
Hypothesis 3a	✔
Hypothesis 3b	✔

As indicated in the Table 31 above, all of the hypotheses proposed for this research were accepted based on the findings.

Chapter 5: Conclusion

The main focus of this research was to investigate how Hanze UAS can implement E-learning tools in conjunction with traditional teaching methods in order to increase its level of internationalisation at home. To reach this aim, the following main research question and sub-research questions were formulated.

''How can the use of E-learning tools impact the increase of the internationalisation within Hanze UAS effectively?''

Subq1a: How do the features of E-learning tools impact the willingness of students to use E-learning within Hanze UAS?

Subq1b: How do the features of E-learning tools impact domestic and international students' willingness to interact with each other via E-learning tools within Hanze UAS?

Subq2a: What is the impact of the possible barriers to E-learning on students' willingness to use E-learning within Hanze UAS?

Sub2b: What is the impact of the possible barriers to E-learning on domestic and international students' willingness to interact with each other via E-learning tools within Hanze UAS?

Subq3a: Is there a significant difference between the students' demographics regarding their willingness to use E-learning within Hanze UAS?

Subq3b: Is there a significant difference between students' demographic factors regarding their willingness to interact with each other via E-learning tools within Hanze UAS?

Considering sub-questions 1a and 1b, Smedley (2010) states that the customisable features of E-learning tools enable students to decide when and where they can access the materials. In the same study, it is also discussed that flexibility, accessibility and selectable learning content positively affect a student's willingness to use E-learning and provide an opportunity for enhancing the connection between students with different languages of instruction. Regarding the findings, the positive association between the features of E-learning tools and students' willingness to use E-learning tools is supported by the data in the present study. Furthermore, the positive association between the features of E-learning tools and domestic and international students' willingness to interact with each other via E-learning also indicated a positive relationship. To conclude, the features of E-learning tools have a positive impact on both willingness to use E-learning and willingness to interact with each other (students from domestic and international programmes) via E-learning tools. Considering this positive effect of the features of E-learning tools on students willingness to use E-learning and domestic and international students' willingness to interact with each other via E-learning, Birzina et. Al (2009) defined the ways to increase the interaction between students from domestic and international programmes as the capability of E-learning tools to provide cognitive engagement, interaction and collaborative work for students. Furthermore, creating an online platform where students with different languages of instruction can work together is suggested as an encouraging method for students. Birzina et. Al (2009) also highlighted the EU higher education criteria which concentrate on offering the same content and skills for students with different languages of instruction. Particularly, it is discussed that at least two languages in research and learning is one of the criteria of EU higher education. Moreover, students studying in domestic programmes are not sufficiently encouraged to collaborate with international students because of the different languages of instruction (Birzina et. Al, 2009).

Regarding sub-questions 2a and 2b, as Mihhailova (2005) and Baruqe and Brazil (2014) stated, the use of E-learning can cause a lack of motivation, a lack of communication between students and lecturers, and technical problems which have a negative impact on students' willingness to use E-learning and their (domestic and international students) willingness to interact with each other via E-learning. The findings also supported this statement as the analyses indicated that there was a

negative association between students' attitudes towards possible barriers to use E-learning and their willingness to use E-learning and interact with each other via E-learning. Mihhailova (2005) and Baruqe and Brazil (2014) studied these possible barriers to E-learning since they discussed that the flexibility and accessibility of E-learning tools can cause procrastination when studying and they can cause concentration problems as well. However, Amirault and Visser (2010) stated that knowing the possible barriers to E-learning allow universities to take precautions during the implementation process and in that way, E-learning tools can be designed in a way to cope with these barriers.

Furthermore, the results of sub-questions 3a and 3b are supported by the studies conducted by Koster (2018); Lu and Chiou (2010); Huang (2013); Jung et. Al. (2010), as the students' willingness to use E-learning and interact with each other via E-learning platforms differs depending on their demographics. Considering the data analysed, it is concluded that this statement supports the findings as the analyses demonstrated that there was a significant difference between the students' demographics on their willingness to use E-learning and their willingness to interact with each other via E-learning. Therefore, the features of E-learning provide students with a customisation facility which can be used to fulfil their demands. Koster (2018); Lu and Chiou (2010); Huang (2013); Jung et. al. (2010). Huang (2013) conducted studies which substantiate this argument as they defined the customisation of E-learning tools as an opportunity to reach a wider demographic of students as they are free to decide what type of learning content to use, when and where to use it and they can also track their learning types and learning steps by taking mock exams and quizzes.

The other aspects of the possibility to boost internationalisation within Hanze UAS via E-learning tools are discussed in more detail based on the findings in the recommendations section.

Figure 5 below indicates the positive effect of the features of E-learning tools on the increase of students' willingness to use E-learning and their (domestic and international students) willingness to interact with each other via E-learning, which as a result effects the internationalisation within Hanze UAS effectively. Besides, based on the results, the willingness to use E-learning and domestic and international

students' willingness to interact with each other via E-learning differ depending on their demographic backgrounds, which is also supported by the secondary data (Koster, 2018; Lu and Chiou, 2010; Huang, 2013; Jung et. Al., 2010).

How can the use of E-learning tools impact the increase of the internationalisation within Hanze UAS effectively?

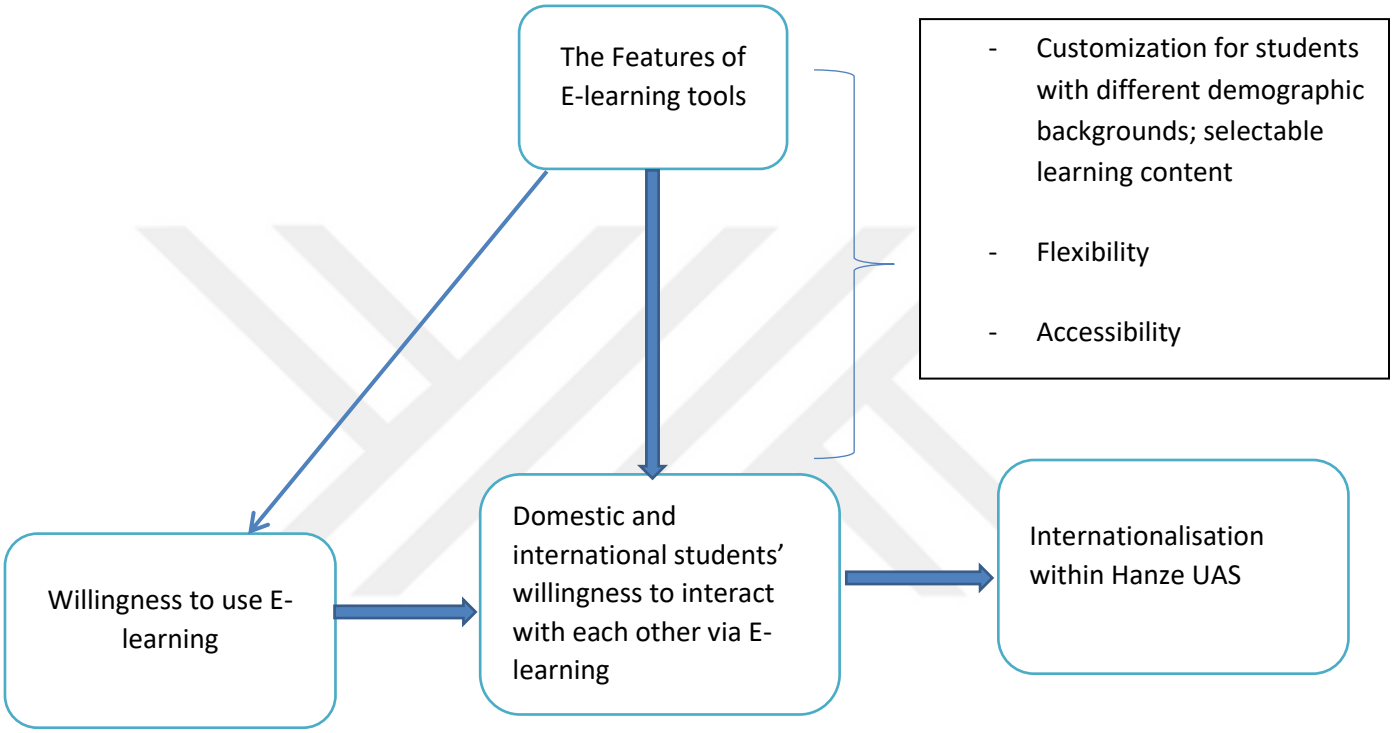

Figure 5: The impact of E-learning on internationalisation regarding the features of E-learning tools

In addition to Figure 5, the negative impact of the possible barriers to use of E-learning on students' willingness to use E-learning and their willingness to interact with each other via E-learning are revealed as a discouraging influence on students' willingness to use E-learning and their willingness to interact with each other via E-learning are presented in Figure 6 below, which is also stated by Mihhailova (2005); Baruqe and Brazil (2014). Nevertheless, as both of these studies suggested, these possible barriers can be avoided in the implementation plan by taking several precautions which are defined in more detail in the recommendations section.

However, since the findings revealed that students' attitudes towards the features of E-learning tools and their willingness to use E-learning and interact with each other via E-learning are positively associated with each other, the possible barriers are should be avoided in order to provide this increase in both the willingness to use E-learning tools and domestic and international students' willingness to interact with each other. As Amirault and Visser (2010) discussed, the possible barriers will mostly occur at any stage of the implementation process of something new. However, by knowing the barriers, it will be easier to take actions in the early stages of the implementation of E-learning tools.

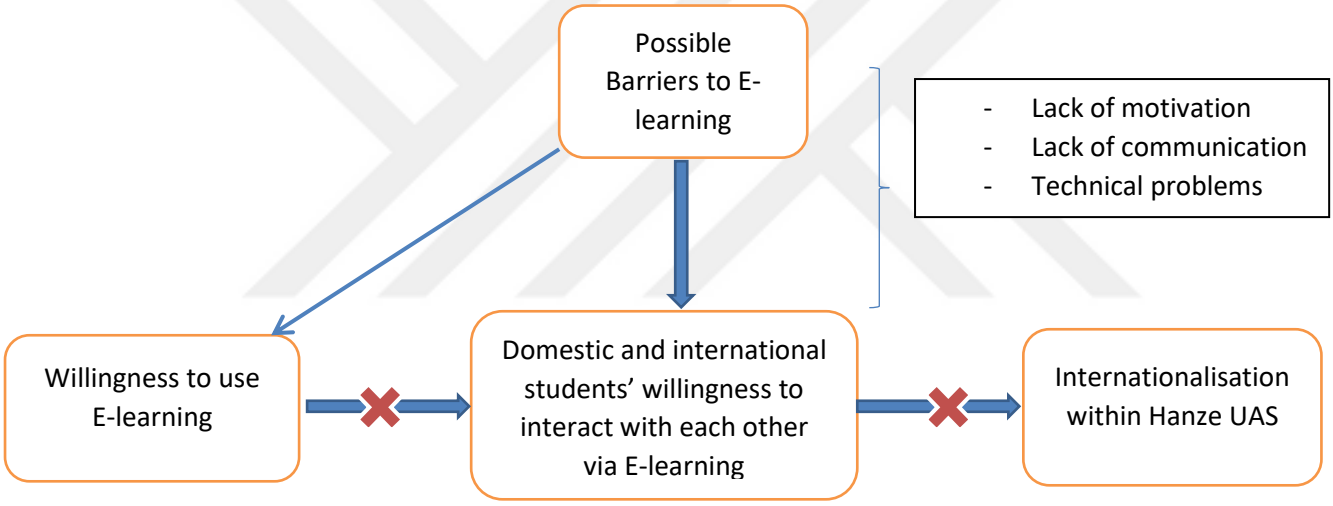

Figure 6: The impact of possible barriers to E-learning on students' willingness to use E-learning and their willingness to interact with each other via E-learning

5.1 Recommendations

In this section, three recommendations based on the findings are discussed. The recommendations are formulated by setting SMART goals and are proposed to the management of Hanze UAS, the intended recipient of the recommendations.

Based on the research and the results, the following three recommendations are proposed:

1. E-learning tools as a way to improve the liaison between domestic and international students: Based on the outcome of this research, it is suggested introduce more E-learning tools to increase the interaction between domestic and international students. Despite the fact that students following Dutch-taught programmes are surrounded by domestic students, the different languages of instruction limit interaction between both groups of students. This can be improved by adding a chat-and-video call possibility via a digital platform for the domestic and international students following the same study programme with different languages of instruction. In this way, they can share their opinions and information about the courses which is a significant factor ın terms of increasing the liaison between them. Furthermore, virtual classrooms can be implemented in combination with traditional programmes to connect students with different languages of instruction. Specifically, some of the courses can be offered via virtual classrooms where domestic and international students studying in different languages can study in groups. By studying and discussing their work together, this can boost their level of interaction. In addition, these virtual classroom sessions can also be utilised in order to connect students at partner universities with Hanze students, which as an outcome will increase internationalisation at home for Hanze UAS. The implementation of E-learning tools can begin the next academic year (2018-2019). First, there can be trial courses in combination with E-learning tools for a semester. At the end of the first year (December 2018), there can be a check to see if the interaction between domestic and international students improved.

2. Avoiding the possible barriers: The results illustrated that the lack of motivation, lack of communication between students and lecturers and technical problems affect students willingness to use E-learning and interact with each other. To avoid these possible barriers, an online attendance sheet should be used for virtual classrooms. Since students do not need to be physically present in the traditional classrooms during the virtual classroom sessions, they will be less motivated and less willing to participate in the virtual classes. Therefore, an online student check should be done regularly via attendance forms. Furthermore, the students' attendance should be used as a factor which affects their overall grade in order to encourage them to participate in the sessions. The availability of the E-learning tools should only be for the students who attend the traditional classes regularly to avoid their physical absence.

3. Training of staff and students is the key factor in ensuring the successful implementation of courses delivered via E-learning tools. Since harmonising E-learning tools in traditional classrooms brings new responsibilities and the requirement for training to facilitate the effective use of course materials in the system, to utilise the platform in order to interact with fellow students, to regularly check the platform and managing the diversity of virtual materials for virtual classrooms is significant, the importance of understanding these factors should be clarified for students. Moreover, students should be trained how to benefit from E-learning tools, to use the platform in order to interact with others in a way to work collaboratively, encouraged to attend virtual classes, to watch video recordings of the lectures and to upload their online attendance sheets and also the other files asked from lecturers. The training can be for a month (September 2018). After the training students can apply what they learned by utilising the tools. Feedback facility can be provided just in case if students need help or have questions regarding the use of E-learning tools.

Strategically, implementing E-learning tools is not considered too expensive since Hanze UAS already has the necessary equipment and the infrastructure for E-learning tools. Thus, the management of Hanze UAS should focus on increasing the utility of E-learning tools to enhance the interaction between domestic and international programmes which as a result will increase the internationalisation at home for Hanze UAS.

Chapter 6: Discussions

In this section, the weaknesses and strengths of the research methodology used, and results are discussed. Limitations are discussed under a sub-section (see 6.1) within this chapter.

Firstly, this research topic of this thesis was fascinating to investigate, regarding students' interests in the utility of E-learning in conjunction with traditional programmes within Hanze UAS. Additionally, meeting the EU higher education criteria and the Bologna Process has brought new necessities to universities within EU. Huang (2013) discussed these criteria as oppressive towards universities within EU in order to encourage the higher education institution to utilise more digitalised tools in EU higher education. However, this increased the competition and new challenges for universities within EU as well. Therefore, this research aimed to investigate the use of E-learning tools in combination with traditional programmes to improve the interaction between domestic and international students within Hanze UAS, which as a result to increase internationalisation at home regarding the EU criteria and the Bologna Process. In addition, Säljö (2010) states, the increasing use of technology has introduced new trends to higher education. In regard to this, the importance of the use of E-learning tools in conjunction with traditional classrooms has been an important strategy for universities within the EU in order to increase students' interest and interaction with each other, which as a result, allows higher education institutions to meet the Bologna Process and the EU accreditation criteria. In the same study, it is discussed that technological innovations have changed the way higher education is delivered. Students are nowadays more eager to utilise digitalised tools in their classrooms to increase their learning and communication capabilities by collaboratively working with the large demographics of students

(Birzina et. Al, 2009). Considering this, this research created an opportunity to study the technological advances in EU higher education, in particular within Hanze UAS. It was interesting to discover that although students considered the possible barriers to E-learning as a negative impact on their willingness to use E-learning and interact with each other via E-learning, they still indicated a positive attitude towards the features of E-learning. As a result, this showed that students' willingness to use E-learning and their willingness to interact with each other (students within international and domestic programmes) via E-learning is positively associated. Moreover, Koster (2018) states that E-learning tools have the capability of improving the interaction between domestic and international programmes. In the same study it is suggested to use common platforms and E-learning tools where students from different departments can communicate and study together. Therefore, students' attitudes towards the possible barriers to E-learning did not affect their willingness to use E-learning and to utilise it as a way to interact with the students from programmes which have different languages of instruction within Hanze UAS.

The strengths of this research include that the outcomes can be used by other higher institutions, other than Hanze UAS, to increase their internationalisation through the use of E-learning tools. The reason for this pertains to the transferability and generalisability of this research. More specifically, considering the different characteristics of the students in the survey and the high response rate (approximately 80%), the results can be considered as a representative of the general population (Hanze UAS). It is important to distribute a survey randomly and include people of all demographic backgrounds, such as age, and nationality, in order for the results to be generalised. Since these factors were considered when collecting primary data and the number of responses represents the general population, the results of this research can be generalised within Hanze UAS. To reach a high response rate (approximately 80 %), different approaches were utilised as also discussed in the methodology section (see Chapter 3), which are the face-to-face approach and online survey. Moreover, five lecturers also helped to share the survey which facilitated the research since a wider group of students from different departments and languages of instruction and also demographic backgrounds within Hanze UAS were reached. Although the online survey did not allow the researcher to clarify the questions and the topic for the participants, the topic and the questions

were clarified when students were approached Hanze UAS which increased the reliability of the answers.

Additionally, the survey questions were backed up by previous studies which strengthened the validity and generalisability. Moreover, the high Cronbach's alpha value of the variables proved that the survey questions were reliable, meaning that similar answers can be received if the survey was to be replicated. To conclude, these steps increased the generalisability of this research. Furthermore, international education via E-learning tools can be utilised not only for students but also for lecturers and society, which signifies the importance of the research topic and the usefulness of the findings. Moreover, the results were in line with previous studies which further strengthened the outcomes of this research.

However, considering the weaknesses, questions asking students to state their departments or faculties should have been added, which could shed light on the specifıc demands for E-learning tools each department of faculty has. Furthermore, since this research only investigated the students' perspectives, the interest level of lecturers in E-learning tools has not been studied, which could be crucial when implementing E-learning tools within Hanze UAS. Moreover, there can be researcher bias when interpreting the collected data. Specifically, although this research was quantitative thus, several analyses were conducted to analyse the primary data, the researcher can (consciously or unconsciously) focus on specific numbers when interpreting the results which can affect the generalisability.

6.1 Limitations

In this section, the limitations of this research are discussed.

Firstly, this research solely focuses on the impact of E-learning tools to increase internationalisation within Hanze UAS. Therefore, all of the students who participated in the survey were either current students or alumni of Hanze UAS. Reflecting on this, there might be different behaviours and answers from students studying at different universities in different countries, also even within the Netherlands which can affect the generalisability in a larger context.

Considering the E-learning facilities other universities currently have, or even for the universities within the EU, there are different regulations and criteria for higher education institutions, which is discussed in the problem statement. Therefore, the need for the utility of digitalised tools and internationalisation in higher education are dependent on the regulations and in this study, the EU regulations and the Bologna process were the oppressive facts for Hanze UAS due to the fact that the university is situated in the Netherlands, EU and the Bologna Process was signed by the Netherlands as well. Nevertheless, for a university in a non-EU country, internationalisation might not be an important objective. Moreover, access to the internet in any of these countries may be limited, which may cause participant bias about E-learning tools, since they would not have sufficient infrastructure to support such tools. Furthermore, since the use of E-learning tools as a method which can be implemented to enhance the interaction between domestic and international programmes is still uncommon, there can be participants' bias when filling out the survey. Although this was avoided when approaching the participants at Hanze UAS, for the online survey this can cause bias for those who are not aware of the features of E-learning tools and the way to use E-learning to improve the liaison between students from domestic and international programmes.

Moreover, the availability of secondary data specifically about this topic cannot always be found. Another reason why the use of E-learning tools is still not known well as a way to increase internationalisation within Hanze UAS links to the lack of knowledge about this area. Despite there being several higher education institutions in the Netherlands that make use of E-learning tools to increase the interaction of students between domestic and international programmes, this strategy is still not

common. This is concluded due to the lack of secondary data available on this topic. Moreover, this research solely investigated the case of Hanze UAS. Thus, the literature review was compiled from various empirical studies and researches on this area to gain knowledge and to relate similar examples to Hanze UAS.

Another limitation could be that in this research, the psychology of interaction, cognitive psychology and sociolinguistics (ie. language use, in which language do domestic students prefer to communicate, do domestic students think internationals should learn their language and then would they be willing to communicate?) have not taken into account, which could identify if students from domestic programmes' (Dutch-taught) feel comfortable when speaking a foreign language within Hanze UAS.

6.2 Future Research

While this research demonstrated the interest level of students and lecturers in the utilisation of E-learning tools in combination with traditional educational methods, based on the findings it can be concluded that using virtual materials namely, virtual classrooms and video recordings of lectures might accelerate the internationalisation within Hanze UAS. There are still other opportunities which can be applied to this research to increase internationalisation within Hanze in a more effective way in the future. In this section some directions will be given for future research.

6.2.1 Virtual Reality tools

As studied in this research, VR tools seem to be an interesting alternative virtual learning method. Since this study is focused more on e-learning facilities which can be easily implemented in order to accelerate internationalisation within Hanze UAS, VR tools were not studied in detail. Nevertheless, in order to observe the interest level of students in VR tools, a detailed study into the advantages and challenges of the use of VR tools in higher education is required. Moreover, more time and research are required to cover the interest of students in VR tools.

6.2.2 Augmented reality and simulation games in education

This study does not include augmented reality, but simulation games applied in different educational fields. However, augmented reality tools seem to be interesting and they will be an alternative learning method in the future. Thus, in any future research, it is suggested to study the facilities of augmented reality methods and how they can be implemented in combination with traditional methods. Furthermore, the use of simulation games was discussed under the VR tools sections in this study. However, further research into how some of these games can be adopted by Hanze could be an interesting study.

6.2.3 Lecturers' willingness to use E-learning

Since this research focussed solely on the students' perspective within Hanze UAS, the results are therefore only based on the responses from students. However, lecturers also play a significant role when investigating in an educational context. Therefore, for future research it is recommended to study lecturers' interest levels in the use of E-learning in combination with traditional study programmes, which will consequently provide a different perspective and more results for this research in this area as also discussed by Mihhailova (2005).

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Appendix 1

Supervisor meetings

During the supervisor meetings, I always received feedback on time and I had regular meetings with my supervisor once a week. Since the way we communicated was simple and friendly, it made us understand what each other's expectations were and how we could work together to achieve them. My supervisor Mariusz Soltanifar had always time to answer my questions as soon as possible and schedule a meeting if I needed. In our meeting sessions, he always checked my weekly work and how my process went. Whenever there was something wrong or missing in my research, he guided me to correct my mistakes and write a thesis in the best way. Additionally, he cared what I wanted and how I wanted in my thesis and he guided me to follow my own path. Therefore, the meetings made me keep up my work and go with the discipline since I knew that my supervisor would check my work weekly. Therefore I always needed to progress in order to have something to discuss in the meetings and receive feedback on that.

Appendix 2

‘‘The impact of E-learning tools on Internationalisation within Hanze University of Applied Sciences"

Dear Participant,

This survey is aimed to observe the interest level of e-learning tools (virtual materials, audio materials and virtual reality tools) within Hanze University of Applied Sciences. By participating in this survey, you will be able to help me find out the interest level of the use of E-learning tools within Hanze University of Applied Sciences thus, I would be glad if you spend approximately 6 minutes to fill out this survey. The survey will take place anonymously. Thanks in advance!

P.S. This survey is valid only for students.

Kind Regards,

Berk Kaykanat
MIBM Student - Hanze University of Applied Sciences

1. What is your gender?

A. Male

B. Female

C. I would prefer not to answer.

2. What is your nationality?

A. EU nationality

B. Non-EU nationality

3. What is your language of instruction?

A. English

B. Dutch

C. German

4. What is your age?

A. 18-24 years old

B. 25-34 years old

C. 35-44 years old

5. I think I will become less motivated if I study using E-learning tools.

	1	2	3	4	5	
Strongly Disagree	O	O	O	O	O	Strongly Agree

6. I think technical problems can occur while using E-learning tools.

	1	2	3	4	5	
Strongly Disagree	O	O	O	O	O	Strongly Agree

7. I think E-learning tools can cause a lack of communication between lecturers and students.

	1	2	3	4	5	
Strongly Disagree	O	O	O	O	O	Strongly Agree

8. I would like to make use of more E-learning tools in my programme.

	1	2	3	4	5	
Strongly Disagree	O	O	O	O	O	Strongly Agree

9. I think using E-learning makes courses more interesting.

	1	2	3	4	5	
Strongly Disagree	O	O	O	O	O	Strongly Agree

10. I can customize E-learning tools regarding my demands.

	1	2	3	4	5	
Strongly Disagree	O	O	O	O	O	Strongly Agree

11. I can access E-learning tools wherever I need as physical presence is not needed.

	1	2	3	4	5	
Strongly Disagree	O	O	O	O	O	Strongly Agree

12. I can make use of E-learning tools whenever I would like to as I can have an access to them online when I need.

	1	2	3	4	5	
Strongly Disagree	O	O	O	O	O	Strongly Agree

13. E-learning tools enable me to choose the learning content regarding my demands.

	1	2	3	4	5	
Strongly Disagree	O	O	O	O	O	Strongly Agree

14. I think the use of E-learning tools can increase internationalisation within Hanze as students can make use of E-learning tools anytime, anywhere in combination with traditional courses.

	1	2	3	4	5	
Strongly Disagree	O	O	O	O	O	Strongly Agree

15. I think students from domestic programmes (Dutch-taught) and international programmes (English-taught) can be connected with each other easily by using E-learning tools in their traditional programmes.

	1	2	3	4	5	
Strongly Disagree	O	O	O	O	O	Strongly Agree

16. I think E-learning tools build up good an easier interaction with students studying with different languages of instruction.

	1	2	3	4	5	
Strongly Disagree	O	O	O	O	O	Strongly Agree

17. I can work with domestic/international students in a same project by using E-learning tools under the same language

	1	2	3	4	5	
Strongly Disagree	O	O	O	O	O	Strongly Agree

18. I think the flexibility of the use of E-learning can cause motivational problems for me to complete the course.

	1	2	3	4	5	
Strongly Disagree	O	O	O	O	O	Strongly Agree

19. I think technical problems of E-learning tools can affect my study.

	1	2	3	4	5	
Strongly Disagree	O	O	O	O	O	Strongly Agree

20. I think I cannot have regular meetings with my lecturers while studying via E-learning tools.

	1	2	3	4	5	
Strongly Disagree	O	O	O	O	O	Strongly Agree

21. I think E-learning tools are really efficient if they are used in combination with traditional courses.

	1	2	3	4	5	
Strongly Disagree	O	O	O	O	O	Strongly Agree

Appendix 3

Regression Analysis – Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B		Correlations		
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part
1	(Constant)	1,555	,663		2,347	,020	,251	2,859			
	Features_sum	,554	,050	,541	11,088	,000	,456	,652	,541	,541	,541

a. Dependent Variable: use_sum

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B		Correlations		
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part
1	(Constant)	4,431	1,106		4,007	,000	2,255	6,607			
	Features_sum	,489	,083	,322	5,868	,000	,325	,653	,322	,322	,322

a. Dependent Variable: Internationalisation_sum

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B		Correlations		
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part
1	(Constant)	10,999	,789		13,949	,000	9,447	12,551			
	Barriers_sum	-,096	,034	-,160	-2,799	,005	-,163	-,028	-,160	-,160	-,160

a. Dependent Variable: use_sum

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B		Correlations		
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part
1	(Constant)	13,814	1,172		11,792	,000	11,508	16,120			
	Barriers_sum	-,130	,051	-,147	-2,564	,011	-,230	-,030	-,147	-,147	-,147

a. Dependent Variable: Internationalisation_sum

Independent Samples t test

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
use_sum	Male	140	8,1214	2,34860	,19849
	Female	159	9,4298	1,53549	,12177

Group Statistics

	Nationality	N	Mean	Std. Deviation	Std. Error Mean
use_sum	EU	169	8,5503	2,09945	,16150
	Non-EU	130	9,1641	1,96579	,17241

Descriptives

use_sum

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
18-24 years old	233	8,6867	2,07373	,13585	8,4190	8,9544	2,33	11,67
25-34 years old	61	9,4645	1,73555	,22221	9,0200	9,9090	4,67	11,67
35-44 years old	5	7,0000	3,24893	1,45297	2,9659	11,0341	4,67	11,33
Total	299	8,8172	2,06169	,11923	8,5825	9,0518	2,33	11,67

Descriptives

use_sum

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
English	182	9,1374	1,94082	,14386	8,8535	9,4212	2,33	11,67
Dutch	73	7,7763	2,23955	,26212	7,2537	8,2988	2,33	11,67
German	44	9,2197	1,66270	,25066	8,7142	9,7252	4,67	11,67
Total	299	8,8172	2,06169	,11923	8,5825	9,0518	2,33	11,67

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Internationalisation_sum	Male	140	10,2000	3,57577	,30221
	Female	159	11,4119	2,38371	,18904

Group Statistics

	Nationality	N	Mean	Std. Deviation	Std. Error Mean
Internationalisation_sum	EU	169	10,2308	2,93645	,22588
	Non-EU	130	11,6423	3,03643	,26631

Descriptives

Internationalisation_sum

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
English	182	11,2953	3,15665	,23399	10,8336	11,7570	3,25	16,25
Dutch	73	10,2021	2,93289	,34327	9,5178	10,8863	3,25	15,00
German	44	10,0455	2,48850	,37516	9,2889	10,8020	3,25	13,00
Total	299	10,8445	3,05673	,17678	10,4966	11,1924	3,25	16,25

Descriptives

Internationalisation_sum

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
18-24 years old	233	10,6277	3,07959	,20175	10,2302	11,0252	3,25	16,25
25-34 years old	61	11,5574	2,85861	,36601	10,8253	12,2895	6,50	16,25
35-44 years old	5	12,2500	3,24037	1,44914	8,2265	16,2735	6,50	14,00
Total	299	10,8445	3,05673	,17678	10,4966	11,1924	3,25	16,25