



**Pre-service Teachers' Perceptions of Their Use of an Intelligent Tutoring  
System for English Language Proficiency**

**by**

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**Thesis submitted in fulfilment of the requirements for the degree**

**Master of Education**

**in the Faculty of Education**

**at the Cape Peninsula University of Technology**

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**Wellington Campus**

2 February 2021

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## ABSTRACT

### **Pre-service Teachers' Perceptions of Their Use of an Intelligent Tutoring System for English Language Proficiency**

Language proficiency of university students is a contentious issue in South Africa because many students are not studying in their home language and are required to be academically proficient in a language that is not their own. This takes on a new dimension for pre-service teachers studying to become English home language teachers. A further challenge is the increasing numbers of students entering higher education and the lack of resources available to support low performing or at-risk students.

This study aimed to examine pre-service teachers' perceptions of their use of an Intelligent Tutoring System as it was incorporated in an English language module in a Bachelor of Education degree. This ITS was used as an English language proficiency tool and the perceptions of its use by pre-service teachers, were viewed through the lens of Engeström's second generation Cultural-Historical Activity Theory.

Rooted in the pragmatism paradigm, a sequential mixed methods approach was therefore designed to analyse and interpret the relationships between the CHAT nodes, using cross-sectional surveys in the quantitative phase and semi-structured interviews in the qualitative phase of the study. The surveys were designed to uncover initial patterns in the quantitative data, with thematic coding used in the qualitative phase to uncover themes and concepts. This was done to explore the interrelationships between the nodes in depth, and to understand how the tensions and contradictions that existed in the Activity System were perceived by the pre-service teachers when using an ITS that was designed to improve their language proficiency.

The findings of the study showed that the participants' perceptions of the ITS when introduced into an Activity System were positive. This was despite the participants strongly favouring face-to-face learning, and experiencing tensions related to digital literacy. While perceiving that the ITS mimicked aspects of what a human tutor does, their overall perception was that it did not effectively mimic a human tutor. The participants however, perceived that the ITS was: a.) an excellent tool for learning, b.) interesting to use, c.) a tool that assisted with their language proficiency, and, d.) a tool that could assist them in reaching their goals and objectives. The overall perception was that the ITS as a tool was particularly good and effective for improving language proficiency.

## ACKNOWLEDGEMENTS

### I wish to thank:

- My supervisors, Dr Candice Livingston and Associate Professor James Garraway for their time, energy, and guidance throughout this journey.
- Dr Sanet Cox and Ms Melanie Muller.

The financial assistance of the National Research Foundation towards this research is acknowledged. Opinions expressed in this thesis and the conclusions arrived at, are those of the author, and are not necessarily to be attributed to the National Research Foundation.

## **DEDICATION**

To my mom, for always believing in me and supporting me with my studies.

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## CHAPTER 1: INTRODUCTION

### 1.1 Introduction and background to the problem

The language proficiency of university students is a contentious issue in South Africa because many students are not studying in their home language and are required to be proficient in a language of instruction that is not their own (Boughey & McKenna, 2016; Mheta, Lungu & Govender, 2018; Seabi, Seedat, Khoza-Shangase & Sullivan, 2014; Van der Merwe, 2016). This issue takes on another dimension, when pre-service teachers who are studying to become English home language teachers, are often not English mother tongue speakers (Nel & Müller, 2010: 635). Even though these pre-service teachers will eventually go on to teach English as a Home language, the researcher has noticed that these students still battle with a variety of language issues, not only with grammar issues, but with pronunciation and fluency too.

Students enrolling at English-medium universities and not being fully competent or proficient in English are not unique to South Africa. There is in fact a plethora of research available that speaks to the growing number of non-English speakers attending these English medium institutions (Dafouz & Camacho-Miñano, 2016; Doiz & Lasagabaster, 2018; Macaro, Curle, Pun, An & Dearden, 2018). Even though students realise they are entering English-medium institutions, and universities try to assist them with academic reading and writing skills, many still struggle with language, nonetheless. This naturally leads to frustration, demotivation, and anxiety among many students (Murray, 2013).

A growing challenge for lecturers is to try to find ways in which to support the ever-increasing language needs of the students in their classrooms (Mohamedbhai, 2014). One solution that has been proposed to deal with this problem is the introduction of Intelligent Tutoring Systems (ITS), not only to deal with the increased numbers at university level, but also in order to improve the language proficiencies of the students. In their research, VanLehn (2011: 201) states that ITS are as effective as face-to-face tutors and should be considered as a viable option for a lecturer.

### 1.2 Problem statement

To set the scene and elucidate the central position in this research, the researcher pointed out the following:

- a) The Education Faculty at the university at which this research has been conducted, does not have sufficient tutors available to assist students who may require additional assistance adequately.
- b) The lecturers within the English department have full work schedules, and have neither the capacity nor the resources available to offer additional English tutoring outside the classroom environment.
- c) To add to the two complexities mentioned above, it should be stated that this research took place during the Covid-19 pandemic and the ensuing lockdown (§4.3). University campuses across South Africa were shut for many weeks with face-to-face lectures suspended. Both institutions and students were required to teach/learn via online methods, even though many universities across the country were not ready for this way of teaching and learning (Department of Higher Education and Training, 2020: 1–10; Hlati, 2020; Khubeka, 2020; Nowicki, 2020).

Keeping these constraints in mind, it should further be noted that many students enrolling at universities in South Africa are not fully proficient in English (Coetzee-Van Rooy, 2011: 151–181; Nash, 2006: 21–31; Nel & Müller, 2010; Seabi *et al.*, 2014: 67; Steenkamp, Baard & Frick, 2009: 635). Globally, there is a plethora of research available which speaks to the growing number of non-English speakers attending English medium institutions (Calderón, Slavin & Sánchez, 2011: 104; Owu-Ewie, 2006: 76; Walqui, 2006: 159). Murray (2013: 299) in his research argues that it can no longer be assumed that students who enter into their university studies have the level of language proficiency required to participate effectively in their studies, complicated further by institutions needing to produce work-ready graduates who are proficient in English.

Even though students realise that they are entering English medium of instruction (EMI) universities, and the universities try to assist them with academic reading and writing skills, many still struggle nonetheless with language proficiency. This naturally leads to frustration, demotivation and anxiety in many (Liu & Huang, 2011: 1; Murray, 2013: 300; Woodrow, 2006: 297). Typically, not having direct access to your lecturer or a tutor could exacerbate this even further. Is there more that South African universities could be doing for these non-native English-speaking students in the form of English language tutoring?

A possible solution to overcome the problem could be to turn to technology such as ITS. However, there is still a lack of consensus in the research community when it comes to the effectiveness of ITS. Historically, Corbett, Anderson, Koedinger & Pelletier (1995: 849) in their research have found that ITS show only an average improvement in learning, with recent reviews showing ITS to have only moderate effects (Ma, Adesope, Nesbit & Liu, 2014: 12).

Kulik and Fletcher (2016:42) examined 50 ITS in 2016 to evaluate their effectiveness in comparison to human tutors. What their analysis showed was that students using ITS outperformed students who attended only traditional classes. They found ITS to be an effective instructional tool which performed better than other forms of tutoring. In fact, in some instances, they found that ITS outperformed human tutors, and that overall, ITS showed a moderately strong effect across the board (Kulik & Fletcher, 2016: 67). This research ties up with VanLehn's (2011: 214) research that states that ITS could potentially be as good as human tutors, if not better, and that further research is therefore needed to prove their effectiveness in the classroom. What all the research presented above has in common is that it looks at the effectiveness of the ITS compared to human tutors, and not how the ITS is *perceived* in comparison to a human tutor by the participants using the ITS.

The participants in this study are undergraduate pre-service teachers in a Bachelor of Education degree programme at a university in the Western Cape. They used ITS during their study. The purpose of this study is to investigate pre-service teachers' perceptions of using ITS for English language proficiency. The study has one central overarching research question:

- What are pre-service teachers' perceptions of an ITS for English Language Proficiency that has been introduced into an Activity System?

In order to answer the main research question, the following sub-questions have been posed:

- Sub-question 1: What are the pre-service teachers' perceptions of the ITS when viewed through the lens of Cultural-Historical Activity Theory (CHAT)?
- Sub-question 2: What tensions and contradictions are perceived by pre-service teachers when using ITS?
- Sub-question 3: To what extent does ITS mimic face-to-face human tutoring?
- Sub-question 4: To what extent do pre-service teachers perceive ITS as an effective or ineffective tool?

### **1.3 Objective**

The main objective of this study was to examine the perceptions of pre-service teachers regarding the use of ITS for English Language Proficiency, which was introduced into an undergraduate English module at a university in the Western Cape, using CHAT.

A further objective was to determine

- what tensions and contradictions were experienced in this CHAT system;

- whether the ITS was able to mimic one-on-one human tutoring; and finally
- whether the ITS was perceived, by the participants as an effective or ineffective tool.

#### **1.4 An overview of the review of literature**

An ITS is a teaching and learning system that can adapt to specific learning needs by adapting to, and personalising learning for individuals; and that can mimic one-on-one instruction at any place and time (Alevan & Ashley, 2008: 78; Merrill, Reiser, Trafton & Ranney, 1992: 278; Yang, 2010: 64). Phobun and Vicheanpanya (2010: 4064) succinctly define an ITS as a system that assesses each student's actions within an interactive environment; develop a model of their knowledge, skills, and expertise; then tailor instructional strategies to assist that specific learner.

While there may be many computer-aided instruction programmes (CAI – the use of computers or educational technology in learning) or computer-based training systems (CBT – training that is presented primarily on a computer) available for teaching and learning, these are often not able to assist learners individually (Chen, Mdyunus, Zah, Ali & Bakar, 2008: 50; Nwana, 1990: 251; VanLehn, 2011: 198). While CBT and CAI have often used a more standardised form of instruction and testing methods; ITS uses complex algorithms to adapt to the specific level of the individual student. It is for this reason that ITS is an essential research area, not only in education but also in psychology and computer science.

When educators refer to tutoring in education, the thought is often that one-on-one human tutoring is the gold standard of instruction (Mathews, 2012: 10; VanLehn, 2011: 197). In fact, studies have shown that this form of instruction can lead to a student learning four times faster than through traditional classroom methods (Merrill, Reiser, Trafton & Ranney, 1992). Since the early 1970s, researchers have been interested in seeing how computers could be used to aid instruction and learning in the classroom and potentially act in the same way as human tutors. The thought of a computer being able to act as or even replace a human tutor has therefore existed for many decades (VanLehn, 2011: 213; Yang, 2010: 63)

With the advancement in technology over the years, how the computer has been used in the classroom has evolved into what we can now refer to as ITS. The earlier use of computers in classrooms was primarily as digital aids, whereby the instructors would teach with the assistance of a computer in the classroom. Historically, learners could be asked questions via a computer programme, and they could get immediate answers or feedback (Atkinson, 1968). A shortcoming with these earlier generation computer tutors was that they were not specific enough to an individual learner, and the testing done was more standardised, and not adaptive enough. Learning was therefore not individualised enough to mimic human tutoring. With the

advancement in computer technology and the use of artificially intelligent software, newer generations of computer tutors have evolved. An ITS is now able to deliver content and give the learner immediate feedback to questions that the student may have (Alkhatlan & Kalita, 2019: 4; Ma *et al.*, 2014: 4; Mahmoud & Abo El-Hamayed: 283, 2016; Marouf, 2019: 7). These ITSs are now successfully able to adapt to the individuals learning needs by acting as a human tutor (Alkhatlan & Kalita, 2019: 6; Phobun & Vicheanpanya, 2010: 4065; Shuib, Abdullah, Azizan & Gunasegaran, 2015: 41). This adaptation, in turn, makes the content delivery and testing more specific and customised to the individual's needs (VanLehn, 2011: 197–221), thereby improving cognition.

Before 2011, learning outside of a traditional classroom format could be viewed as a continuum, ranging from no tutoring (being the least effective) to human tutoring (being the most effective). The common belief was that no tutoring was the least effective; while computer-aided tutoring was more effective than no tutoring at all; ITSs were more effective than computer-aided tutoring; and that human tutors were the most effective of all (Bloom, 1984: 4–16; Corbett, 2001: 137–147; Kulik & Kulik, 1991:75–91). In his research, VanLehn (2011: 197–221) compared human tutoring to two types of computer tutors, ITS and CAI, to see what the actual differences were. He hypothesised that the interactivity of human tutors with learners (immediate feedback and scaffolding) could potentially be the reason as to why human tutors are considered to be better than computer tutors, with similar findings by Chi, Jeong, , Hausmann, Siler and Yamauchi (2005) to support this. However, through research and testing of the various tutoring methods, VanLehn (2011) found that the new generation ITSs were just as valid as human tutors, contradicting many researchers' earlier beliefs.

ITSs that adapt to the individual needs of a student are grounded in the thought that each student has an individual aptitude to learn (Clifford, 2013; Heilman, Collins-Thompson, Callan & Eskenaz, 2013; Ma *et al.*, 2014) Even though ITS can adapt according to the individual's aptitude, this study will not be looking at aptitude, but rather at perceptions of the participants using the ITS. This research will look at pre-service teachers' perceptions of an ITS when introduced into an Activity System, what the pre-service teachers' overall perceptions of the ITS are, what tensions and contradictions exist in the Activity System, and if the ITS is perceived to mimic a human tutor or not.

The ITS will be used within an Activity System as a tool for online learning, where the participants are able to access it anywhere and at any time. The subjects (the participants) will take a standardised English language proficiency pre-test to determine their English language proficiency benchmarked according to the Common European Framework of Reference (CEFR). The pre-test is done to ensure that the participants are placed on the

correct language level on the ITS. The participants will then complete an English course on the ITS. Once completed, the researcher will investigate and explore the main research question and sub-questions.

Computer-assisted English language learning has been accessible to both teachers and students for approximately the last 40 years (Chinnery, 2006: 9–16; Lee, 2000: 1–8; Warschauer & Healey, 1998: 57–71). Over the last few years, this type of language learning has become a lot more sophisticated, allowing it to be more collaborative and adaptive to the specific needs of the student (Alkhatlan & Kalita, 2018: 1; Nkambou, Bourdeau & Psyché, 2010: 361). While there are many forms of computer-assisted English learning, what is interesting to note is that research is inconclusive with regard to the effectiveness of language learning ITS. While ITS has historically been shown to be extremely effective in well-defined subjects such as mathematics (Chi & VanLehn, 2010: 39; Heilman & Eskenazi, 2006: 20; Alevan & Ashley, 2006: 92), there is still some debate around its effectiveness in ill-defined domains such as languages (A Almasri, Ahmed, N Al-Masri, Sultan, Mahmoud, Zaqout, Akkila & Abu-Naser, 2019: 27; Kulik & Fletcher, 2017; Tai, 2012: 222).

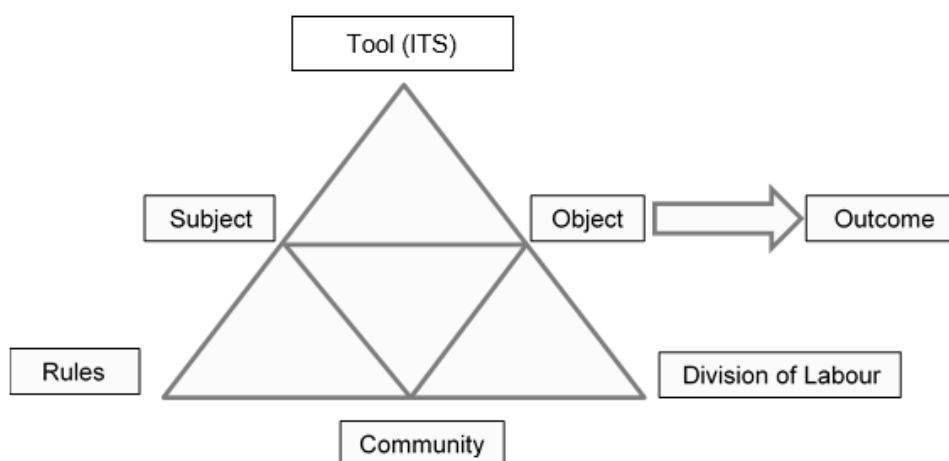
## **1.5 An overview of theoretical framework**

The theoretical framework of second-generation Activity Theory (AT) or Cultural-Historical Activity Theory (CHAT) (Engeström, 1987: 5) has been used within this research to examine the perceptions of the use of an ITS by pre-service teachers in an English language module. De Beer and Menz (2019:252) state that “Engeström created the idea of an activity system in order to better explain the sociocultural context in which people live and communicate. In an activity structure, the focus of the activity is inspired by a particular goal (called the object), and the result is influenced by rules, tools, the environment, and the division of labour. New and existing objects are continuously changed through people and their activities.” In the context of this research, this would be the participant (the subject) using a tool/instrument (the ITS) to complete grammar and vocabulary exercises (the object) to create an outcome, as perceived by the pre-service teachers using the ITS.

When considering second-generation AT as a lens for this study, it is important to note that the first-generation AT, consisting of subject, tool, and object, looks at Activity Systems in isolation and does not consider any outside actors or forces which could influence the activity (Engeström, 1987: 5; Obando, 2016: 43; Westberry, 2009: 58). Engeström (1987: 6) has suggested that certain related elements be added to the first-generation AT to give it a more realistic real-world view of how various tensions within Activity Systems drive activities. The additional elements to be added were rules, division of labour, and community. The

researcher's preference therefore within this research is to use second-generation AT (CHAT), that looks at the Activity System as a whole, and may prove to be more useful in the context of this research within the social sciences field.

In Engeström's second-generation CHAT (Figure 1.1), three additional elements have been added to the first-generation AT model. The three additional elements, or nodes, as referred to above (rules, community, and divisions of labour) can be seen in the figure below, with the lines connecting the various nodes depicting the interrelationships or forces between the nodes. Rules refer to the rules that govern the activity within this particular system, community refers to the community of people of an Activity System (which could be both internal as well as external communities), and division of labour refers to the hierarchy of an Activity System.



*Figure 1.1: Engeström's second-generation Cultural-Historical Activity Theory Model (Sannino & Engeström, 2018: 45)*

Within this research, the various elements in the Activity System, are described as follows:

1. Tool/Instrument: An Intelligent Tutoring System (ITS) for English language proficiency, which is an online adaptive and personalised platform, used by pre-service teachers during lockdown of the 2020 Covid-19 pandemic, accessed by the participants on their personal digital devices.
2. Subject: The participants, first-year pre-service teachers, using the ITS.
3. Object: The work carried out on the platform.
4. Rules: This refers to any rules affecting the Activity System, such as the rules related to the classroom, the rules related to the use of the platform, rules related to the University, or even rules affecting the participant at home, as the tool was used for supplementary home learning.



5. Community: The community could refer to the specific English class that the participants are in (such as classmates), or the community of the University (such as friends, students at the university), or the larger societal community in which the participants live or find themselves in at home (such as parents, siblings, and community members)
6. Division of labour: This will be the students involved in the course and interacting with each other during the course. Within the system, division of labour refers to both a horizontal division among the students and a vertical division between power and position holders. As a result, division of labour can be interpreted in terms of control within and between systems (Hardman, 2005: 260). Rules mediate the relationship between subject and community, while the division of labour mediates the relationship between object and community (Hashim & Jones, 2007: 6).
7. Outcome: This is the outcome at the end of the research, whether intended or not. (For example, what are the pre-service teachers' overall perception of the ITS? Their perceptions could be positive, neutral, or negative.)

The aim of introducing the ITS as a tool was to allow the participants to work on their English language proficiency during dedicated class time or when on campus, where they would have easy access to devices and the internet. However, as the research was about to begin, South Africa went into lockdown as a result of the Covid-19 pandemic, and students were forced to study from home using their own devices and with limited data supplied to them by the university.

## **1.6 An overview of research design**

A mixed method research design has been used by the researcher, as it was the most appropriate design for this research. Fraenkel, Wallen & Hyun (2012) and Creswell (2014) argue that the mixed methods approach is effective in analysing interrelationships between factors, it allows the researcher to comprehensively explore these interrelationships, and it assists the researcher in validating and corroborating the connection or association of the factors (Fraenkel, Wallen & Hyun, 2008: 558). This viewpoint is supported by Onwuegbuzie and Leech (2005: 384) who argue that quantitative research is often driven by the researcher's interests in certain issues, while qualitative research endeavours to secure the participant's voice.

Looking at the research design from a practical perspective, an ITS was introduced into an AT using an iterative process. The ITS was an English language proficiency ITS, introduced into an undergraduate English module for pre-service teachers. An iterative process was used, as

it can be viewed as a repetitive process for testing, analysing, and refining processes (Gossain & Anderson, 1990: 12–27; Kelley, 1984: 26–41; Nielsen, 1993: 32–41; Ó Doinn, 2018: 90). With the activity existing in a real-world scenario, an iterative process was the most appropriate way to introduce the ITS to the AT, as it highlighted possible changes required, it allowed the researcher to intervene if needed, and it made it possible to make changes to the implementation of the ITS when needed.

The first step of the research process was to conduct an English language pre-test with the participants. This happened just before lockdown, so the researcher conducted a paper-based test in a face-to-face classroom environment with the participants. The purpose of the pre-test was to establish at what English proficiency level the participants were benchmarked according to the CEFR and to place them on the correct level on the ITS. Participants were then placed on the relevant level on the ITS and allowed to complete their exercises from home. This was the point at which South Africa went into lockdown with the Covid-19 pandemic; universities were forced to shut, and students were forced to study from home.

Once the participants had completed the work on the ITS, they were asked to complete an online cross-sectional survey to gather quantitative data to enable the researcher to start exploring initial trends or patterns regarding the participants' perceptions of the ITS. Once analysed and interpreted, the researcher identified specific questions in the survey as high-tension questions, or questions where the participants had the highest level of contradictions or tensions in the Activity System. The researcher then conducted a semi-structured interview by telephone, to delve more deeply into the meaning of the areas of high tension, and to gain a better understanding as to why the participants were perceiving tensions or contradictions in those areas. The interviews were recorded, transcribed, and coded, using the second-generation AT nodes as predetermined or a priori codes. This allowed the researcher then to uncover themes related to the specific codes, which could then be used to formulate a hypothesis.

## **1.7 Sequential mixed-method research**

In this study, the researcher was interested in understanding participants' perceptions of an ITS implemented as a tool in the Activity System from a real-world or pragmatic point of view. Pragmatism as a paradigm may be defined as the philosophy of meaning or knowledge in its original form. Pragmatists claim that the reality or value of a principle can be found in its realistic realisation in real life scenarios. Pragmatists infuse 'useful' with importance, but utility relies on the researcher's point of view and recognising the usefulness and relevance of a set of concepts (Anastasakis, 2018: 64; Creswell, 2014: 10; Lee, 2011: 415). Research is often

multi-purpose, and a 'what works' approach will encourage the researcher to address topics that do not match easily with a strictly quantitative or qualitative process. For this reason, the design of a mixed approach was the most suitable design for this study.

This researcher made use of a sequential mixed-method approach, rooted in a CHAT. The researcher has previously made use of a trusted framework, CHAT, with which data has been analysed and interpreted. CHAT is regarded as a reliable and trustworthy lens through which to view the interactions of humans with tools in educational settings and which allows the researcher to observe how social and cultural influences affect the learning environment (Allen, Karanasios & Slavova, 2011: 6; Hashim & Jones, 2007: 1–20; Leadbetter, 2002: 25; Murphy & Rodriguez-Manzanares, 2008: 442–457). AT is especially useful in understanding qualitative data related to human-to-human interactions within Activity Systems. The researcher was interested in a holistic view of the Activity System, and for that reason chose to use a mixed methods approach to gain an overall picture of the participants' perceptions of the ITS in the AT (Fraenkel, Wallen & Hyun, 2012). In gathering both quantitative and qualitative data, all questions were framed around the CHAT nodes. Contradictions and Tensions as perceived by the participants were then investigated to understand the participants' perceptions.

All the participants in this research were sampled because they were undergraduate pre-service teachers, who are studying to become English Home language teachers, but are not English first-language speakers. For this reason, purposive sampling criteria, which are characterised by deliberate targeting of information-rich participants, were used to select:

- Eighty-two undergraduate pre-service teachers who were studying to become English Home language teachers. The participants were not English Home language speakers.

The participants were selected from two undergraduate teaching cohorts at a university in the Western Cape, who would eventually go on to teach English as a home language in schools in South Africa. The reason for selecting these participants was that they were the ideal population in terms of being pre-service teachers taking an undergraduate module in English, they were willing to take part in this research, they were geographically conveniently located to the researcher, and they were available at the time of the research being conducted.

## **1.8 Quantitative phase**

Quantitative data is a method in which researchers can report their research findings numerically. It allows for the researcher to gather large volumes of data which can be analysed

using various statistical methods that examine the variables and are used to shape initial ideas (Gal & Ograjenšek, 2010: 287–296; Obando, 2016: 65; Murphy & Rodriguez-Manzanares, 2008: 448). Quantitative research can be defined as research that forms a numerical representation and a manipulation of observations to describe the phenomena of observations (Sukamolson, 2007: 2). The quantitative data collection in this research was conducted using a cross-sectional survey as the first phase of this study.

### **1.8.1 The survey**

A cross-sectional survey was designed to collect the biographical information of the participants, to determine their language practices, and to try to uncover their perceptions after having used the ITS. The survey questions were based on the research questions and sub-questions. The cross-sectional survey allowed the researcher to gather a large amount of data from the target population to gather the participants' initial perceptions of the ITS, at a specific snapshot in time, to uncover themes.

The survey consisted of 28 questions and was broken down into 8 sections. The biographical section consisted of multiple-choice type questions, with the remainder of the questions being Likert scale. The Likert scales used were 1 = Strongly Agree, 2 = Agree, 3 = Neutral, 4 = Disagree and 5 = Strongly Disagree. The breakdown of the 8 sections of the survey can be seen below:

- Section 1 – Introduction and conditions.
- Section 2 – Subject.
- Section 3 – Tool.
- Section 4 – Object.
- Section 5 – Rules.
- Section 6 - Community.
- Section 7 – Divisions of labour.
- Section 8 – Outcome.

### **1.8.2 The participants in the quantitative phase**

Participants involved in this research came from a first-year English language module and were from the Further Education and Training or Senior Phase (FET/SP) and the Intermediate Phase (IP) in a Bachelor of Education degree. They were pre-service teaching students within a Faculty of Education at a university in the Western Cape. Of the 82 students who participated in the research, 48 participants went on to take the survey. A limitation of this research was that the Covid-19 lockdown forced the participants to work from home, using their own data,

and as a result, there were fewer respondents to the survey than had previously been hoped for.

### **1.8.3 Quantitative data**

The data from the survey were analysed using descriptive statistics which were based on the multiple-choice selection questions for questions 1–4, and Likert type questions for questions 5–28. The researcher analysed the data, searching for questions where participants perceived high levels of tension or contradiction. Of the 28 survey questions, seven questions were identified as having high levels of tension or contradictions perceived by the participants. These were referred to as 'high-tension' questions and were questions where the participants had higher numbers of 'disagree' or 'strongly disagree' options selected in the survey – they were therefore considered to be perceived as high levels of tension or contradiction. These questions were then analysed in order to identify patterns in the data.

### **1.8.4 Validity of the quantitative data**

Validity relates to how correctly a methodology calculates what it is supposed to calculate. If research is highly valid, that implies that it produces outcomes that correspond to real properties, characteristics, and physical or social world variations. One indication that a calculation is valid is high reliability. There are three ways to ensure that your research is valid, namely:

- **Content:** The degree to which all dimensions of the definition being measured are covered in the calculation.
- **Construct:** The adherence of a measure to the current theory and knowledge of the measured concept.
- **Criteria:** The extent to which the outcome of a measure corresponds to other measures of the same concept which are valid.

Validity refers to how effectively the research approach accomplishes its goals and how much access the study has to the participants' true knowledge and meaning. Some scholars discuss validity in terms of the credibility of their research; in other words, validity is embedded in the philosophical frameworks of the study's research paradigm and underlying assumptions. The most critical aspect of validity in research is ensuring that the participant and the researcher have the same interpretation and that the research is reliable. This entails proving that the study design correctly recognized and explained the phenomena being studied (Carcary, 2009: 14).

The design methods and tools used in the collection of the quantitative data can be viewed as solid, reliable, valid, and accurate. One way in which this was done was by conducting a Likert scale-type survey to ensure that the data were accurate, consistent, reliable, and measurable. The researcher ensured that the design and statistical analysis used are valid and reliable, while clearly pinpointing what they are doing, why they are doing it, and with whom they are doing it, and remaining true to the ground rules of surveys. The data gathered through the survey can also be shown to be valid, as it has measured what the researcher intended to measure, with all the survey data and results thereof stored for confirmability.

Further to this, the researcher has understood the limitations of quantitative data collection, knowing that clear and unambiguous data about the participants' perceptions may not be reflected by only using this method of collection. Therefore, the researcher decided to uncover any areas of uncertainty or ambiguity by conducting an interview with selected participants to ensure that the data collected would be clear, accurate, reliable, and unambiguous in any way.

## **1.9 The Qualitative phase**

Qualitative data collection allows for researchers to delve deep into areas of ambiguity or uncertainty, and for them to gain a better understanding of certain phenomena (Saldana 2015:38). Qualitative data allows for the participants to get a chance to clearly describe their understanding, experiences and perceptions, an important aspect to consider when researching individuals or groups in social settings. As part of this mixed-methods study, the qualitative phase was used to uncover themes and patterns that were uncovered in the quantitative phase.

### **1.9.1 Qualitative data collection**

Once the researcher had analysed and interpreted the surveys conducted, specific patterns or trends started to emerge. To avoid any shortcomings and arrive at a better understanding of the emerging themes and patterns, the researcher designed a semi-structured interview that would be used to uncover the deeper meanings in and uncertainties from the surveys.

The interview questions were designed taking second-generation AT nodes into account, as this would allow the researcher to gather rich and meaningful data about the Activity System, and the participants' perceptions of the ITS, once analysed and interpreted. The interviews were designed to gather all the additional data needed from the surveys in a conversational setting, to uncover the deeper meanings of the participants, and to elicit further responses from the participants being interviewed. These interviews were conducted telephonically and lasted for approximately 20–30 minutes.

Eight questions were designed focusing on the areas of high tension or contradiction from the surveys. The interviews were semi-structured using the eight main questions, with the option of asking further questions if the researcher felt the need to probe further.

The researcher had contacted the six participants for the interviews and arranged for the interviews to occur on set dates and times that were convenient for everyone. With face-to-face access to the participants still restricted as a result of Covid-19 restrictions, the researcher decided to do telephonic interviews, which were recorded with the participants' permission and transcribed verbatim later. The telephonic interviews lasted on average 20–30 minutes each.

### **1.9.2 The participants in the qualitative phase**

Participants were selected by making use of non-probability purposive sampling, often used with both quantitative and qualitative data collection, and especially useful when researching specific cultural domains with knowledge experts, therefore lending itself well to second-generation AT. By using this technique, the researcher was able to rely on their judgment purposefully when selecting participants for the interviews best suited to answer the research questions.

The following sampling criteria were identified:

- Six participants from the original study population, and who had completed the survey, were selected.
- The six participants were selected, as they had perceived high levels of tension or contradictions in the surveys.

The reasons for selecting these participants to be interviewed were to get a better understanding as to why tensions and contradictions were perceived and what they were related to, and by focusing on the second-generation AT nodes.

### **1.9.3 Qualitative data analysis**

For the researcher to gain a better understanding of the interview data gathered, the qualitative data were analysed using thematic categorisation, a popular method used in qualitative analysis to understand certain phenomena (Saldana, 2015). By using thematic categorisation, the researcher could clarify results of patterns identified in the quantitative data, to elaborate and enhance it further. It allowed the researcher to corroborate results and develop further the inferences that had emerged from the quantitative data.

The thematic analysis used in this research was based on a version of Saldana's thematic analysis of coding used to form data clusters for analysis (Saldana, 2015: 14). Data were coded using predetermined or a priori codes, according to second-generation AT nodes. The transcribed interview data were then grouped into themes according to these codes, and according to the perceptions of the participants. From the categorisation of the coded data, specific themes and patterns emerged, which then resulted in a theory or hypothesis being developed.

#### **1.9.4 Trustworthiness of the qualitative data**

By using reliable and credible data collection methods and design, dependability and trustworthiness of qualitative research is improved (Carcary, 2009: 11; Nowell, Norris, White & Moules, 2017: 3; Owen, 2014: 3). The six interviews were transcribed by a professional transcription agency, and each line of the transcribed interviews were numbered for the researcher to reference specific comments made by the participants. Saldana (2015: 38) suggests that several checks and balances should be followed when coding to ensure trustworthiness, such as coding line by line, which the researcher has done. To improve the coding, transcribed interviews were also coded multiple times in a precise, exhaustive, and consistent manner (Nowell *et al* 2017:1). Throughout the coding process, the researcher kept a detailed trail of evidence to demonstrate integrity and competence, further adding to the trustworthiness of the research (Fereday & Muir-Cochrane 2006: 91)

The trustworthiness of the data were ensured as follows:

1. The researcher used a trustworthy theory, namely second-generation AT.
2. The researcher followed Saldanha's code to theory model.
3. A trail of evidence was maintained throughout the process.
4. The data were coded multiple times to ensure accuracy and dependability.
5. The researcher stuck to best practice by ensuring coding was done line by line and keeping records of everything.
6. Participants' interpretations were checked with them to ensure accuracy.

#### **1.10 Ethical considerations**

The researcher has ensured that the ethics policies of the university were followed and adhered to and has ensured that the participants had given their written consent to take part in the research. Their participation in the research was completely voluntary, and participants were given the choice to choose to stop at any time. Participants were advised that the research and the results thereof would be strictly confidential and anonymised the data, with



each participant receiving a pseudonym; and it was confirmed by the researcher that no harm would come to them because of this research being conducted.

Furthermore, the researcher applied for and received an ethics clearance certificate from the university at which the study was conducted (ethical clearance number EFEC 2-11/2019, §Appendix A), and to ensure that the research complied with the university's ethical guidelines for researchers, the researcher adhered to best practice, and protected the integrity of the University, and the rights of all the participants. The researcher has also acknowledged any research bias that exists and signed a declaration stating any conflict of interest that may have arisen.

### **1.11 Chapter division**

The following chapters represent the structure of the research.

- Chapter 1: Introduction
- Chapter 2: Literature review
- Chapter 3: Cultural-Historical Activity Theory as a framework
- Chapter 4: Methodology
- Chapter 5: Results
- Chapter 6: Summary, findings, and recommendations.

### **1.12 Conclusion**

In conclusion, this research aimed to examine perceptions of pre-service teachers about their use of ITS on English language proficiency. The study was guided by the following main research question and sub-questions:

- What are pre-service teachers' perceptions of an ITS for English Language Proficiency that has been introduced into an Activity System?
- Sub-question 1: What are the pre-service teachers' perceptions of the ITS when viewed through the lens of Cultural-Historical Activity Theory (CHAT)?
- Sub-question 2: What tensions and contradictions are perceived by pre-service teachers when using ITS?
- Sub-question 3: To what extent does ITS mimic face-to-face human tutoring?
- Sub-question 4: To what extent do pre-service teachers perceive ITS as an effective or ineffective tool?

These questions were all viewed using second-generation AT as a lens, to investigate and explore what tensions and contradictions were perceived by the participants, and how they affected the participants' perceptions.

The researcher used a mixed-methods approach to observe and study the introduction of an ITS into an Activity System at a university in the Western Cape. Of special interest to the researcher was the second-generation AT nodes and the tensions and contradictions that existed between them, and how they affected the participants' perceptions, adding to the current discourse on ITS and AT from the perceptions of pre-service teachers.

## CHAPTER 2: LITERATURE REVIEW

### 2.1 Introduction

In chapter 1 the researcher discussed the problem statement, as well as the research question and sub-questions which would be answered by this study. The paradigm, framework and research methodology were outlined, including the tools that would be used to gather the research data, and the way in which the data would be analysed in order to answer the research questions.

In this review of literature, the researcher addresses the many aspects of the Intelligent Tutoring System (ITS), and the introduction of an ITS into a pre-service teachers' English course at a University in the Western Cape. In doing so, the researcher delves into the main topics in relevant literature of ITS acknowledging prior research, and how this has evolved into the contemporary research that we know today.

In answering several pertinent questions, the researcher illuminates the use of ITS in educational settings, with the spotlight on the students' perceptions of the ITS. Where this research positions itself, and ultimately intends to add to the ITS body of knowledge, is by investigating how the participants perceive the ITS. More specifically, the aim is to investigate pre-service teachers' perceptions of an English Language ITS when introduced into an Activity System in a South African University setting

The literature review is guided by focus areas stated below:

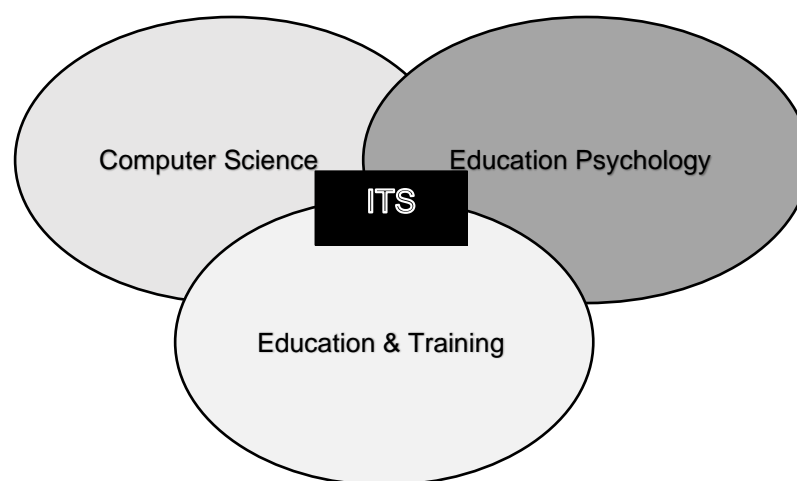
- a) The definition of ITS and Computer-aided language learning (CALL).
- b) Why turn to technology and ITS?
- c) Human tutoring versus computer tutoring.
- d) ITS effectiveness compared to human tutors.
- e) Challenges facing ITS and the English language.
- f) English language testing and the Common European Framework of Reference (CEFR).
- g) Perceptions of ITS.

What this research intends to add to the literature is an exploration of one such language ITS, being used in a less-structured subject domain of language, specifically the English language. The uniqueness of this research lies in the fact that the participants in this study are non-native

English speakers who are pre-service teachers who will go on to teach English as home language in South African schools. The research will further investigate the perceptions of the participants when an ITS is introduced into an Activity System for English language practice and will try to determine if the ITS could be perceived to mimic the effectiveness of a human tutor. The ITS is introduced as a tool for English language practice, with an analysis and interpretation of the data executed using second-generation CHAT as the lens for this study. What this research does not do is create a meta-analysis of every type of ITS being used for English language practice, but it rather offers a generic analysis of one such ITS, and of the participants' perceptions of it through the lens of second-generation CHAT.

## 2.2 The definition of Intelligent Tutoring Systems and Computer-Aided Language Learning

The study of ITS (Figure 2.1.) can be viewed as the sweet spot where Computer Science, Education Psychology and Education & Training research meet (Alkhatlan & Kalita, 2019: 2; Hamed & Samy, 2017: 31; Nwana, 1990: 253). As such, researchers of ITS need a good understanding of all three fields of study. The research goals of this specific study, however, look at ITS primarily from an educationist point of view.



*Figure 2.1: Where ITS is situated in research, adapted from Alkhatlan and Kalita (2018: 2)*

When concentrating on ITS, it is essential to define clearly and understand what makes up an ITS, and what this research defines an ITS to be (Kulik & Fletcher, 2016: 47; Ma *et al.*, 2014: 902; VanLehn, 2011: 197). As already mentioned, the term ITS is interchangeable with other forms of (CAI) and computer-aided language learning (CALL), with the subtle differences distinguished below.

Research into ITS in the educational domain has traditionally been referred to as intelligent computer-aided instruction (ICAI) (Duchastel & Imbeau, 1988: 102; Fan & Guoyong, 2016: 4;

Ford, 2008: 312). This name evolved from its predecessors, CAI and CALL. With the addition of artificial intelligence, the letter “I” representing the word “intelligent” was added to the acronym. The words can be used interchangeably with ITS (Duchastel & Imbeau, 1988: 102; Nkambou *et al.*, 2010: 252). This research refers to an ITS used for English language learning.

Găbureanu and Istrate (2013: 353) define an ITS as being different from other forms of CAI by virtue of their complex processing mechanisms, which can provide answers; by giving the learners more control upon application; and by allowing them to control, in essence, their own learning paths. Similarly, Phobun and Vicheanpanya (2010: 4065) define ITS as a system that can assess each student’s actions within an interactive environment, thereby developing a model of their knowledge, skills, and expertise, and then tailoring instructional strategies to assist the specific learner. With further reference to real-time diagnosis and adaptation, Shute and Psofka (2014: 9) in their research summarise several expert definitions, concluding that the most critical element for ITSs is that they can offer real-time cognitive diagnosis and adaptive remediation.

Definitions referring to AI and adaptation can be seen in the works of Duchastel and Imbeau (1988: 102), wherein they define ITS as a computer-based learning programme that uses AI techniques such as knowledge representation and language processing to adapt the computer instruction to the needs of the students. Also referring to AI and adapting to students’ needs, Nkambou *et al.* (2010: 252) define ITS as computer programs that use the techniques of AI to provide computer tutors with knowledge about what they want to teach, how they want to teach it, and to whom they are teaching it.

Sharma, Ghorpade, Sahni & Saluja (2014: 37) refer to “Expert Tutoring Systems or ETS” in their survey of ITS. They define an ITS as a program or system that enables users to learn and understand concepts, with the system being able to customise its strategies by analysing the users’ intelligence level, making learning more accessible and more productive. Sharma *et al.* (2014) go on to define an ITS as a system that mimics a tutor by assigning learning tasks, asking questions, providing feedback, and offering motivation and metacognition. The researchers go on to say that the ITS understands the students’ psychological state from the responses gathered and then uses these responses to adapt to the needs of the student.

While there may be many definitions of an ITS, the research points to several common components or similarities. This research draws on the similarities of the ITS definitions above, with the researcher defining what an ITS is within the context of this study as follows:

- It is a knowledge- or expert-based AI computer learning program.
- It gives the student some form of control of their own learning.

- It is adaptive, interactive, and customisable.
- It offers a real-time diagnosis and feedback.

With ITS defined within the confines of this research, it is important to discuss the components of an ITS. ITS researchers now generally accept that there are four conceptual components that need to be present for a computer learning programme to be considered an ITS, and the design theory that distinguishes ITS from their earlier less sophisticated predecessors (Devedzic & Debenham, 2018: 10; Ma *et al.*, 2014: 3; Mahmoud & Abo El-Hamayed, 2016: 291; Nwana, 1990: 262; Phobun & Vicheanpanya, 2010: 4066; Shute & Psotka, 2014: 9).

### **2.3 Why turn to technology and ITS?**

Just by surveying your immediate surroundings, you would observe and agree that technology has undoubtedly transformed our daily lives. We no longer write letters and post them; instead, we type emails or WhatsApp messages from our smartphone or computer devices. We no longer stand in long queues to do our banking; instead, we now do our transactions online using the internet or a banking application. Historically, technology has changed the way in which we work, live and entertain (A Kumar, P Kumar, Palvia & Verma, 2017: 3; Oblinger, 2004: 2; Strommen & Lincoln, 1992: 466). Some of these technologies have now even made their way into our classrooms around the world, changing the way in which we teach and learn (Levin & Wadmany, 2006: 157; Mobinizad, 2018: 1456; Nkambou, Bourdeau & Psyché, 2010: 361–375;). Kitade (2015: 417) summarises this well in his research, where he speaks of the radical technological changes that teachers have experienced, especially over the last 16 years.

So, why has education experienced these radical changes in recent years? A possible reason that educational institutions have progressively turned to technological solutions could be to adjust to the ever-changing needs of lecturers and students (Baylor & Ritchie, 2001: 1; Stoll, 2009: 6; Kellner, 2004: 10). Technology use in educational institutions is not only viewed as a way of improving and simplifying students' and lecturers' lives when implemented correctly, but, in many instances, can be perceived as a way of saving both time and money (Buabeng-Andoh, 2012: 143; Kremer & Holla, 2009: 515; Reeves, 1998: 32). With institutions facing tight budget constraints as a result of increased competition and an ever-increasing number of students entering into higher education, research into education technologies has become notably prominent, especially over the past four decades (Catlin & Blamires, 2010:12; Khalid, Hani, Daniyal & Ghadah, 2017: 51; Nye, 2015: 178).

One of the notions driving this thought for over four decades has been the idea of using ITS in education. It can successfully mimic the instruction methods and behaviour patterns of

human tutors, which is considered to be the best form of instruction (Aleven & Ashley, 2008: 78; Merrill *et al.*, 1992: 278; Yang, 2010: 64). What research shows us is that ITSs have become increasingly popular over the years, one such reason being that they allow for learning to take place anywhere and at any time (Brown, 2009: 104; Chinnery, 2006: 13; Phobun & Vicheanpanya, 2010: 4064). Research further points to ITSs popularity in education, as they can monitor and adapt to the individual's learning needs effectively, much in the same way as human tutors do, and remarkably well in structured subject domains such as mathematics and physics (Heilman & Eskenazi, 2006: 23; Khalid *et al.*, 2017: 51; Phobun & Vicheanpanya, 2010: 4064–4069). However, where ITSs have had more challenges is in less-structured domains such as language learning, where the meanings of words are not as well formalised as with other subjects, such as mathematics. Word use, syntax, pronunciation, accents and cultural differences are just a few of the complexities faced by an ITS in the language domain (Aleven & Ashley, 2006: 80; Heilman & Eskenazi, 2006: 20–28; Heilman, Collins-Thompson, Callan & Eskenazi, 2013: 3; Virvou, Maras & Tsiriga, 2000: 148).

## **2.4 Human tutoring versus computer tutoring**

In 1984 Benjamin Bloom conducted a now-famous study, the 2-sigma problem. This involved a search for methods of group instruction as effective as one-on-one tutoring in which he showed evidence that students who studied with the support of a human tutor coaching them, combined with corrective instruction and traditional assessment, were able to perform better than students who received only traditional classroom instructions (Kulik & Fletcher, 2016: 43; Raley, 2015: 1; Nkambou *et al.*, 2010: 253; Shute & Psootka, 2014: 28; VanLehn, 2011: 209).

Human tutoring, in the context of this research, refers to one-on-one instruction with a human tutor, and has been considered to be highly effective as it is dynamic, individualised and adaptive (Chen *et al.*, 2008: 51; Katz, Allbritton & Connelly, 2007: 79; Khuwaja & Patel, 1996: 2; Kulik & Fletcher, 2016: 43; Merrill *et al.*, 1992: 278; VanLehn, 2011: 197–221). VanLehn (2011: 197) defines human tutoring as “an adult, subject matter expert, working synchronously with a single student”. It is thought that faster gains in understanding can be attributed to the dynamic individualised and adaptive learning methods of the human tutor, whereby they take on the role of a coach allowing the student to learn at their own pace. This in turn increases the motivation levels of the student, who then feels more accomplished by seeing the positive effects of effective learning, as a result of the personalised opportunity to focus on problem areas afforded to them (Chi *et al.*, 2005: 478; Ma *et al.*, 2014: 902; VanLehn, 2011: 200). Other reasons human tutors have been considered so effective could be because they challenge the students; provoke students' curiosity; work around their specific challenges; and offer hints and instantaneous feedback (Chi *et al.*, 2005: 481; Katz *et al.*, 2003: 79; Merrill *et al.*, 1992:

278). If an ITS were able to offer adaptive, personalised instruction, give instant feedback, and coach students at their own pace, would the students perceive the ITS to be as effective as a human tutor?

With human tutoring is historically considered to be the most effective form of instruction (Chi *et al.*, 2005: 475; Mathews, 2012: 9; VanLehn, 2011: 198), and with the rapid advancement of computers and artificial intelligence, researchers were quickly able to recognise the opportunity to create computer tutors that could mimic human tutors, by providing effective tutoring methods adapted to the individualistic needs of the student and by being able to adapt instructional strategies to accommodate these different needs (Alevan & Ashley, 2008: 55; Kozulin, Gindis, Ageyev & Miller, 2003: 109; Latham, Crockett & McLean, 2014: 97; Shute & Psotka, 2014: 4; Yang, 2010: 63). The goal of the ITS would therefore be to deliver appropriate content for the individual student's needs at just the right time, recognising that each student is individual with a distinct aptitude, and that students learn differently and at different speeds (Lai, Wang & Wang, 2011: 1; Martínez Pérez & Bertone, 2019: 6). With this in mind, ITSs have evolved into the sophisticated systems that we know today, driven by the idea that ITS could one day perhaps take the place of human tutors, or, at least, become a valuable mediating tool to be used alongside teaching and learning (Catlin & Blamires, 2010: 3; Clifford, 2013: 11; Sharma *et al.*, 2014: 37; VanLehn, 2011: 197), while they continue to evolve even further.

## **2.5 ITS effectiveness compared to human tutors**

The most significant challenge for ITS is undeniably the ability to mimic human tutoring successfully if one is to believe Bloom and others' compelling evidence that human tutoring is the most effective way of learning (Baker, 2016: 600; Shute & Psotka, 2014: 23; Yang, 2010: 64).

Since the inception of ITS, there have been several intelligent digital learning environments created, following a variety of approaches (Katz *et al.*, 2003: 80; Khalid *et al.*, 2017: 56; Khuwaja & Patel, 1996: 2; Ma *et al.*, 2014: 1; Merrill *et al.*, 1992: 278). The definition of what makes an ITS successful or not is discussed later in this review. While the consensus among researchers is that ITSs are effective in producing positive learning results, there is less consensus as to whether or not the ITS can successfully mimic a human tutor (Chi *et al.*, 2005: 473; Latham *et al.*, 2014 97; Merrill *et al.*, 1992: 277).

It is the common belief that, on a spectrum with no tutoring on the one side as the least effective way of learning and human tutoring on the other side of the spectrum as the most effective way of learning, CAI is more effective than no tutoring at all, but less effective than



ITS. ITS is considered more effective than CAI<sup>1</sup> but less effective than human tutoring (Figure 2.2.)

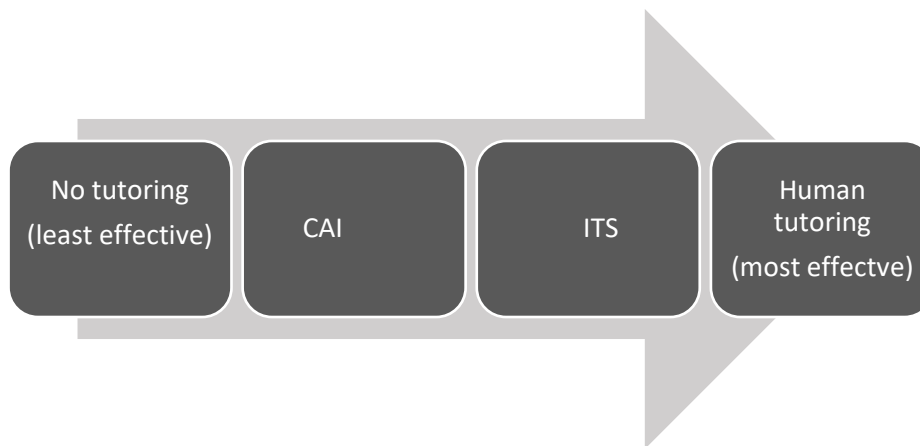


Figure 2.2: The relative effectiveness of ITS, adapted from VanLehn (2011:198)

However, in his review "The Relative Effectiveness of Human Tutoring, Intelligent Tutoring Systems, and Other Tutoring Systems", VanLehn (2011: 214) argued that his research did not confirm this. VanLehn found that the effectiveness of human tutoring was, in fact, much lower than originally thought and that ITSs were almost as effective as human tutors.

Researchers are finding that ITSs in general already have many similar traits that allow them to mimic human tutors. Research conducted has shown that ITSs can offer a motivational, educational environment, and that learners find instant feedback valuable (Chen *et al.*, 2008: 58; Rambe, 2012: 1351; VanLehn, 2011: 200). Similarly, Tamim, Bernard, Borokhovski, Abrami and Schmid (2011: 17) found that ITS was effective compared to traditional classroom instruction, as a result of greater interactivity and adaptation to the students' needs. They correctly attributed the effectiveness to the immediacy of feedback, greater response-specific feedback, greater cognitive engagement, more opportunity for practice and feedback, and greater learner control. Zhou (2000: 69) argues how instant feedback supports students' language learning efficiency. Kulik and Fletcher (2016: 53) in their research compared the use of an ITS with regular classes and found that 92% of the students who had interacted with the ITS outperformed students who had received traditional classroom instruction.

Moundridou and Virvou (2002: 253) found that ITS had positive effects on learning. Their research showed that time and test scores improved when conducting post-tests on students' studying economics and concluded that student performance improved. Koedinger, Anderson,

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<sup>1</sup> In the 1960s first-generation computer tutoring systems made an appearance in classrooms and were referred to as computer-aided instruction (CAI) or computer-based instruction (CBI) (Carbonell, 1971; Mathews, 2012; Raley, 2015). CAI or CBI are synonyms referring to the use of computers in instruction and can be used interchangeably.

Hadley and Mark (1997: 38) found that ITS had a positive effect on students studying mathematics. Similarly, Abidin and Hartley (1998: 290) found the use of ITS in learning mathematics to be effective, and that students were able to solve more mathematical problems in a post-test. Ramachandran (2003: 913) found, however, that the use of an ITS for high school Algebra showed no significant effects when students had limited interaction with it. However, students did show a positive reaction to using it. Nathan, Kintsch and Young (1992:375) found that ITS assisted students in their comprehension of algebraic word problems, showing that students who used the ITS were more effective in their problem solving and scored better test results on their post-tests.

In 2014, Ma *et al.* (2014: 901–918) conducted a meta-analysis of ITS and learning outcomes. Their research showed that ITSs were in fact associated with higher achievement outcomes than previously thought. Their research showed that the achievement outcomes of small-group human tutoring, individual tutoring and the use of an ITS showed very little difference with no significant statistical evidence to prove that human tutoring was better, whether used as an additional resource or as the principal means of instruction.

ITS systems undoubtedly have significant advantages over traditional training methods (Chi & VanLehn, 2010: 37; Ma *et al.*, 2014: 904; Nye, 2015: 182; Raley, 2015: 35). Immediate feedback, constant monitoring and personalised learning all improve cognitive learning effects of the ITS. However, historically, with there still being little consensus on whether an ITS can successfully mimic a human tutor, there are still many questions for researchers to answer (Baker, 2016: 600; Latham *et al.*, 2014: 99; VanLehn, 2011: 197–221). What recent research has shown is that ITSs are more effective than originally thought (Chi & VanLehn, 2010: 35; Shamir, 2012: 51). Further clear advantages of the ITS is that it can supplement traditional classroom environments by acting as a digital one-on-one tutor by adapting and personalising learning, thereby improving cognition and assisting students in becoming better learners (Khalid *et al.*, 2017: 58; Nye *et al.*, 2018: 2; Reigeluth, Aslan, Chen, Dutta, Huh, Lee, Lin, Lu, Min, Tan, S. Watson & W. Watson, 2015: 19). They can do this not only in a traditional classroom setting but anywhere and at any time.

What is noticeable from the research encountered is that ITSs have indeed made huge strides, especially in fields with well-defined domains such as chemistry, mathematics and physics (Aleven & Ashley, 2006: 92; Chi & VanLehn, 2010: 39; Heilman & Eskenazi, 2006: 20). Well-defined domains are quantitative domains characterised by formal theory and are clear cut and unambiguous. More research, however, is needed to show the effectiveness of ITSs in less structured domains such as language learning (Akkila, Almasri, Ahmed, Al-Masri, Sultan, YMahmoud, Zaqout & Abu-Naser, n.d.; Alkhatlan & Kalita, 2019; Koedinger, Brunskill, Baker,

McLaughlin & Stamper, 2013). This is where this research intends to add value, by analysing and investigating the participants' perceptions of the ITS introduced for English language practice as a digital tutor. What is clear from the research is that ITS should continue striving to mimic human tutoring as closely as possible for the most effective learning to take place.

## **2.6 The components of an Intelligent Tutoring System**

It is now generally accepted in the ITS research community that four necessary components are *usually* present for a computer system or platform to be considered a traditional ITS. ITSs need to have expert knowledge of content, knowledge about the student, knowledge about teaching strategies, and knowledge about communication (Devedzic & Debenham, 2018: 10; Ma *et al.*, 2014: 3; Mahmoud & Abo El-Hamayed, 2016: 291; Nwana, 1990: 262; Phobun & Vicheanpanya, 2010: 4066; Shute & Psotka, 2014: 9). Figure 2.3. below is a simple depiction of the four components needed for the traditional architecture of an ITS.

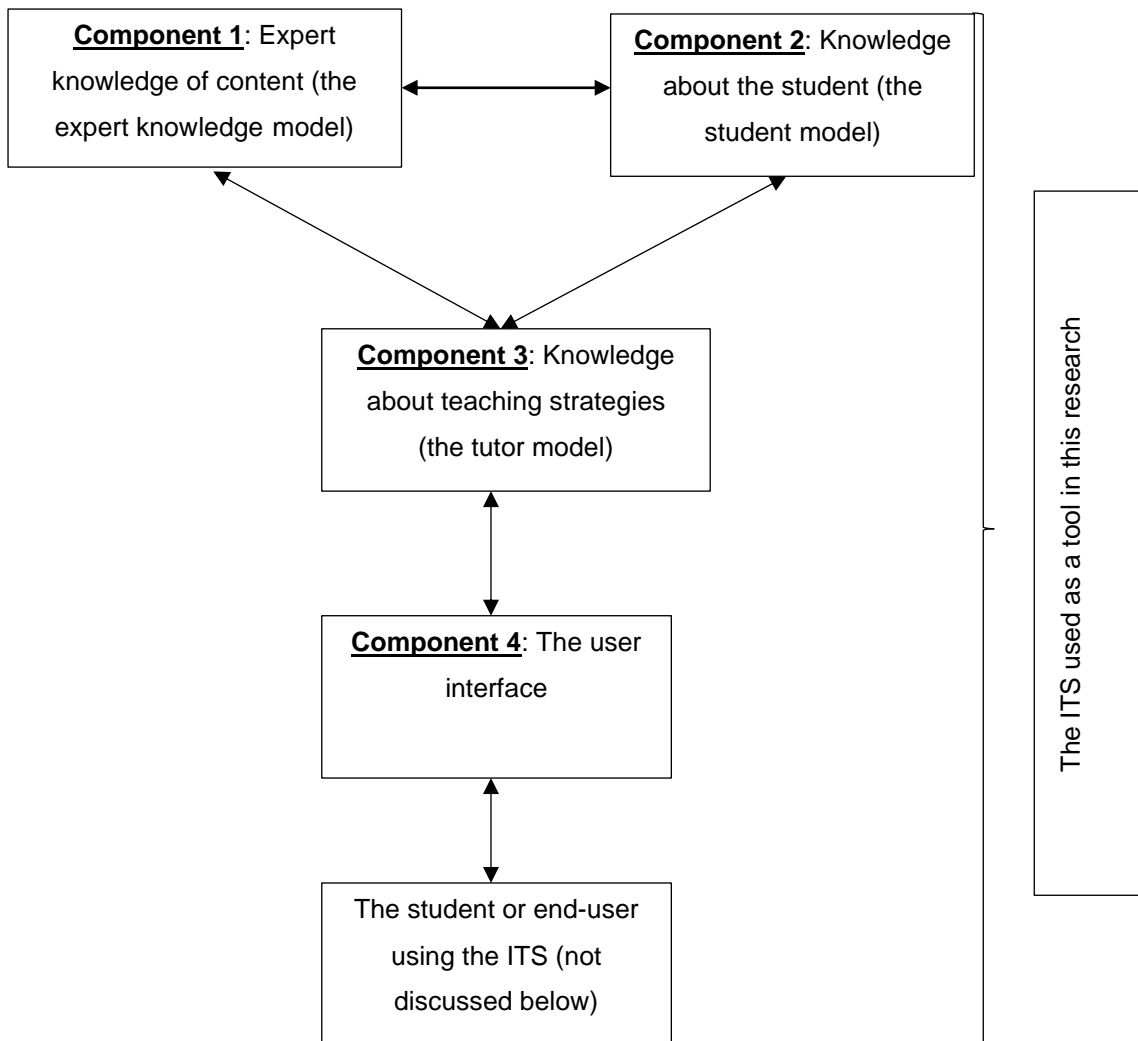


Figure 2.3.: Four Components of an ITS, adapted from Nwana (1990: 263)

### 2.6.1 The expert knowledge component

The expert knowledge component contains all the knowledge about the language (Amaral & Meurers, 2011: 19), such as all the theory and data related to a specific course. All the rules, concepts, problem-solving strategies and pedagogical structure are contained here (Phobun & Vicheanpanya, 2010: 4066). The expert knowledge domain forms a source of expert knowledge to evaluate and diagnose the student's performance. When the student interacts with the system and inputs data, the expert knowledge domain can diagnose errors made and predict certain behaviours (Sharma *et al.*, 2014: 37; Shute & Psocka, 2014: 9). The knowledge model in the ITS used in this research consists of all of the vocabulary and grammar activities, elements and key concepts needed to address the problem of language learning at the correct level for the participant (Devedzic & Debenham, 2018: 10; Mahmoud & Abo El-Hamayed, 2016: 292).

### **2.6.2 The student component**

The student component gathers and stores information about the students' knowledge and what they know from their interaction with the ITS (Amaral & Meurers, 2011:19; Phobun & Vicheanpanya, 2010: 4066; Yang, 2010: 19). The student model is a cognitive model and compares the work of the student to the expert knowledge for the same task. The ITS will then compare the two and determine the mastery of the learning (Shute & Psotka, 2014: 10; Yang, 2010: 64). The student model uses the information gathered about the knowledge of the student, and then uses it to hypothesise about the current student state of knowledge. The student model then feeds into the tutorial model, which will then process this information and correct any misconceptions (Heffernan & Koedinger, 2002: 600; Ma *et al.*, 2014: 3).

### **2.6.3 The tutor component**

The tutor component acts as a coach to guide the student, using the information gathered from the expert model and student model, and makes instructional decisions and assessments (Devedzic & Debenham, 2018: 10; Mahmoud & Abo El-Hamayed, 2016: 287; Phobun & Vicheanpanya, 2010: 4066). It will then use instructional techniques and strategies to show the students where they have gone wrong and generates a correct answer to diagnose where they have gone wrong (Amaral & Meurers, 2011: 19; Yang, 2010: 64). The tutor model may even require the students to answer questions which are slightly beyond their current level of knowledge to support mastery of learning (Ma *et al.*, 2014: 3; Phobun & Vicheanpanya, 2010: 4066; Shute & Psotka, 2014: 4).

### **2.6.4 The user interface component**

The final component is the user interface component, an attractive web-based graphical interactive user interface, which forms an important bridge between the student and the ITS (Devedzic & Debenham, 2018: 10; Heift, 2016: 446; Mahmoud & Abo El-Hamayed, 2016: 282). The student and the ITS communicate with each other through the interface which interacts with the tutor and expert models (Phobun & Vicheanpanya, 2010: 4066; Wibawa & Nafalski, 2010: 33). Research refers to two kinds of interfaces, the student-facing interface, which is an efficient and friendly user-centred interface; and the lecturer-facing interface which is more performance centred. With most ITSes, the lecturer and the student will interact with different interfaces. The interfaces will determine how the lecturer or the student interacts with the ITS by determining what types of responses are needed, or whether or not the ITS needs to seek further information, or by responding to questions (Devedzic & Debenham, 2018: 10; Shute & Psotka, 2014: 46; Yang, 2010: 64).

## 2.7 Challenges facing English language ITS

As has already been discussed, ITS used for language learning has been accessible to both teachers and students for well over four decades (Chinnery, 2006: 9–16; Lee, 2000: 1–8; Warschauer & Healey, 2008: 57–71), but face some challenges when it comes to language learning (Chinnery, 2006: 13; Heilman & Eskenazi, 2006: 21; Tai, 2012: 222), with its biggest challenge being that language subject domains are ill-defined. Language domains are complex when it comes to developing ITS, as there are multiple levels of knowing words. Developing ITS for language learning has, therefore proved to be particularly challenging because of the complexity and the cost involved, and the sophisticated technology needed in order for the ITS to be considered effective (Aleven & Ashley, 2006: 38, Alkhatlan & Kalita, 2018: 15; Heift, 2010: 443; Koedinger *et al.*, 2013: 28; Shute & Psocka, 2014: 48).

When it comes to language learning, there is a multitude of factors to consider. Rao (2017: 3), for example, refers to the following factors that make the English language complicated, such as a) Phonology (the relationship between speech and sounds), b) Morphology (how words and meanings are made up and formed), c) Syntax (how words are arranged in sentences or statements), d) Semantics (making sense of the meaning of words and phrases), and e) Lexicon (the meaningful units of language). A simple example of a challenge is vocabulary acquisition in the English language and the multiple meanings of words. English language can also be used in a variety of contexts, adding further complexity, not to mention the use of synonyms, syntax, and semantics (Amaral & Meurers, 2011: 20; Heilman & Eskenazi, 2006: 20). Lexical resources will often define words informally and in a limited way, making it difficult to assess the student's actual knowledge of words. For an ITS to be considered effective in language learning, it needs to adjust to or be matched to the correct level of the student's English language proficiency (Amaral & Meurers, 2011: 19; Stockwell, 2007: 106; Woodrow, 2006: 298).

Ultimately, the goal of the ITS should be to create an effective teaching and learning process that can identify gaps in the student's knowledge and improve this with customised instruction and feedback (Clifford, 2013: 15; Heift, 2016: 490; Koedinger *et al.*, 1997: 33; Reddy & Sasikumar, 2014: 441). Lee (2011: 25–58) points to this in his research stating that the ultimate goal of computer-assisted language learning should be to create an environment in which students can acquire communicative proficiency with crucial factors needed in order for students to be truly proficient, such as comprehension input, comprehension output, corrective feedback and motivation and attitude. This should be done in a way where the content is not pushed to the student, but in a way that ensures that it offers personalised instruction, and in a way that is most suitable to the student (Latham *et al.*, 2014: 97; Mousavinasab,

Zarifsanaiey, Niakan Kalhori, Rakhshan, Keikha & Ghazi Saeedi, 2018: 1; Nye *et al.*, 2018: 1). We know that this personalised attention is not always possible in a traditional classroom environment.

Over the years, ITS has become a more sophisticated as a result of the advancement of AI (Alkhatlan & Kalita, 2018: 1; Nkambou *et al.*, 2010: 361), allowing it to be more collaborative and adaptive to the specific needs of the student. These sophisticated, collaborative, and adaptive aspects fall well within the defines of an ITS, as described earlier in this paper, and correlate with an ITS being able to mimic a human tutor. There are, however, further factors needed for an ITS to be considered effective and credible in language learning.

Clifford (2013: 11) in his research states that in order for computer-aided language learning to be credible, it would need to define the level of language and the level of instructional activities used, according to a hierarchy of language proficiency levels. Similarly, Milliano, Vermeer, Hootsen and Van der Werf (2008: 16–31) found that students progressed significantly in their vocabulary and reading as a result of the difficulty of the text being adapted to the level of their vocabulary in an e-learning environment. Guan (2014: 69–81) also found that using digital mobile technology in the classroom noticeably assisted his students in developing their oral communication skills.

Heift (2010 443–459) refers to a study where students using a computer-aided language learning device found traditional types of computer activities more useful and appreciated these more than blogs or web-based problems. This could relate to Lai *et al.*'s argument (2011: 1–13), where they compared the use of ITS to traditional face-to-face instruction from a human instructor, where the students preferred the latter and found it to be more beneficial in linguistic development. However, would this still be the outcome, if students were faced with no other choice than using an ITS? From the plethora of research available, it seems that ITS does predominantly have a positive effect on language learning.

## **2.8 English language testing and the Common European Framework of Reference**

The purpose of this research was to examine pre-service teachers' perceptions of an ITS introduced into an Activity System (an English module taken by pre-service teachers') and to explore the participants' perceptions thereof. The ITS as well as the pre-test to place the participants on the right level of the ITS both used British English and were benchmarked to the Common European Framework of Reference (CEFR). It is for this reason that the CEFR is discussed in this section.

What does it mean to be proficient in a language and how do you test for proficiency in the English language? English language testing is complex (Clifford, 2013: 9; Heilman, Collins-Thompson, Callan & Eskenazi, 2013: 20), and as such, rating scales remain a challenge for the development of tests and assessments, and understanding progression and proficiency. Also, within language learning, there are many ways to assess and show progression and proficiency (Abedi, 2007: 93; Berger, 2019: 85; Murray, 2013: 301).

Before we can speak about English language testing, it is important to understand what the definition of proficiency is within the context of this research. Murray (2013: 307) in his research states that English language proficiency is

*“a general communicative proficiency in language that enables its users to express and understand meaning accurately, fluently and appropriately according to context and which comprises a set of generic skills and abilities. Proficiency is reflected in learning that includes a focus on grammar, phonology, listening skills, vocabulary development, reading and writing skills, communication strategies, fluency, and the pragmatics of communication and associated concerns with politeness, implicature and inference”.*

But Francis and Rivera (2007: 17) in their research add that English language proficiency

*“involves the effective use of language to accomplish different objectives of importance to the language user and reflects linguistic proficiencies in multiple dimensions”.*

Rao (2017: 5) agrees with both and refers to English language proficiency as

*“the ability to do something well because of skill and practice; the progress of advancement in knowledge and skills and having great facility or skill”.*

There is a multitude of language tests available that an educator or student could use to test or measure English language proficiency (Francis & Rivera, 2007: 22; Marian, Blumenfeld & Kaushanskaya, 2007: 940–967; Mojica, 2013: 9), with various measures and frameworks that could be used. This research measures English proficiency according to the CEFR, as shown in Figure 2.4. The pre-test and ITSs used in this research are benchmarked according to the CEFR, and were used for convenience purposes, with the ITSs and pre-tests being readily available to the researcher. It was for this reason that a South African English proficiency test was not used. While no proficiency test is perfect, this section will define and describe the CEFR's impact and use in language proficiency testing and allow the researcher to homogenise participants' test scores and provide a base from which to work, according to the



CEFR, to place the participants on the correct CEFR level on the ITS. Further, as can be seen from Figure 2.4, the CEFR framework is benchmarked against other international tests used for testing English proficiency, to illustrate how the CEFR aligns with these.

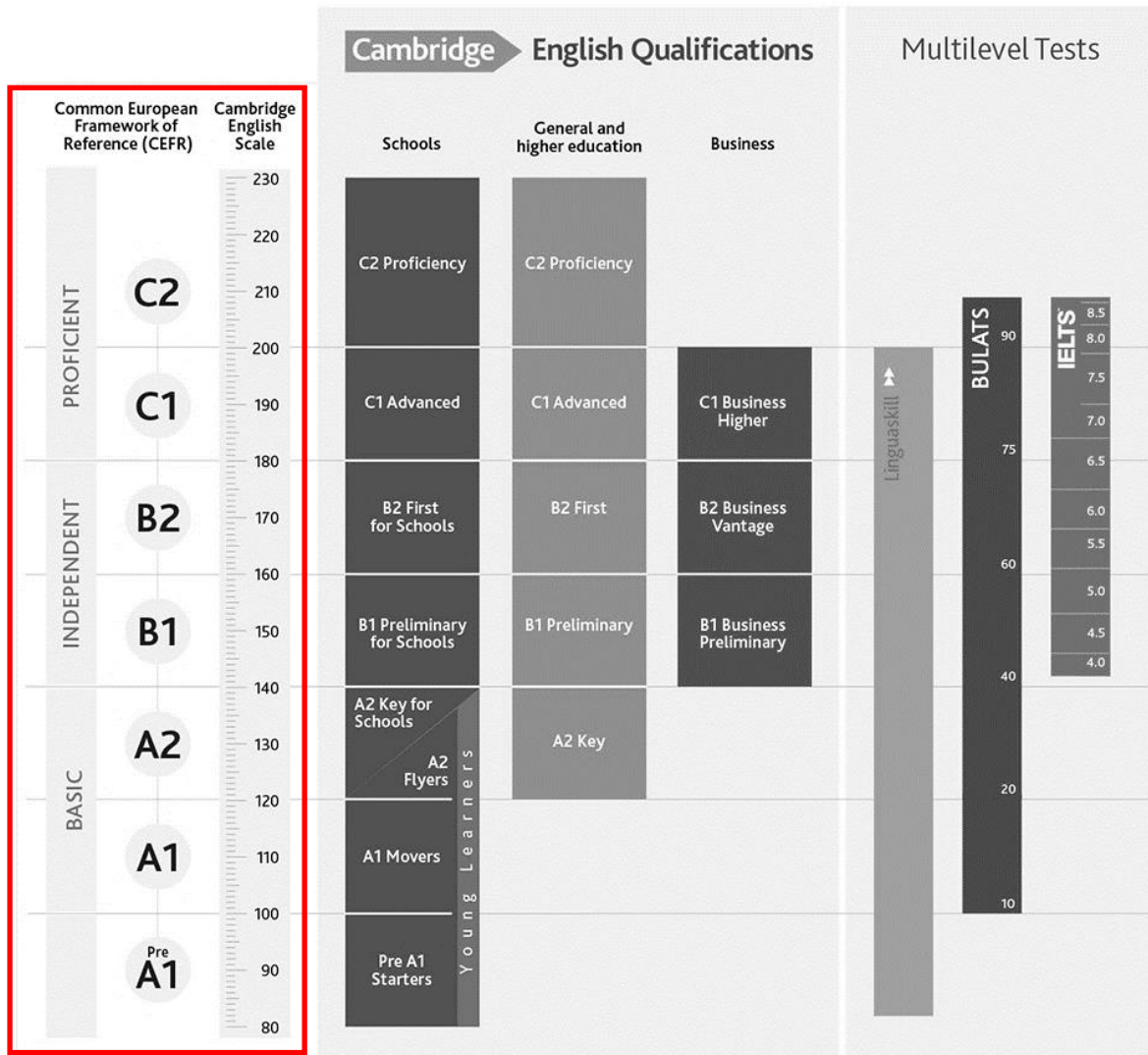


Figure 2.4: Common European Framework of Reference (International Language Standards) Cambridge English (2021). (<https://www.cambridgeenglish.org/exams-and-tests/cefr/>)

When it comes to the English language, a shared understanding and framework is needed globally for governments, businesses and even universities to underpin theory and statistics for alignment, transparency and coherence purposes (Bağatur, 2017: 538; Berger, 2019: 85; North, 2014: 222). Having a globally recognised framework allows language teaching, language learning and language assessment to be linked to a common approach (Brunfaut & Harding, 2019: 215–231). One such descriptor or approach used globally by publishers, governments and businesses is the CEFR, and what makes the CEFR especially useful is its

single aim, which is to make it simple for practitioners and students to understand what it is that they need to know and why, in order to progress. Also, purely from an operational point of view, the CEFR is a ready-made rating scale (Berger, 2019: 85).

Ó Doinn (2018: 18) in her research points to a few factors that make using the CEFR popular among language educators and students and echoed by multiple researchers. The CEFR offers a clear outcome-based roadmap for effective language learning; it utilises various communicative and constructivist pedagogical strategies for language learning; and it allows for comparisons to be made easily in various contexts. Pollitt (2010: 2), North (2014: 228) and Figueras (2012: 482) have come to similar conclusions.

Pollitt (2010) in her research argues that the CEFR test measures 1) the taker's knowledge of the second (grammatical and pragmatic), and 2) his or her ability to use this knowledge to communicate a range of meanings while listening and reading. Figueras argues that the CEFR is seen as globally successful as a result of two factors, these being 1) its real-life orientated approach to the English language, easily linked to its framework, and 2) the embodiment of its positive wording and descriptors, which mention what the students know and not what they do not know, which can be demotivating (Figueras, 2012). North (2014: 228) emphasises the good uses of the CEFR and the communality of the reference levels. He argues that the CEFR is a good point for English language proficiency testing as it relates to real world language ability and offers good descriptors, making it transparent in respect of learning objectives and empowering language learners.

Descriptors are used by the CEFR and are mainly a communication tool which are used by educators in assessment and analysis, used to communicate progress and to guide the students (Ó Doinn, 2018: 149). Table 2.1 outlines the descriptors of the CEFR as reference.

*Table 2.1: Common European Framework of Reference (CEFR), adapted from the Council of Europe website. (<https://www.coe.int/en/web/common-european-framework-reference-languages/table-1-cefr-3.3-common-reference-levels-global-scale:2021>)*

USER TYPE	Indicator	Comments
<b>PROFICIENT USER</b>	C2	Can understand with ease virtually everything heard or read. Can summarise information from different spoken and written sources, reconstructing arguments, and accounting in a coherent presentation. Can express him-/herself spontaneously, very fluently and precisely, differentiating finer shades of meaning even in more complex situations.

<b>INDEPENDENT USER</b>	C1	Can understand a wide range of demanding, longer texts, and recognise implicit meaning. Can express him-/herself fluently and spontaneously without much obvious searching for expressions. Can use language flexibly and effectively for social, academic, and professional purposes. Can produce clear, well-structured, detailed text on complex subjects, showing controlled use of organisational patterns, connectors, and cohesive devices.
	B2	Can understand the main ideas of complex text on both concrete and abstract topics, including technical discussions in his/her field of specialisation. Can interact with a degree of fluency and spontaneity that makes regular interaction with native speakers quite possible without strain for either party. Can produce clear, detailed text on a wide range of subjects and explain a viewpoint on a topical issue giving the advantages and disadvantages of various options.
	B1	Can understand the main points of clear standard input on familiar matters regularly encountered in work, school, leisure, etc. Can deal with most situations likely to arise while travelling in an area where the language is spoken. Can produce simple connected text on topics which are familiar or of personal interest. Can describe experiences and events, dreams, hopes and ambitions and briefly give reasons and explanations for opinions and plans.
<b>BASIC USER</b>	A2	Can understand sentences and frequently used expressions related to areas of most immediate relevance (e.g. very basic personal and family information, shopping, local geography, employment). Can communicate in simple and routine tasks requiring a simple and direct exchange of information on familiar and routine matters. Can describe in simple terms aspects of his/her background immediate environment and matters in areas of immediate need.
	A1	Can understand and use familiar everyday expressions and very basic phrases aimed at the satisfaction of needs of a concrete type. Can introduce him-/herself and others and can ask and answer questions about personal details such as where he/she lives, people he/she knows and things he/she has. Can

		interact in a simple way provided the other person talks slowly and clearly and is prepared to help.
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Ultimately, it is important to understand the reason that the researcher is interested in English language proficiency in this study. Firstly, a) the researcher needs to understand what the students' current level of English proficiency is in order to place them on the correct language level on the ITS; secondly b) the researcher needs to monitor the students' progress while they are using the ITS and thirdly c) the researcher needs to evaluate the students' perceptions of the ITS after having used it.

The goal of the tool, the ITS, in the Activity System is to assist the students with their English language proficiency. The test used to measure the students' English language proficiency to be placed at the right level on the ITS is the CEFR. There are, however, many factors that create forces within the Activity System that could result in the final outcome of the participants' perceptions being either positive, negative or neutral – which may not necessarily be directly related to the ITS itself but could possibly be due to sociocultural factors in the environment in which the activity finds itself. For this reason, CHAT will be used as the lens to analyse and interpret the perceptions of the participants after using an ITS in an English course for pre-service teachers at a university in the Western Cape.

## 2.9 Perception of ITS

ITS can offer versatility to lecturers, students, and institutions in terms of educational methods, and benefits such as being able to learn anytime and anywhere (Bledar, 2019: 217). Further benefits are lecturer support and being able to offer students individualised and personalised learning by tracking them in real time and providing the assistance timeously. Fazlija (2019) further contends that these benefits may, however, not be enough to motivate lecturers or students to use ITS or affect their perceptions of them. Ndenge (2016: 18) argues that with students moving from predominantly print learning environments to digital learning environments, the design of these digital learning environments and therefore ITS becomes increasingly important with regard to how students perceive it. Ndenge (2016) goes on to argue that perception plays an important role in how learners use digital learning environments, and how they learn while using these environments. He contends that perceptions are often a result of sociocultural contexts, because the way in which learners view interactive learning can be influenced by the setting in which it is designed

Hardman (2005: 259) in her research considered how teachers understand and approach novel tools, such as ITS, and how this would affect their perceptions thereof. In order to explain

how teachers used digital tools, and how they perceived them, Hardman argued that one first needed to understand what the teacher's expectations of the tool were. What Hardman's research focused on was what motivated teachers to use the tool to address a specific problem area. Like Bledar (2019) and Hardman (2005), Fossati (2008: 31) in his research looked at the benefits of timeous feedback and motivation (Fossati, 2008: 32), which could be factors that influence student perceptions of ITS. He argues that constructive and timeous feedback from a tutor can be a powerful motivating strategy, so long as the student tries to engage with the feedback to achieve the maximum benefit thereof. He further contends that this timeous feedback may in fact be motivational enough for the student to perceive the ITS positively, and more willing to use it.

Nye *et al.* (2018: 10) in their research looked at student learning gains, with an experimental group using ITS and a control group not using an ITS. What their research showed was significant differences in learning gains. However, these could not be explained by either initial mastery or time-on-task. The perceptions of students in their study were mixed when it came to ITS. According to Nye *et al.* (2018), learning and student perceptions were most heavily affected by time spent studying among all users, which coincided with tendencies of students to resist additional effort. Karacı, Piri, Akyüz and Bilgici (2018: 31–36) in their research investigated how students embrace ITS, and the reasons for this. They identified from their chosen participants that 64.12% of students perceived the ITS to be beneficial, 14.5% perceived its ease of use, and 21.37% intended using the ITS. Like Bledar's research, students embraced the ITS flexibility. Karacı *et al.* (2018: 31) further mention the importance of making the ITS user friendly so that the students perceive the ITS more positively, as ease of use, or rather the lack thereof, is seen as a barrier to students being motivated to use the ITS. In support of ease of use and the usefulness of the ITS impacting on students' attitudes, Al-Azawei, Parslow and Lundqvist (2017: 1–23) examined variables that influence the adoption and perceived satisfaction of technology in a blended e-learning environment, and Haddaji, Essalmi, Hamzaoui and Tlili (2017: 59–68) built a web-based interface to help lecturers select the most suitable combination of customisation for a course. What both research projects found was that ease of use and usefulness influenced the perceptions of the ITS used. In the same way, Edmunds, Thorpe and Conole (2012) used the TAM model to analyse the ITS and found that students' attitudes to ITSs were largely related to their usefulness.

Many universities now use some form of the ITS to provide students with a degree of versatility in learning. However, the issue arises as to whether the versatility provided by these digital platforms adequately represents the interests of students and lecturers by offering solutions to the problems they are facing at university. Further, do the students notice the benefits to

using the ITS to address these problems in order for them to perceive the ITS positively, and ensure that they make full use of it?

## **2.10 Conclusion**

In this chapter the researcher explained the use of ITS in an educational setting. This specific study has been positioned with reference made to the history of ITS/CALL and current-day research, and what this research ultimately hopes to add to the domain of ITS research from an education perspective. The researcher has further detailed the importance of the ITS being able to mimic specific aspects of a human tutor and why this is important to this study, with regard to developing English language practice and usage of pre-service teachers' who will go on to teach English as a home language in South African schools.

Kitade (2015) in her research speaks of the growing number of studies looking at teachers' who are teaching English as a first language, but they themselves are second language English speakers. Kitade further draws on the importance of looking at these studies through the lens of CHAT (Engeström, 2015) to best understand the development of proficiency through a socio-cultural and historical lens (Kitade, 2015: 396–426). Zhou and Evans (1999: 13–18) adds that development of proficiency should be looked at from a language acquisition point of view; how the students are able to integrate the use of the language into their lives; and this should also be understood in a sociocultural context.

Will technology carry on evolving, and will educators turn to ITS/CALL to assist them in the English language, with ITS widely acknowledged as being beneficial to the learning process, and successfully being able to mimic aspects of a human tutor according to contemporary research? Where this research will add additional value to the ITS domain is by better understanding how the ITS can be used within an Activity System as a tool to assist with English language practice by investigating students' perceptions of the ITS as viewed through the lens of CHAT. The researcher finished the chapter with a section covering modern-day discourse of students' perceptions of ITS. In the following chapter, the researcher unpacks the framework of the cultural historical activity theory as the lens through which this research was analysed and interpreted.

## **CHAPTER 3: CULTURAL HISTORICAL ACTIVITY THEORY FRAMEWORK**

### **3.1 Introduction**

In the previous chapter the researcher discussed ITS and defined it according to historic and contemporary research. The researcher looked at why educators would turn to technology and compared human tutoring to computer tutoring and the effectiveness thereof. The researcher then looked at the challenges facing English language ITS and perceptions of ITS.

This chapter flows from a definition of CHAT and its evolution from first to third generation; with a view to using second-generation AT (§3.3.2) as the theoretical lens to analyse and interpret the data gathered, the reason for which is discussed later in the chapter (§3.4). This chapter presents the background of AT, explores the definitions and principles of AT, and then attempts to describe how second-generation AT will be used as the lens for observing the student's use of an ITS used as a tool in a larger macrostructure of an English language course at University, to frame the participants' perceptions of an ITS used for English language practice of first-year pre-service teachers. The chapter rounds off with the researcher's rationale for using CHAT as a lens to analyse and interpret the data obtained from this research, with a conclusion outlining the chapter.

The research presented here is guided by an activity theory perspective, with this chapter reviewing Cultural-Historical Activity Theory (AT), or more specifically Engeström's Cultural Historical Activity Theory (CHAT) (Engeström, 2010: 135), as the theoretical lens through which the researcher will scrutinise the data gathered to answer the research questions.

One of the fundamental concepts of AT is that humans are all involved in real-world activities that are orientated towards objectives, driven by a purpose that lies beyond specific goals and is mediated through cultural and historical artefacts, which is therefore referred to as CHAT (Kozulin, Gindis, Ageyev & Miller, 2003: 393; Lee, 2011: 29; Obando, 2016: 41). AT, with its principles of contradictions, is a helpful way to direct education research by concentrating on the contradictions of the elemental inferences and research questions; and to address the findings and analysis (Murphy & Rodriguez-Manzanares, 2013: 442). Engeström (2010: 137) refers to these contradictions as not just competing complications or issues, but as historically accumulated structural tensions within an Activity System that not only agitate but ultimately can be drivers to innovate change. CHAT is the theoretical framework used within this

research to seek an enhanced understanding of the participants' perceptions related to the use of an ITS. The ITS was introduced into the Activity System as a tool for English language practice, with the researcher using CHAT as a lens to analyse the findings of the mixed-methods data gathered.

AT is based on the collective works of Vygotsky (1978), Leont'ev (1981) and Luria (1976) with this chapter describing the evolution of AT into the modern and contemporary third-generation model of Engeström (1987) (Anastasakis, 2018: 5; Hardman, 2005: 259; Hashim & Jones, 2007: 4; Nussbaumer, 2012: 38; Ó Doinn, 2018: 69). This research will, however, draw upon the theory and principles of second-generation CHAT, as the researcher will be looking at only one Activity System from the perceptions of the participants. The principles of second-generation AT will therefore be used to guide the analysis and interpretation of this research.

### **3.2 Cultural-Historical Activity Theory**

Activity Theory can be a powerful theoretical framework to view human practices within specific cultures and contexts, with Engeström even referring to CHAT as the best-kept secret in academia (Langemeyer, Technische. & Cottbus., 2006: 20). Murphy & Rodriguez-Manzanares (2013: 443) describe CHAT as the investigation of human activity in specific social settings such as work and learning. Barahona (2015: 9) defines CHAT as the theory of human development where culture plays a big role in learning and development, based on the works of Vygotsky (1978), Leont'ev (1978) and Engeström (1987), with traditional or first-generation approaches focusing on the individual and what the individual is doing. As Obando (2016: 3) states, all these actions are influenced by goals that are mediated by cultural and historical influences within the greater constraints of the environment in which they find themselves. A history of AT and the different generations is detailed below, with special emphasis placed on second-generation CHAT.

### **3.3 The evolution of Activity Theory**

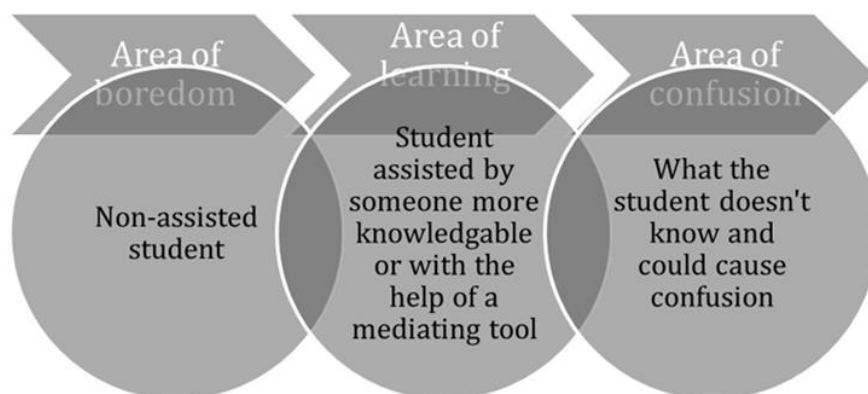
AT has evolved over the decades and will continue to evolve as researchers discover shortcomings and theorise new ways to overcome these. Below, the researcher discusses the evolution from first-generation CHAT to third-generation CHAT, with this research focusing on second-generation CHAT.

#### **3.3.1 First-Generation CHAT**

First-generation activity theory is based on the work of the Russian psychologist and researcher Lev Vygotsky's cultural mediation (Anastasakis, 2018: 5). Vygotsky's theory of cultural mediation investigated children's mental development, guided by culture and social



and interpersonal communications with significant people in their community (Vygotsky, 1978). Vygotsky's research focused on the child's information processing, perceptual skills, language process, and other functions of the adult brain (Harland, 2003: 265), and was further defined by Vygotsky as the "Zone of Proximal Development" (ZPD) (Figure 3.1.) which was "what a child does not know can be achieved with the help of a more knowledgeable other" (Kozulin *et al.*, 2003: 3). Raley (2015: 14) posits that when learning is interpreted as a series of transitions between knowledge states, the goal of teaching is to make the student's traversal of the space of knowledge states as smooth as possible through external scaffolding, to a point where learning is internalised. More simply put, ZPD could be looked at as the learning and growing from having done some form of primary activity, with the outcome being knowledge acquisition. Harland (2003: 265) talks about students' learning through tackling real-life problems, whereby the students' work on a problem systematically with the help of a tutor (in this case the ITS could be viewed as the tutor) and develop relevant content knowledge.



*Figure 3.1: Adapted from Vygotsky's (1978) Zone of Proximal Development*

Vygotsky's ZPD (Vygotsky, 1978) looks at the difference between assisted and non-assisted student performance which he called the ZPD and which can be seen as the area where learning takes place (Hardman, 2005: 259; Kozulin *et al.*, 2003: 3; Raley, 2015: 16).

The concept of the ZPD is grounded in the early work of Russian psychologists Lev Vygotsky and Alexei Leont'ev, with the ZPD being the precursor for first-generation Activity Theory (Hardman, 2005: 259; Hasan & Kazlauskas, 2014: 13). When viewing ZPD as an Activity System, we can view the human interaction within the specific Activity System, with the human using a specific mediating tool to transform an individual. Vygotsky referred to this as a mediating model between a stimulus, a response, and a mediating tool (John-Steiner & Mahn, 2014: 194; Mariotti, 2009: 427–440; Vygotsky, 1978: 1–26).

In the first-generation of Activity Theory (Figure 3.2.), we observe a human interacting with an individual with the use of a tool to produce some form of outcome (Engeström, 2010: 134). Abboud-Blanchard & Cazes (2012: 141) define first-generation activity theory as “the study of a subject acting on an object to produce a result with the use of a tool”; with Hasan and Kazlauskas (2014: 9) simply defining it as “who is doing what, why and how”. What we observe is an event within the Activity System that results in a reaction by using that specific tool. A tool is added to an Activity System as a stimulus to evoke a specific reaction. Hardman succinctly describes the first-generation of AT as "humans using tools to change the world and [who] are themselves changed through the use of the tool" (Hardman, 2005: 259).

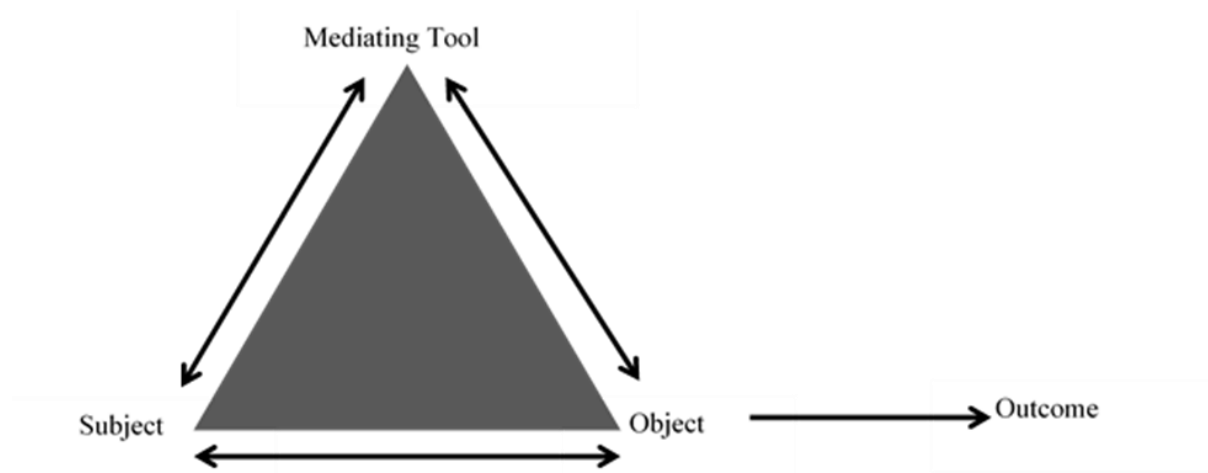


Figure 3.2: Adapted First-Generation CHAT, Hardman (2005: 259)

In the first generation, you can see the interaction between the subject, object, and tool (used as a stimulus) within the Activity System, with some form of outcome (as a result of a reaction having taken place). The defining part of the first-generation AT is the intervention factor of the tool and looking at the cultural entities of the object, much like ZPD, and how an individual can learn from transformation as opposed to only transmission of information (Hardman, 2005: 259).

A shortcoming of this first generation of AT is that it focuses only on the individual, as if it were in a vacuum, with no external factors playing a role in the activity or the outcome (Engeström, 2010: 134; Kozulin *et al.*, 2003: 382). Hardman adds to this in her research, saying that a further shortcoming to first-generation AT is that it “lacks articulation of the individual subject and their societal role” (Hardman, 2005: 259).

First-generation AT can therefore be a model that can be used to demonstrate how a teacher in a classroom environment does not simply transfer knowledge to a student, but in fact interacts with the student socially, supported by the tool. During the interaction, the teacher

can adapt and adjust teaching methods by analysing the student's actions and then interpreting what type of support needs to be provided. The three poles of the first-generation Activity System are described below, along with the description of an outcome.

### **3.3.1.1 Subject and Object defined**

The term "subject" refers to a person or a group of people who act on something in a specific way. The CHAT framework can be used to assess the motivations, interests, and needs of all stakeholders of an Activity System and the activity processes by analysing them in the light of the subjects' real environment to gain a holistic understanding of the situation (Lazarou, 2011: 426). Hardman (2005: 259) defines the subject as the individual, dyad or group (in this research pre-service teachers as individuals) that acts on an object using a tool; and the object as the motive for the outcome. Similarly, Hasan and Kazlauskas (2014:9) argue that in an Activity System, the subject is the human doer, and the object is the thing being done. The thing being done in this research are the specific activities and exercises assigned to the student via the ITS to practice English language. Their argument defines the object as the focus and purpose of the activity (grammar and vocabulary exercises used for the English language practice), and the subject as the person or people within the activity (the pre-service teachers') incorporating their various motives. Langemeyer and Roth (2006: 22) in their research state that one could reject a philosophical distinction between subject and object as separate entities, as these could mutually constitute each other in the realm of consciousness. They argue that the subject and object are in fact poles or extremes within an Activity System, and they question theories where the subject and object are classified as stable elements without any interests in their interrelations, their histories, and changes in different concepts. They go on to argue that the subject and object cannot be thought of as independent of each other but are complementary expressions of the same unit.

Therefore, within the context of this research, the researcher defines the subject as the pre-service teacher in the Activity System using the ITS as a tool for English language practice. The object refers to the raw material or problem space at which the activity is directed, namely English language practice for proficiency. The object can be viewed as the 'thing' being done within the activity. In this case, the participant uses the tool which embraces grammar and vocabulary activities) of the ITS, acting on the object (English language practice). The object is transformed by the stimulus of the tool to produce outcomes, by virtue of having used the ITS.

Activity Systems can be viewed as object-orientated, as the object is the problem space at which the activity is directed (practice of the English language). The need for an outcome is

the motivation to use the ITS to address a perceived issue and precedes the activity. A researcher would, therefore, analyse the object of an Activity System as the primary unit of analysis concerning the outcome, to determine if the tool has been effective or not (Obando, 2016: 165). In this research, the perceptions of the participants are analysed and interpreted using second-generation CHAT as a theoretical lens through which to view the mixed-methods data gathered.

### **3.3.1.2 Tool defined**

A tool can be either symbolic or physical (Kozulin *et al.*, 2003: 350; Ó Doinn, 2018: 71; Westberry, 2009: 19). In the case of this research, the tool is a physical tool, in the form of an English language ITS. An example of a symbolic tool used similarly, for instance, could be the language used as instruction in the Activity System. The tool is part of the transformation of the object into an outcome, whether intended or unintended, and the tool being used in this research is the ITS.

Tools used in activities can either assist or constrain activities (Hardman, 2005: 260; Kozulin *et al.*, 2003: 89; Ó Doinn, 2018: 141; Westberry, 2009: 38), so it is important to understand the advantages or usefulness, effectiveness and appropriateness of the tool to justify why you are using it. Usefulness refers to the tool matching the user's needs; effectiveness refers to whether or not the tool being used to make a difference addresses the learning need; and appropriateness refers to whether or not the tool is being used in the correct way to address a specific need, and not just because the tool is readily available. In layman's terms, does the tool do what it says it does on its packaging; and is it the most suitable tool available to address the user's specific needs sufficiently and effectively (Barahona, 2015: 9; Buabeng-Andoh, 2012: 42; Davie & Hilber, 2015: 70; Raley, 2015: 13)? Further examples of physical tools used within a similar environment to this research could be textbooks, the voice, whiteboards, or hand-raising.

It is important to remember that AT is learning through doing with the use of a tool as a stimulus to achieve an outcome, whether intended or unintended. Hasan and Kazlauskas (2014: 9) argue that Vygotsky's AT is uniquely different from Pavlov's stimulus-response theory, in that human activity is purposeful (unlike with animals) and is carried out by deliberate actions using either psychological or physical tools. Hardman (2005: 258) argues that it is the tool-intervening interactions within an Activity System that enable the understanding of learning as a complex result. Bagarukayo, Ssentamu, Mayisela and Brown (2016: 133) in their research refer to the tool as the technological support that learners use to get to the ZPD by putting their knowledge into action and solving problems.

### 3.3.1.3 Outcome defined

The outcome occurs because of the Activity System. Hasan and Kazlauskas (2014: 9) argue that the outcome of an Activity System can either be intended or unintended, positive, or negative. To explain this further, if the pre-service teachers perceive that the intended effect of using the ITS has been positive (English proficiency), then the outcome has been positive. If the students see an unintended result of using the tool in the activity, then the outcome could be viewed as negative, depending on the outcome. Langemeyer and Roth (2006:30) argue that the outcome is the change of movement within the Activity System and an invisible action that transforms the object of the activity because of the subject's motives and intentions.

There are three possible outcomes within the context of this research. The students could have a positive, a neutral, or a negative perception of the Activity System. It is the motives of the outcome that drive the Activity System, and this could also vary between the lecturer and the student (Barahona, 2015: 3; Buabeng-Andoh, 2012: 148; Davie & Hilber, 2015: 70; Raley, 2015: 22). The lecturer's motive could be to ensure that the students complete their English language practice as part of the course they are studying in order, for example, to see some form of improvement in English language use where the student's motive could possibly be only to get a pass mark in the subject. This shows that it is the motive of the subject that is the catalyst for change within an Activity System.

### 3.3.2 Second-generation CHAT

Second-generation AT is based on the work of Leont'ev (1982). He pointed to the fact that first-generation AT was focused around the individual and not the collective. Leont'ev (1982) shifted the focus from the individual to the collective by adding complex interrelations between the individual subjects and their community (Engeström, 2010: 134; Leadbetter, 2002: 304; Nussbaumer, 2012: 38). Engeström (1987), too, recognised the shortcomings of first-generation AT and expanded on Leont'ev's second-generation model (Figure 3.3), to include elements which he felt the first generation lacked (Engeström, 1987), being rules, community and division of labour.

Leont'ev (1982) and Engeström (1987) both recognised that learning activities with individuals could not happen in a vacuum, but that these activities took place in a collective and were influenced by external factors. Engeström (1987) therefore included these external forces that would act on the activity and expanded on the first-generation theory by adding these additional elements or forces which included community, rules, and division of labour. Engeström argued that there was a minimum of elements needed for an Activity System, namely: subject, object, mediating tool, communities, rules, and divisions of labour. These

additional elements allowed for a more realistic interpretation of Activity Systems in real-life situations, by looking at the relationships and interactions between the various forces within the system (Engeström, 2010).

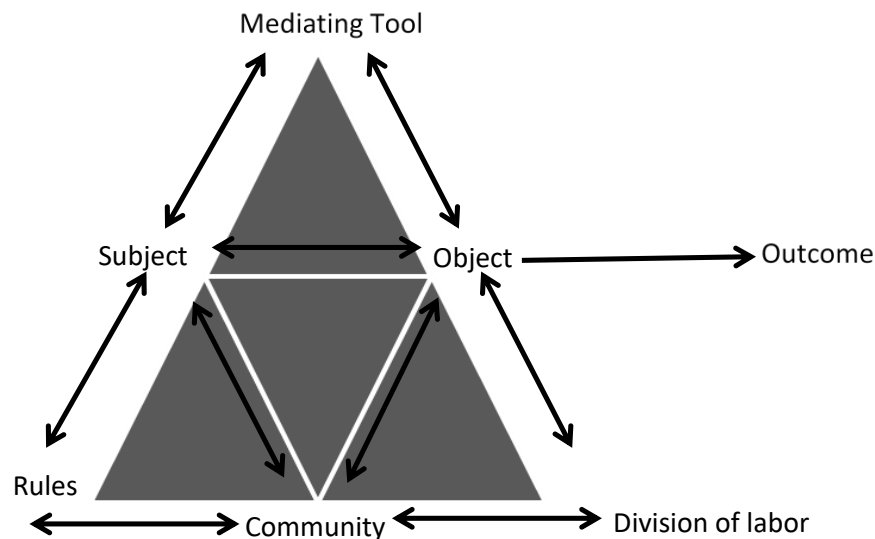


Figure 3.3: Adapted from Engeström and Sannino (2018: 45) Second Generation CHAT

Because CHAT considers historical and cultural aspects, with environmental surroundings and past experiences consciously or unconsciously affecting the human actions within the system, the result is a complex multilevel lens with which to view human interactions within an Activity System. The additional elements included by Engeström are listed and explained below, with references made on how these are viewed within this research.

### 3.3.1.1 Community defined

The researcher has discussed the collective nature of Activity Systems, and that motivation drives a subject to use tools to act on an object. However, communities too have an object-orientated interest in the activity (Anastasakis, 2018: 6). Bagarukayo *et al.* (2016: 133) in their research on developing knowledge application skills through the use of Facebook argue that learning is a social process and cannot happen without community and social influence and that learning does not happen only through the use of a tool but is influenced by the community in which the Activity System occurs.

Communities can be defined slightly differently because activities do not occur in isolation. Communities could be seen in a narrower view, such as the immediate community in which

the activity is placed, or from a wider view, such as the external community surrounding the Activity System. Yagamata-Lynch (2010) defines a community as the social group that the subject belongs to while engaged in the specific activity. Murphy and Rodriguez-Manzanares (2008: 443) refer to the community as all the participants of an Activity System that share the same topic.

As mentioned above, communities could be viewed more narrowly according to their immediate environment. Glover, Czerniewicz, Walji, Deacon and Small (2015) in their investigation to see whether massive open online courses (MOOCs) and open education change educator practices refer to a community within a high school classroom environment as the teachers, students as well as the parents, describe the community as the school community, the classroom, and the organisation. Similarly, Rambe (2012: 1337) in his research on using question-based consultation on Facebook refers to the community as the students, their peers, senior students, educators, and the broader learning community with whom they are sharing knowledge on Facebook.

Communities viewed on larger scales could include those that are outside the classroom. Barahona (2015: 9) in her research into English language teacher education in Chile refers to the word “community” as the English language teaching (ELT) community, the English-speaking community, the school community, and the university setting. Morales (2017: 88) also refers to a wider community. Morales (2017) refers to the scientific language as the public understanding of science which could refer to anyone who may be interested in their study within the larger scientific education community concerned with nature, performance, and reforms in current educational systems.

Keeping the above descriptions in mind, the researcher will look at both the narrow and the wider communities which could have had an impact on the research. A narrow view of the community would be the participants in the study, the researcher, and the lecturers. The wider view would consider the community in which the study takes place, within a University in the Western Cape, as well as the greater community outside the University. This wider community would then also include other students at the University, parents, the online community, and ultimately society in general.

### **3.3.1.2 Division of labour**

Hardman (2005: 260) describes division of labour within an Activity System as a horizontal division among community members, as well as a vertical division between power or status holders within the activity. It could also describe the power between and within Activity Systems. Similarly, Obando (2016:49) refers to the distribution of tasks and powers within the

Activity Systems, and Rambe (2012: 1337) argues that division of labour refers to the multiple intersecting roles between educators and students during their engagement within the Activity System.

In their research, Bagarukayo *et al.* (2016: 136) simply define this division as the student who is to acquire the skills and the lecturer (or in this case the ITS) who is to teach the skills. However, division of labour goes far wider within the confines of this research, as it will be viewed according to Hardman's (2005) horizontal and vertical view, both from a narrow perspective as well as a much wider external view. A narrow horizontal view could be the power and status within the classroom between the participants, with a narrow vertical view being the power and status between the students, the researcher, and the lecturers. A wider view (horizontal or vertical) could have several scenarios, but these could include the power or status that parents have on the participants, student representative groups, or the power and status of members of the wider community.

### **3.3.1.3 Rules**

The rules of any Activity System regulate the actions and interactions within the system. Hardman defines rules as the principles of control (Hardman, 2005: 260). Rambe (2012: 1337) states that rules are negotiated and mediated by the community of the Activity System, in a way which supports the activity.

Rules can be viewed from different perspectives. A more traditional point of view could be the rules of a classroom environment. These rules, for instance, could be very well defined, such as no talking during the lecture, or mobile phones turned off, raising of hands to ask questions, or handing in assignments and tasks on time. The rules could be vastly different for the Activity System outside the classroom environment, such as using the mediating tool in a virtual environment away from the classroom, where the traditional classroom's rules no longer apply, for example, where the participant is at home. Here, sociocultural rules may apply.

In the second generation of Activity Systems, the focus has moved from the individual to the complex interrelationships between the individual and his/her community (Langemeyer *et al.*, 2004: 32). Considering all the information above, a good example of a first-generation CHAT could be a lecturer that decides to use a mediating tool such as a computer in a classroom. In a traditional classroom environment, a lecturer would add an intervention (perhaps a computer programme to mediate a known problem), and there would be some sort of an outcome. Now, with the computer added to the classroom as a mediating tool, the lecturers may perhaps not be able to teach all the students at once, finding that they may be spending more time with students who do not understand a topic or know how to use the computer. Some students in



the classroom may already have some knowledge of how computers work, or have some knowledge on the topic, and could, therefore, assist other students in the Activity System in much the same way as the teacher would. In this way, the students are now also teaching, by calling on their past learning and social/cultural/historical experiences. This would be a good example of a second-generation CHAT.

### **3.4 Third-generation CHAT and justification for using second-generation CHAT in this research**

Even though second-generation CHAT will be used as the theoretical lens with which the researcher will analyse and interpret the mixed-methods data gathered in this study, it may be of interest to explain how CHAT has evolved into a third-generation model to expand on this research in the future, possibly, but also to justify why the researcher has chosen to use second-generation CHAT with which to view these data.

Although CHAT was formerly popular only in Eastern Europe, it was Engeström and Cole who popularised CHAT in the 1980s and 1990s in Scandinavia and the United States, with Engeström positioning the need for a third-generation Activity System in 2001 (Engeström & Glăveanu, 2012: 515–518). Engeström defines the third generation Activity System as an expansion from studying only one Activity System at a time, to studying multiple (minimally two) competing (and interdependent) Activity Systems (Engeström & Glăveanu, 2012: 516). Third-generation AT offers an expanded offer by including different layers of Activity Systems; these can be viewed as networks of interacting systems with contradictions and tensions, often with the researcher forming an engaging role within the Activity System, emboldening collective learning through transformation (Anastasakis, 2018: 7; Nussbaumer, 2012: 39; Ó Doinn, 2018: 76). Engeström's third-generation Activity System can be seen in Figure 3.4.

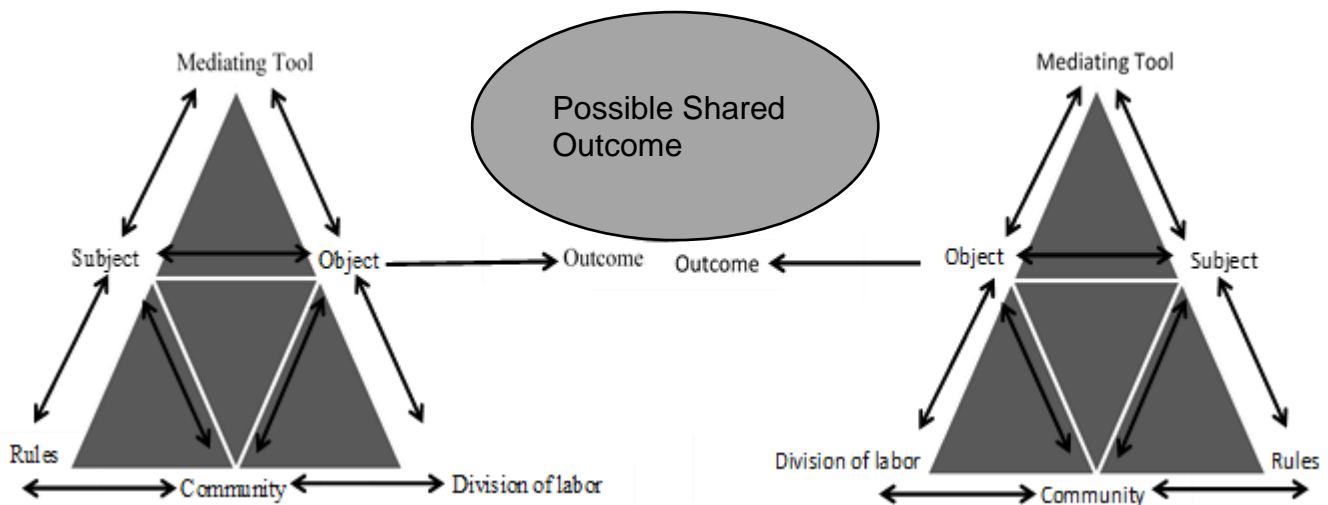


Figure 3.4: Third-generation CHAT, adapted from Nussbaumer (2012: 40)

In the context of this research, there is only one Activity System, not two competing systems, being viewed. The Activity System is made up of participants from the first-year SP/FET and IP classes at a university in the Western Cape. These first-year classes are made up of participants taking an English language module who will eventually go on to teach English as a first language, with English not being their first language. The mother tongue of the participants in this research is Afrikaans.

The participants in each of the SP/FET and IP classes have varying levels of English language skill, which was tested using a placement test and graded according to CEFR levels. The students were given access to the same mediating tool (and English language ITS) and given access to do grammar and vocabulary exercises with the ITS according to their respective CEFR levels. The researcher used an ITS in this study as a stimulus to change a perceived problem or issue, the need for English practice in an English course being taken by the participants. By using personalised and adaptive grammar and vocabulary exercises within the ITS, the motivation is to see a specific outcome: how the participants perceive the ITS; and to explore the contradictions and tensions perceived by the participants.

When analysing second-generation activities in the context of a classroom activity the researcher has to start observing the interaction and dynamics of the Activity System in which the participants find themselves. The participants are then affected by the additional forces of rules, community and divisions of labour, as mentioned by Engeström. The second-generation system allows for sociocultural and historical analysis, something the first generation was not able to do. This Activity System analysis allows the researcher to participate or intervene in

the activities to change the experience. It is for this pragmatic reason that the researcher has chosen CHAT as the lens through which to view the real-life Activity System of participants using an English language ITS. CHAT, however, as with any framework, is not without its limitations.

### **3.5 Limitations of CHAT**

Choosing CHAT as a framework can come with limitations. By understanding some of the potential limitations, the researcher can potentially counteract them in order not to affect the validity of the research. Two of the limitations especially important to mitigate are a narrow point of view of the environment of the Activity System, and the lack of consistent methodologies to use in CHAT.

Lim (2002: 416) argues that looking at activities from a narrow viewpoint could be limiting and suggests that one should consider not only the immediate community in which the activity is taking place but also the greater environment and society at large. The researcher in this study intends to overcome this limitation by viewing the Activity Systems within the broader socio-cultural context outside the University, as well as society at large. With the ITS forming the centre of this research, the researcher needs to ensure that the participants understand all of the factors pertaining to their use of the tool, but also to their perceptions of the use of the tool (Anastasakis, 2018: 19).

O' Doinn (2018: 79) in their research points to another potential limitation of using CHAT as a framework. They argue that CHAT is not very prescriptive in its approach and offers neither specific methods to follow, nor a matrix with which to code the qualitative data collected. The researcher intends to overcome this by detailing all of the methods, actions and activities taken, using a mixed-methods approach, to ensure that data are not only analysed and interpreted at face-value but that the researcher can arrive at the deeper meaning.

### **3.6 The rationale for using CHAT in the methodology chapter**

There has been an increased interest in CHAT as a promising theoretical and methodological tool for the design of computers as tools used in education technologies (Allen, Karanasios & Slavova, 2011: 8; Darwin, 2011: 217; Lazarou, 2011: 424; Nussbaumer, 2012: 45). This is because CHAT is a framework that can contribute to features that allow for researchers to design and shape tools within Activity Systems that can fulfil the needs or outcomes of the problem they are hoping to address (Fuks, Pimentel & Pereira De Lucena, 2006: 117–142; Murphy & Rodriguez-Manzanares, 2008: 448; Roth, Lee & Hsu, 2009: 186–232).

Digital technology has proposed to be a promising mechanism for students to gain abstract knowledge, and this includes educational software and computer programmes such as ITS (Carreira, 2015: 93–113; Hsi, 2007: 1509–1529; Liu & Moeller, 2019: 33–51). By examining an Activity System through the lens of CHAT, a researcher is shown a comprehensive look at how a new computer tool, which is introduced into an Activity System, addresses a specific problem, from the perception of the participants. CHAT can therefore be a valuable theoretical framework or methodology used in Educational research to aid in the design of the Activity System, from start (introduction of the tool) to finish (the outcome of the activity), in an attempt to understand better what is happening within the Activity System when adding an ITS as a mediating tool.

In his study, Lazarou (2011: 424–439) used CHAT as his research methodology at the beginning stages of introducing a science game into an Activity System. Lazarou looked at the development, implementation and subsequent evaluation of the mediating tool used in the Activity System. This study, however, will look from the perception of the participants at the implementation and evaluation of an existing ITS built for the improvement of English language which is then introduced into an Activity System. The researcher may then suggest a possible redesign at the end of the study, depending on the outcome, and interpretation of the data gathered.

### **3.7 Conclusion**

In this chapter, the researcher introduced AT and the evolution of first- to third-generation CHAT, with the researcher positioning this study within second-generation AT.

In this research, the researcher draws on second-generation CHAT as the theoretical framework to analyse and interpret the data gathered, to investigate the contradictions and tensions perceived by the participants. The reason for using second-generation CHAT in this research is that no Activity System happens in isolation, but that sociocultural and historical forces could affect the participants' perceptions of using the ITS in the Activity System, and of primary interest in this research. There are, as in real-life scenarios, multiple forces at play when learning occurs, as learning needs to be transformative, not just transmitted. The researcher will therefore have a primary (qualitative) and secondary (quantitative) focus related to this research. The primary focus is where this research positions itself. Chapter 4 will discuss the mixed-methods design used for gathering used for gathering the quantitative and qualitative data, which will eventually be analysed and interpreted using CHAT as a lens through which to view the research in Chapter 5.

## CHAPTER 4: METHODOLOGY

### 4.1 Introduction

In chapters two and three, the researcher presented a review of literature exploring the present-day research on intelligent tutoring systems, and Activity Theory (AT). This chapter introduces the research methodology. The researcher discusses the primary research focus, and the steps that were taken to develop the research design. The researcher then goes on to outline the challenges faced during the research process, especially with regard to the data gathering and analysis, as a result of the Covid-19 pandemic. This chapter then sets out the rationale for the methodological approach used to collect and analyse the data, ultimately guided by the principles of the theoretical framework CHAT (subject, tool, object, outcome, rules, community and divisions of labour) herein referred to as the nodes, to better pursue the research questions and aims of this research (Darwin, 2011: 216; Morales, 2017: 87; Nussbaumer, 2012: 41).

The aim of this research was to interpret the research questions asked, according to a real-world scenario where a tool (the ITS) was introduced into an activity system (an English module taken at a University) as a tool to achieve a specific outcome (Anastasakis, 2018: 52; Nye, Pavlik, Windsor, Olney, Hajeer & Hu, 2018: 1; Ó Doinn, 2018: 67), as perceived by the participants. The chapter goes on to frame the participants and discusses the criteria and strategies used when selecting them. It describes the setting in which the data were gathered using a mixed methods approach and attempts to explain why specific approaches were used for the collection of both quantitative (surveys) and qualitative data (interviews). The researcher then discusses the ethical considerations of conducting this research.

Activity Theory as a framework can be regarded as a reliable and comprehensive lens with which to view human interaction with tools and artefacts when used within research design (Allen, Karanasios & Slavova, 2011: 6; Hashim & Jones, 2007: 1–20; Leadbetter, 2002: 25; Murphy & Rodriguez-Manzanares, 2008: 442–457). It is especially useful to examine systems in times of change, for example where IT is introduced in educational settings, and when interpreting qualitative and interpretive research where activities are affected by social and cultural influences in a constantly evolving environment (Bagarukayo, Ssentamu, Mayisela & Brown, 2016: 133; Hashim & Jones, 2007: 3; Lim, 2002: 83; Sam, 2012: 412). Even though Activity Theory provides an especially useful framework for understanding qualitative data

(especially related to human interaction within an activity system), quantitative data in the form of pre-test scores needed to be gathered in this research to ensure the participants were placed on the correct CEFR level on the platform (§2.8). Surveys were also used in this research to gain an overall picture of the participants' experiences and perceptions, and the questions were framed around the CHAT nodes. Contradictions and tensions as perceived by the participants were then investigated through qualitative methods (interviews). Figure 4.1. (below), adapted from Anastasakis (2018: 68), shows the design used within this research, and illustrates the research being conducted during and after the Covid-19 pandemic, the challenges of which are discussed further down.

Throughout the chapter, the researcher describes the reason for having chosen a specific design and rationale used and demonstrates in detail the methods practiced gathering the data. Trustworthiness and validity are shown in this research with the researcher using CHAT with which data has been viewed and analysed. The chapter then ends with a conclusion

## 4.2 Research questions

The research question to be answered was:

- What are pre-service teachers' perceptions of an ITS for English Language Proficiency that has been introduced into an Activity System?

In order to answer the main research question, the following sub-questions were posed:

- Sub-question 1: What are the pre-service teachers' perceptions of the ITS when viewed through the lens of Cultural-Historical Activity Theory (CHAT)?
- Sub-question 2: What tensions and contradictions are perceived by pre-service teachers when using ITS?
- Sub-question 3: To what extent does ITS mimic face-to-face human tutoring?
- Sub-question 4: To what extent do pre-service teachers perceive ITS as an effective or ineffective tool?

## 4.3 Primary focus

The primary focus of this research study was to investigate the perceptions of pre-service teachers' use of an ITS when introduced into an Activity System. The sub-aims of this study were to better understand what contradictions and tensions existed within the activity system when the ITS was added; whether the ITS could mimic a human tutor or not; and whether the participants perceived the ITS to be an effective tool.

#### 4.4 Research challenges due to COVID-19

This research was envisaged to take place in late March 2020. However, just before the participants could start working on the ITS, the world was struck by a global pandemic. With Covid-19, the introduction of the ITS into the Activity System had now taken on greater significance, as it would be used as a tool by the participants as part of their classwork, and not just as an additional resource as previously expected. However, with the pandemic, this research suddenly needed to be halted – as many of the participants had trouble in accessing the ITS from home as a result of no internet connection and an apparent lack of devices. This meant that the data collection was pushed out by approximately three months, while the participants and the University tried to come up with plans to work remotely, with access to both devices and internet connection. Initially, the use of the ITS would have been followed by surveys, done in print format, and completed in class, and then followed by face-to-face interviews. This now meant that the surveys needed to become digital surveys completed remotely. This also meant that the face-to-face interviews needed to become telephone interviews.

According to the National Institute for Communicable Diseases (NICD), on 7 January 2020, a severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) was confirmed as the causative agent of Coronavirus disease 2019 (Covid-19). Originating in the Hubei Province in China, the source of the virus is not yet known (National Institute for Communicable Diseases, 2020). On 11 March 2020, Time magazine reported on The World Health Organisation (WHO) calling the Covid-19 a global pandemic. WHO referred to this pandemic as the global spread of a new virus strain, able to spread easily from person to person in an efficient manner, and affect many regions globally (Ducharme, 2020). Not long after, on 27 March 2020, South Africa's President called for a state of emergency due to the rapid spread of Covid-19 globally and calling for a national lockdown for 21 days (Cohen & Sguazzin, 2020). The lockdown would have far-reaching consequences, not only for businesses in South Africa, but for educational institutions too, with the closure of schools and universities countrywide. While universities were initially gearing up to start again on Monday 20 April 2020 (Hlati, 2020), the government then decided to extend the lockdown period for another two weeks, resulting in classes being able to resume only on 4 May 2020.

On 20 April 2020, noticeably very few institutions were ready or geared up to start teaching. On 21 April 2020, the Department of Higher Education and Training released a report entitled "Plans for Academic Year 2020 and Response to Covid-19 Pandemic", compiled by the Portfolio Committee on Higher Education, Science and Technology (Department of Higher

Education and Training, 2020). Below are some principles and framework suggested in the report, that are specifically important to mention in relation to this research. These were:

- All academic institutions have committed to finish the academic year 2020.
- No student should be left behind (this means that all should be given a fair opportunity for completion).
- Online, remote, and flexible learning methodologies to be used as best as possible considering institutional differences.
- A phased-in return to the academic year with a combination of online and remote learning initially, with full return to contact teaching where feasible.
- A return to learning and teaching through primarily online and remote methodologies from 4 May 2020.
- No full return to face-to-face campus activity until peak of the virus is over (possibly September 2020.)
- A phased-in resumption of teaching and learning, with only some students returning to campus.
- The provision/loan of devices from institutions where possible.
- The scope of zero-rated websites and data bundles.

The responses to South African institutions' sudden move to online and remote learning methodologies have been varied and widely reported. Minister of Higher Education Blade Nzimande in an *Eyewitness News* article (Khubeka, 2020) referred to "online learning continues to be a key challenge during lockdown" as a response to trying to save the 2020 academic year. The minister specifically mentions that "the education sector needs to ensure that students have access to learning materials, but that they need to remember that poor students form part of this sector" (Khubeka, 2020). Similarly, the *Daily Maverick* reported that few institutions were geared up and ready for a move to online and remote learning methodologies, citing that "many students are still confronted with a multitude of challenges, including access to devices, data, and enabling learning environments" (Mthethwa, 2020). While some universities have been able to supply students with devices and data, many have not had the resources to do the same. With educational institutions trying to find the best way to respond to the government's report on principles and framework, student reactions have also been varied. While some students have been quite happy to move to an online and remote learning environment, others have not. Some student bodies have gone so far as to say that e-learning is unaffordable and elitist (Mukeredzi, Kokutse & Dell, 2020), while others have threatened boycott if all students are not given the same access to online learning (Nowicki, 2020).



As with all activity systems, the activity system being researched in this study was not operating in isolation but fell within a greater activity systems and real-world scenarios, ultimately affecting the outcomes of this research. This research and the data collected happened during the global Covid-19 pandemic, and when viewed through the lens of CHAT, has added an interesting additional dimension to the research. As an example, the rules governing the activity system being researched were now viewed not only at an institutional or class level of the participants, but also by the laws governing the country's response to the virus. A second example was the community of the activity system being studied. The community would usually have been that of the pre-service teachers using the ITS, both within their usual class or university environments, but students were now being asked to use the ITS in their external environments with home or remote learning. When you look at the virus and the responses taken by the government and learning institutions, the community suddenly becomes far wider than participants would have considered their *usual* environment for this research. The participants would originally have used the ITS during class sessions or while on the university campus, with access to devices and the internet. This research therefore adds an interesting additional layer to the research as viewed through CHAT, and how it affected the ultimate outcome of the research questions from a cultural and historical activity theory perspective.

#### **4.5 Mixed method research design**

In this research, the researcher was interested in interpreting the participants' perceptions of an ITS introduced as a tool into an Activity System from a real-world scenario or pragmatic standpoint. Pragmatism as a paradigm can be interpreted in its original form as the theory of meaning or knowledge. Pragmatists believe that the truth or value of a concept can be found in its realistic implementation in real life scenarios (Anastasakis, 2018: 64; Creswell, 2014: 10; Lee, 2011: 415). Pragmatists infuse 'useful' with meaning, but value relies on the researcher's views and understanding of the usefulness and significance of a collection of concepts. Analysis is also multi-purpose, and a 'what works' technique would allow the researcher to discuss problems that do not fit in easily with a solely quantitative or qualitative method. For this reason, a mixed method design was the most appropriate design for this research.

The reasons for selecting this type of design lay in the following three reasons, discussed in the works of Fraenkel and Wallen (2008: 558) and Creswell and Plano Clark (2007: 10) whereby they argue that 1) a mixed methods approach is useful in assisting to clarify the relationship between variables, 2) by delving more intensively into the interrelationship between the variables, and 3) by helping to substantiate or cross-validate the interconnection of the variables. The variables in this research are the interrelationships between the nodes

of CHAT and, in this research specifically, the interrelationships between the subject (the participants) and the other CHAT nodes (for example: What tensions or contradictions exist between the subject and tool, or subject and rules; or between the tool and the community or the tool and the object?).

In this mixed method design, quantitative and qualitative data were gathered, with the quantitative phase being executed first (the survey), followed by the qualitative phase (the interviews). The reasons for doing this is because a mixed method approach allows the researcher to look not only at the numerical facts and figures of quantitative data, but also to supplement the quantitative data with the qualitative data gathered (Creswell & Sinley, 2017: 101). In this way, a mixed methods design lends itself to the theoretical lens through which this research is viewed, as the researcher was most interested in the participants' perceptions. Survey data alone would not have been enough to uncover the deeper meaning of the participants' perceptions. For this reason, qualitative data in the form of interviews was needed for a deeper dive into the themes identified from the surveys. With the participants' perceptions being the focus of the research, the researcher was therefore specifically focused on and interested in the qualitative data gathered in the interviews. The qualitative data were what contained the rich, thick, detailed information around the participants' perceptions, as seen through the lens of second-generation CHAT. Figure 4.1 shows the structure of mixed methods which was used.

Onwuegbuzie and Leech (2005: 384) note that quantitative research is often driven by the researcher's concerns over certain issues, while qualitative research strives to capture the participant's voice. The mixed method approach is particularly effective in three areas, namely: a) when it comes to researchers addressing confirmatory and exploratory questions simultaneously, b) by allowing a researcher to verify and generate theory at the same time, and c) allowing the researcher to gather a greater assortment of views (Anastasakis, 2018: 84). Similarly, Rahman (2017: 106) postulates that while the strength of qualitative data allows researchers to gain deeper insights by interpreting and exploring perceptions, quantitative data can be seen as limiting and only a snapshot of a phenomenon without understanding the deeper meaning of what is meant in the quantitative data.

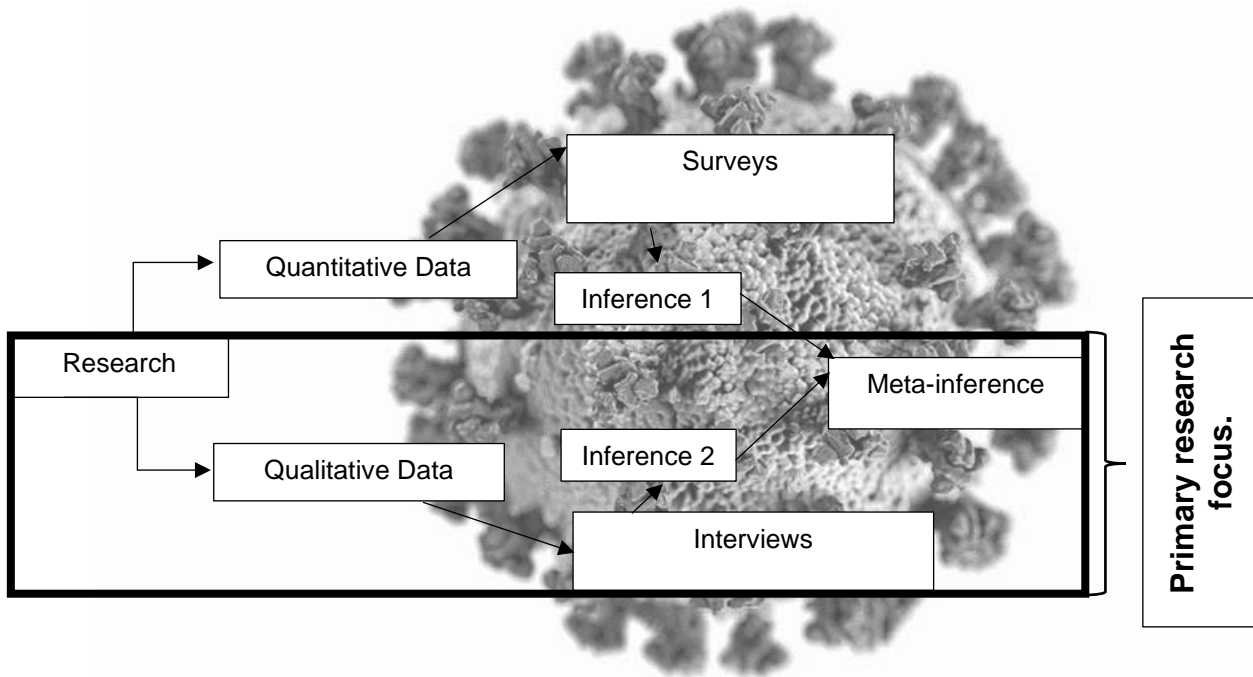


Figure 4.1: The mixed-method design used in this research

As with all data collection methods, there are advantages and disadvantages. Driscoll, Rupert, Appiah-Yeboah & Salib (2007: 21) argue that a mixed methods approach offers pragmatic advantages to data collection. Their argument is that qualitative data collection, although valuable in understanding deeper meanings of patterns and responses, can be quite time consuming and expensive for the researcher. If this is an issue, then ultimately quantitative data collection may be the solution, unless the researcher is trying to elicit a more extensive and deeper analysis. Almalki (2016: 288) concurs that researchers should consider not limiting themselves to only quantitative or qualitative research methods. While qualitative collection methods may take longer and be more expensive, they offer specific qualities and affordances that quantitative data collection methods on their own cannot do. Using both methods offers researchers, specifically in educational research, a broader and deeper scope to understand specific issues.

#### 4.5.1 Implementation process followed

Figure 4.2 shows an iterative interpretation of how the ITS was introduced into the activity system. Iterative design methodologies are repetitions of a process to test, analyse and refine processes (Gossain & Anderson, 1990: 12–27; Kelley, 1984: 26–41; Nielsen, 1993: 32–41; Ó Doinn, 2018: 90). Iterative design methods are effective ways in which to highlight possible changes that need to be made to the design of similar interventions implemented in the future

to refine the process even further for an improved outcome. The steps followed in introducing the ITS are shown below, with this research primarily focusing on steps four and five.

Once the participants concluded the work on the ITS, the researcher used a cross-sectional survey to gather an overview of the participants' perceptions of the ITS, and to determine where the most tensions and contradictions were in the activity system. The survey was then followed by the qualitative data collection method in the form of telephonic interviews, which were designed incorporating questions related to the nodes of CHAT to unpack and elaborate on the survey data gathered. This is discussed in section 4.5.

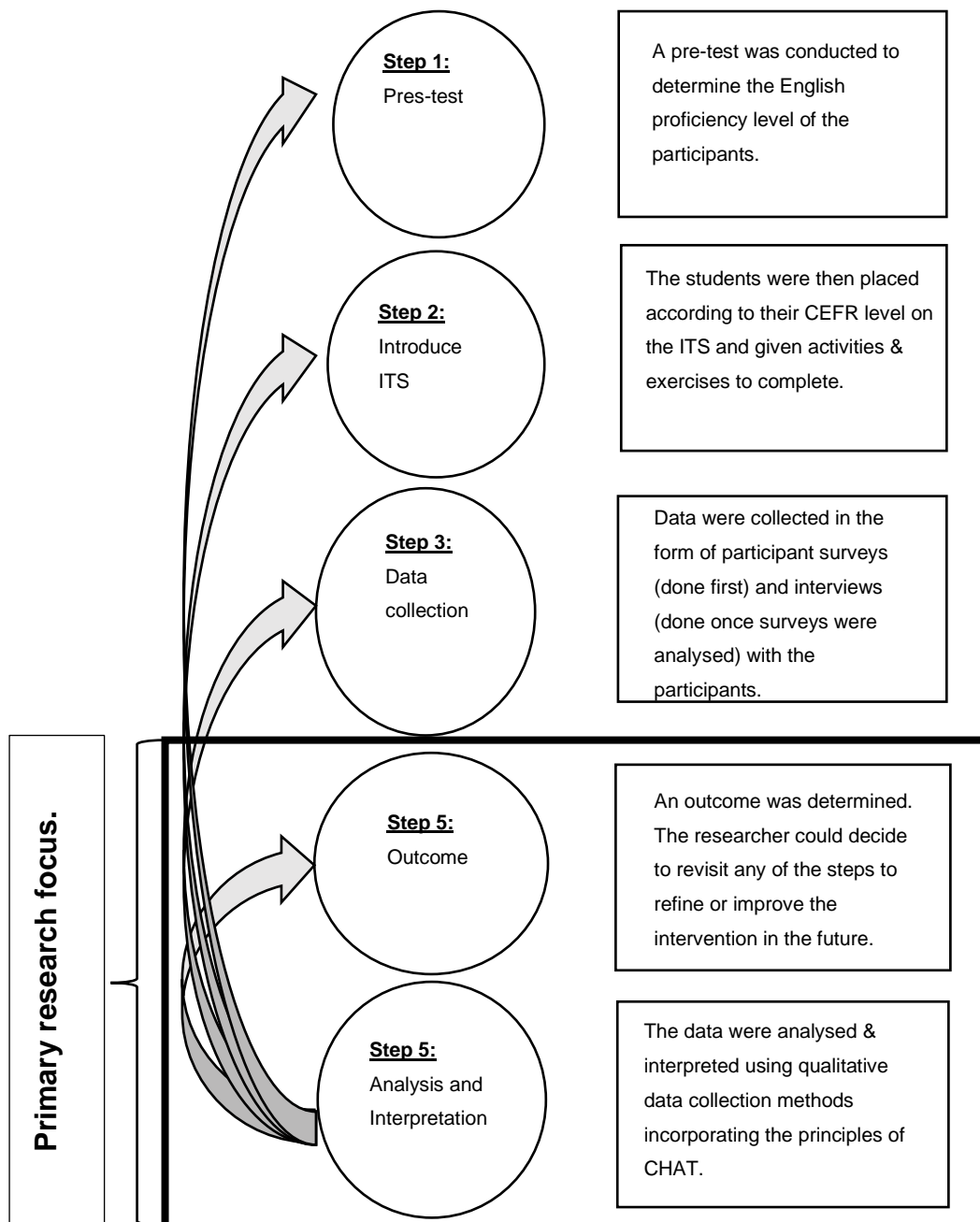


Figure 4.2: Iterative steps followed in the implementation process, adapted from Ivankova et al (2009: 15)

#### 4.5.2 Quantitative phase

While quantitative research is a recognised exploratory research method to shape and sharpen initial ideas and systematically measure and study data collected, qualitative research allows the researcher to interpret and analyse more complex data such as the perceptions of human participants, phenomena which are not visible to the researcher when relying only on

quantitative data (Gal & Ograjenšek, 2010: 287–296; Obando, 2016: 65; Murphy & Rodriguez-Manzanares, 2013: 448).

Creswell (2014: 13) defines quantitative research as research that looks at theories that examine variables which are measured and analysed by various statistical methods. As such, quantitative data gathered measures the thing being researched and establishes the research numerically. Similarly, Sukamolson (2007: 2) defines quantitative research as research that is a numerical representation and a manipulation of observations for the purpose of describing phenomena of observations.

The cross-sectional survey used in this research was designed to collect the biographical information of the participants. Cross-sectional surveys are a useful research tool to gather primary data in that they allow the researcher to gather large volumes of data from target population groups to discover particular issues that the larger group may have experienced (Anema & Brown, 1995; Hackett, 1981; McCawley, 2009). Cross-sectional surveys allow for the researcher to view this vast amount of data as a snapshot in time of when the data were gathered and allow for certain inferences to be made and also for coding of the information. The surveys gathered from the participants contain both factual and attitudinal data.

Cross-sectional surveys are flexible and allow the researcher to cover many areas of human behaviour (Said, Summers, Abd-el-khalick & Wang, 2016: 626; Tanyer & Ozturk, 2014: 39; Yuksel & Yasin, 2003: 29). The cross-sectional survey allows the researcher to pick up specific trends from the data collected, and these can then form a representative sample of a larger population group. The surveys used were created online using Google Forms and made use of the Likert scale. The researcher specifically chose the Likert scale in the survey questions, as they are univariate and can clearly demonstrate common themes or patterns such as degree of agreement or preference (Barrios, 2015: 54; Nye *et al.*, 2018: 15; Said, Summers, Abd-el-khalick & Wang, 2016: 632). The survey consisted of 28 questions, which the participants completed online.

#### **4.5.2.1 Survey as a research method**

A cross-sectional survey design was used incorporating questions based around the research question and sub-questions. Likert scales are a convenient way to gather general overviews around perceptions and experiences (Heilman & Eskenazi, 2006: 27; Martirosyan, Hwang & Wanjohi, 2015: 63; McCawley, 2009: 9; Tai, 2012: 226). A 5-point Likert scale was designed in this research ranging across “Strongly Agree = 1, Agree = 2, Neutral = 3, Disagree = 4 and Strongly Disagree = 5”. The questions were predetermined and structured to focus on the various CHAT nodes to gather preliminary information from the participants involved in the

study. The purpose of the survey was to assess the perceptions of the participants using the ITS.

By using the survey with predetermined questions, the researcher could gather information around the experiences and perceptions of the participants using the ITS, compare them, and then group them into themes or trends to be further investigated using interviews. The researcher's reason for using the surveys was to try to interpret the experiences and perceptions of the participants, and then see how these were affected or related to the CHAT nodes, such as "how do the divisions of labour affect the use of the intelligent tutoring system?", "what effect do cultural or historical aspects have on the use of the ITS?" or "how did the rules of the university related to the Covid-19 shutdown affect the participants' use of the ITS?".

The survey data were gathered in electronic format using Google Forms. Every effort was made by the researcher to keep the questions asked clear and concise in an attempt to avoid ambiguity or confusion. The question wording, format and structure were the same for the entire group. As can be seen in Figure 4.2, quantitative and qualitative data were gathered sequentially, with the quantitative phase being executed first. This was followed by the qualitative phase. Some quantitative data needed to be gathered first (in the form of pre-tests) and was purely to determine what the participants' level of English language proficiency was to place them at the right level on the ITS according to the CEFR (§2.8).

The survey (§Appendix D) was broken down into 8 sections, namely:

- Introduction.
- Section 1 – Biographical Information.
- Section 2 – Subject perceptions.
- Section 3 – Tool perceptions.
- Section 4 – Object perceptions.
- Section 5 – Rule perceptions.
- Section 6 – Community perceptions.
- Section 7 – Division of labour perceptions.
- Section 8 – Outcome perceptions.

The participants' responses were scored on a Likert scale (1 = Strongly agree, 2 = Agree, 3 = Neutral, 4 = Disagree, and 5 = Strongly Disagree) for questions 5–28. The data were then analysed and sorted into questions ranging from the highest tension experienced down to questions with the lowest tension experienced in the Activity System.

#### 4.5.2.2 Participants in the quantitative phase

Eighty-two participants were selected from an undergraduate cohort of FET/SP and IP pre-service teaching students taking a first-year English language module. This was within a Faculty of Education at a university in the Western Cape. The participants would eventually be teaching English as a home language in schools in South Africa. The researcher's reason for selecting these participants was because they were a part of the population that were best suited to answer the research questions being posed. Furthermore, the participants were members of a target population that met certain other convenient and practical criteria for the researcher. These criteria included 1) ease of accessibility, as they were situated in a geographically convenient location to the researcher; 2) they were available at the given time of the research; and lastly 3) they were willing to participate openly in the research.

#### 4.5.2.3 Analysis of the quantitative data

Quantitative analysis approaches attempt regularity in human life by splitting the social universe into empiric elements called variables that can be interpreted numerically, the relations of which can be examined by statistical techniques (Rahman, 2017: 105). In this study, the researcher specifically used a Likert scale in the survey to look at how the participants perceived the questions asked and referred to these questions as high-, medium-, or low-tension questions. The "high-tension questions" were ones where participants surveyed perceived the highest levels of tension. The questions that received the highest tension ratings in the survey were questions 19, 23, 24, 18, 21, 8 and 6. These were questions where the participants surveyed mostly disagreed or strongly disagreed or were neutral.

*Table 4.1 High-tension questions*

Question Number	19	23	24	18	21	8	6
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The remaining questions revealed far fewer perceived tensions from the participants, but still presented interesting data regarding the participants' perceptions of the ITS introduced.

#### 4.5.2.4 Validity

The researcher has ensured validity and reliability of the quantitative data by using accurate and reliable design methods and tools to gather the data. Supporting this idea, Sukamolson refers to the importance of statistics in quantitative research methods, but states that even more important than statistics is the way in which the data collection methods has been designed to ensure that your data is valid and reliable (Sukamolson, 2007: 17).



Similarly, Almalki (2016: 289) argues that the most important part of any form of research is being able to pinpoint what they are doing, why they are doing it, and with whom they are doing it. Abdullah and Raman (2001: 126) argue that quantitative data is valid and reliable when researchers follow specific strategies or ground rules in surveys and questionnaires; along with solid research design, data collection and processing methods and statistical analysis of the data.

Rahman (2017: 122) refers to certain disadvantages of using quantitative data collection methods only. This could include researchers overlooking participants' experiences or perceptions, which is especially important in this study, and in the context of using CHAT as a lens. Abdullah and Raman (2001: 123) seem to support this notion in their research, stating that quantitative data are not able to capture participants' feelings or opinions freely and can lead to ambiguity if not clarified. It is primarily for these reasons that the researcher had decided to use a mixed-methods approach within this study to ensure that the outcome of the data would be clear, accurate, reliable, and unambiguous in any way.

### **4.5.3 Qualitative phase**

Westberry (2009: 90) describes qualitative data methods as a way in which a researcher can study things in their natural settings and make sense of or interpret the phenomenon; with Almalki (2016: 291) describing it as understanding and exploring individuals or groups related to a human or social context. Both of these descriptions speak to the essence of this research, which is to analyse and interpret the participants' understandings, perceptions, and experiences.

#### **4.5.3.1 Interviews**

Once trends or patterns were identified in the surveys, the researcher used the interviews to uncover any deeper meanings or uncertainties in the data collected and not easily answered by the survey questions - such as perceptions. While surveys are useful when gathering larger volumes of data from sample populations, a shortcoming is that they could be seen as artificial, with participants not reflecting their true feelings (Creswell, 2014: 19; Westberry, 2009: 298). The researcher intended to overcome the survey's shortcomings using semi-structured interviews (§Appendix E), to interpret the deeper meanings of the results or findings. CHAT looks at the whole context of the introduction of the ITS into the activity system, making it a rich method of analysis and interpretation, and acknowledges historical influences. Uncovering these deeper meanings assisted the researcher in analysing the data collected through the cultural and historical lens of CHAT to answer the research questions posed in the best way possible.

Interviews are a type of verbal survey using open-ended questions whereby the researcher can have a conversation with one or more people to elicit responses or perceptions from the interviewee (Alshenqeeti, 2014: 39; Morales, 2017: 89; Owen, 2014: 8; Powney, Watts & Brenner, 2018: 357). They are specifically useful when there is a lack of clarity in the surveys conducted, or to take a deeper dive into specific areas of interest.

Interviewing is regarded as an influential tool in gathering information aimed at understanding human behaviour (Alshenqeeti, 2014: 39; Kvale, 2011: 2–10; Robotham, 2004: 225–233). The purpose of the interviews in this research was to gather in-depth information and meaning regarding the participants' understandings, experiences, and perceptions, as viewed through the lens of second-generation CHAT as a framework. The qualitative phase of this study therefore comprised in-depth telephonic interviews which were used to clarify and explain the various themes that were identified in the surveys.

#### **4.5.3.2 Participants in the qualitative phase**

This research made use of non-probability purposive sampling. Non-probability purposive sampling can be defined as a sampling technique whereby samples are gathered in a process that does not allow for all individuals in a population to be selected and based on judgement (Etikan, 2016: 2; Etikan & Bala, 2017: 215; G. Sharma, 2017: 750). Tongco (2007: 147) defines the purposive sampling technique as a type of non-probability sampling that is most effective when one needs to study a certain cultural domain with knowledgeable experts within and relates well with CHAT. Purposive sampling may also be used with both qualitative and quantitative research techniques (Tongco, 2007: 147). Further, a purposive sampling technique is used, as the researcher wants to rely purposefully on their judgement to choose participants who will be best equipped to answer the research questions.

All the participants in this study were chosen because they were pre-service teachers, studying to become English home language teachers, but did not have English as a mother tongue. For this reason, the following sampling criteria was identified:

- Six pre-service teachers taking a first-year English language module, studying to become English home language teachers, but not English home language speakers.

Using interlaced sampling, six participants of the original sample population (or 10%) were chosen to participate in the interview process of this study. The reason for selecting 10 percent of the original population lies in the rationale behind using the sequential explanatory mixed-method research design. The reason for using this approach therefore suggests that the qualitative process of this analysis was intended to justify the results in the quantitative step.

Although CHAT can be used as a holistic lens to look at both positive and negative, the researcher in this study was particularly interested in the contradictions or tensions. For this reason, participants who experienced the highest tensions in the surveys were selected to partake in the interview phase of this study. The researcher selected 6 participants on the understanding that extensive time would be needed for gathering, analysing, and interpreting the qualitative data effectively, and with the academic year quickly coming to an end.

The criteria for selection for the interviews was to understand why these participants perceived the highest tensions and what these tensions were related to. The only other criteria used by the researcher was that the participants selected needed to have completed the online programme of the ITS to have insight of having used it from start to finish. The reason for this was to gain insight into the data obtained from the surveys and to explore themes that were exposed in this phase of the data collection. The aim was then to use interview questions, using the CHAT nodes to elicit further responses to clarify any uncertainties related to the survey data collected and to answer the research questions, by getting to the deeper meaning of the results of the survey. Interview questions were then designed according to the eight survey questions where the participants experienced the greatest tensions.

#### 4.5.3.3 Interview schedule

The interviews were conducted using a semi-structured interview schedule that specified predetermined questions. Semi-structured questions allowed the interviewer to determine the exact sequence and wording of questions in advance but also allowed the interviewer to probe and cross-check questions during the interview (Fraenkel & Wallen, 2008: 447). The interview was not limited to the questions listed below, with the researcher asking additional questions in the interview to probe the participants replies further. Table 4.2 shows the interview questions which were used.

*Table 4.2: Interview questions*

Survey Question Number	Interview Question (related to survey question)	Relevant CHAT Node
6	<i>(Survey Question: My technology experience at home can be considered the same or better than my technology experience on campus.)</i>	Tool

	<p>Interview Question 1:</p> <ul style="list-style-type: none"> <li>• Describe your technology experience at home compared to your technology experience on campus? (Technology being a device that you can work on).</li> <li>• How is it different to your experience on campus?</li> </ul>	
8	<p><i>(Survey Question: My internet access at home is the same or better compared to my internet access on campus.)</i></p> <p>Interview Question 2:</p> <ul style="list-style-type: none"> <li>• What is your internet access like at home compared to on campus?</li> <li>• How do you describe internet access?</li> <li>• How is it different?</li> </ul>	Tool
18	<p><i>(Survey Question: I prefer learning in an online environment compared to a face-to-face classroom environment.)</i></p> <p>Interview Question 3:</p> <ul style="list-style-type: none"> <li>• Why do you prefer face to face learning?</li> <li>• Does the ITS mimic human tutoring?</li> <li>• What was your overall perception of the online platform?</li> </ul>	Subject, Rules & Community
19	<p><i>(Survey Question: I experienced the Online English Proficiency Platform to be better than face-to-face classroom teaching.)</i></p> <p>Interview Question 4:</p> <ul style="list-style-type: none"> <li>• What did you prefer about face-to-face teaching?</li> <li>• Why?</li> <li>• How did the ITS affect your learning experience.</li> </ul>	Subject, Rules & Community
21	<p><i>(Survey Question: It was a challenge for me to complete the work in the Online English Proficiency Platform)</i></p> <p>Interview Question 5:</p> <ul style="list-style-type: none"> <li>• What were your biggest challenges when completing the online work?</li> </ul>	Subject, Tool, Rules & Community

23	<p><i>(Survey Question: I frequently get the chance to spend one-on-one time with my lecturer.)</i></p> <p>Interview Question 6:</p> <ul style="list-style-type: none"> <li>• How often do you get to spend one-on-one time with your lecturer?</li> <li>• What are some of the reasons why you would want to spend more time with your lecturer?</li> </ul>	Division of labour, Subject, Rules
24	<p><i>(Survey Question: I frequently get the chance to spend one-on-one time with a tutor).</i></p> <p>Question 7:</p> <ul style="list-style-type: none"> <li>• How often do you get to spend one-on-one time with a tutor on campus?</li> <li>• Would you consider the online platform to be a type of digital tutor or lecturer?</li> </ul>	Division of Labour, Subject, Rules

#### 4.5.3.4 Interview procedure

All interviews were conducted telephonically at a date and time that was predetermined and agreed to by the participants and researcher. The data gathered from the interviews were recorded using a call recording app, with the interviews lasting between 20–30 minutes in length.

The researcher ensured that the participants showed respect to the other participants being interviewed, that they acted as naturally as possible while trying to maintain a natural and appropriate rapport, and asked the participants to repeat their answers back to the researcher to ensure that answers or statements given by the participants were understood and communicated clearly.

#### 4.5.3.5 Analysis of qualitative data

The raw data and empirical evidence were gathered through the surveys, and then with deeper dives through interview, were synthesised using the second-generation CHAT framework as a lens. The researcher did this to gain a deeper understanding of the data gathered and in an attempt to unravel and understand the participants' perceptions.

To better understand, clarify and elaborate on the survey data and interview data gathered, the qualitative data were analysed using thematic categorisation to explain the phenomenon identified more adequately. Thematic categorisation is a popular method applied in qualitative data analysis, used to identify, analyse and interpret patterns picked up from the data analysis (Fereday & Muir-Cochrane, 2006: 82; Fugard & Potts, 2015: 669; Vaughn & Turner, 2016: 41–51). The thematic categorisation was used in the qualitative phase as suggested by mixed-method methodology design in order to:

- look for convergence and corroboration of results for the quantitative phase;
- search for patterns to elaborate, enhance, illustrate, and clarify of the results found in the quantitative study;
- plot the development of the research as inferences emerge from the quantitative research study, and
- ensure that a complete picture of the phenomenon would be obtained.

Thematic analyses were used to ascertain themes that seemed to be significant and occur regularly. The purpose of using thematic analysis was to uncover the specific codes which were picked up from the data and link the interpretation of the emerging themes to CHAT. A version of Saldana's thematic analysis of coding was used to form data clusters for further analysis (Saldana, 2015: 14).

Saldana (2015: 4) defines coding as “a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data”. Fugard and Potts (2015) summarise coding or thematic analysis as a way of uncovering themes and patterns and collecting them to describe implicit or explicit ideas, in order to answer questions that have not been answered clearly through quantitative data. Fereday and Muir-Cochrane (2006: 82) concur in their definition of coding or thematic analysis by saying that it is a search for emerging themes to describe specific phenomena identified when reading the data collected.

Data were coded, grouped into themes, and categorised as shown in Figure 4.3 to theorise whether ITS was effective in the development of English language proficiency of pre-service teachers as viewed through the lens of CHAT, and according to the understanding, perceptions, and experiences of the participants in the activity system, indicating where the tensions and contradictions lay.

The figure below shows how data were broken down and categorised into codes, which could then be broken down into more granular sub-codes if needed. The codes were then categorised according to the second-generation CHAT nodes. From the categorisation of the

coded data, specific themes and patterns emerged, which then resulted in a theory or hypothesis being developed.

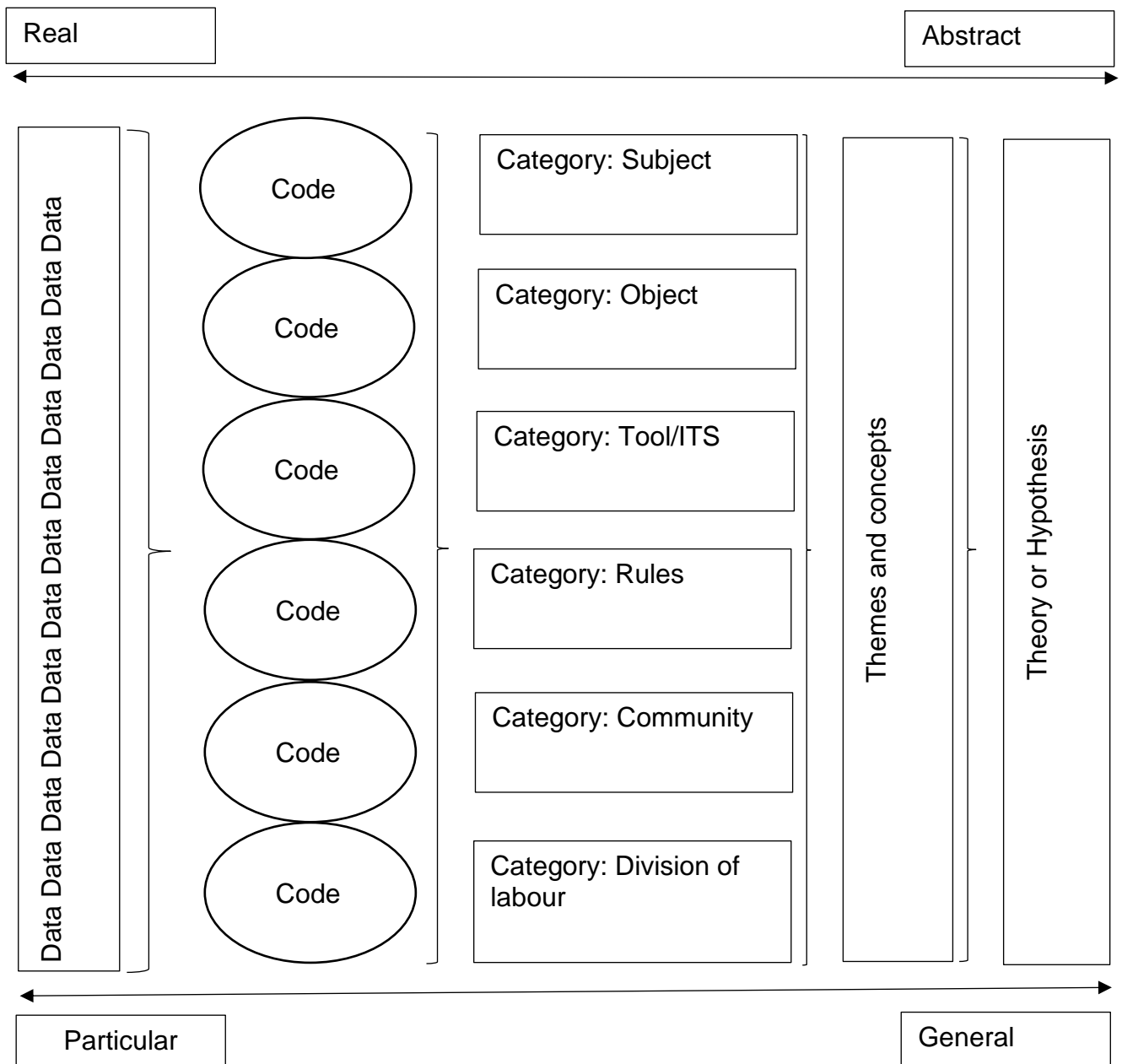


Figure 4.3: A representation of Saldana's (2015: 14) streamlined codes-to-theory model for qualitative inquiry

#### 4.5.3.6 Trustworthiness

In qualitative research, data collection methods and design need to add to the trustworthiness of the results. Credibility, dependability, trustworthiness and confirmability are sought to

ensure that the qualitative research process is reliable and dependent (Carcary, 2009: 11; Nowell *et al.*, 2017: 3; Owen, 2014: 3).

For coding or thematic analysis to be trustworthy and reliable, Saldana (2015: 38) suggests that several checks and balances should be followed. Coding, where possible, should be done line by line, which will help to alleviate the researcher inputting their own motives. Researchers should code as they transcribe, keeping reflective journals of the process with plenty of analytics memos taken during the process, and interpretations should be checked with the participants to ensure that they are correct. Saldana (2015: 38) further suggests that coding may need to be checked and re-coded if needed to ensure accuracy.

Nowell *et al.* (2017:1) argue that for thematic analysis to be trustworthy, researchers should demonstrate that data have been analysed in a precise, exhaustive and consistent manner through recording, systematising and disclosing the methods of analysis with enough detail so that other researchers can look at the detail and decide whether or not the process has been credible. The idea in this research is first to code and then to assign the themes identified to CHAT nodes. Fereday and Muir-Cochrane (2006: 91) contend that in order for thematic analysis to be considered rigorous and trustworthy, researchers need to demonstrate integrity and competence in their study and keep a trail of evidence throughout the research process to demonstrate this credibility and trustworthiness.

For this research to be considered trustworthy, reliable, and credible, the researcher proposed to do the following:

- Use a trustworthy theory, namely CHAT.
- Follow Saldanha's code to theory model.
- Keep a clear trail of evidence throughout the process.
- Demonstrate credibility and trustworthiness by following a precise, exhaustive, and consistent method of analysis, by recording and disclosing all the methods of analyses.
- Follow good practice methods of coding, such as coding line-by-line, keeping details records of notes made.
- Check the interpretations with the participants to ensure accuracy.

To ensure that the qualitative research process is sound and dependable, Shenton (2004:63) argues that the researcher should attempt to seek a) credibility, b) dependability and c) confirmability at all times.



- a) Struwig & Stead (2001: 143) argue that in qualitative research, validity can be equated to credibility, with Shenton (2004: 65–68) describing steps that could be used as a guideline. This was achieved by:
- Rigorous data gathering throughout the research processes.
  - A comprehensive review of literature was done to pin down the aim of the research and corroborate results.
  - The researcher fully described what was being studied, for it to be understood within the correct context of the research.
  - The researcher used a recognised research framework such as CHAT.
- b) Dependability indicates the far-reaching consequences of the research (Shenton, 2004:64). The researcher ensured their research was dependable by ensuring that:
- Transcripts of the interviews were recorded and could be produced if needed.
  - The researcher regularly discussed the coding procedure with experts in the field of CHAT, resulting in an agreement on the codes.
- c) Confirmability ensures that the researcher establishes certainty within the research being conducted, such as by keeping all the recorded interviews and transcriptions used, such as direct quotes from the interviews for example. Carcary (2009:15) refers to this as an audit trail of sorts whereby the reader can audit the events, influences and actions of the researcher, thereby confirming what has been done.

#### **4.6 Ethical considerations**

The researcher ensured that the Ethics policies of the university where the research was conducted were followed and adhered to. Ethics clearance to conduct the research was applied for and granted by the University's Ethics Committee. This research complied with the University's Ethical Guidelines for Researchers in that it adhered to best practice, protected the integrity of the University, and protected the rights of all participants and fellow researchers. The researcher agreed to acknowledge any research bias that existed and agreed to sign a declaration stating if any conflict of interest may arise.

The researcher's initial intention was to create a co-operative and secure environment in which participants felt at ease with answering the questions and felt that they were being treated with sensitivity and that the researcher was being receptive to their answers. It was explained to the participants that participation was voluntary and that they had the freedom to withdraw at any point. The background of the research was explained to the participants, and they were assured that all information gathered would be anonymised and kept confidential. Because the research involved human participants, the researcher ensured that the participants gave

their written consent to take part in the research (§Appendix B). The researcher went into class and went through the consent form in detail with the participants, ensuring that they understood every part of the research being conducted. The consent forms were given to the participants prior to the research starting, with the participants signing their consent forms after having them explained to the participants thoroughly. The researcher further asked for the participants' consent in the survey form. It was explained to the participants that the research conducted had no significant risks associated with it, with the use of the ITS being a part of the class activities.

Participants were advised that the research and the results thereof would be strictly confidential; and that no harm would come to them because of this research being conducted. Kaiser (2009: 1632) argues that confidentiality forms an important part of qualitative research, while finding a balance to reflect rich detailed accounts of unique challenges. Similarly, Brinkmann and Kvale (2005: 157–181) speak to the importance of the researcher being able to present their data in a rich and meaningful way, so that the reality can be described and not constructed or formed. It is important therefore that the researcher finds a way to do this skilfully by considering the society and culture at large and ensuring that the data presented does not harm the participants in any way, while being as descriptive as possible.

#### **4.7 Conclusion**

In this chapter, the researcher described the mixed methods approach, and the reason for his focus on the mixed-methods approach, in answering the research questions and sub-questions, using second-generation CHAT as the theoretical lens to interpret the outcome of the study. The researcher went on to relate the research questions and sub-questions to the CHAT nodes; advised what quantitative and qualitative methods had been used to gather the research data; and what CHAT nodes were explored when interpreting the data, with a description of the primary research focus and background to the research given.

The design of this study followed a second-generation CHAT framework, with the researcher showing the iterative approach taken in introducing the ITS into the activity system as an intervention and mediating tool used to develop the English language proficiency of pre-service teachers. Quantitative and qualitative data were gathered using surveys and interviews, then analysed and interpreted using CHAT nodes.

The participants, pre-service teachers who would teach English as a home language, were selected from a University in the Western Cape. These participants were chosen particularly because English was not their home language. The participants were given a pre-test (§Appendix C) to determine their current language proficiency, and then given access to an

ITS for English language proficiency, according to their specific CEFR level. The intelligent tutoring system was adaptive and could adjust to the varying levels of the participant to develop their language proficiency.

The aim of this research was to investigate and interpret the participants' perceptions having used an ITS as tool to develop English language proficiency, then being asked to use it remotely as a result of the Covid-19 pandemic. While conducting the study, the researcher and participants found themselves confronted by the additional challenges of the Covid-19 pandemic, which added a unique layer to the research questions and sub-questions, especially when using CHAT as the lens to interpret and understand the outcomes.

With the use of the CHAT framework and by looking at the use of the ITS through the lens of Engeström's Activity Theory (Engeström, 1987), the researcher attempted to interpret the participants' understandings, perceptions and experiences using the ITS, and whether it is perceived to develop English language proficiency effectively in pre-service teachers. The findings and analysis of this data can be found in chapter 5.

## CHAPTER 5: RESULTS

### 5.1 Introduction

In chapter 4 the researcher discussed the mixed methods methodology with which the data were collected and analysed. Using a mixed methods approach, quantitative data were collected in the form of surveys, and qualitative data were collected in the form of telephonic interviews. The data were then analysed and interpreted through the lens of second-generation CHAT.

This chapter reports on the results of the data collected, framed around the research questions and sub-questions, as interpreted through the participants' perceptions of having used the ITS within an activity system. The research questions are as follows:

- What are pre-service teachers' perceptions of an ITS for English Language Proficiency that has been introduced into an Activity System?

In order to answer the main research question, the following sub-questions have been posed:

- Sub-question 1: What are the pre-service teachers' perceptions of the ITS when viewed through the lens of Cultural-Historical Activity Theory (CHAT)?
- Sub-question 2: What tensions and contradictions are perceived by pre-service teachers when using ITS?
- Sub-question 3: To what extent does ITS mimic face-to-face human tutoring?
- Sub-question 4: To what extent do pre-service teachers perceive ITS as an effective or ineffective tool?

Relevant results and analysis conducted are presented here by the researcher, with important trends and tensions experienced within the activity system discussed. Meanings and consequences are then expanded on in the results and conclusion in chapter 6. The student surveys, survey data, interviews, and interview data are attached as appendices.

### 5.2 Quantitative analysis of survey results

Four biographical questions were asked in the survey to present the demographics of the participants and their use of the English language (§4.5.2.1.) The use of the English language

was important, as the ITS used by the researcher was an ITS for English language practice, and the module they were taking was a first-year English language module.

### 5.2.1 Description of the participants

This section of the analysis was used to gather general biographical data and to provide a frame of reference (see Table 5.1).

*Table 5.1: Biographical information*

Question	Biographical Data	Frequency	Percentage
1	Academic year of study: <ul style="list-style-type: none"> <li>• First</li> <li>• Second</li> <li>• Third</li> </ul>	<ul style="list-style-type: none"> <li>• 45</li> <li>• 2</li> <li>• 1</li> </ul>	<ul style="list-style-type: none"> <li>• 93.8%</li> <li>• 4.2%</li> <li>• 2.1%</li> </ul>
2	Ethnicity: <ul style="list-style-type: none"> <li>• Black</li> <li>• Coloured</li> <li>• White</li> <li>• Indian</li> </ul>	<ul style="list-style-type: none"> <li>• 2</li> <li>• 23</li> <li>• 22</li> <li>• 1</li> </ul>	<ul style="list-style-type: none"> <li>• 4.2%</li> <li>• 47.9%</li> <li>• 45.8%</li> <li>• 2.1%</li> </ul>
3	Language spoken at home: <ul style="list-style-type: none"> <li>• Afrikaans</li> <li>• English</li> </ul>	<ul style="list-style-type: none"> <li>• 41</li> <li>• 7</li> </ul>	<ul style="list-style-type: none"> <li>• 85.4%</li> <li>• 14.6%</li> </ul>
4	Language spoken to friend: <ul style="list-style-type: none"> <li>• Afrikaans</li> <li>• English</li> <li>• Xhosa</li> </ul>	<ul style="list-style-type: none"> <li>• 41</li> <li>• 6</li> <li>• 1</li> </ul>	<ul style="list-style-type: none"> <li>• 85.4%</li> <li>• 12.5%</li> <li>• 2.1%</li> </ul>

Of the 48 surveys that were analysed, 45 participants were first-year students (93.8%), two were second-year students (4.2%) and one student was in third year (2.1%) (Table 5.1). The reason for there being two second-year students and one third-year student taking the first-year module was because they needed to retake the module to pass the course.

The demographics of the participants showed that 1 participant was Indian (2.1%), 2 participants were black (4.2%), 22 participants were white (45.8%), and 23 participants were coloured (47.9%) (Table 5.1.)

Of the 48 participants surveyed, 41 participants spoke Afrikaans at home (85.4%), while 7 participants spoke English at home (14.6%) (Table 5.1). As most of the participants are Afrikaans speakers (85.4%) it can be stated that most of the participants who took part in this

study are English second language speakers. This is particularly relevant to the research, as the ITS introduced in the Activity System is an English language ITS. With most of the class being ESL speakers, language barriers could be a possible cause of tension within the Activity System.

Participants were then asked in what language they communicated with their friends, to explore how often they were speaking English on a regular basis. Of the 48 participants, 41 spoke Afrikaans to their friends (85.4%), 6 spoke English (12.5%) and 1 spoke Xhosa (2.1%) (Figure 5.1.) It can therefore be stated that the majority of the participants surveyed (87.5%) were not speaking English with their friends on a regular basis.

The survey results of questions 5–28 are discussed below, starting with questions that ranked highest for tensions (§4.5.2.3), and ending with the questions that showed the lowest tensions. The researcher divided questions 5–28 into three sections, namely high-tension, medium-tension, and low-tension questions. The researcher described high-tension questions as questions where 50% or more of the participants (that is, more than half of the class) surveyed experienced tension. Medium-tension questions consisted of a set of 12 questions ranging from 40% to 49%. These questions contained fewer “Strongly Disagree” and “Disagree” answers, so were medium tension as the researcher was looking only at questions where at least 50% of the participants surveyed perceived tension. Low-tension questions ranged from 0%–39%, and included questions that were primarily answered as “Strongly Agree” or “Agree.”

### 5.2.2 High-tension questions

The questions with the highest tension (Table 5.2 below) in the survey were questions based around the Community, Division of Labour and Tools within the activity system. The researcher described these as high-tension questions, as they had the highest number of participants select “Undecided”, “Disagree” or “Strongly Disagree”, showing that the participants were perceiving high levels of tension or contradiction in the survey questions being asked. The high-tension questions with the associated data are shown below.

*Table 5.2: Survey questions with the highest tensions perceived*

Question asked	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	CHAT Node
6. My technology experience at home can be considered the same or better than my technology experience on campus.	7	22	8	8	3	Subject's ability to use tools to work on the object.

8. My internet access at home is the same or better compared to my internet access on campus.	11	11	10	13	3	Subject's ability to use tools to work on the object.
18. I prefer learning in an online environment compared to a face-to-face classroom environment.	7	7	10	13	11	How subjects wish to work with tools and community.
19. I experienced the online proficiency platform to be better than face-to-face classroom teaching.	1	6	17	14	10	How subjects wish to work with tools and community.
21. It was a challenge for me to complete the work in the Online English Proficiency Platform	8	3	14	19	4	Subject working with tools.
23. I frequently get the chance to spend one-on-one time with my lecturer.	0	6	18	18	6	Division of labour.
24. I frequently get the chance to spend one-on-one time with a tutor.	1	9	13	17	8	Division of labour.

The questions that scored the highest for tension are discussed below. Question 19 asked the participants if they experienced the Online English Proficiency Platform to be better than face-to-face classroom teaching. This question focused on the Community node of CHAT. One participant strongly agreed (2.1%), 6 agreed (12.5%), 17 participants were undecided (35.41%), 14 participants disagreed (29.17%), and 10 participants strongly disagreed (20.83%). Fifty percent of the participants surveyed therefore felt that the online platform was not better than face-to-face teaching, with a large portion of the participants undecided.

In Question 23 the participants were asked if they frequently got the chance to spend one-on-one time with their lecturer. Six participants (12.5%) felt that they did get to spend one-on-one time frequently with their lecturer. 18 participants (37.5%) were undecided. Eighteen participants (37.5%) felt that they did not get frequent one-on-one time with their lecturer, while 6 participants (12.5%) strongly disagreed. Once again, a large proportion (50%) of the participants felt that they did not get to spend time frequently enough with their lecturer, with 37.5% undecided on whether they did or not.

In Question 24, participants were asked if they frequently got the chance to spend one-on-one time with a tutor. One participant (2.1%) strongly agreed with this question, 9 participants (18.75%) agreed, 13 participants (27.1%) were undecided, 17 participants (35.42%) disagreed, and 8 participants (16.67%) strongly disagreed. More than half of the participants felt they did not get to spend time frequently enough with a tutor on campus, with just under a third of the class undecided.

Question 18 asked the participants if they preferred learning in an online environment compared to a face-to-face classroom environment. Here, like question 19, the participants seemed to prefer face-to-face classroom learning. Seven participants (14.58%) strongly agreed that they preferred online learning, while 7 participants (14.58%) agreed. Ten participants (20.83%) were undecided, while 13 participants (27.08%) disagreed, and 11 participants (22.92%) strongly disagreed. Again, half of the participants surveyed preferred face-to-face learning, with under a third of the class undecided.

Question 21 asked the participants if it was a challenge for them to complete the work in the Online English Proficiency Platform. Three participants (6.24%) strongly agreed that it was challenging for them to complete the online work, with another 8 participants (16.67%) agreeing. 14 Participants (29.17%) were undecided. 19 Participants (39.58%) disagreed that that it was challenging to complete the online work, with 4 participants (8.33%) strongly disagreeing. Almost half of the participants (47.91%) felt that it was difficult for them to complete the online work, with 29.17% being undecided.

In Question 8 participants were asked if their internet access at home was the same as or better than their internet access on campus. Eleven participants strongly agreed (22.92%), 11 participants agreed (22.92%), 10 participants were undecided (20.83%), 13 participants disagreed (27.08%), and 3 participants strongly disagreed (6.25%). A third of the class (33.33%) felt that their internet access at home was worse than on campus, with 20.83% undecided.

In question 6, participants were asked if their technology experience at home was the same or better than their technology experience on campus. Seven participants strongly agreed (14.48%), 22 participants agreed (45.83%), 8 participants were undecided (16.67%), 8 participants disagreed (16.67%), and 3 participants strongly disagreed (6.25%). 22.92% of the participants felt that their technology experience at home was worse than on campus, with 16.67% being undecided. However, 60.41% felt that it was better.



- **Discussion of questions with the highest tensions**

Trends and patterns presenting themselves in the first seven questions can be summarised as shown in the three points below, and they predominantly involve the following:

- a.) Online learning versus face-to-face classroom learning: The participants in the survey expressed a clear preference for face-to-face learning versus online learning with the ITS.
- b.) The frequency of time spent with either a lecturer or a tutor: A strong pattern started to emerge where participants felt they did not spend enough time with their lecturer or tutor.
- c.) Technology and access to the internet: Technology and access to the internet came through strongly as a pattern. What the researcher needed to investigate further here was whether it was a problem with access to devices, access to the internet, or some other underlying issue.

What the data reported above have shown is that there are very definite patterns that have presented themselves. Participants have indicated that they prefer face-to-face learning over the online platform. Although they indicated that they prefer face-to-face interactions with tutors and lecturers, it is interesting to note that participants felt that they do not get to spend enough time with either tutors or lecturers. What are some of the reasons for the participants' preferring face-to-face instruction, even if they feel they do not get to spend enough face-to-face time with their lecturers? Do the participants prefer face-to-face over online learning because they experience difficulties accessing technology?

The summary above will form the basis of the interview questions asked in the semi-structured telephone interview, to try to answer the research question and sub-questions by focusing on the trends and patterns observed. With the data collection in this research taking a mixed methods approach, the researcher can uncover the deeper meanings of the tensions experienced and summarised above. By asking deeper probing questions in the interview, the researcher can delve deeply into the participants' perceptions of having used the ITS for English language practice, and to gain a better understanding of the survey results.

### **5.2.3 Medium-tension questions**

Medium-tension questions were questions (shown in Table 5.3) that scored between 40% and 49%, and therefore less than half of the class perceived tension when answering these questions. This was evident across all 7 CHAT nodes that were explored.

Table 5.3: Medium-tension questions

Question asked	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	CHAT Node
7. I can easily access a device to use at home for my online learning	13	22	5	6	2	Tool
9. It was easy for me to access the Online English Proficiency Platform to complete the online learning	11	22	8	7	0	Tool
10. The parts of the English language covered by the Online English Proficiency Platform helped me to develop my English proficiency	6	30	9	3	0	Object
11. I was motivated to work on the Online English Proficiency Platform	5	29	11	2	2	Object
16. I am encouraged by my lecturers to use devices such as laptops, tablets, or smart phones in my face-to-face classroom environments	7	29	6	5	1	Rules
17. I was able to access the Online English Proficiency Platform as often as I needed to, to complete the online learning	13	25	2	7	1	Rules
20. The technology available to me at home allows me to easily study online	8	25	6	5	4	Community
22. My university assists me with the necessary tools/devices to achieve academic success	7	28	7	6	0	Division of labour
25. I feel that the Online English Proficiency Platform was the right tool to use to develop my	9	22	10	5	2	Tool

English language proficiency						
26. I am satisfied that the Online English Proficiency Platform assisted me to develop my English proficiency	10	29	7	2	0	Outcomes
27. I am satisfied that the university assists me with the necessary technology I need to achieve my desired academic outcomes	6	29	11	2	0	Outcomes
28. I would use a similar platform to the Online English Proficiency Platform again if I got the chance to	7	27	10	2	2	Tool

Question 7 stated that the participants could easily access a device to use at home for their online learning. Most of the participants (72.92%) acknowledged that they could easily access a device at home for online learning. 13 participants strongly agreed (27.1%), 22 participants agreed (45.83%), 5 participants were undecided (10.42%), 6 participants disagreed (12.5%), and 2 participants strongly disagreed (4.17%).

Question 9 stated that It was easy for the participants to access the Online English Proficiency Platform to complete the online learning. Eleven Participants strongly agreed (22.92%), 22 participants agreed (45.83%), 7 participants disagreed (14.58%), and 8 participants were undecided (16.67%). Most of the class (68.75%) felt that it was easy for them to access the online platform.

Question 10 asked the participants if the parts of the English language covered by the Online English Proficiency Platform helped them to develop their English proficiency. Six participants strongly agreed (12.5%), 30 participants agreed (62.5%), 9 participants were undecided (18.75%), and 3 participants disagreed (6.25%). Most of the participants (75%) therefore felt that the part of the language covered was perceived to develop their English language proficiency.

Question 11 asked the participants if they were motivated to work on the Online English Proficiency Platform. Five participants (10.42%) strongly agreed, 29 participants (60.42%) agreed, 10 participants (20.83%) were undecided, 2 participants (4.17%) disagreed, and 2 participants (4.17%) strongly disagreed. Interestingly, most of the participants (70.84%) were therefore motivated to work on the online platform.

Question 16 asked the participants if they were encouraged by their lecturers to use devices such as laptops, tablets, or smart phones in their face-to-face classroom environments. Most of the participants (75%) acknowledged that they were encouraged by their lecturers to use devices in class, with 7 participants (14.58%) strongly agreeing and 29 participants (60.42%) agreeing. Six participants (12.5%) were undecided, while 5 participants (10.42%) disagreed, and 1 participant (2.1%) strongly disagreed.

In question 17, where participants were asked if they were able to access the online platform as often as they needed to, to complete the online learning, 52.08% agreed, 14.58% disagreed, 27.08% strongly agreed, 2.08% strongly disagreed, and 4.17% were undecided. Just over 79% of the class were therefore able to access the platform as often as they needed to.

In Question 20 participants were asked if the technology available to them at home allowed them to study easily online. Eight participants (16.67%) strongly agreed, 25 participants (52.08%) agreed, 6 participants (12.5%) were undecided, 5 participants (10.42%) disagreed, and 4 participants (8.33%) strongly disagreed. Almost 69% of the participants therefore had technology available to them allowing them to easily study online.

Question 22 asked the participants if their university assists them with the necessary tools/devices to achieve academic success. Most of the participants (72.91%) perceived that the University did assist them with the necessary tools/devices to achieve academic success. Seven participants (14.58%) strongly agreed, while another 28 participants (58.33%) agreed. Seven participants (14.58%) were undecided, while 6 participants (12.5%) disagreed.

Question 25 asked the participants if they felt that the Online English Proficiency Platform was the right tool to use to develop their English language proficiency. Nine participants (18.75%) strongly agreed that the platform was the right tool to use to develop their English language proficiency, with (45.83%) agreeing. Most of the participants (64.58%) therefore felt that the platform was indeed the right tool to use. Ten participants (20.833%), however, were left undecided, with 5 participants (10.42%) disagreeing and 2 participants (4.17%) strongly disagreeing.

Question 26 asked the participants if they were satisfied that the Online platform assisted them in developing their English proficiency. Of the group, 60.42% agreed, 4.17% disagreed, 20.83% strongly agreed, and 14.58% were undecided. Overall, 81.25% therefore agreed that the platform did develop their English proficiency.

In question 27 participants were asked if they were satisfied with the technology that the University assisted them with to achieve their desired academic outcomes. There were 60.41% who agreed, 4.17% who disagreed, 12.5% who strongly agreed, and 22.92% who were undecided. In total 72.91% were satisfied that the University did assist them with the technology needed to achieve their desired academic outcomes.

Question 28 looked at whether the participants would use a similar platform to the Online English Proficiency Platform if they got the chance to in the future. Seven participants (14.58%) strongly agreed that they would use a similar platform in the future, with 27 participants (56.25%) agreeing. Most of the participants therefore agreed that they would use a similar online platform again if given the opportunity. Ten participants (20.83%) were undecided if they would use a similar platform again. Two participants (4.17%) disagreed, and 2 participants (4.17%) strongly disagreed with regard to using a similar platform again.

- **Discussion of questions with medium tension**

In summary, there was less tension perceived in the medium-tension questions, with positive perceptions of the ITS access to devices, the support given by the University, and a general perception that the ITS was the correct tool to use and that it assisted with their English language proficiency. The results above can be summarised as:

- 68.75% of the participants had technology available to them allowing them to study online easily.
- 64.58% felt that the ITS was indeed the right tool to use.
- 70.84% were motivated to work on the ITS.
- Most of the participants therefore agreed that they would use a similar online platform again if given the opportunity.
- 75% acknowledged that they were encouraged by their lecturers to use devices in class.
- 72.91% perceived that the University assisted them with the necessary tools/devices required to achieve academic success.
- 68.75% felt that it was easy for them to access the ITS.
- 72.92% acknowledged that they could easily access a device at home for online learning.
- 75% felt that the part of the language covered by the ITS was perceived to develop their English language proficiency.
- 79.16% of the class were therefore able to access the platform as often as they needed to.

- 81.25% therefore agreed that the platform did develop their English proficiency.

The points above add additional interest to this research as to why the participants prefer face-to-face learning compared to online learning on the ITS, and experience tensions with regard to the amount of time they get to spend with a lecturer or tutor on campus, and why tensions are experienced with technology. The data above point to most of the class having access to both devices and internet and being able to access the ITS regularly. They were motivated to work on the ITS, encouraged to use technology by their lecturers, and agreed that they would use a similar ITS again in the future as they believed it helped them improve their English language proficiency. These data point to a deeper meaning being needed to highlight the high-tension questions.

### 5.2.4 Low-tension questions

Low-tension questions consist of the five questions with the lowest tensions perceived by the participants. Low-tension questions were categorised as questions ranging from 0% to 39% (Table 5.4).

*Table 5.4: Low tension questions*

Question asked	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	CHAT Node
5. I consider my English language to be proficient	10	31	6	1	0	Subject
12. I understood the reason for me needing to work on the Online English Proficiency Platform	11	35	1	1	0	Object
13. It was important for me to complete the work on the Online English Proficiency Platform	15	27	5	1	0	Object
14. I have a clear understanding of whom I need to turn to for help in a face-to-face classroom environment, when I do not understand something	12	31	4	0	1	Rules & Community
15. I had a clear understanding of whom I should contact when I needed to understand something about the	13	30	3	2	0	Rules & Community

Online English Proficiency Platform						
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Question 5 asked the participants whether or not they considered their English language to be proficient. Of the participants, 20.83% strongly agreed, 64.58% agreed, 12.5% were undecided, and 2.08% disagreed. Collectively, 85.41% of the participants therefore considered their English to be proficient.

The next question (question 12) pertained to whether the participants understood the reason for them needing to work on the ITS. In total, 22.92% strongly agreed, 72.92% agreed, 2.08% were undecided and 2.08% disagreed. In summary 95.84% of the participants understood the reason for needing to complete the online work.

In question 13, the participants were asked if it was important for them to complete the online work or not. In total, 31.25% strongly agreed, 56.25% agreed, 10.42% were undecided, and 2.08% disagreed. This showed that 87.5% of the participants had the view that it was important for them to complete the online course work.

Question 14 asked the participants if they had a clear understanding of whom they need to turn to for help in a face-to-face classroom environment, when they do not understand something. There were 25% of the participants that strongly agreed, 64.58% agreed, 8.33% were undecided and 2.08% strongly disagreed. This showed that 89.58% of the participants therefore knew who to turn to in a classroom environment when needing help with something.

Participants were then asked in question 15 if they had a clear understanding of whom they should contact when needing to understand something about the ITS. There were 27.08% that strongly agreed, 62.5% agreed, 6.25% were undecided, and 4.17% disagreed. In total, 89.58% of the participants surveyed know who to turn to for help when needing to understand something related to the ITS.

- **Discussion of questions with low tension**

It is clear from the questions above that there was little tension perceived by the participants. The percentages below were calculated by looking only at answers that were “Strongly Agree” or “Agree” (and therefore low contradictions or tensions were perceived), then the consensus in fact seemed quite positive, being as follows:

- 85.41% of the participants considered their English to be proficient.

- 89.58% of the participants knew who to turn to in a classroom environment when needing help with something.
- 89.58% of the participants knew who to turn to for help with regard to the ITS.
- 95.84% of the participants understood the reason for needing to complete the online work.
- 87.5% of the participants had the view that it was important for them to complete the online course work.

The data from the low-tension questions point to the fact that participants felt that they were proficient in English, although they were ESL students. The participants understood the need, however, for them to do the work on the ITS. It was also clear to the participants who they needed to turn to in class or in an online environment when experiencing difficulties and needing assistance.

### **5.2.5 Concluding quantitative analysis**

From the data gathered above, it is clear where tensions were perceived by the participants, and where the researcher would need to spend more time exploring the deeper meanings to the answers given in response to the research questions and sub-questions. From the data above, the following areas of interest would be explored further by the researcher in the telephonic interviews:

- Why did 50% of the participants surveyed feel that the ITS was worse than face-to-face teaching, with a large portion of the participants being undecided?
- Why did almost 50% of the participants feel that they did not get to spend enough time with their lecturer, with a further 37.5% undecided on whether they did or not?
- Why did approximately the same number of participants feel that they did not get to spend enough time with a tutor on campus, with just under a third of the class undecided on whether or not they did?
- What are the reasons for the participants preferring face-to-face learning, and why was under a third of the class undecided?
- What are the reasons for almost half of the participants (47.91%) feeling that it was difficult for them to complete the online work, with 29.17% being undecided?
- Why did a third of the class (33.33%) feel that their internet access at home was worse than on campus, with 20.83% being undecided?
- 22.92% of the participants felt that their technology experience at home was worse than on campus, with 16.67% being undecided. However, 60.41% felt that it was better. What were the reason for this?



By exploring the above areas of tension, the researcher intended to take a deeper look at the perceptions of the participants through the lens of CHAT to answer the research question and sub-questions. In order to do this, a mixed-methods approach was followed, with the researcher conducting interviews to explore the themes that were exposed, and to clarify and explore these themes further.

### **5.3 Qualitative analysis**

In this next section, the qualitative data gathered from the telephone interviews were analysed and presented according to Saldana's (2015) streamlined codes-to-theory model for qualitative inquiry (§4.5.3.5). Saldana's model was adapted by the researcher, as it became evident from the semi-structured interview questions that there were three clear categories, and that coding would not be required. The predetermined categories or a priori categories would be sufficient to identify themes and patterns. Once the interviews were transcribed verbatim, with the data coded using pre-determined categories according to Engeström's version of AT, and in particular the three predetermined CHAT nodes: subject, tool, and community (Figure 5.1).

In the telephone interviews, participants were asked questions related to the high-tension questions identified by the researcher to uncover what their perceptions were, using the semi-structured interview. Words or phrases were coded according to the CHAT nodes, with each node then representing a category. Categories then formed themes or concepts, leading from there to a theory or hypothesis. Categories and their supporting data are described below, which go on to form themes or concepts. The transcribed interviews are attached as an appendix (§Appendix F).

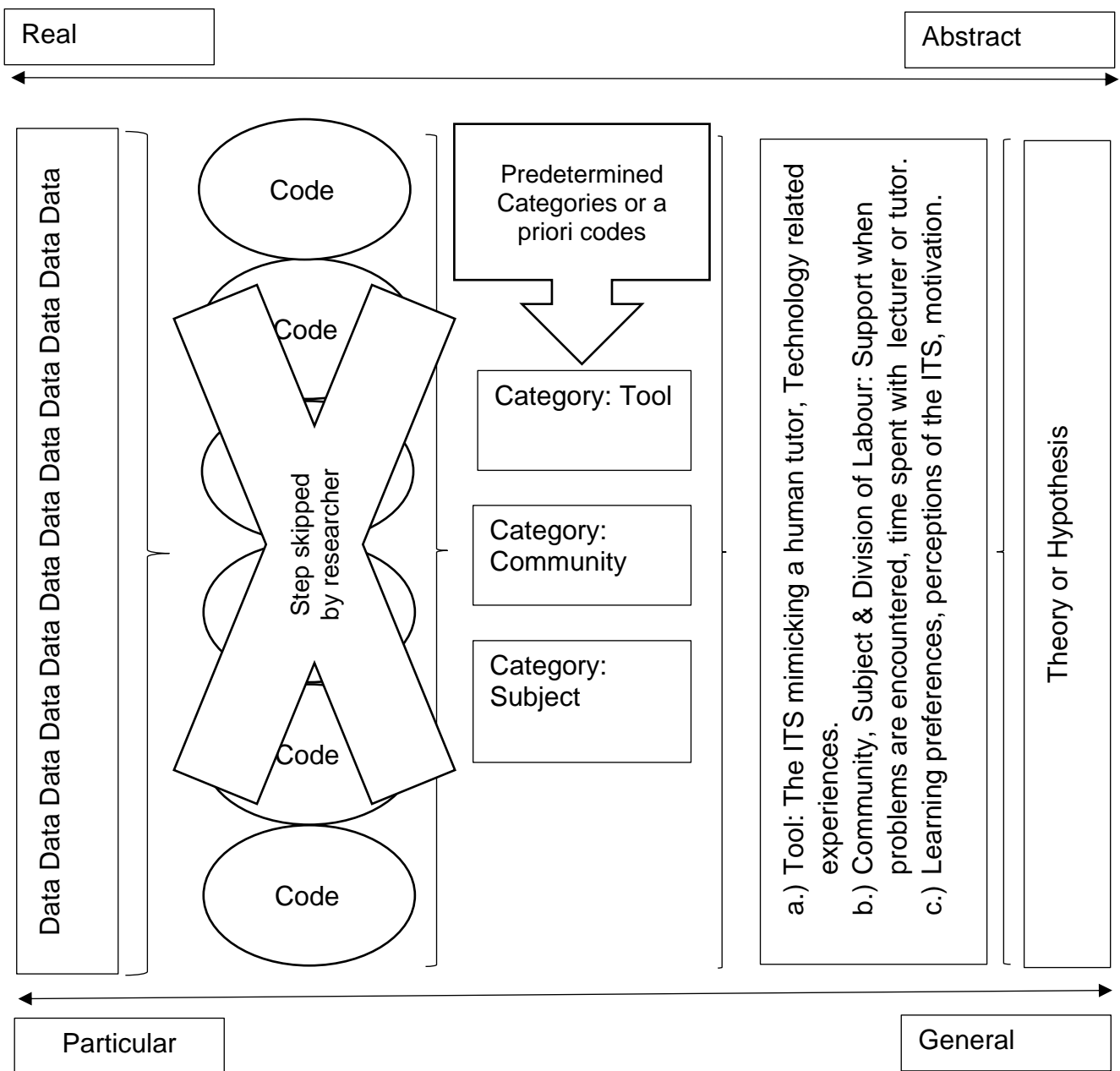


Figure 5.1: An updated (§4.5.3.5.) representation of Saldana's (2015) streamlined codes-to-theory model for qualitative inquiry

#### 5.4 Defining the categories

The six nodes of Engeström's second-generation AT were considered when trying to uncover the deeper meanings of the participants perceptions, with their broader definitions discussed in Chapter 3 (§3.3.2). Specific words pertaining to characteristics of the main categories allowed the researcher to group these under the relevant categories, with examples of the category from the transcribed interviews included and pointing to specific themes presenting

themselves. The three main categories presenting themselves early during the interview are discussed in further detail below. Some of the examples presenting as themes came through quite clearly during the interviews, while other were not as clear. Examples from the transcribed interviews below are shown as the anonymised student pseudonym (for example, AB63), with the verbatim quote in italics, followed by the page number and line number (for example, page 6: 198)

#### 5.4.1 Category 1 – Tool (the ITS)

In this category, sections of the interviews relating specifically to the ITS were coded and assigned to the “Tool” category or node. This was divided into two main themes (Figure 5.2.), these being a) the ITS mimicking a human tutor, and b) technology-related experiences. The examples below show excerpts from the interviews with the participants’ confirmations and contradictions of the themes.

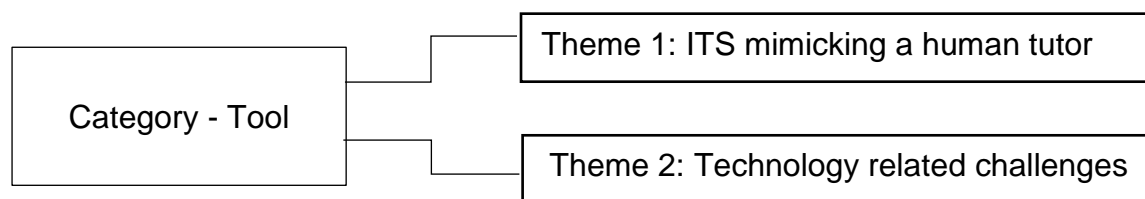


Figure 5.2: Category "Tool" with two emerging themes

##### 5.4.1.1 Theme 1 – The ITS mimicking a human tutor

This theme was related to the main category (node) of tool, where predetermined questions were asked in the interview to uncover whether the participants perceived the ITS as mimicking a human tutor or not – observing it as a type of digital tutor, in comparison to a human tutor.

Four of the participants clearly recognised that aspects of what the ITS did were indeed similar to what a human tutor does. AB32 responded:

*“I would say so”* (page 5: 144) ...

*“the information that we get from a human form and the online tutor form it’s, it’s precise, it’s concise, it’s short, it’s not too much. It’s easy to take in so it’s not hard to understand; it is very informative”* (page 5: 148–150).

AB66 perceived that that ITS offered help and guidance, much like a human tutor.

*“Ja”* (page 9: 276) ...

*“In many ways ja I do”* (page 9: 279) ...

*“it has offered help”* (page 9: 305) ...

*“it has been like [inaudible 0:21:47] guidance mostly and it has guided me”* (page 10: 307).

AB28, too, drew similarities in the way that the ITS allowed the participants to reflect on their mistakes, and how it gave them an opportunity to go back and correct them, much like a human tutor.

*“I do consider it as one. Like I said, it gave me the opportunity to go back and see where I didn’t do as well and I could always better myself and more or less I do consider the platform as a tutor, [inaudible 12:11] just for me to go and put myself out there to fix that”* (page 5: 145–148).

AB25 also saw the similarities between the ITS and a human tutor, but distinctly drew on the differences of the ITS being a digital tutor and not “human”.

*“Yes, basically. The only difference is, a tutor is another person and the online platform you just – I just read everything”* (page 8: 178–179).

When comparing the ITS to a human tutor, the participants mentioned the following similarities:

- The ITS offered help.
- The ITS offered guidance.
- It was concise.
- It was precise.
- The ITS was “always there” (referring to its being available anywhere, at any time).
- Participants could interact with the ITS.
- The ITS allowed participants to go back and fix their mistakes.

There were, however, two participants who both thought that aspects of the ITS made it both similar and dissimilar to the attributes of a human tutor. The human versus machine elements clearly came through in the interviews. AB32’s perception of the ITS was that

*“you can’t interact with the system as with a human being”* (page 8: 263)

AB32 went on to say that

*“I think an actual human tutor could assist better than the online tutor”* (page 7: 238) ...

*“there’s literally verbally or physical interaction you can, you can feel and sense emotion or you can read body language”* (page 8: 241–243).

AB63 referred to the “presence” of a human tutor and perceived that the “presence” of a human tutor was why they felt that the ITS fell short of mimicking a human tutor:

*“even though we can interact with the digital and so on but it won’t – it just won’t be the same, the presence is for me, the presence is the most uh effective because you can just feel something and you can do exactly what you need to do and ask someone next to you, what should we do”* (page 10: 233–236).

They went on to describe this further by adding

*“Lecturers can see in your face if you don’t understand something or if it’s weird to you or something”* (page 9: 217–218).

- **Summary of theme 1: ITS mimicking a human tutor**

The participants interviewed referred to the following elements of the ITS being dissimilar to those of a human tutor:

- You cannot interact with an ITS like you do with a human tutor.
- Lecturers/tutors can “see in your face” if you do not understand something.
- The participants referred to “the presence” of a human compared to an ITS.
- The participants then referred to the verbal and physical interaction of human tutors, a feel and sense for emotions, and human tutors being able to read body language.

#### **5.4.1.2 Theme 2 – Technology-related experiences**

The second theme for tools emerged when participants were asked about the differences between their technology-related experiences on campus compared to their technology-related experiences at home. Interviews were coded specifically around words or phrases relating directly to the ITS, such as internet connectivity and access to devices.

AB66 referred to having an unpleasant experience with technology but related this to not being familiar with her device.

*"I do have a laptop on which I access the uh work but uh I haven't quite gotten uh I haven't quite like, it hasn't been a pleasant experience for me because I am not used to what we doing"* (page 2–3: 68–70).

*"I haven't had a pleasant experience with technology"* (page 3: 71–72).

AB32 had a similar experience referring to having to get to know their laptop and struggling with technology in general:

*"... to get to know my laptop"* (page 3: 77) ...

*"just the technological side"* (page 6: 197).

Further struggles were experienced by AB32 in having to borrow a laptop from a cousin to do the work on:

*"I had to share (laptop) with a cousin"* (page 3: 89) ...

*"on campus you can do everything. You literally have all the resources...there is literally no barriers that restricts you from doing your best"* (page 4: 125–128).

Interestingly, AB25 also referred to being "technologically challenged", saying

*"I'm not very tech savvy"* (page 5: 121).

As a group, when comparing their home situation to that of being on campus, the following challenges were perceived:

- Challenges with technology related to training, or the use of the device. Participants referred to "not being tech savvy", struggling with a phone and storage space, data struggles, having to share laptops with family members, with one participant mentioning challenges with "just the technological side".
- Other challenges were related to not having the same amount of access to devices and internet as on campus.
- It was also mentioned that the Wi-Fi on campus was better than at home.

In contradiction to the above, two participants felt that their access to the internet was better and faster at home. AB28 mentioned that

*"about a month ago we had fibre installed so when my data is up, I still have the fibre, whereas at campus the Wi-Fi often breaks up"* (page 3: 83–85).

The student also referred to not needing to wait for a computer terminal to open up on campus and having to wait for students to finish using them. For this participant, having one's own laptop and being able to work at home was a distinct advantage.

*“For me it’s better. On campus you often have to wait for the like the computer or something but at home I have my own”* (page 3: 77–79).

- **Summary of theme 2: Technology-related challenges**

In summary of the two themes above, it was clear that the participants perceived the ITS to be a form of digital tutor, but that the biggest differences were the human aspects of human tutoring compared to the computer elements of the ITS. The students' perceptions of technology challenges at home compared to campus were more around the participants' own abilities, referring to challenges with using devices, not being tech savvy, data storage issues; and less to do with access to devices, data, or the ITS. The next category presenting common themes is the nodes Theme 2: Technology-related challenges with regard to community, subject, and division of labour

#### 5.4.2 Category 2 – Community, Subject and Division of Labour

In this category, sections of the interviews relating more specifically to the bottom half of the activity system, the community, and how the subject's work was divided up between the different community members, were coded. The two main themes identified (Figure 5.3.) focused on

- a) who the participants turned to for support when experiencing challenges, and
- b) the time spent with lecturers and tutors.

The examples below show parts of the interviews where the participants both confirmed and contradicted what the perceptions were.

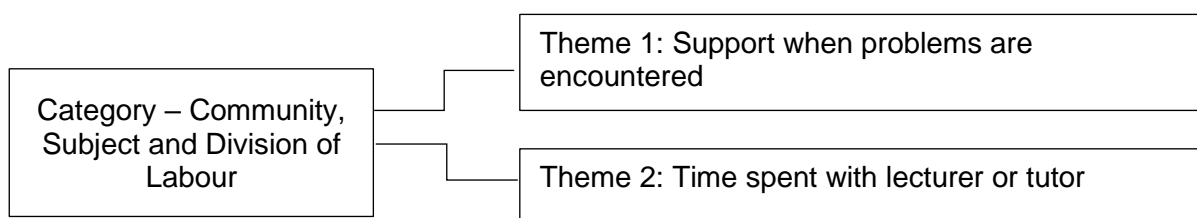


Figure 5.3: Category "Community, Subject and Division of Labour" with related themes

#### 5.4.2.1 Theme 1 - Support when problems are encountered

This theme relates to support for the participants and their learning. The most obvious theme to emerge with regard to support when encountering challenges was who the participants turned to.

When asked who they turn to for assistance, AB32 replied

*“I would ask my classmates”* (page 6: 185).

They also compared the situation of receiving assistance on campus compared to at home.

*“The advantage I had on campus was there was a lot of students and my mentor and everyone could help me”* (page 3: 76–77) ...

*“but once I got home, I was left to go on my own again and ja it was a bit difficult”* (page 3: 78–79).

AB63 agreed with this perception. This student stated that

*“at campus I can ask someone if they want to help me with something or there’s always someone to assist me ... at home no-one is like completely a genius in technology. So, it’s difficult being at home and learning through the technology of today”* (page 5: 106–110).

Similarly, AB14 mentioned that they approached their former schoolteachers for immediate assistance, as the lecturers or tutors would often take too long to get back to them or explain in enough detail

*“I can go to my teachers’ from my school and ask them for help if I struggle with something”* (page 3: 93–94).

*“Sometimes the lecturers or the tutors they take very long to respond maybe and sometimes they don’t explain in detail”* (page 3: 100–101).

- **Summary of Theme 1: Support when problems are encountered**

Overwhelmingly, all six participants interviewed confirmed that they first turn to friends or classmates for help, then they try on their own. One of the participants even mentioned turning to former schoolteachers for support as they explained concepts more clearly. Interestingly, lecturers and tutors were last to be approached for assistance.



#### 5.4.2.2 Theme 2 – Time spent with lecturer or tutor

With the participants in the surveys revealing a strong preference for face-to-face classes versus online classes, the researcher wanted to find out if enough support was offered by the lecturers or tutors on campus when participants experienced challenges. When asked if the participants spent enough time with their lecturers or tutors, all six participants felt that they did not spend enough time with them, or at least not as much as they would have liked to.

In answering this, AB66 stated they did not get to see the lecturer or tutor enough, and that they were easily demotivated by this.

*“No, I don’t”* (page 6: 181) ...

*“like if I only see them (lecturers) once, I easily get demotivated”* (page 8: 256–257).

AB63 concurred, saying that they almost never saw their lecturer or tutor, and would ideally want to spend more time with them to ask them more questions:

*“almost never”* (page 9: 206).

*“I would want to spend more time with my Lecturer face-to-face to get the... to ask questions and to get the right information”* (page 9: 215–216).

Similarly, AB28 agreed with the above. They said that they did not get to see the lecturer as often as they would have liked to. They did have a mentor, but there was no tutor they could turn to when they needed help with their work.

*“I would say no, not as much as I would like to”* (page 4: 121).

*“No, I don’t. I have a mentor and she tries to [inaudible 10:57] as far as possible as she can but there’s no tutor that I can go to when I’m stuck or when I have a problem”* (page 4: 131–133).

However, Only AB32 mentioned that they made use of a tutor, and that their tutor went out of their way to support students.

*“the tutor actually goes out of his way for us, so I think we see him often enough to ask questions”* (page 7: 231).

- **Summary of theme 2: Time spent with lecturer or tutor**

Throughout the interview, the participants revealed a strong preference for face-to-face classes versus online classes using the ITS. During the interview, participants also alluded to several tensions related to not seeing their lecturer or tutor often enough. These included insufficient class time; the time taken for lecturers to get back to them in replying to their challenges; and messages sent in answering challenges being “lost in translation” when communicating with the students.

### 5.4.3 Category 3 – Subject

Data relating to the students were assigned to the category of subject (Table 5.4). Three main themes emerged from the data. These were the participants’ learning preferences (face-to-face learning versus online learning), perceptions of the ITS, and the participants’ motivation to complete the work on the ITS.

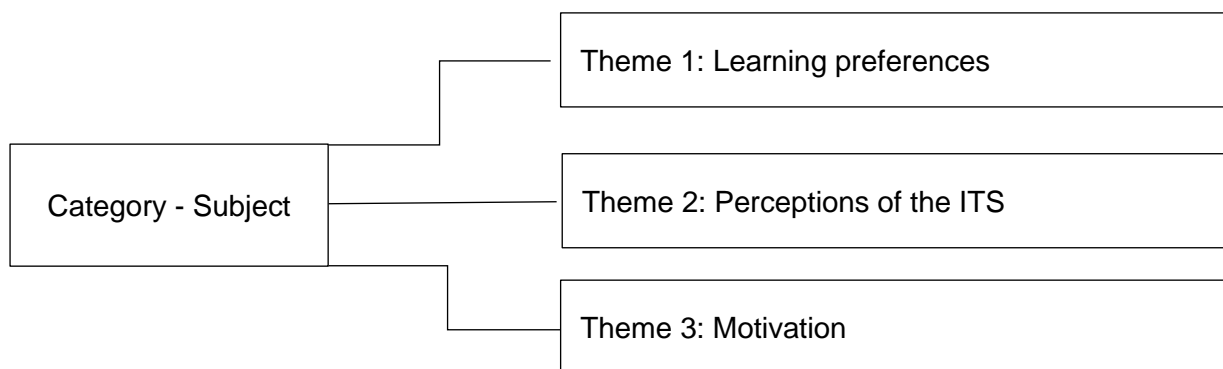


Figure 5.4: Category Subject with related themes

#### 5.4.3.1 Theme 1 – Learning preferences (face-to-face versus online using the ITS)

With the surveys pointing to a noticeable preference for face-to-face learning versus online learning, the researcher wanted to probe a bit deeper to uncover why the participants perceived face-to-face to be better and understand why online learning was perceived as a tension. The interview revealed the participants’ reasons for this, as can be seen below.

AB32 mentioned that it was easier to interact with a lecturer in a classroom environment and felt that a more in-depth answer to their questions was given.

*“Definitely face to face because I feel it is easier to interact with the lecturer” (page 4: 133–134) ...*

*“In the class you can literally just ask a question and make a note”* (page 5: 137–138) ...

*“There is always something that the lecturer actually explains to you in depth”* (page 5: 169–170).

They once again referred to being technology challenged, saying that the student was “not an internet guy”, meaning that he struggled with technology in general, and that it was a challenge working in the online environment from the start:

*“I’m not a big internet guy”* (page 3: 74) ...

*“so it was a struggle from the start”* (page 3: 75).

Similarly, AB66 preferred face-to-face learning, understanding better when a lecturer explained concepts to them in class. This student felt that once at home, he/she just did not “get it”, referring to trying to figure out challenges on their own:

*“I really do prefer face to face because face to face* (page 4: 116) ...

*it is like I understand it better and the lecturer is explaining everything, so I get it but at home it is like I do not get it, I just don’t get it”* (page 4: 117–118).

AB63 also once again pointed to challenges with technology. And, although this student didn’t specifically have a preference when comparing face-to-face versus online learning, he/she would *still* choose face-to-face learning over online learning, referring to a lot going on in the home environment, and the need for immediate assistance when faced with a challenge. It was for this reason that this student preferred learning on campus.

*“so, I am not like – I am not wise with technology”* (page 4: 88)

*“I wouldn’t prefer exactly face-to-face because* (page 6: 141–142) ...

*but I would prefer it anyway because this distance learning is not for me and I think I’m speaking on behalf of many other children and learners because at home there are- there’s a lot of things that’s going on around you and you don’t have that study environment about and you don’t have the assistance to – how you need to do a specific thing. So, it’s a bit difficult, I would prefer face-to-face learning”* (page 6: 144–149).

Only one student interviewed, AB14, preferred online learning. They felt that they found technology easy to work with and found it more effective for them. They specifically referred

to having to work in groups in face-to-face environments and felt that not everyone in the group would contribute equally. For this reason, they preferred working on their own in the online environment.

*“Technology for me is very easy to understand so and working on my own (page 2: 63–64) ...*

*is more effective for my own schoolwork that I do, and I don’t really like to work in groups because sometimes I feel like not everyone is contributing the same amount” (page 2: 66–68).*

- **Summary of theme 1: Learning preferences**

When the participants were asked whether they preferred face-to-face learning or online learning using the ITS, their general perception was a preference for face-to-face learning. Reasons for this from four of the participants interviewed were:

- not being “techno savvy”
- preferring the face-to-face interaction
- better or clearer explanations given by the lecturer
- possible misinterpretation of explanations given when explaining in the digital environment.

In conclusion to theme 1, AB32 mentioned that it was easier for students to interact with a lecturer in a classroom environment. AB66 preferred face-to-face learning, understanding better when a lecturer explained concepts in class. Only one student interviewed, AB14, preferred online learning. This student felt that he/she found technology easy to work with and found it more effective. AB63 said that he/she struggled with technology in general. This student preferred working on his/her own in the online environment, as not everyone in the group would contribute equally.

#### **5.4.3.2 Theme 2 – Perceptions of the ITS**

The participants’ perceptions of the ITS was an important theme for the researcher to uncover. With the survey results and interviews showing that the participants preferred face-to-face learning, there was a possibility that the participants might perceive the ITS negatively. For this reason, the researcher needed to understand what the participants’ overall perceptions were of the ITS, and how they experienced it.

Although AB32 felt that he/she was not “tech savvy”, this candidate managed to find his/her feet very quickly with the ITS, even though he/she was initially scared. The student managed to cope with the work and felt that it was an excellent platform overall.

*“I thought it was, it was really cool” (page 5:155) ...*

*“I was scared that I might not cope but overall, I think I, I found my feet very quickly and it was a great learning curve for me” (page 5: 158–159) ...*

*“Overall, I think it is a good platform, it is excellent” (page 8: 265).*

Similarly, AB66 felt that the ITS was good, and that they had a great experience with it, without experiencing any complications.

*“I think if, I think it is good, I only experienced great, I’ve only had a great experience sorry. I didn’t have complications or anything like that” (page 7: 210–212).*

AB63, who had also experienced general technology challenges, looked at working on the ITS as an opportunity to learn and grow. They knew that they would potentially need to use similar technology in the future, possibly with their own students one day, and would therefore know what to do if they found themselves in the same situation, having to use an ITS.

*I’ve learnt a lot because I know that maybe in the future – in the near future – if there is anything again like this I would know how to work with my students or my learners or so on” (page 8: 194–197) ...*

*“I saw it as a opportunity” (page 11: 260).*

AB25 perceived the ITS to be interesting, but time consuming. However, overall, this student perceived the experience to be ‘nice’, and felt that he/she had learnt a lot.

*“It was nice, interesting. It was, as I said, time consuming, lot of reading but it was a very nice experience and I actually learnt a lot” (page 5: 108).*

AB14 perceived the experience of using the ITS to be ‘pleasant’ and ‘amazing’, as it taught the students to become more independent in the sense of learning on their own and doing their own research.

*“it was a very pleasant experience” (pages 3, 73).*

*“For me it was amazing because it helped me grow and it taught me to work more on my own and do my own research” (page 5: 154–157).*

AB28 perceived that the ITS assisted with their confidence by allowing the students to practise the work on their own. This student also found the experience of finding his/her feet while using the platform to be 'nice'.

*"My overall perception, it helped me further [inaudible 12:32] the first term I did that with confidence and by the end of the term my marks were [inaudible 12:41] wasn't what I expected and I [inaudible 12:44] what I did in class, this was the practice that I did on my own at home with the English platform that did it for us. So, I do, I definitely [inaudible 12:54] and it was nice to find myself and find my feet throughout this platform"* (page 5: 151–156).

- **Summary of theme 2 – Perceptions of the ITS**

The participants' perceptions of the ITS were an important theme for the researcher to uncover. Although AB32 felt that he/she was not "tech savvy", this student managed to find his/her feet very quickly with the ITS. AB66 felt that the ITS was good, and that they had a great experience with it, without experiencing any complications. AB63, who had also experienced general technology challenges, looked at working on the ITS as an opportunity to learn and grow. AB14 perceived the experience of using the ITS to be "pleasant" and "amazing", while AB28 perceived that the ITS assisted with the students' confidence by allowing them to practise the work on their own. However, AB25 found the ITS to be time consuming, but still felt that the ITS was 'nice' and that they had learnt a lot.

#### **5.4.3.3 Theme 3 – Motivation**

When it came to motivation, a strong sense of self-actualisation came through in the interviews. Motivation was an important theme to uncover, in order to understand what the drive was behind the participants wanting to complete the work on the ITS, despite preferring face-to-face learning. With the participants favouring face-to-face instruction, having to work on the ITS could have created tension, leading to demotivation, and could possibly have created a negative perception of the ITS or the coursework in general. When questioned, participants showed that they were in fact motivated to work on the ITS. Reasons for this were:

AB32 stated that he/she wanted to prove to him-/herself that he/she could work on a computer, even though technology was not their strong point.

*"to prove to myself that I that I can actually work on a computer because it's literally not my strong [point]"* (page 8: 247–248).

AB28 was motivated by the fear of failure and wanting to complete their studies.

*“I’m very scared of failing”* (page 5: 159) ...

*“So that was my motivation, I want to pass my first year, I want to finish my studies”*  
(page 5: 161–162).

AB63 referred to wanting to improve his/her English proficiency and to achieve his/her personal goals.

*“I personally want to be better in English and I want to achieve my goals”* (page 10: 243–244).

- **Summary of theme 3: Motivation**

Reasons for the participants’ being motivated can be summarised as follows:

- They wanted to learn how to use technology as they would need to work with it in the future.
- The participants wanted to do well to prove to themselves that they could do it.
- The participants created support groups to push each other to do well.
- They were motivated by pressure.

The participants in the Activity System were motivated to complete the work on the ITS. Even though some of the participants felt that they were not “tech savvy” or good with technology, they still wanted to do well and improve their skills with technology, and offered a general perception of wanting to do well despite any perceived tensions experienced.

## **5.5 Merging the quantitative data with the qualitative data**

Before merging the quantitative and qualitative data, one needs to first look at the seven areas of tension uncovered after the surveys were analysed and interpreted. The seven areas of tension were:

1. The participants’ technology experiences at home compared to their technology experience on campus
2. The participants’ access to internet at home being better or worse compared to their internet access on campus
3. Whether the participants preferred an online learning environment compared to a face-to-face classroom environment
4. The participants’ experiences of the ITS, and whether they perceived it to be better than face-to-face classroom teaching or not

5. Whether the participants found it a challenge for them to complete the work on the ITS
6. The amount of time that they got to spend with their lecturer
7. The amount of time they got to spend with a tutor.

In exploring these seven areas of tension, the researcher used a semi-structured interview to gather further evidence to uncover the deeper meanings to the results of the survey. Using the CHAT nodes at predefined categories, three nodes clearly stood out. These were Tool, Community and Subject. From the coded data, themes started to become clear under the three main categories. These were:

- a) Tool: The ITS mimicking a human tutor, and technology related experiences
- b) Community: Support when problems are encountered, and time spent with a lecturer or tutor
- c) Subject: Learning preferences, perceptions of the ITS, and motivation.

The researcher reached data saturation having conducted six interviews, with clear answers to the seven tension areas being uncovered. Tensions involving technology experiences were found to be based around not being “tech savvy” or digitally literate. The tensions perceived were interestingly less about internet access or access to devices. Participants clearly favoured face-to-face learning compared to online learning with the ITS, but still experienced the ITS to be particularly good, even calling it “excellent”. The participants also admitted that they considered the ITS to be a form of digital tutor, but that it fell short when compared to human tutors. While the ITS mimicked aspects of what a human tutor could do, it could not match the human presence, read body language, or look into the participants’ eyes and notice that they had not understood something. Another interesting tension uncovered was that the participants all agreed that they did not get to spend enough time with their lecturer or tutors, which was a point of demotivation for them. The participants showed that they would want to spend more time with a lecturer or tutor if given the chance. Interestingly, the participants were all motivated to work on the ITS, with a strong sense of self-actualisation being uncovered. The overall perception of the ITS, however, was incredibly positive.

## **5.6 Conclusion**

In order to collect data to answer the main research question and sub-questions, the research was conducted in two phases. In the first quantitative phase, 48 participants were surveyed, and the surveys were then analysed and interpreted. This was followed by the qualitative phase, where six participants were interviewed to ensure that the researcher collected data in order to understand the perceived contradictions and tensions experienced within the Activity System. Interviews were coded by adapting Saldana's (2015) streamlined codes-to-theory



model for qualitative inquiry, with three main a priori categories identified, with their related themes. In the next chapter the researcher discusses the summary, findings, and recommendations.

## CHAPTER 6: SUMMARY, FINDINGS, AND RECOMMENDATIONS

### 6.1 Introduction and problem statement

In chapter 5, the data were analysed and reported on. The following chapter provides a summary of those findings and recommendations for further research.

The language proficiency of university students in South African institutions of higher education is a controversial issue, and there is a growing challenge for lecturers to find ways in which to support students in their classrooms. Many students in South Africa are not studying in their home language, yet they are expected to be proficient in the language of instruction, which is English (Coetzee-Van Rooy, 2011: 151–181; Nash, 2006: 21–31; Nel & Müller, 2010; Seabi, Seedat, Khoza-Shangase & Sullivan, 2014: 67; Steenkamp, Baard & Frick, 2009: 635) (§2.3.).

The need for additional English language support intensifies when these same students in question are participants studying English to become English first-language teachers, especially when English is not their mother tongue. Added to this is further complexity attributed to the ever-increasing number of students entering higher education institutions that are facing budget cuts. What more can South African institutions do to assist these students? (§2.3.)

What I have noticed is that that these students will often struggle with a variety of language issues, not exclusively grammar issues, but with pronunciation and fluency issues, too. One proposed solution to assist with this problem could be the introduction of ITS, to assist students with language tutoring. This could be an innovative and relatively cost-effective way to tutor these students. VanLehn (2011) in his research stated that ITSs are as effective as face-to-face tutors and should be considered a viable option for lecturers. There is, however, a lack of consensus in the research pointing to the effectiveness of ITSs in ill-defined subject domains, such as languages (§2.2.). However, in well-defined domains such as mathematics, ITSs have been shown to be greatly effective tools for tutoring and can in fact be as effective as tutoring or classroom teaching (§2.4.).

This research considers what contemporary research tells us, and that is that ITSs are better than originally thought (Chi & VanLehn, 2011: 35; Shamir, 2012: 51). Research in fact points to ITSs that could potentially be as good as human tutors. This research, however, intends to

add to the ITS discourse by examining an English language ITS through the lens of Engeström's second-generation CHAT, and through the perceptions of the participants using the ITS (§2.1.).

## **6.2 Overview of the literature review**

In this study, the researcher explored the evolution of ITS and the contemporary inquiry into ITS of today (§2.1). With an ITS having been introduced into an Activity System in a first-year English module at a university in the Western Cape, the researcher honed in on what participants' perceptions of the ITS were, and whether they perceived the ITS to mimic a human tutor or not. The researcher then presented what is considered to be the best kept secret in academia (§3.2), a powerful theoretical framework called Activity Theory, by means of which this research was viewed through a lens, through which it was analysed and interpreted.

### **6.2.1 Overview of intelligent tutoring systems**

For decades, the notion of a computer programme that can successfully mimic the behaviour patterns of human tutors has been a driving force behind further research and development of ITS. What research in this field has shown us is that ITSs are able to mimic aspects of human tutoring relatively well, especially in well-defined domains such as mathematics and chemistry, but less well in ill-defined domains, such as in languages (§2.2.). Where this research has positioned itself is by adding to the literature of ITSs in ill-defined domains. The ITS explored was an English language ITS, therefore existing in a less structured subject domain of language, with the researcher exploring participants' perceptions of the ITS, and whether they perceived the ITS to mimic a human tutor or not. The participants' perceptions were then viewed, analysed, and interpreted through Engeström's second-generation Activity Theory (§3.3.2.).

A central position in this research was an ITS that could be used in an online education setting, with the view of mimicking a human tutor, and what the participants' perceptions of the ITS would be. The participants in this research were English second-language learners, and with many students enrolling at South African institutions not being fully proficient in English, the researcher was particularly interested in exploring the participants' perceptions of the ITS. With human tutoring widely considered to be the most effective form of instruction, and with the research taking place at a university with insufficient tutors, and during the Covid-19 pandemic, having an ITS that could successfully mimic a human tutor and be positively perceived by the participants could prove to be invaluable (§2.3.).

While great strides have been made with ITS in well-defined domains, there have been some challenges with English language ITSs. This has been due to a multitude of factors to consider, such as Phonology, Morphology, Semantics, Lexicon, and even accents (§2.7.). The goal of the ITS would be to offer corrective feedback timeously, offer adaptive individualised instruction, be motivational and improve communicative proficiency. With South African English being based on British English, the ITS used British English, and was benchmarked against the CEFR, a globally recognised framework of reference (§2.8.). The focus on ITS improving English language proficiency was, however, not the main aim of this research. There are many reasons that could determine whether an ITS is effective or not. For this reason, the researcher was more interested in the participants' perceptions of the ITS, and whether or not they perceived it as mimicking a human tutor. There are many factors that create forces within the Activity System that could result in the ITS being successful, and which may not necessarily be related to the ITS itself but may be due to other factors. For this reason, a more holistic view of the ITS within an Activity System, Activity Theory, was used as a lens through which to view this research, as well as analyse and interpret these data (§2.8.). Activity Theory as a framework is discussed next.

### **6.2.2 Overview of CHAT as a framework**

A fundamental concept of CHAT is that real-world activities are orientated towards objectives and driven by purposes that lie behind specific goals. The principles of contradictions in CHAT are helpful in driving educational research by allowing the researcher to focus on the contradictions. The contradictions in CHAT are not only competing complications but historically accumulated tensions that not only agitate but can drive innovative change (§3.1.).

CHAT is a robust theoretical framework which can be used to view human practices within specific cultures and contexts. It is specifically useful to investigate human activities within specific social contexts, such as work or learning. Traditional CHAT looks at the individual, and how the individual's actions are influenced and mediated by cultural and historical influences within the greater constraints of their environment (§3.2.).

CHAT has evolved over the decades from first-generation CHAT to third-generation CHAT, with this research using second-generation CHAT as a framework. First-generation CHAT, based on the work of Vygotsky, focuses on how an individual learns from having done some form of primary activity, with an outcome of knowledge acquisition. First-generation CHAT further focuses on the subject, the tool, and the object, with a specific outcome – either intended or unintended. The shortcoming of first-generation CHAT was that it focused only on

the individual as if that person were inside a vacuum, with no external factors playing a role in his/her learning (§3.3.1.).

In recognising the shortcomings of first-generation CHAT, and primarily through the research of Leont'ev and Engeström, second-generation CHAT was developed. These researchers recognised that learning does not happen in a vacuum in real-world scenarios, but that learning is also affected by external factors such as rules, community, and divisions of labour. Second-generation CHAT therefore included subject, tool, and object, but also included these additional nodes as external factors, which would result in an outcome. Second-generation CHAT therefore looked at these nodes and their interrelationships and tensions within a system (§3.3.2.).

CHAT has evolved into its third generation, whereby research looks at not only one Activity System, but minimally two competing Activity Systems. Third-generation CHAT examines networks of interacting systems, and their own unique contradictions or tensions. With this research focusing on only one Activity System, a conscious decision was taken by the researcher to use second-generation CHAT as the framework for this research (§3.4.).

The rationale for using second-generation CHAT in this research is that CHAT allows for researchers to design and shape tools within systems. With ITS promising to be a tool for students to gain knowledge, CHAT promises to offer a comprehensive view of the system, as a way to address specific problems, as perceived through the eyes and experiences of the students using the ITS (§3.6.).

### **6.3 Method of research**

The main objective of this study was to examine the perceptions of pre-service teachers regarding the use of an ITS for English Language Proficiency. A further aim was to determine what tensions and contradictions were experienced in this CHAT system. Data were gathered using a mixed methods approach, with CHAT used as the framework and comprehensive lens through which to view the participants' interactions with the ITS in an educational setting (§4.1.) What added an additional layer of complexity and interest to this research was the fact that the research was conducted during the Covid-19 pandemic of 2020, where government institutions of higher education were forced to move from traditional face-to-face instruction on campus to online or distance learning methods, despite many institutions and students not being ready for this change (§4.3.).

### **6.3.1 The research design**

A mixed methods approach was the most suitable design for this research. This method was the most suitable as the researcher was interested in the interrelationships between the various AT nodes, to clarify the relationships between these nodes, and to better understand the interconnection between the nodes.

### **6.3.2 Quantitative phase**

The quantitative data were collected by means of a cross-sectional survey, a useful method that allows researchers to gather vast amounts of data from target population groups, allowing for certain inferences to be made. The cross-sectional survey allowed the researcher to identify specific trends, as a representative sample of a larger population, and as a numerical representation for phenomena of observations (§4.5.2.)

#### **6.3.2.1 Participants in the quantitative phase**

Of the original 82 participants placed on the ITS, 48 participants partook in the cross-sectional survey. This was because of some of the limitations experienced because of Covid-19, such as participants not having adequate access to devices or the internet. The participants were students in the FET/SP and IP phases of the Bachelor of Education degree taking an English module at a university in the Western Cape. The participants were English second language learners and would eventually go on to teach English as a first language. The participants were purposefully selected because of the ease of accessibility by the researcher to their geographic location, they were available at the given time of the research, and they were willing to participate in the research (§4.5.2.2.)

#### **6.3.2.2 Instruments in the quantitative phase**

The instruments used as part of the quantitative data collection were cross-sectional surveys using the Likert scale. Because of the Covid-19 restrictions, the researcher used an online survey using Google Forms. The original method that the researcher intended to use was a paper-based survey which would have taken place in a face-to-face classroom environment (§4.5.2.1.)

The researcher conducted a survey to interpret the initial perceptions of the participants using the ITS and to compare them in order to relate them to the various AT nodes which would later be interpreted further by using interviews. Quantitative data alone would not have been a sufficient method of data collection, as the researcher was most interested in the deeper meanings of the participants' perceptions related to the ITS (§6.3.1.)

The survey consisted of 28 questions, which were broken down into various sections. These included an introduction, a biographical section, and sections according to the various second generation AT such as Subject, Tool, Object, Rules, Community, Divisions of Labour and Outcome (§4.5.2.1).

### **6.3.2.3 Analysis of the quantitative data**

The cross-sectional survey used a Likert scale with 1 = Strongly Agree, 2 = Agree, 3 = Neutral, 4 = Disagree and 5 = Strongly Disagree. The researcher's intention was then to identify questions where the participants were perceived to show high tension or contradictions. The researcher then divided the results of the survey into high-, medium-, and low-tension questions. The researcher identified seven questions where the participants perceived higher tension than with the other survey questions. The researcher then intended to uncover the deeper meanings as to why the participants perceived higher tensions or contradictions to these specific questions, by doing a thorough investigation using interviews to analyse and interpret them further (§4.5.2.3.)

### **6.3.3 Qualitative phase**

Qualitative data collections methods are valuable methods for researchers to gather deeper insights and meaning into individuals and groups in social contexts and expand on what was reflected in the quantitative data (§4.5.3)

The researcher used semi-structured interviews to interpret the deeper meanings of themes observed in the surveys as seen through the lens of second-generation CHAT. In order to understand the survey themes, more descriptive data were required for the researcher to interpret and analyse the deeper meaning of the participants perceptions (§4.5.3.1)

#### **6.3.3.1 Participants in the qualitative phase**

Six participants displaying high levels of contradictions or tension from the surveys conducted were selected by the researcher to uncover the deeper meanings of these perceptions (§4.5.3.2) It was for this reason that the participants were selected, as they were best positioned to answer the interview questions related to the tensions and contradictions perceived, and to understand why these tensions and contradictions were perceived at all. Further, the researcher selected the six participants, or just more than 10 percent of the participants surveyed, to ensure that data saturation could be reached in the interviews.

### **6.3.3.2 Data collection**

The interview data were gathered with the use of a semi-structured interview, and done telephonically because of the Covid-19 restrictions. The researcher had originally planned to do the interviews face-to-face with the participants on campus.

A semi-structured interview schedule was created to probe and cross-check participants' answers. The researcher was not limited to the schedule and asked additional probing questions when required to do so. The questions for the semi-structured interview were all based around the high-tension questions uncovered in the surveys (§4.5.3.3).

The interviews were conducted on predetermined days and times with the participants and lasted for approximately 20–30 minutes each. The researcher ensured that the participants agreed to being interviewed, and that they were happy for the interview to be recorded. The recorded interviews were then sent to a transcription agency to be transcribed verbatim. Throughout the interviews, the researcher kept the questions as simple and unambiguous as possible, repeating the questions and explaining what was meant when needed (§4.5.3.4)

### **6.3.3.3 Analysis**

Once the interviews were concluded and transcribed verbatim, the interviews were coded line by line using three a priori codes from AT, namely: Subject, Tool and Community. These three a priori codes were used, as nodes from CHAT were the most prevalent in the interviews. A version of Saldana's thematic analysis of coding was used to form data clusters for further analysis (Saldana, 2015: 14) (§4.5.3.5)

Using the three codes, the researcher searched for related words or phrases related to the codes. These were then categorised into themes or concepts. The main themes revealed were 1) whether the ITS mimicked a human tutor or not; 2) the technology-related experiences of the participants; 3) who the participants turned to in their community when problems were encountered; 4) the time spent with their lecturer or tutor; 5) the participants' learning preferences; 6) the participants' perceptions of the ITS; and 7) the participants' motivation for working on the ITS (§5.3.)

## **6.4 Summary of findings**

In order to answer the central overarching research question, the sub-questions were answered first. The section below provides the answers to these sub-questions, with a conclusion at the end answering the main research question. Figure 6.1. has been created as



a model to illustrate the findings in this study by adapting Engeström's second-generation CHAT to suit the outcomes.

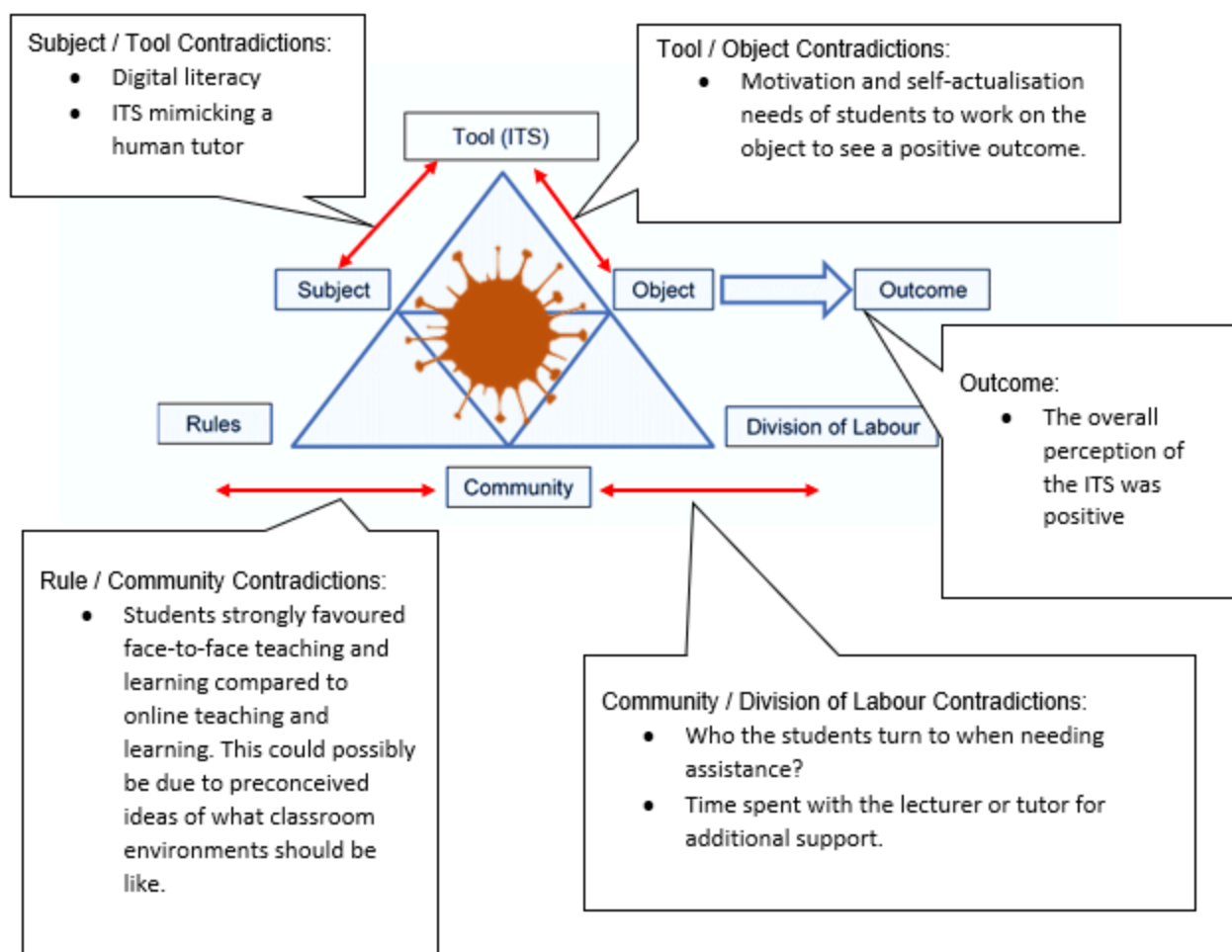


Figure 6.1: An adapted second-generation AT model, Sanino & Engestrom (2018:45)

#### 6.4.1 Sub-question 1

*“What are the participants’ perceptions of the ITS when viewed through the lens of CHAT?”*

When this research was viewed through the lens of CHAT, there were three main categories that became clear (Subject, Tool, and Community) (§5.3), which could affect the participants’ perceptions of the ITS. Overall, however, the ITS was perceived as a pleasant experience and a good tool to use (§5.4.3.2). Particularly intriguing was the fact that the participants agreed that they would use the ITS or a similar tool again if given the chance to (§5.2.3), despite favouring face-to-face learning and experiencing some technology challenges in the beginning (§5.5), unrelated to the ITS itself. This could possibly be attributed to the ITS’s mimicking

certain elements of a human tutor successfully (§5.4.1.1). While using the ITS was a learning curve for the participants (§5.4.3.2), the ITS was perceived as being a positive and rewarding learning experience (§5.4.3.2).

#### **6.4.2 Sub-question 2**

*“What tensions or contradictions are perceived by the participants?”*

It could be assumed that the greatest tensions or contradictions perceived by the participants when introduced to the ITS for online learning would have been the lack of access to devices or the internet. However, this research has shown that this was not the case with these participants. Despite this, contradictions or tensions were perceived in all three categories of Tool, Community and Subject.

The two main themes of contradictions or tensions experienced with regard to use of the Tool were the ITS unsuccessfully mimicking a human tutor, and technology challenges related to getting to know the device and the participants' own digital literacy (§5.4.1). This therefore pointed to specific contradictions related to the Tool node, between the ITS tool itself and the knowledge and skills needed by the subjects (so also a subject-tool contradiction). While the participants recognised that aspects of what the ITS did successfully mimicked some of the elements of human tutors, they were clear that the human “presence” for them was missing (§5.4.1.1), with examples given such as being able to read body language and seeing in the participants' faces when they did not understand a concept being explained to them. When it came to the technology challenges, participants mentioned very specific words or phrases, such as not being “tech savvy” and battling with storage and getting to know their phones or laptops, with one participant referring to it as “just the technological side” (§5.4.1.2).

Interestingly, the contradictions or tensions that were perceived when it came to community were to do with who the participants turned to for help when faced with challenges, and the amount of time they were able to spend with their lecturer or tutors (§5.4.2). In both themes, there was consensus with all the participants interviewed. All the participants, when faced with challenges, would first turn to their classmates or friends for help (§5.4.2.1). Lecturers and tutors would be turned to last. The participants also all agreed that they did not spend enough time with their lecturers, and if given the choice, would want to spend more time with them (§5.4.2.2).

Participants clearly favoured face-to-face learning compared to online learning with the ITS, but still experienced the ITS to be particularly good. There was thus again a contradiction between the subjects, their preferences, and the ITS tools they were expected to use. It might

be suggested that this relates to participants' more commonplace understanding of how education should be conducted, perhaps indicating their understanding of 'rules' which may be in conflict with a more online environment. The participants also admitted that they considered the ITS to be a form of digital tutor, but that it fell short when compared to human tutors, possibly indicating a contradiction between make-up of the ITS tool and its purpose to help subjects work on the object of the system.

### **6.4.3 Sub-question 3**

*"To what extent does ITS mimic face-to-face human tutoring?"*

Although the participants were able to see the similarities in what the ITS could do in comparison to what a human tutor does, the consensus was that they did not feel the ITS mimicked a human tutor successfully (§5.4.1.1). The ITS was described by the participants as precise, concise, it offered timeous feedback, was interactive, and was able to offer assistance in many similar ways to those which a human tutor could offer, it still wasn't successful in mimicking a human tutor.

The participants especially picked up on the human-versus-computer element. The presence of the physical human tutor was important to them. They felt that other than the physical presence, human tutors were able to read body language, and were able to judge, by looking at the students, whether or not they understood the work. The participants felt that they could not interact with the ITS as they would with a human tutor.

### **6.4.4 Sub-question 4**

*"To what extent do pre-service teachers perceive ITS as an effective or ineffective tool?"*

The consensus among the participants was that the ITS was an effective tool for improving language proficiency. This was an interesting finding, particularly because the participants all preferred face-to-face learning compared to online learning. Even though there was a strong preference for face-to-face, the participants were all positive about the ITS and agreed that they would use something similar again if given the chance (§5.4.3.2). Part of what made the ITS effective was the way in which it mimicked a human tutor, such as offering help and guidance, by being concise and precise, by being "always there" (referring to its being available anywhere, at any time), by being interactive, and by allowing the participants to go back and fix their mistakes (§5.4.1.1).

What leads the researcher to believe that the participants found the ITS to be effective was their overall perception of the ITS being excellent, and their motivation to continue using the ITS specifically for language proficiency (§5.4.3.2). The contributing factor to show the ITS's effectiveness was the participants' motivation to continue doing the online learning with the ITS, despite favouring face-to-face learning and any technological challenges faced (§5.4.3.3). Added to this, when questioned about their overall perception of the ITS, there were no negative comments made.

#### **6.4.5 The overarching research question**

*“What are pre-service teacher’s perceptions of their use of an ITS for English Language Proficiency when introduced into an Activity System?”*

The participants perceptions of the ITS when introduced into an Activity System were exceptionally good (§5.4.3.2). This was particularly interesting for the researcher, as there were tensions around not being digitally literate or “tech savvy” (§5.4.1.2), and with the participants expressing a strong preference for face-to-face learning (§5.4.3.1). The participants, although initially unfamiliar with or unsure of the ITS, were able to find their feet quickly without any complications (§5.4.3.2). The following was observed by the students: a) the ITS was an excellent tool for learning and language proficiency, b) they perceived it to be interesting, c) they perceived it to be a tool that assisted with their learning and language proficiency (§5.4.3.2), and d) they perceived it to be a tool that could assist them in reaching their goals and objectives (§5.4.3.3). While the effectiveness of ITS in ill-defined domains such as languages is still up for further debate (Chinnery, 2006: 13; Heilman & Eskenazi, 2006: 21; Tai, 2012: 222) (§1.5), this research has shown that the overall perception of the ITS was favourable. The participants were all motivated to work on the ITS, with a strong sense of self-actualisation being uncovered. In CHAT terms, for some participants, the ITS could help them to work on the language object to achieve a language proficiency outcome (and even a digital proficiency outcome).

#### **6.5 Limitations of the study**

- As with any research framework, AT comes with its own limitations. Two specific limitations of AT are 1) the narrow view of the environment of an Activity System, and 2) a lack of consistent methodologies used in AT. Having a narrow viewpoint and only considering the participants' immediate environment and not their larger sociocultural environment could be problematic. Further, AT is not a prescriptive framework, and does not offer a matrix with which to code qualitative data (§3.5).

- Although 82 participants originally formed part of the research and worked on the ITS, only 48 participants went on to be surveyed. As a result of Covid-19, participants were forced to work online at home, using their own devices and being given limited data by the university. All 82 participants were requested to participate in the survey via email and WhatsApp. Only the 48 participants surveyed replied. This could possibly have been due to the participants' not having access to devices or the internet to complete the online survey. The researcher's original intention to get more participants to be surveyed was to do a paper-based survey with the participants in class (§4.5.2.2.).
- Access to the participants was a limitation for the researcher throughout the research process. Originally the researcher had access to the participants in a face-to-face classroom environment. However, as a result of Covid-19, all further access to the participants had to become virtual (§4.3.) Although the researcher tried communicating regularly with the participants through email, it was difficult to know if the emails had been received, or in fact read. Further, had the ITS been introduced to the participants in a face-to-face classroom environment, then it could have been positioned better, with training given to any of the participants who may have required some digital training.
- Lastly, the assumption originally was that the participants would be using the ITS on campus, where they would have sufficient access to devices and the internet. If the research had gone forward as planned, then many of the tensions or contradictions experienced by the participants could have been quite different. If the research had been carried out on campus, theoretically, the participants could have had better access to devices and the internet, access to a lecturer or tutor, and have been assisted with technical issues related to digital literacy. A shortcoming, therefore, of this research was that, had this research been conducted on campus, there could well have been different contradictions or tensions perceived. However, in a real-world scenario and with the lockdown as a result of COVID-19, it is difficult to predict all unknown variables, which is what makes CHAT such a valuable framework with which to view, analyse and interpret educational research.
- This research looked at only one specific English language proficiency ITS and did not do a meta-analysis of English proficiency ITSs currently available. The ITS that was used was created in 2014, and with technology continuously improving and evolving, the possibility exists that there could be a more sophisticated ITS available, which is more adaptive and better personalised to the participants' needs, which could have resulted in different perceptions and outcomes.

## 6.6 Recommendations

Below, the researcher gives recommendations for the current research, as well as recommendations for future research.

### 6.6.1 Recommendations to improve current research

- This research has shown that the participants would first turn to their classmates or friends for help when needed, with some participants mentioning the length of time that it would take for a lecturer to tutor to get back to them. The ITS has a built-in system to support participants with quick feedback, whereby they could choose to mail the researcher, or chat with a friend. The chat function in the ITS allowed the participants to create groups of friends taking the course at the same CEFR level as them. This was linked to a class list that allowed them to add classmates on the same course. The participants chose to use email, WhatsApp, or phone calls to communicate with each other. This functionality of messages, discussions, and chats within the ITS could have been better explained to the participants as an additional form of communication for quick feedback.
- As most of the participants interviewed showed a clear preference for face-to-face learning versus online learning, further research is needed with regard to change management, including moving from the traditional classroom environment to a predominantly online learning environment. The participants all experienced the ITS in a positive light and would choose to use it again, even though they still preferred face-to-face instruction. Change management is required to ensure that the participants are digitally literate, have access to devices and the internet for online learning, and that communities of lecturers, tutors and classmates are created for support and improved feedback.
- Even though the ITS included an embedded instruction guide, this guide did not cover basic digital literacy. The ITS used in this research was meant for English language proficiency, and institutions focus heavily on academic literacy. However, digital literacy was not considered, and should be considered a fundamental aspect in the move from face-to-face to online instruction.
- All the participants surveyed felt that the ITS displayed elements of what a human tutor could do, but that it fell short of mimicking a human tutor successfully. This was because of the human aspect or the human “presence” of a tutor. Can an ITS successfully mimic the human elements of a tutor? While there is a plethora of research around ITSs being successful in mimicking the effectiveness of a human tutor and having the same or similar effects to those of a human tutor, there is less research

around the actual human aspects and what it would take for an ITS to be perceived to have these human traits or elements, as well as what exactly would be required. This research was limited in understanding that the participants noticed that this human element was lacking, but further research is needed to understand this in more detail, and to examine ways in which to overcome this.

- This research has shown that the participants perceived that they did not spend sufficient time with the lecturers or tutors. While research has shown ITS to be effective in mimicking human tutors, there were still elements missing for the participants interviewed. ITS can go a long way towards assisting lecturers and students in achieving specific outcomes. However, this process needs to be managed correctly. What CHAT has exposed in this research is that something should have been done differently in the iterative process of adding the ITS to the online learning. More time and research is required in order for the researcher to uncover at what part of the iterative process something could have been done differently in order for the participants to have had an improved perception of the ITS mimicking a human tutor, and ways in which to overcome the additional tensions perceived such as digital literacy and access to lecturers and tutors.
- Further research could focus on incorporating digital literacy testing with English proficiency and Academic literacy testing at universities in South Africa. Students were shown to be resilient. Preconceived notions were that one of the biggest contradictions would be students' access to devices and the internet. However, what this research showed was that students made a plan, by finding a device to use, whether that was by using an existing device or by borrowing one from a family or community member. The biggest contradiction between the Subjects and the Tool was digital literacy and understanding how to use the device.
- Another area of further research could be focusing on the contradictions that exist between the Community and Division of Labour. This could be a particularly fascinating research area to delve into further with CHAT, by finding ways to improve immediate feedback and communication by calling on the community and more knowledgeable subjects in the AT to assist with learning.
- Finally, an area of further research could be investigating methods of using the Subjects' high levels of motivation and improved digital literacy to assist with novel ways of allowing the ITS to become more successful in mimicking the effectiveness of human tutors. This would go a long way towards improving the Subjects' contradictions and ambivalence experienced between face-to-face learning as a preference and improving their perceptions of online learning while perceiving the ITS as a digital tutor.

### 6.6.2 Recommendations for the institution

- To improve on this research for the future, the researcher suggests that a digital literacy pre-test also be conducted with its own benchmark. The overall perception of the ITS was extremely good. This was despite various contradictions and tensions experienced in the Activity System. Institutions and lecturers often assume that the biggest challenge for students will be access to devices and the internet. While this could still be the case in some situations, this research has shown that when it comes to devices and the internet, the biggest need was for the students to be digitally literate.
- The perception of an ITS successfully mimicking a human tutor will require further time and research. What the institution and further research needs to focus on is improving the user experience to such a point that the lack of human presence goes unnoticed. Instead, the users of the ITS should be supported to such an extent that this “presence” that the participants have referred to is not defined as human. The students using the ITS perceived themselves to be highly motivated to use the ITS. Could the driving forces behind the students’ motivation be linked to this improved user experience, along with improved feedback and communication from lecturers and tutors, leading to the ITS being viewed as successfully mimicking a human tutor (or improving performance)?
- Finally, the importance of community in the Activity System was highlighted in this research. What became clear was that the students preferred to ask friends or classmates for help first, before turning to a lecturer or tutor. The students felt that they did not get to see their lecturer or tutor often enough, and the time taken to get back to them was too long. What the institution and further research could do is consider ways in which to improve communication when using the ITS, perhaps by relying more on the messages, discussions, and chat functions of the ITS. In this way, questions posed to the lecturers could potentially be answered by more knowledgeable students in the class, and corroborated by others, if the lecturer is unable to get back to the student fast enough. This community engagement within the ITS could assist in allowing it to mimic a human tutor more successfully too.

### 6.7 Concluding thoughts and reflections

The research journey often elicits more questions than answers and can often seem like a journey with no certain destination. The author hopes that this dissertation clearly demonstrates the practical steps that were taken in a real-world scenario of incorporating an English language proficiency ITS into an Activity System. Where this study adds value to current ITS research is through its novel approach of analysing and investigating the



participants' perceptions of the ITS introduced for English language practice as a digital tutor, and not the effectiveness of an ITS, as many other studies have done.

AT proved to be a useful framework to engage with in this research as a lens to observe the complexities of moving from primarily face-to-face teaching methods, to online methods using an ITS. Considering the social, cultural, and historical aspects and perspectives of the Activity System added a deeper layer of understanding to the research findings and a holistic perspective with regard to the use of an ITS in an Activity System contained by CHAT, as the research could have gone in many diverse directions. CHAT further proved to be an effective framework to use when coding interviews, by using the CHAT nodes as predetermined categories with which to identify related themes and patterns. This certainly assisted the researcher to stay focused on the main research question and sub-questions.

Finally, conducting research during a global pandemic proved to be a limitation in many ways, but extremely rewarding in others. What the pandemic did was to allow for problem areas in our institutions teaching practices to be exposed. Many universities were not fully equipped to make the move from a primarily face-to-face teaching environment to a more online teaching environment, therefore proving to be a valuable learning curve. Based on the findings of this research, many areas of further research were identified which could improve on this.

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## Appendices

### Appendix A – Ethics Certificate



***For office use only	
Date submitted	
Meeting date	
Approval	P/Y/N
Ethical Clearance number	EFEC 2-11/2019

#### FACULTY OF EDUCATION

#### RESEARCH ETHICS CLEARANCE CERTIFICATE

This certificate is issued by the Education Faculty Ethics Committee (EFEC) at Cape Peninsula University of Technology to the applicant/s whose details appear below.

#### 1. Applicant and project details (Applicant to complete this section of the certificate and submit with application as a Word document)

Name(s) of applicant(s):	Derek Andrew Ballantyne		
Project/study Title:	The use of an intelligent tutoring system in the improvement of pre-service teachers' English Language proficiency		
Is this a staff research project, i.e. not for degree purposes?	N/A		
If for degree purposes the degree is indicated:	M.Ed		
If for degree purposes, the proposal has been approved by the FRC	Yes		
Funding sources:	N/A		

#### 2. Remarks by Education Faculty Ethics Committee:

Ethics clearance valid until 31 <sup>st</sup> December 2023.		
Approved: X	Referred back:	Approved subject to adaptations:
Chairperson Name: Dr Candice Livingston		Date: 18/11/2019
Chairperson Signature:		
Approval Certificate/Reference: EFEC 2-11/2019		

## Appendix B – Student consent form



### Consent Form to be completed by participants:

Faculty of Education Ethics informed consent form

### CONSENT TO PARTICIPATE IN A RESEARCH STUDY

#### Category of Participants (tick as appropriate):

Students	<input type="checkbox"/>
----------	--------------------------

You are kindly invited to participate in a research study being conducted by **Derek Ballantyne** from the Cape Peninsula University of Technology. The findings of this study will contribute towards (tick as appropriate):

A Master's thesis	<input checked="" type="checkbox"/>	A published report	<input checked="" type="checkbox"/>
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#### Selection criteria

You were selected as a possible participant in this study because:

**You are a first-year pre-service teacher studying English, to go on to teach English as a first language once you have completed your studies.**

The information below gives details about the study to help you decide whether you would want to participate.

#### Title of the research:

**THE USE OF AN INTELLIGENT TUTORING SYSTEM IN THE IMPROVEMENT OF PRE-SERVICE TEACHERS' ENGLISH LANGUAGE PROFICIENCY**

#### A brief explanation of what the research involves:

**The central overarching research question in this study is:**

**How can an intelligent tutoring system be used to improve first year pre-service teachers' English language proficiency?**

**In order to answer this question, the following sub-questions have been posed:**

- **What are students' perceptions of the intelligent tutoring system as a mediating tool when used to improve English language proficiency?**
- **What are lecturers' perceptions of the intelligent tutoring system as a mediating tool when used to improve English language proficiency?**
- **Does the use of the intelligent tutoring system mimic one-on-one human tutoring when used as a mediating tool to improve English language proficiency?**

**The Aim/objective of the study:**

- **The main aim of this study is to determine how the use of an intelligent tutoring system can improve first year pre-service teachers' English language proficiency.**
- **The sub-aims of this study will be to determine the perceptions of the pre-service teachers on their use of the intelligent tutoring system as a mediating tool to improve English language proficiency, as well as the perceptions of the lecturers involved in teaching the module.**
- **The final sub-aim of this study is to determine if the intelligent tutoring system is able to mimic one-on-one human tutoring within the context of pre-service teachers.**

#### Why is this research important?

**The language proficiency of university students is a contentious issue in South Africa at the moment because many students are not studying in their home language and are required to**

be academically proficient in a language that is not their own. This issue takes on another dimension, when pre-service teachers who are studying to become English Home Language teachers, are often not English mother tongue speakers. Even though these pre-service teachers will eventually go on to teach English as a Home language, I have noticed that these students do battle with a variety of language issues, not only with grammar issues, but with pronunciation and fluency.

A growing challenge for lecturers is trying to find a way to support the ever-increasing language needs of the students in their classrooms. One solution that has been proposed to deal with this problem is the introduction of intelligent tutoring systems, not only to deal with the increased numbers at university level, but also in order to improve the language proficiencies of the students.

#### Benefits of research

Potential benefits could include:

- An improvement in first year pre-service teachers' English language proficiency.
- Students positively perceiving the use of the intelligent tutoring system as a mediating tool when used to improve English language proficiency.
- Lecturers positively perceiving the use of the intelligent tutoring system as a mediating tool when used to improve English language proficiency.
- The use of the intelligent tutoring system being able to mimic one-on-one human tutoring when used as a mediating tool to improve English language proficiency.

#### Incentives

No incentives will be offered. The only incentive will be improved English language proficiency, should the intelligent tutoring system prove to be effective.

#### Procedures (duration)

Participants will be recruited at the beginning of their first semester to take part in the study. Participants will do a pre-test, so as to determine their current level of English language proficiency. Once their level of proficiency is determined, they will be given access to an Online Skills Program for General English. Participants will follow the programme for approx. 3 months, following which they will do a post-test. Data analytics will be gathered continuously while they are using the programme. After the online skills programme, participants will do a post-test. Participants and lecturers will be surveyed, and if necessary, further interviews will be conducted.

#### Right to withdraw/ voluntary

Participants need to complete a consent form, giving their consent to take part in the research. Participants fully understand that participating in this research is voluntary and that they have the right to withdraw at any point of the research process.

#### Confidentiality and anonymity

Participants are advised that the research and the results of this research will be strictly confidential; and that no harm will come to them as a result of this research being done. Participants will be given pseudonyms (i.e.: Student A, Student B, etc.) The participants will work independently, and results of tests and data gathered will be kept anonymous sawto ensure confidentiality. This research will also comply with the universities Ethical Guidelines for Researchers in that it will adhere to best practice, protect the integrity of the University, and protect the rights of all participants and fellow researchers. The researcher will also acknowledge any research bias that exists and will sign a declaration stating any conflict of interest that may arise.

#### Potential risks, discomforts or inconveniences

There are no perceived risks, discomforts or inconveniences.

The only potential risk envisaged may be the dignity of the participants who do not improve, but the study will be completely anonymous to mitigate this. Participants will be advised before the study that there is a possibility of there being no improvement, so that they are made aware before the time.

If students feel the need to withdraw for whatever reason, they will be allowed to do so without any pressure to continue.

What will happen to the data when the study is completed?

There are four possible outcomes of this research. The research could show that Intelligent Tutoring Platforms “DO” improve English language proficiency, or “DO NOT” improve English language proficiency, or “HAVE NO EFFECT ON” English Language proficiency, or the research could prove to be inconclusive and require further research. The researcher’s findings will also be used in their M.Ed thesis and in an article which will be published. There is a possibility that the finding of this research may presented at a conference.

Kindly complete the table below before participating in the research.

Tick the appropriate column		
Statement	Yes	No
1. I understand the purpose of the research.	*	
2. I understand what the research requires of me.	*	
3. I volunteer to take part in the research.	*	
4. I know that I can withdraw at any time.	*	
5. I understand that there will not be any form of discrimination against me as a result of my participation or non-participation.	*	
6. Comment:		*

Please sign the consent form. You will be given a copy of this form on request.

Signature of participant	Date

#### Researchers

	Name:	Surname:	Contact details:
1.	Derek	Ballantyne	<a href="mailto:derek.ballantyne1978@gmail.com">derek.ballantyne1978@gmail.com</a>

Contact person:	
Contact number:	Email:

## Appendix C – English proficiency test: Listening and Grammar

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### Oxford Placement Test 1 Listening Test

Name .....	
Total Listening .....	/ 100
Total Grammar .....	/ 100
Grand Total .....	/ 200

Look at the example below. Listen to the tape. You will hear the example *once* only. Decide which word you hear, 'soap', or 'soup'.

- a Will you get me some  soap  soup at the supermarket?

The word was 'soup', so 'soup' is ticked. Now look at these examples, and listen to the tape again. This time, you tick the words you hear. For example, if you hear 'shorts', tick 'shorts'.

- b The team need new  shirts  shorts .  
c They've recently developed a new kind of  vine  wine around here.

The words on the tape were 'shorts' and 'vine', so the correct answers look like this:

- b The team need new  shirts  shorts .  
c They've recently developed a new kind of  vine  wine around here.

Now the test will begin. Listen to the tape and tick (✓) the words you hear.

- |    |  |    |       |
|----|--|----|-------|
| 1  | I gather you've been having trouble with your <b>earring hearing</b> .                               | 1  | _____ |
| 2  | A number of students are expected to join the advanced <b>composition conversation</b> class.        | 2  | _____ |
| 3  | This beard of mine is awfully itchy. I'll be glad when it <b>goes grows</b> .                        | 3  | _____ |
| 4  | I doubt if he's very comfortable in his <b>present prison</b> bed.                                   | 4  | _____ |
| 5  | Have you played <b>Dennis tennis</b> very much recently?   | 5  | _____ |
| 6  | Martina lives in a great big <b>freezing Friesian</b> barn.  | 6  | _____ |
| 7  | Do you have any idea how long ago it was <b>found founded</b> ?                                      | 7  | _____ |
| 8  | Your letter must have crossed with <b>my own mine</b> .  | 8  | _____ |
| 9  | One thing I really <b>loved loathed</b> in the late nineties was the style of the clothes.           | 9  | _____ |
| 10 | My sister says <b>he's she's</b> a very nice person.   | 10 | _____ |
| 11 | That Dutch friend of mine you met yesterday is a very good <b>chess jazz</b> player.                 | 11 | _____ |
| 12 | That's the Euro equivalent of <b>30p 40p</b> .   | 12 | _____ |
| 13 | Do we need to change the <b>cloths clocks</b> tonight?   | 13 | _____ |
| 14 | Today's a <b>holiday horrid day</b> , isn't it?  | 14 | _____ |
| 15 | Well, I wonder what <b>joys choice</b> they have in store for us this time.                          | 15 | _____ |
| 16 | Only 30% of those sampled <b>can can't</b> tell the difference between margarine and butter.         | 16 | _____ |
| 17 | I can't really say if I like jazz or not; <b>sometimes some kinds</b> I do.                          | 17 | _____ |
| 18 | She's been quite <b>tearful cheerful</b> the last couple of weeks.                                   | 18 | _____ |
| 19 | Williams now seems unlikely to <b>regain retain</b> her title.                                       | 19 | _____ |
| 20 | I think it's <b>Dave Steve</b> on the phone.   | 20 | _____ |
| 21 | <b>Why Where</b> are you going to live in London?  | 21 | _____ |
| 22 | It is recommended that dyslexic students follow a remedial <b>reading writing</b> option.            | 22 | _____ |
| 23 | Do you have any idea where my <b>class glass</b> is?   | 23 | _____ |
| 24 | It was only later we found out he wasn't <b>injured insured</b> .                                    | 24 | _____ |
| 25 | I <b>can see consent</b> to it if it has to be done.   | 25 | _____ |
| 26 | I see the <b>peaches pictures</b> are starting to go yellow.   | 26 | _____ |
| 27 | If it hadn't been for him they <b>couldn't wouldn't</b> have done it.                                | 27 | _____ |
| 28 | Have you got any more of this <b>blended splendid</b> butter?  | 28 | _____ |
| 29 | I don't think the management side took any <b>notes notice</b> .                                     | 29 | _____ |
| 30 | At the end of this test the papers will be <b>corrected collected</b> by the investigators.          | 30 | _____ |
| 31 | If you have any problems, please contact the British <b>Council Consul</b> immediately.              | 31 | _____ |
| 32 | During his holidays he spends most of his time at the Lotus test track <b>watching washing</b> cars. | 32 | _____ |
| 33 | Liverpool were <b>really rarely</b> dangerous in the first half.                                     | 33 | _____ |
| 34 | Mind you don't tread on the <b>glass grass</b> .   | 34 | _____ |
| 35 | You've got a <b>lash rash</b> just under your eye.   | 35 | _____ |

subtotal	/35
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- 36 Do you think you could **take talk** us through the next bit of the film? 36 \_\_\_\_\_
- 37 How many **tests texts** are we going to need to get all the data we want? 37 \_\_\_\_\_
- 38 There's a fishery somewhere round here where they **hatch catch** trout by the thousand. 38 \_\_\_\_\_
- 39 Are you going to **Penny's Benny's** tonight? 39 \_\_\_\_\_
- 40 Do you think we could have **two minibuses too many buses** for the summer courses? 40 \_\_\_\_\_
- 41 Do you think Rick's place is still **buyable viable** ? 41 \_\_\_\_\_
- 42 We've gone through **today's two days'** money in less than an hour. 42 \_\_\_\_\_
- 43 **I reckon Eric and** I need a good holiday. 43 \_\_\_\_\_
- 44 This horse will have to be **shod shot** immediately. 44 \_\_\_\_\_
- 45 Can you get me some **sealing tape ceiling paint** when you're in town? 45 \_\_\_\_\_
- 46 Even if he leaves the country he won't be safe from **persecution prosecution** . 46 \_\_\_\_\_
- 47 Since the accident the only thing he can do is **menial manual** work. 47 \_\_\_\_\_
- 48 She's very much the **'committee' 'committed'** type. 48 \_\_\_\_\_
- 49 You can get quite a **view few** from up here. 49 \_\_\_\_\_
- 50 What can we do with this **lot slot** to make the timetable work? 50 \_\_\_\_\_
- 51 Keane was **cheered chaired** off at the end of the match. 51 \_\_\_\_\_
- 52 The future of the party now seems to depend on **delegate delicate** decisions to be worked out at local level. 52 \_\_\_\_\_
- 53 Have you done much **riding writing** recently? 53 \_\_\_\_\_
- 54 We've all been **heartened hardened** by recent events. 54 \_\_\_\_\_
- 55 What we have here is essentially a **fiscal physical** problem. 55 \_\_\_\_\_
- 56 Make sure you keep the ropes **tied tight** . 56 \_\_\_\_\_
- 57 I think they **set sat** the exam last week. 57 \_\_\_\_\_
- 58 You'll need a **mass of massive** cheese to make a fondue for that many people. 58 \_\_\_\_\_
- 59 I can't really advise you without knowing the type of **context contacts** you're presupposing. 59 \_\_\_\_\_
- 60 The visit went ahead in **defence defiance** of the government's views. 60 \_\_\_\_\_
- 61 I thought his behaviour was **unexceptional unexceptionable** . 61 \_\_\_\_\_
- 62 Look at the **clouds crowds** over there. 62 \_\_\_\_\_
- 63 Her ambition is to become a **belly ballet** dancer. 63 \_\_\_\_\_
- 64 Did you get a chance to **try dry** it out? 64 \_\_\_\_\_
- 65 If you look very carefully you can see there used to be a **cabinet cabin up** there. 65 \_\_\_\_\_
- 66 Recent EU regulations have been disastrous for British fish **stocks docks** . 66 \_\_\_\_\_
- 67 Pollution is a real threat to the North American **basin bison** . 67 \_\_\_\_\_
- 68 Have you had an invitation to the **lunch launch** ? 68 \_\_\_\_\_
- 69 Do you know if she's **Finnish finished** ? 69 \_\_\_\_\_
- 70 Yorkshire and Wales are both famous for their pony **trials trails** . 70 \_\_\_\_\_

subtotal	/35
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- |     |   |     |       |
|-----|---|-----|-------|
| 71  | We just didn't think he'd be <b>armed</b> <b>harmed</b> .   | 71  | _____ |
| 72  | I'm not feeling so <b>ill</b> <b>well</b> today.  | 72  | _____ |
| 73  | They are <b>old</b> <b>all</b> things they've grown out of, so you can take them for the jumble sale.               | 73  | _____ |
| 74  | My brother-in-law left <b>Euston</b> <b>Houston</b> early this morning, so he should get here tonight.              | 74  | _____ |
| 75  | The profitability of North Sea oil rigs is very dependent on the quality of the <b>crude</b> <b>crew</b> they find. | 75  | _____ |
| 76  | You can buy logs by the <b>barrow-</b> <b>barrel-</b> load at the local timber works.                               | 76  | _____ |
| 77  | I hear you've got a new <b>rival</b> <b>arrival</b> .   | 77  | _____ |
| 78  | Who was responsible for sending the <b>infantry</b> <b>inventory</b> ?  | 78  | _____ |
| 79  | We'll be letting them have a <b>newer system</b> <b>new assistant</b> if they want one.                             | 79  | _____ |
| 80  | He works for a company called <b>JMB</b> <b>J &amp; B</b> .   | 80  | _____ |
| 81  | Have you read the latest book on Watergate by <b>HA</b> <b>AJ</b> Haldeman?   | 81  | _____ |
| 82  | Some motels now have <b>hair-dryers</b> <b>air-dryers</b> in the cloakrooms.  | 82  | _____ |
| 83  | Recent legislation makes it imperative that <b>we men</b> <b>women</b> work together to help each other.            | 83  | _____ |
| 84  | The Social Services try to ensure that children who need them get <b>free</b> <b>three</b> meals every day.         | 84  | _____ |
| 85  | It's Richard's <b>birthday</b> <b>bath day</b> on Sunday, so he'll have to do it on Monday.                         | 85  | _____ |
| 86  | I gather their child is <b>autistic</b> <b>artistic</b> .   | 86  | _____ |
| 87  | She was terribly <b>scared</b> <b>scarred</b> as a result of the accident.  | 87  | _____ |
| 88  | This year Britain's top <b>oarsman rowed</b> <b>horseman rode</b> to his third world title.                         | 88  | _____ |
| 89  | He's an <b>eternal</b> <b>internal</b> student.   | 89  | _____ |
| 90  | At Silverstone Wildlife Park they've got an <b>Andean</b> <b>Indian</b> buffalo.                                    | 90  | _____ |
| 91  | In England all <b>rod</b> <b>road</b> users must have a licence.  | 91  | _____ |
| 92  | I'd like you to be responsible for the <b>personal</b> <b>personnel</b> side of the deal.                           | 92  | _____ |
| 93  | <b>He and</b> <b>Ian</b> Woosnam could well turn the tables next week.  | 93  | _____ |
| 94  | Who's going to propose the <b>loyal</b> <b>royal</b> toast?   | 94  | _____ |
| 95  | England would never have scored if it hadn't been for that <b>free</b> <b>freak</b> kick by Beckham.                | 95  | _____ |
| 96  | Such measures have never previously been taken in the absence of a <b>president</b> <b>precedent</b> .              | 96  | _____ |
| 97  | When I saw the <b>train</b> <b>terrain</b> I realized I would never catch him.                                      | 97  | _____ |
| 98  | We haven't had any more news <b>today</b> <b>to date</b> .  | 98  | _____ |
| 99  | It's hard not to lose <b>face</b> <b>faith</b> in a situation like that.  | 99  | _____ |
| 100 | I've just heard that these tests have been <b>pirated</b> <b>piloted</b> in Japan.                                  | 100 | _____ |

subtotal	/30
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# Oxford Placement Test 1

## Grammar Test PART 1

Name .....	
Total Listening .....	/ 100
Total Grammar .....	/ 100
Grand Total .....	/ 200

Look at these examples. The correct answer is ticked.

- a In warm climates people  like  likes  are liking sitting outside in the sun.
- b If it is very hot, they sit  at  under the shade.

Now the test will begin. Tick the correct answers.

- |   |          |
|---|----------|
| 1 Water <input type="checkbox"/> is to boil <input type="checkbox"/> is boiling <input checked="" type="checkbox"/> boils at a temperature of 100°C.  | 1 _____  |
| 2 In some countries <input type="checkbox"/> there is <input type="checkbox"/> is <input checked="" type="checkbox"/> it is very hot all the time.  | 2 _____  |
| 3 In cold countries people wear thick clothes <input type="checkbox"/> for keeping <input type="checkbox"/> to keep <input checked="" type="checkbox"/> for to keep warm.                   | 3 _____  |
| 4 In England people are always talking about <input type="checkbox"/> a weather <input type="checkbox"/> the weather <input checked="" type="checkbox"/> weather.                           | 4 _____  |
| 5 In some places <input type="checkbox"/> it rains <input type="checkbox"/> there rains <input checked="" type="checkbox"/> it raining almost every day.                                    | 5 _____  |
| 6 In deserts there isn't <input type="checkbox"/> the <input type="checkbox"/> some <input checked="" type="checkbox"/> any grass.  | 6 _____  |
| 7 Places near the Equator have <input type="checkbox"/> a warm <input type="checkbox"/> the warm <input checked="" type="checkbox"/> warm weather even in the cold season.                  | 7 _____  |
| 8 In England <input type="checkbox"/> coldest <input type="checkbox"/> the coldest <input checked="" type="checkbox"/> colder time of year is usually from December to February.            | 8 _____  |
| 9 <input type="checkbox"/> The most <input type="checkbox"/> Most of <input checked="" type="checkbox"/> Most people don't know what it's really like in other countries.                   | 9 _____  |
| 10 Very <input type="checkbox"/> less <input type="checkbox"/> little <input checked="" type="checkbox"/> few people can travel abroad.   | 10 _____ |
| 11 Mohammed Ali <input type="checkbox"/> has won <input type="checkbox"/> won <input checked="" type="checkbox"/> is winning his first world title fight in 1960.                           | 11 _____ |
| 12 After he <input type="checkbox"/> had won <input type="checkbox"/> have won <input checked="" type="checkbox"/> was winning an Olympic gold medal he became a professional boxer.        | 12 _____ |
| 13 His religious beliefs <input type="checkbox"/> have made him <input type="checkbox"/> made him to <input checked="" type="checkbox"/> made him change his name when he became champion.  | 13 _____ |
| 14 If he <input type="checkbox"/> has <input type="checkbox"/> would have <input checked="" type="checkbox"/> had lost his first fight with Sonny Liston, no one would have been surprised. | 14 _____ |
| 15 He has travelled a lot <input type="checkbox"/> both <input type="checkbox"/> and <input checked="" type="checkbox"/> or as a boxer and as a world-famous personality.                   | 15 _____ |

subtotal /15

- 16 He is very well known **all in** **all over** **in all** the world.
- 17 Many people **is believing** **are believing** **believe** he was the greatest boxer of all time.
- 18 To be the best **from** **in** **of** the world is not easy.
- 19 Like any top sportsman Ali **had to** **must** **should** train very hard.
- 20 Such is his fame that people **would** **will** **did** always remember him as a champion.

The history of **aeroplane** **the aeroplane** **an aeroplane** is **quite a** **a quite** **quite** short one. For many centuries men **are trying** **try** **had tried** to fly, but with **little** **few** **a little** success. In the 19th century a few people succeeded **to fly** **in flying** **into flying** in balloons. But it wasn't until the beginning of the **this** **near** **last** century that anybody **were** **is** **was** able to fly in a machine **who** **which** **what** was heavier than air, in other words, in **who** **which** **what** we now call a 'plane'. The first people to achieve 'powered flight' were the Wright brothers. **His** **Their** **Theirs** was the machine which was the forerunner of the jumbo jets that are **such** **such a** **so** common sight today. They **could** **should** **couldn't** hardly have imagined that in 1969, **not much** **not many** **no much** more than half a century later, a man **will be** **had been** **would be** walking on the moon. Already **a man** **man** **the man** is taking the first steps towards the stars. Space satellites have now existed **since** **during** **for** more than half a century and we are dependent **from** **of** **on** them for all kinds of **informations** **information** **an information**. Not only **are they** **they are** **there are** being used for scientific research in space, but also to see what kind of weather **is coming** **comes** **coming**. By 2018 there **would** **must** **will** have been satellites in space for sixty years and the 'space superpowers' will have **had** **made** **let** massive space stations built. When these **will be** **are** **will have been** completed it will be the first time **when** **where** **that** astronauts will be able to work in space in large numbers. **Apart** **For** **Except** all that, in many ways the most remarkable flight **of** **above** **at** all was **it** **that** **that one** of the flying bicycle, which the world saw on television, **flying** **to fly** **fly** across the Channel from England to France, with nothing **apart** **but** **than** a man to power it. As the bicycle-flyer said, 'It's the first time **I realize** **I've realized** **I am realizing** what hard work it is to be a bird!'

- 16 \_\_\_\_\_
- 17 \_\_\_\_\_
- 18 \_\_\_\_\_
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- 47 \_\_\_\_\_
- 48 \_\_\_\_\_
- 49 \_\_\_\_\_
- 50 \_\_\_\_\_

subtotal /35

## Grammar Test PART 2

- 51 Many teachers **say to say tell** their students should learn a foreign language. 51 \_\_\_\_\_
- 52 Learning a second language is not the same **as like than** learning a first language. 52 \_\_\_\_\_
- 53 It takes **long time long a long time** to learn any language. 53 \_\_\_\_\_
- 54 It is said that Chinese is perhaps the world's **harder hardest more hard** language to master. 54 \_\_\_\_\_
- 55 English is quite difficult because of all the exceptions **who which what** have to be learnt. 55 \_\_\_\_\_
- 56 You can learn the basic structures of a language quite quickly, but only if you  
**are wanting will to are willing to** make an effort. 56 \_\_\_\_\_
- 57 A lot of people aren't used **to the study to study to studying** grammar in their own language. 57 \_\_\_\_\_
- 58 Many adult students of English wish they **would start would have started had started**  
their language studies earlier. 58 \_\_\_\_\_
- 59 In some countries students have to spend a lot of time working **on by in** their own. 59 \_\_\_\_\_
- 60 There aren't **no any some** easy ways of learning a foreign language in your own country. 60 \_\_\_\_\_
- 61 Some people try to improve their English by **hearing listening listening to** the BBC World Service. 61 \_\_\_\_\_
- 62 **Live Life Living** with a foreign family can be a good way to learn a language. 62 \_\_\_\_\_
- 63 It's no use **to try trying in trying** to learn a language just by studying a dictionary. 63 \_\_\_\_\_
- 64 Many students of English **would rather not would rather prefer not would rather not to** take tests. 64 \_\_\_\_\_
- 65 Some people think it's time we all **learn should learn learnt** a single international language. 65 \_\_\_\_\_
- Charles Walker is a teacher at a comprehensive school in Norwich. He **has joined joined joins** 66 \_\_\_\_\_  
the staff of the school in 1998 and **has been working worked works** there ever since. 67 \_\_\_\_\_  
Before **move to move moving** to Norwich, he taught in Italy and in Wales, 68 \_\_\_\_\_  
and before that he **has been was was being** a student at Cambridge 69 \_\_\_\_\_  
University. So far he **isn't wasn't hasn't been** in Norwich for as long 70 \_\_\_\_\_  
as he was in Wales, but he likes the city a lot and **should would could** 71 \_\_\_\_\_  
like to stay there for at least another two years, or, **how which as** he 72 \_\_\_\_\_  
puts it, until his two children **have will have will be** grown up a bit. 73 \_\_\_\_\_  
He met his wife, Kate, in 1992 while he **was to live was living had been living** 74 \_\_\_\_\_  
abroad for a while, and they got married in 1996.  
Their two children, Mark and Susan, **are were have been** both born in Norwich. 75 \_\_\_\_\_

subtotal	/25
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## Grammar Test PART 2

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- 56 You can learn the basic structures of a language quite quickly, but only if you **are wanting will to are willing to** make an effort. 56 \_\_\_\_\_
- 57 A lot of people aren't used **to the study to study to studying** grammar in their own language. 57 \_\_\_\_\_
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- 59 In some countries students have to spend a lot of time working **on by in** their own. 59 \_\_\_\_\_
- 60 There aren't **no any some** easy ways of learning a foreign language in your own country. 60 \_\_\_\_\_
- 61 Some people try to improve their English by **hearing listening listening to** the BBC World Service. 61 \_\_\_\_\_
- 62 **Live Life Living** with a foreign family can be a good way to learn a language. 62 \_\_\_\_\_
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- Charles Walker is a teacher at a comprehensive school in Norwich. He **has joined joined joins** the staff of the school in 1998 and **has been working worked works** there ever since. 66 \_\_\_\_\_
- Before **move to move moving** to Norwich, he taught in Italy and in Wales, 67 \_\_\_\_\_
- and before that he **has been was was being** a student at Cambridge 68 \_\_\_\_\_
- University. So far he **isn't wasn't hasn't been** in Norwich for as long 69 \_\_\_\_\_
- as he was in Wales, but he likes the city a lot and **should would could** 70 \_\_\_\_\_
- like to stay there for at least another two years, or, **how which as** he 71 \_\_\_\_\_
- puts it, until his two children **have will have will be** grown up a bit. 72 \_\_\_\_\_
- He met his wife, Kate, in 1992 while he **was to live was living had been living** 73 \_\_\_\_\_
- abroad for a while, and they got married in 1996. 74 \_\_\_\_\_
- Their two children, Mark and Susan, **are were have been** both born in Norwich. 75 \_\_\_\_\_

subtotal /25

The Walkers' boy, **who which he** is five, has just started at school, but **his their her** sister **shall stay stays will be staying** at home for another couple of years, because she is nearly two years **younger more young the younger** than him. Charles and Kate Walker **are used use used** to live in the country, but now that they have children, they **have moved move moved** into the city. Charles wanted a house **next near close** the school **in order for to** get to work easily. Unfortunately **the a that** one the two of them really wanted was too expensive, so they **must should had to** buy one a bit further away. By the time the children **go will go will have gone** to secondary school, **that which what** Charles and Kate hope will be in Norwich, the Walkers **will have been have been will be** living there for at least fifteen years. They can't be sure if they **stay do stay will stay**, but if they **don't didn't won't**, their friends won't be too surprised.

76 \_\_\_\_\_  
77 \_\_\_\_\_  
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83 \_\_\_\_\_  
84 \_\_\_\_\_  
85 \_\_\_\_\_  
86 \_\_\_\_\_  
87 \_\_\_\_\_  
88 \_\_\_\_\_  
89 \_\_\_\_\_  
90 \_\_\_\_\_

Look at the following examples of question tags in English. The correct form of the tag is ticked.

- a He's getting the 9.15 train, **isn't he**  **hasn't he**  **wasn't he**  ?  
 b She works in a library, **isn't she**  **doesn't she**  **doesn't he**  ?  
 c Tom didn't tell you, **hasn't he**  **didn't he**  **did he**  ?  
 d Someone's forgotten to switch off the gas, **didn't one**  **didn't they**  **haven't they**  ?

Look at the following examples of question tags in English. The correct form of the tag is ticked.

- a He's getting the 9.15 train,  isn't he  hasn't he  wasn't he ?
- b She works in a library,  isn't she  doesn't she  doesn't he ?
- c Tom didn't tell you,  hasn't he  didn't he  did he ?
- d Someone's forgotten to switch off the gas,  didn't one  didn't they  haven't they ?

Now tick the correct question tag in the following 10 items:

- |     |  |     |       |
|-----|--|-----|-------|
| 91  | John's coming to see you, <input type="checkbox"/> hasn't he <input type="checkbox"/> wasn't he <input type="checkbox"/> isn't he ?                                | 91  | _____ |
| 92  | It's been a long time since you've seen him, <input type="checkbox"/> hasn't it <input type="checkbox"/> isn't it <input type="checkbox"/> haven't you ?           | 92  | _____ |
| 93  | He's due to arrive tomorrow, <input type="checkbox"/> won't he <input type="checkbox"/> isn't he <input type="checkbox"/> will he ?                                | 93  | _____ |
| 94  | He won't be getting in till about 10.30, <input type="checkbox"/> isn't he <input type="checkbox"/> is he <input type="checkbox"/> will he ?                       | 94  | _____ |
| 95  | You met him while you were on holiday, <input type="checkbox"/> didn't you <input type="checkbox"/> weren't you <input type="checkbox"/> haven't you ?             | 95  | _____ |
| 96  | I think I'm expected to pick him up, <input type="checkbox"/> aren't I <input type="checkbox"/> don't I <input type="checkbox"/> are you ?                         | 96  | _____ |
| 97  | No doubt you'd rather he stayed in England now, <input type="checkbox"/> didn't you <input type="checkbox"/> wouldn't you <input type="checkbox"/> shouldn't you ? | 97  | _____ |
| 98  | Nobody else has been told he's coming, <input type="checkbox"/> is he <input type="checkbox"/> has he <input type="checkbox"/> have they ?                         | 98  | _____ |
| 99  | We'd better not stay up too late tonight, <input type="checkbox"/> didn't we <input type="checkbox"/> have we <input type="checkbox"/> had we ?                    | 99  | _____ |
| 100 | I suppose it's time we called it a day, <input type="checkbox"/> didn't we <input type="checkbox"/> isn't it <input type="checkbox"/> don't ?                      | 100 | _____ |

subtotal /25

## **Appendix D: Student Survey**

### **Section 1:**

Dear Student

Thank you for participating in this survey.

The survey consists out of 8 sections and should take you no longer than 10 minutes to complete it.

As you are aware, you have been using an Online English Proficiency Platform for three months in your English class. The aim of this survey is to investigate your experiences and perceptions after having used the platform.

Your responses are important, for me to gather enough data about your unique perceptions and experiences. Please be as honest and open as you can with your responses. This survey will be kept anonymous and confidential.

Thank you in advance.

Mr. Derek Ballantyne.

### **Conditions:**

- This online survey is being conducted for research purposes.
- The data resulting from this anonymous survey will be used in the master's research of Mr. Derek Ballantyne.
- You cannot be identified by your survey responses. Your responses to this survey are collected anonymously.
- Any personal data will be made anonymous.
- The online survey involves questions about your IT experiences and perceptions after having used an Online English Proficiency Platform.
- Beyond demographics, all questions will address the use of the Online English Proficiency Platform.
- If you participate in this survey, it will not affect your university status in any way.
- If you choose, you may stop your participation at any time.

Email address: \_\_\_\_\_



**(Only tick one block for every question below.)**

**Section 2 – Subject**

1. My current academic year is:

First year	
Second year	
Third year	
Fourth year	
Post-graduate	

2. I belong to the following ethnic group:

Black	
Coloured	
Indian	
White	
Other	

3. The language that I speak at home is:

Afrikaans	
English	
Ndebele	
Northern Sotho	
Sotho	
Swazi	
Tswana	
Tsonga	
Venda	
Xhosa	
Zulu	
Other	

4. The language that I speak to my friends is:

Afrikaans	
English	
Ndebele	
Northern Sotho	
Sotho	
Swazi	
Tswana	
Tsonga	
Venda	
Xhosa	
Zulu	
Other	

5. I consider my English language to be proficient:

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

### **Section 3 – Tool**

6. My technology experience at home can be considered the same as or better than my technology experience on campus:

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

7. I can easily access a device to use at home for my online learning:

Strongly Agree	
Agree	
Undecided	

Disagree	
Strongly Disagree	

8. My internet access at home is the same as or better compared to my internet access on campus:

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

9. It was easy for me to access the Online English Proficiency Platform to complete the online learning:

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

#### **Section 4 – Object**

10. The parts of the English language covered by the Online English Proficiency Platform helped me to develop my English proficiency:

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

11. I was motivated to work on the Online English Proficiency Platform:

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

12. I understood the reason for my needing to work on the Online English Proficiency Platform:

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

13. It was important for me to complete the work on the Online English Proficiency Platform:

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

### **Section 5 – Rules**

14. I have a clear understanding of whom I need to turn to for help in a face-to- face classroom environment, when I do not understand something:

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

15. I had a clear understanding of whom I should contact when I needed to understand something about the Online English Proficiency Platform:

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

16. I am encouraged by my lecturers to use devices such as laptops, tablets, or smart phones in my face-to-face classroom environments:

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

17. I was able to access the Online English Proficiency Platform as often as I needed to, to complete the online learning:

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

### **Section 6 – Community**

18 I prefer learning in an online environment compared to a face-to-face classroom environment:

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

19. I experienced the Online English Proficiency Platform to be better than face-to-face classroom teaching:

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

20. The technology available to me at home allows me to study online easily:

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

21. It was a challenge for me to complete the work in the Online English Proficiency Platform:

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

### **Section 7 – Division of Labour**

22. My university assists me with the necessary tools/devices to achieve academic success:

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

23. I frequently get the chance to spend one-on-one time with my lecturer:

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

24. I frequently get the chance to spend one-on-one time with a tutor:

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

### **Section 8 – Outcome**

25. I feel that the Online English Proficiency Platform was the right tool to use to develop my English language proficiency:

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

26. I am satisfied that the Online English Proficiency Platform assisted me to develop my English proficiency:

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

27. I am satisfied that the university assists me with the necessary technology I need to achieve my desired academic outcomes:

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

28. I would use a similar platform to the Online English Proficiency Platform if I got the chance to:

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	



## **Appendix E – Semi-structured interview script**

**Title:** The implementation of an ITS in an undergraduate teaching programme: An Activity Theory perspective.

**Date:**

**Time:**

**Place:**

**Interviewer:** Derek Andrew Ballantyne

**Interviewee:**

### **INTRODUCTION**

#### **Introduce the study:**

The research examined the use of an intelligent tutoring system used as a tool (an English ITS) used for English language practice, for pre-service teachers, as viewed through the lens of activity theory.

Language proficiency of university students is a contentious issue in South Africa because many students are not studying in their home language and are required to be academically proficient in a language that is not their own. This takes on a new dimension for pre-service teachers studying to become English home language teachers. A further challenge is the increasing numbers of students entering into higher education and the lack of resources available to support low performing or at-risk students.

A mixed methods approach was implemented and viewed through the lens of second-generation Activity Theory to help clarify, explore, and explain the participants' perceptions of the activity system.

**Introduce yourself:**

My name is Derek Ballantyne. I am a master's student at this University that you are attending. As you are aware, I have been conducting research into the use of the online platform being used in your English class. This research forms part of my dissertation and will also be used when writing a journal article.

**Inform interviewee of confidentiality & anonymity:**

All data gathered in this research will be kept completely confidential. Data collected will also be kept completely anonymous, along with name of the University where the research takes place. All participants in this research have been given pseudonyms to ensure anonymity and confidentiality. I have also been given an ethical clearance certificate by the university to conduct this research, meaning that I am obligated to protect the rights and personal information of the participants as well as the University.

**Inform interviewee of right not to answer a question if they do not wish to:**

Please note that you have the right to not answer any questions if you feel that you would prefer not to. You are however asked to be as open and honest as possible, knowing that your confidentiality and anonymity is protected, and will not cause you any harm or bias in any way.

**Inform interviewee of right to stop the interview at any time without jeopardy:**

If you feel uncomfortable at any point of the interview, then you have the right to end the interview without any jeopardy.

**Get consent (verbal) to participate:**

Do you understand what I have said so far, and are you willing to proceed with the interview?

**Get consent for audio recording:**

Please note that this interview is being recorded. This is to ensure that I can transcribe everything after the interview, to ensure that I am as accurate as possible with this data collection. Are you happy for me to proceed?

QUESTIONS		
Survey Question Number	Interview Question (related to survey question)	Relevant CHAT Node
6	<p><i>(Survey Question: My technology experience at home can be considered the same or better than my technology experience on campus.)</i></p> <p>Interview Question 1:</p> <ul style="list-style-type: none"> <li>• Describe your technology experience at home compared to your technology experience on campus? (Technology being a device that you can work on).</li> <li>• How is it different to your experience on campus?</li> </ul>	Tool
8	<p><i>(Survey Question: My internet access at home is the same or better compared to my internet access on campus.)</i></p> <p>Interview Question 2:</p> <ul style="list-style-type: none"> <li>• What is your internet access like at home compared to on campus?</li> <li>• How do you describe internet access?</li> <li>• How is it different?</li> </ul>	Tool
18	<p><i>(Survey Question: I prefer learning in an online environment compared to a face-to-face classroom environment.)</i></p> <p>Interview Question 3:</p> <ul style="list-style-type: none"> <li>• Why do you prefer face to face learning?</li> <li>• Does the ITS it mimic human tutoring?</li> <li>• What was your overall perception of the online platform?</li> </ul>	Community

19	<p><i>(Survey Question: I experienced the Online English Proficiency Platform to be better than face-to-face classroom teaching.)</i></p> <p>Interview Question 4:</p> <ul style="list-style-type: none"> <li>• What did you prefer about face-to-face teaching?</li> <li>• Why?</li> <li>• How did the ITS affect your learning experience.</li> </ul>	Community
21	<p><i>(Survey Question: It was a challenge for me to complete the work in the Online English Proficiency Platform)</i></p> <p>Interview Question 5:</p> <ul style="list-style-type: none"> <li>• What were your biggest challenges when completing the online work?</li> </ul>	Community
23	<p><i>(Survey Question: I frequently get the chance to spend one-on-one time with my lecturer.)</i></p> <p>Interview Question 6:</p> <ul style="list-style-type: none"> <li>• How often do you get to spend one-on-one time with your lecturer?</li> <li>• What are some of the reasons why you would want to spend more time with your lecturer?</li> </ul>	Division of labour
24	<p><i>(Survey Question: I frequently get the chance to spend one-on-one time with a tutor).</i></p> <p>Question 7:</p> <ul style="list-style-type: none"> <li>• How often do you get to spend one-on-one time with a tutor on campus?</li> <li>• Would you consider the online platform to be a type of digital tutor or lecturer?</li> </ul>	Division of Labour

Possible in-depth questions linked to research questions and sub-questions:

- Describe your experience of having used the online English proficiency platform?
- How were you influenced to use the online English proficiency platform?
- What difficulties did you encounter having to use the online English proficiency platform?
- Tell me about your use the online English proficiency platform?  
(How/Why/where did you use it?)
- How did you perceive the online English proficiency platform?

## CLOSING

Concluding statement

Thank the respondent

Inform them of what will happen after the interview

Provide contact information if they need to contact the organization about the study

**Appendix F: Transcribed interviews****Interview 1****CERTIFICATE OF VERACITY**

We, hereby certify that in as far as it is audible the foregoing is a true and correct transcript of the recording provided by you in the matter:

**(NAME OF AUDIO: INTERVIEW 1 = AB32)**

Date completed : 03/11/2020  
Number of Pages : 9 Pages

- 1 INTERVIEWEE: [Cell phone ringing] Hello.
- 2 INTERVIEWER: Student 1.
- 3 INTERVIEWEE: Yes.
- 4 INTERVIEWER: Derek Ballantyne here, how are you?
- 5 INTERVIEWEE: I am good and yourself Sir?
- 6 INTERVIEWER: Good, good, good. Thanks for offering to be interviewed I  
7 appreciate your time.
- 8 INTERVIEWEE: No, problem at all.
- 9 INTERVIEWER: Are you at home or where are you at the moment?
- 10 INTERVIEWEE: Yes, I am at home. I was quickly with my parents but I came  
11 to my living room now. So I am free now.
- 12 INTERVIEWER: Okay, that's great. So you are comfortable and ready for it?
- 13 INTERVIEWEE: Definitely.
- 14 INTERVIEWER: [Laughs] ha ha ha. I'm trying to think Student 1 were you at  
15 campus the day that I came to see everyone. Have we met?
- 16 INTERVIEWEE: Yes, I was in the class Sir, but I'm quite on the down low so...
- 17 INTERVIEWER: [Laughs] ha ha ha, okay no problem. I just wanted to make  
18 sure because I think I gave you all an explanation of the research that I'm doing  
19 that day uh but basically I'm just going to tell you again about what the research  
20 is. So it is all about the English language platform that you guys were uhm  
21 using in your English class uh with Lecturer 1 and Lecturer 2 for English  
22 Language Practice and my research is to sort of find out what your, what the  
23 students perceptions of the platforms was and uhm this is all going towards my  
24 masters uh research and uh towards a journal article. So, I mean we have met  
25 so you know what my name is Derek Ballantyne and...
- 26 INTERVIEWEE: Yes.
- 27 INTERVIEWER: It's uh part of uh my research uhm like I said and I am just  
28 going to read you a couple of things before I start the interview Student 1 just  
29 to make sure you are comfortable with everything. Uhm so...
- 30 INTERVIEWEE: No problem Sir.
- 31 INTERVIEWER: Perfect so I want to talk to you about confidentiality and  
32 anonymity of this research. So all of the data that's gathered in this research  
33 will be kept completely confidential uh the data collected will be kept completely  
34 anonymous and the name of the university where the research has taken place.

35 So, all of the uhm students that have been involved in this research have been  
36 given pseudonyms to ensure that your uhm anonymity and confidentiality is  
37 protected. So no one is able to identify you in any sort of way or...

38 INTERVIEWEE: Okay.

39 INTERVIEWER: You can't be sort of recognised uhm and it won't count against  
40 you irrespective of whatever you tell me today. So there's nothing for you to  
41 sort of worry about.

42 INTERVIEWEE: No problem.

43 INTERVIEWER: And uhm I am also been given an ethical clearance certificate  
44 by the university uhm which means that uh I am obliged to protect your rights  
45 and uhm to keep everything confidential. So it's you know I need to protect  
46 those rights so there is nothing to worry about there either.

47 INTERVIEWEE: Okay.

48 INTERVIEWER: Uhm and uhm but what I do want to say to you is that you  
49 know if there is a question that you feel that you don't want to answer today you  
50 don't have to answer it. You can just say that you don't want to answer the  
51 question that's fine. And uhm if at any point of the interview you feel like you  
52 want to end the interview and not continue uhm that's also fine, it won't be held  
53 against you in any sort of way.

54 INTERVIEWEE: No problem.

55 INTERVIEWER: So before we continue I just need to hear from you if you are  
56 happy to proceed with the interview?

57 INTERVIEWEE: I am indeed.

58 INTERVIEWER: That's good to know. And uh Student 1 just to make sure that  
59 everything is sort of spot on with regard to what you are saying and uhm that  
60 there is record of what I'm saying I am going to be recording the interview. Are  
61 you happy with me recording the interview?

62 INTERVIEWEE: Uh it's fine, it's fine. No problem at all Sir.

63 INTERVIEWER: Okay fantastic. So, let's get into the interview Student 1 it's  
64 not going to take very long. It's probably going to be about twenty minutes.  
65 Uhm but what I want you to do is think about the answers uhm and answer the  
66 questions sort of as much as possible uhm so don't rush, feel like you have to  
67 rush through it uhm take your time and think about your answers.

68 INTERVIEWEE: Okay.



69 INTERVIEWER: And uh, okay so let's start off with the first question I have  
70 uhm and that is uhm if you have to...okay describe your technology experience  
71 at home compared to your technology experience on campus. And when I say  
72 technology experience I am talking about your sort of access to the internet,  
73 maybe access to devices, that sort of thing.

74 INTERVIEWEE: Okay. So uhm first of all, I'm not, I'm not a big internet guy or  
75 I didn't have get on school, so it was a struggle from the start as on campus.  
76 But the advantage I had on campus was there was a lot of students and my  
77 mentor and everyone could help me uhm to get to know my laptop and all of  
78 the networking much better but once I got home I was left to go on my own  
79 again and ja it was a bit difficult, the data struggles but luckily the university  
80 gave us, gave us data. So even though it wasn't really a lot a lot it was basically  
81 enough to get to me to do research and to be in all of the classes and submit  
82 all of my work but ja it was a bit of a, I would say bit difficult but I am slowly  
83 getting into the rhythm. So, if things doesn't change next year, I will definitely  
84 be better off next year then I was this year.

85 INTERVIEWER: Okay that's good to know and uh uh sort of what devices uh  
86 so when you think of the English language platform that you, that you had to  
87 work on. What device did you work on uhm did you have uh a laptop at home  
88 that you could use or how did you, what did you work on?

89 INTERVIEWEE: Ja I did work on a laptop but unfortunately, I had to share with  
90 a cousin but luckily she works only on weekends because she is still in school  
91 and basically during the week I have the laptop for myself. So ja I did work on  
92 a laptop.

93 INTERVIEWER: Okay so you were sharing a laptop with your with your cousin

94 INTERVIEWEE: Yes.

95 INTERVIEWER: Okay, that's, that's, that's interesting. Nice, nice cousin  
96 [laughs]

97 INTERVIEWEE: Ja definitely.

98 INTERVIEWER: And uh Student 1 if you, so you said you know if you were on  
99 campus you would ask a lecturer or someone to help. Who did you turn to at  
100 home if you were struggling with with your technology uhm issues?

101 INTERVIEWEE: I made a good friend on campus actually uhm...is it fine if I  
102 say the name or...

103 INTERVIEWER: Ja you can.

104 INTERVIEWEE: Okay (friend's name and surname) she is from Worcester but  
105 she had CAT at school. So every time when I struggled to do something or I  
106 am not sure about something I will video call her and she will literally tell me  
107 move your mouse to that corner or move your mouse till there and click there.  
108 So that's how I basically go to know my laptop.

109 INTERVIEWER: Okay excellent you had mentioned something called CAT. I  
110 am not familiar with that. What does that stand for?

111 INTERVIEWEE: It's a subject on school for people that actually work with  
112 computers. I am not sure what but they call it uhm [Afrikaans 00:07:33] in  
113 Afrikaans [Afrikaans 00:07:35]

114 INTERVIEWER: Oka, okay, I am with you. Okay that's interesting.

115 INTERVIEWEE: Ja.

116 INTERVIEWER: So Student 1 tell me about your internet access at home uh  
117 do you have internet access at home or did you only have the data sort of  
118 supplied to you by the university?

119 INTERVIEWEE: Only the data supplied to me by the university unfortunately  
120 but uhm they are planning on getting Wi-Fi because Telkom has great specials  
121 at the moment but ja we still discussing that.

122 INTERVIEWER: Okay so the biggest difference, what is the biggest difference  
123 uh you know uh if you have to compare your home situation for learning  
124 compared to uh campus for instance?

125 INTERVIEWEE: Basically on campus you can do everything. You literally have  
126 all the resources. Even if you don't have a laptop you can go in a computer, if  
127 you don't have data you can go on campus Wi-Fi. So there is literally no  
128 barriers that restricts you from doing your best on campus.

129 INTERVIEWER: Okay that makes sense.

130 INTERVIEWEE: Yes.

131 INTERVIEWER: Uhm okay, so next question I want to ask you is do you prefer  
132 face to face learning or online learning?

133 INTERVIEWEE: Definitely face to face because I feel it is easier to interact with  
134 the lecturer. Uh if you have to do online learning you have to send an email  
135 and it takes, sometimes it can take a time before the lecturer has to respond  
136 because you are not the only student there is a lot of students that has to get

137 attention. But if you are on the class you can literally just ask a question and  
138 make a note of the question you asked with the answer.

139 INTERVIEWER: Okay okay that makes sense, uhm so if we have to think about  
140 the uhm online English platform, do you think it's sort of acts like or mimics a  
141 human tutor?

142 INTERVIEWEE: The...oh you talking about the program we did earlier?

143 INTERVIEWER: Ja the English language program.

144 INTERVIEWEE: Ja, I *you can't interact with the system as with a human being*  
145 .

146 INTERVIEWER: Okay and and sort of if we have to think about a human tutor  
147 and the English language platform as sort of a digital tutor, what, what  
148 similarities do you think are there?

149 INTERVIEWEE: Basically the information that we get from a human form and  
150 the the online tutor form it's, it's precise, it's concise, it's short, it's not too much.  
151 It's easy to take in so it's not data understand, it is very informative.

152 INTERVIEWER: Okay, okay. And what was your sort of and we thinking now  
153 exclusively about the English language platform hey. Uh what was your overall  
154 perception of the, of the platform?

155 INTERVIEWEE: I thought it was, it was really cool at first. I was, I was scared  
156 at first because I'm a, I am not first language or home language English, I'm  
157 second language and our school did not have home language. So I was quite  
158 sceptical, I was, I was scared that I might not cope but overall I think I, I found  
159 my feet very quickly and it was a great learning curve for me.

160 INTERVIEWER: Okay that's good to know excellent. So uhm you said you  
161 prefer face to face compared to online learning. Can you go a little bit, just a  
162 little bit more into detail. You were saying if you have a problem you can uhm  
163 you know ask the lecturer immediately. Do you often turn to your students in  
164 class as well to ask them or is it purely just your lecturer, sort of I want to  
165 understand that whole process of why why you prefer face to face?

166 INTERVIEWEE: Okay so, so basically I feel when, when you interact face to  
167 face with a lecturer or rather from my personal experience as a student this  
168 year I realised that even though they upload uhm the class or the power point  
169 onto black board about the class. There is always something that the lecturer  
170 actually explains to you in depth. Something that might come up in their mind.

171 So it is basically that type of information that I tend to find very interesting and  
172 important that's not on the slide and a lot of students, everyone looks at the  
173 lesson differently. So everyone is going to ask different questions, stuff that  
174 they don't understand that maybe might make me understand something better.

175 INTERVIEWER: Ja.

176 INTERVIEWEE: So that is why I I think it's better to interact face to face rather  
177 than online.

178 INTERVIEWER: Okay that makes sense. So now if we are thinking about the  
179 English language platform. Let's say if there was a question in the uh English  
180 language platform that you didn't understand, who did you turn to for help to  
181 help you with that? Because normally you say face to face you would turn to  
182 the teacher or the lecturer.

183 INTERVIEWEE: Yes.

184 INTERVIEWER: Who would you turn to with the online learning?

185 INTERVIEWEE: I would ask my classmates if I do not get a answer or of we  
186 can't discuss this particular problem and come to a solution then I would send  
187 the lecturer a email or a proper Whatsapp message to ask for assistance.

188 INTERVIEWER: Okay. And uhm when we think about this online English  
189 platform how did it sort of affect your learning experience?

190 INTERVIEWEE: The fact that I, I finished matric in 2016 and I went to Pretoria  
191 for Rugby 2017. Unfortunately I broke my cartilage in my ankle so I had lost a  
192 bit of practice but ja the the platform gave me the opportunity to, to catch up  
193 very quickly. So it was nice yes.

194 INTERVIEWER: Okay excellent. And uhm when we think about this the  
195 platform what were your sort of biggest challenges with the platform and  
196 completing the online work?

197 INTERVIEWEE: Basically just the technological side. The work itself wasn't  
198 really a big uh concern for me. Just understanding where to go or where to go  
199 look for certain stuff. That's all.

200 INTERVIEWER: Okay so I'm going to change, uhm move away now a little bit  
201 from the platform...

202 INTERVIEWEE: Okay.

203 INTERVIEWER: And talk to you a little bit about lecturers and tutors. How  
204 often do you get to see uh or interact with your lecturer on campus?

205 INTERVIEWEE: In this particular area?

206 INTERVIEWER: Ja.

207 INTERVIEWEE: Okay Lecturer 2 is the English home language teacher. Uhm  
208 so we see her every Tuesday, every Tuesday uh we have a collaborate session  
209 with her and then we discuss the work or we can, can ask her questions and  
210 stuff and then on Fridays we see the curriculum studies English lecturer  
211 (Lecturer 3) .So it is two times a week that we interact with English lecturers.

212 INTERVIEWER: And uh do you think it is enough?

213 INTERVIEWEE: I think, I think it is not enough unfortunately. I think two times  
214 per lecturer. So two times curriculum studies maybe and two times for home  
215 language I think would be better because you get a question maybe once you  
216 through the work. On a Tuesday you get the work and you do the work Tuesday  
217 night or you do it Wednesday morning and then you come up with the question  
218 and then either you have to email or ask a friend or you have to wait 'til the next  
219 week's class before you can ask the question. So I think maybe if we had a  
220 class on a Tuesday and a Thursday it would be easier for us even if a Thursday  
221 was just a little session to allow students to ask questions that would be  
222 amazing.

223 INTERVIEWER: Okay, that makes sense. And uhm do you get to see tutors  
224 uhm at all?

225 INTERVIEWEE: Only at education, uhm we interact with our education tutor a  
226 lot but we did our last assignment for education now so more tutor, no more  
227 edu for the year.

228 INTERVIEWER: Okay and and and do you get to see the tutor often enough?  
229 So if you have got any problems or whatever uhm do you have access to the  
230 tutor as often as you want or would you want to see the tutor more?

231 INTERVIEWEE: Yes, definitely. The tutor actually goes out of his way for us  
232 so I think we see him often enough to ask questions if there is something that  
233 we struggle with.

234 INTERVIEWER: Okay that's good to know. Uhm okay so if we, now think about  
235 what our human tutor does and we go back to the sort of the English platform  
236 and what the, what the online English platform does, do you think uhm the  
237 platform could be like viewed as a sort of a digital tutor?

238 INTERVIEWEE: I think it can but I think a actual human tutor could assist better

239 than the online tutor.

240 INTERVIEWER: Why do you say that?

241 INTERVIEWEE: Because there's, there's, there's literally verbally or physical  
242 interaction you can you can feel and sense emotion or you can read body  
243 language. You can see what your responses are and all of that.

244 INTERVIEWER: Okay that makes sense. Uhm what was, what was your main  
245 sort of motivation for working on the platform?

246 INTERVIEWEE: The main source of uhm motivation I would say uhm to prove  
247 to myself that I that I can actually work on a computer because it's literally not  
248 my strong point but ja, I have pushed myself and that was what kept me  
249 motivated.

250 INTERVIEWER: Okay and how often did you work on the platform?

251 INTERVIEWEE: Probably, almost every day I would say.

252 INTERVIEWER: Okay and uhm so you have spoken about the difficulties you  
253 said it was basically just more sort of like technology and not really the content  
254 on the platform.

255 INTERVIEWEE: Yes.

256 INTERVIEWER: Uhm what was your overall perception of the, of the English  
257 platform?

258 INTERVIEWEE: Sorry could you just repeat?

259 INTERVIEWER: No, problem, what uhm, so we are back talking about the  
260 English online platform. If we have to think sort of, of your overall perception  
261 of uhm the platform, how did you perceive it?

262 INTERVIEWEE: Uh I think it's a good platform just the fact that you literally,  
263 you can't interact with the system as with a human being it is the only problem  
264 that I have. Even though it cannot be changed because it is a platform it is not  
265 a human being but overall I think it is a good platform, it is excellent.

266 INTERVIEWER: That's good to know. So uh we are actually at the end of the  
267 questions that I uhm wanted to ask. So uhm I just want to say thank you for  
268 your time uhm I've given you a brief description of what I am going to be doing  
269 with the data that is being collected.

270 INTERVIEWEE: Yes.

271 INTERVIEWER: So I am going to be transcribing this interview and it forms  
272 part of the uhm data and then like I said the next step for me is to complete my

273 degree and uh to write a journal article. Uhm so that's what's going to be done  
274 with this but uhm if you've got any questions Student 1, you have got my  
275 number you can ask me and you've obviously got Lecturer 2 and Lecturer 1's  
276 details as well. If you've got any questions about any of this you are welcome  
277 to to make contact with us.

278 INTERVIEWEE: I will definitely do that, thank you.

279 INTERVIEWER: Great thanks so much uh Student 1 and good luck with your  
280 studies.

281 INTERVIEWEE: Thank you so much, you as well and may you have a beautiful  
282 day further.

283 INTERVIEWER: You too, thanks hey go well.

284 INTERVIEWEE: Okay.

285 INTERVIEWER: Bye, bye.

286 INTERVIEWEE: Bye.

**Interview 2****CERTIFICATE OF VERACITY**

We, hereby certify that in as far as it is audible the foregoing is a true and correct transcript of the recording provided by you in the matter:

**(NAME OF AUDIO: INTERVIEW 2 = AB66)**

DATE COMPLETED : 03/11/2020

Number of pages : 10 Pages



- 1 INTERVIEWEE: Student 2 hello.
- 2 INTERVIEWER: Student 2 it's Derek Ballantyne, how are you?
- 3 INTERVIEWEE: I'm fine thank you and yourself?
- 4 INTERVIEWER: Very good, thank you. Thank you so much for offering to uh  
5 chat to me today. I really appreciate it. Uhm...
- 6 INTERVIEWEE: No problem.
- 7 INTERVIEWER: Are you at home at the moment or where are you?
- 8 INTERVIEWEE: I am at home.
- 9 INTERVIEWER: Okay so you've, you comfortable and you sitting down, you  
10 got a cup of coffee?
- 11 INTERVIEWEE: [Laughs] yes.
- 12 INTERVIEWER: [Laughs]
- 13 INTERVIEWEE: I'm comfortable.
- 14 INTERVIEWER: Okay that's good, that's good. Okay so Student 2 I just want  
15 to say to you don't be nervous about, it is just a conversation I'm going to have  
16 with you and I'm going to ask you a couple of questions but uhm just for me to  
17 give you a little bit of background and I think Lecturer 1 and Lecturer 2 maybe  
18 have already given you a little bit of background it is to do with the English  
19 platform that you guys uh were using in your English class.
- 20 INTERVIEWEE: Ja.
- 21 INTERVIEWER: And uhm it's uhm, so the, so the research that I was doing  
22 was to, to introduce that English platform to the class and let the class practice  
23 the English language on it with you know activities and things like that. Uhm  
24 and then at the end just see how uhm students how you perceived the platform  
25 to be. So that's basically what the research is about and these interviews that  
26 I am having with you will uhm give me a sort of a better idea of of how everyone  
27 perceived that platform to be. So I appreciate your time. So I just need to talk,  
28 uhm give you a little bit of a background so uh we have met previously as you  
29 know but uhm I'm a masters student at the university and I'm conducting  
30 research at this platform for uhm the English class and all of this research is  
31 going to form part of my masters research uhm and it will also form part of a  
32 journal article that I am writing. But what I want to say to you is that all of the  
33 data and everything, so the surveys and these interviews, everything is  
34 completely confidential. So you mustn't worry about it uhm affecting your marks

35 or anything in any way. Uh I keep the data completely anonymous, I don't share  
36 it with anybody uhm all of the students like yourself have been given  
37 pseudonyms. So no one can identify who you are by what you have said and  
38 anything like that. And uhm I've also been given ethical clearance by the  
39 university. I've got a certificate to say that I am allowed to go ahead with this  
40 uhm and I have to protect your rights as well. So you mustn't worry about uh  
41 you know your confidentiality or uh anything being known and uhm also there  
42 is no right or wrong answers but I want you to answer the the interview  
43 questions as much as possible, uhm as fully as possible but if you feel that at  
44 any point you don't want to answer uhm a question you don't have to. So you  
45 can tell me that uhm you don't want to answer the question and if at any point  
46 in the interview you feel like you do not want to continue with the interview, you  
47 can tell me and then I'll stop the interview. So you must not feel any pressure  
48 or anything like that. So I just wanted to make that very clear to you. So before  
49 we continue I just want hear from you are you happy for us to proceed with the  
50 interview?

51 INTERVIEWEE: I am.

52 INTERVIEWER: Okay thank you. And uhm Student 2 in order to for me make  
53 sure that I uhm have exactly what you are saying and and for there to be a  
54 record for what I am saying, I am going to be recording the interview just to  
55 make sure that, like I said everything is in writing. I have everything exactly as  
56 you have said it uhm are you happy with me to proceed?

57 INTERVIEWEE: Yes, I am.

58 INTERVIEWER: Okay. Fantastic, great. So uhm Student 2, I don't think it is  
59 going to take a lot of time but uhm I am not going to rush through it because I  
60 want you to think about the...

61 INTERVIEWEE: The answers.

62 INTERVIEWER: The answers ja and and try to give me as much information  
63 as you can. So the first question I want to ask you is for you to describe your  
64 technology experience at home compared to your technology experience on  
65 campus. And when I say technology uhm I sort of want to understand sort of  
66 what technology do you have at home uhm in order for you to work uhm online  
67 and how does it sort of differ from what is available to you on campus.

68 INTERVIEWEE: Okay so I don't have a smart phone but I do have a laptop on

69 which I access the uhm work but uh I haven't quite gotten uh I haven't quite  
70 like, it hasn't been a pleasant experience for me because I am not used to what  
71 we doing, like I have access to technology in the school where I was. So I  
72 haven't had a pleasant experience with technology but on campus I had help  
73 from students and so but I am getting a hang of it.

74 INTERVIEWER: Okay that's interesting, that's very interesting and uhm so your  
75 experience like you said now hasn't been great uhm so what you are saying  
76 now is that uhm you know at least on campus you have got uhm people that  
77 can help you and things like that.

78 INTERVIEWEE: Ja.

79 INTERVIEWER: At home do you have any problems with technology at home?  
80 Is there anyone at home that can help you or what would you normally do if you  
81 have experienced issues?

82 INTERVIEWEE: If I have experienced issues I would normally uhm contact a  
83 friend on Whatsapp who's also in my class so he would help me with problems.

84 INTERVIEWER: Ja.

85 INTERVIEWEE: And that's how I handle it.

86 INTERVIEWER: Okay so you would still Whatsapp a friend and they would  
87 help you?

88 INTERVIEWEE: Ja.

89 INTERVIEWER: Okay uhm...

90 INTERVIEWEE: They would send me videos and photos and just steps on how  
91 to do what I am struggling with.

92 INTERVIEWER: Okay so, so in your mind your technology experience is better  
93 on campus than at home because you can easily call on friends to to help you  
94 right?

95 INTERVIEWEE: Ja.

96 INTERVIEWER: Okay that's interesting thank you. Okay that's fantastic. Okay  
97 so tell me Student 2 about your internet access at home. Do you have internet  
98 access at home? And uhm how does that compare to your internet access on  
99 campus?

100 INTERVIEWEE: So at home I don't necessarily have internet access, I do not  
101 necessarily have access to the internet but on campus I had residence, private  
102 residence so I could easily go to the library and have access to the internet. So

103 in the morning to night to the evening at eight. So I have data and I access the  
104 internet by using it.

105 INTERVIEWER: By using the data as the data, who who supplies you with the  
106 data? Does the university give you the data? Or do you get it yourself?

107 INTERVIEWEE: Ja the university gives me the data.

108 INTERVIEWER: Okay so, okay so at home uhm it is not as easily available.  
109 You use data but it is easier for you on campus because you are on a residence  
110 and you can go to the library and it is available longer during the day. Is that  
111 what I am hearing correct?

112 INTERVIEWEE: Ja it is.

113 INTERVIEWER: Then I want to ask you about face to face lectures uhm  
114 compared to online learning. Uhm do you prefer face to face learning or do you  
115 prefer learning online.

116 INTERVIEWEE: I really do prefer face to face because face to face it is like I  
117 understand it better and the lecturer is explaining everything so I get it but at  
118 home it is like I do not get it, I just don't get it.

119 INTERVIEWER: Okay.

120 INTERVIEWEE: I don't even know how to explain it what I...

121 INTERVIEWER: So you said...

122 INTERVIEWEE: It is kinda...

123 INTERVIEWER: Ja.

124 INTERVIEWEE: They just give you the work and you have to manage it on  
125 your own but when we was on campus they explained it and you got to  
126 experience it. I don't know if it makes sense.

127 INTERVIEWER: Ja it make sense. So if...okay so you prefer face to face  
128 learning because your lecturer is there and she can explain or he can explain  
129 things to you.

130 INTERVIEWEE: Ja.

131 INTERVIEWER: So what do you in a situation at home when you are learning  
132 something at home and you are not understanding it uh properly uh what did  
133 you do? Uh what do you do?

134 INTERVIEWEE: So I don't know if this makes sense but I normally wait until  
135 the last, for instance if I am working on an assignment I normally wait until the  
136 last moment because maybe if it is two weeks before the assignment is due, I

137 will not understand it but let's say for instance two days until the assignment I  
138 am under pressure and now I am pressured to understand the work so that's  
139 normally how I navigate the struggles of understanding.

140 INTERVIEWER: Okay so what I am hearing is you uhm it's that pressure that  
141 almost motivates you to...

142 INTERVIEWEE: Ja.

143 INTERVIEWER: To do the work.

144 INTERVIEWEE: Ja it does.

145 INTERVIEWER: Okay uhm this online platform do you think it sort of copies or  
146 mimics what a tutor would do?

147 INTERVIEWEE: It does not.

148 INTERVIEWER: It does not, why do you say that?

149 INTERVIEWEE: Uhm cos I know, I really don't know but it just doesn't.

150 INTERVIEWER: Okay.

151 INTERVIEWEE: Because if it did it would be easier for me to understand, I  
152 think it would be, wouldn't be.

153 INTERVIEWER: Okay.

154 INTERVIEWEE: Cos...

155 INTERVIEWER: That's interesting.

156 INTERVIEWEE: When we were on campus I understood. I felt like I  
157 understood everything.

158 INTERVIEWER: Ja.

159 INTERVIEWEE: But now it is like I don't understand, I don't get it.

160 INTERVIEWER: So Student 2 if the platform had to sort of act more like a tutor  
161 or a lecturer and be able to if you could say uhm you know if you had a problem  
162 with a question uhm and it could sort of help you with that problem by explaining  
163 something better would that, would that uh be better for online learning?

164 INTERVIEWEE: It would definitely be good. I can vividly remember I had a  
165 problem a few weeks or months ago and I, I needed to answer right away but I  
166 sent in a lecturer an email and it took almost literally like almost a day for them  
167 to reply and it was quite.... It was inconvenient but I did consult Google for for  
168 some help.

169 INTERVIEWER: So if that phone could answer your question sort of  
170 immediately uhm that would have been a lot better for you?

171 INTERVIEWEE: Ja it would because normally if I have a class at quarter to  
172 eleven, uhm I would be physically with the lecturer. But uhm mostly at home  
173 when I have a class it is almost like self-study.

174 INTERVIEWER: Ja.

175 INTERVIEWEE: Normally. But I only see the lecturer once a week whereas I  
176 would see them five days a week.

177 INTERVIEWER: Ja.

178 INTERVIEWEE: So I can't direct my question, question to them when have a  
179 class cos I only see them once a week.

180 INTERVIEWER: Okay. Do you get to see your lecturers often enough?

181 INTERVIEWEE: No, I don't, I don't like I said we only have uh online session  
182 once a week and I and I think there are a few where they don't, where they  
183 actually just upload the work and you have to figure it out. [cross talk0:13:07]  
184 They just upload it so we don't have. Some we don't have online sessions like  
185 Google Edu or even Zoom or anything. So they just upload the work and you  
186 have to do it. But it is just one or two.

187 INTERVIEWER: Okay. And Student 2 do you, do you get to see tutors often  
188 enough?

189 INTERVIEWEE: No, I don't. I don't actually.

190 INTERVIEWER: Are there tutors in the in the faculty and have you uhm spent  
191 time with tutors before?

192 INTERVIEWEE: One with Education.

193 INTERVIEWER: Okay.

194 INTERVIEWEE: One tutor we had with Education.

195 INTERVIEWER: And you say it is not enough?

196 INTERVIEWEE: I think it is.

197 INTERVIEWER: You think it is, okay.

198 INTERVIEWEE: Ja, I think it is.

199 INTERVIEWER: But you would like to spend more time with the tutor if you  
200 don't have an answer.

201 INTERVIEWEE: Ja ja I would.

202 INTERVIEWER: Okay so now Student 2, tell me, give me your overall sort of  
203 perception of the platform uhm and be and be completely honest. What was  
204 your overall perception of the platform?

205 INTERVIEWEE: Platform black board or?

206 INTERVIEWER: The English language platform that your that your exercise is  
207 on.

208 INTERVIEWEE: English...

209 INTERVIEWER: Ja.

210 INTERVIEWEE: Uhm, I think if, I think it is good, I only experienced great, I've  
211 only had a great experience sorry. I didn't have complications or anything like  
212 that.

213 INTERVIEWER: So...

214 INTERVIEWEE: Like I haven't experienced great or insurmountable obstacles  
215 with the, with the platform.

216 INTERVIEWER: Okay so that's good to know so, so the platform you enjoyed  
217 the platform but you still prefer face to face because you can ask the lecturer  
218 questions and friends questions and they can help you. Okay, I understand.

219 INTERVIEWEE: Ja.

220 INTERVIEWER: Uhm so, uhm how did the platform sort of affect your learning  
221 experience uhm from what I understand you said you enjoyed the platform uhm  
222 overall what was the experience like of using the English platform?

223 INTERVIEWEE: Uhm could you please repeat the question?

224 INTERVIEWER: So you said the platform was, you know you enjoyed the  
225 platform. So uhm I just need to hear from you again so your overall experience  
226 like, how did you find the English language platform? If there was sort of one  
227 thing that you could change to it, what would you change?

228 INTERVIEWEE: I mean there is nothing that I would necessarily change, like I  
229 said it was, it has been a great experience for me like personally English has  
230 been the one module or I have enjoyed like my majors like uhm let me just say  
231 my majors has been like what I enjoy. So it hasn't really been a problem. It  
232 hasn't really been a problem then.

233 INTERVIEWER: Okay. That's excellent to know. So Student 2 we are almost  
234 at the end of the interview. I just want to ask you what was the biggest challenge  
235 for you uhm when you needed to complete the work on the uh on this online  
236 English platform? Uhm what were the biggest challenges that you faced?

237 INTERVIEWEE: I have so many; I can't even think of, I can't even think of one.  
238 So I really can't, where, at the time when I experienced it I thought I wouldn't

239 get through it but now I can't think of it. I really can't.

240 INTERVIEWER: Okay so you thought you weren't going to get through it but  
241 you had a laptop so uhm and you had data so that wasn't an issue, or was that  
242 a challenge for you?

243 INTERVIEWEE: No, it wasn't. Actually maybe it, this is a bit off topic but I really  
244 had trouble with referencing.

245 INTERVIEWER: With referencing?

246 INTERVIEWEE: Ja I had trouble with referencing it has been and has still a  
247 headache of mine, I have trouble with referencing.

248 INTERVIEWER: Okay I think lots of students do. Uh that's not something  
249 unique but that's good to know thank you for that feedback. So I have asked  
250 you about uh your lecturer, how often do you see your lecturer or speak to your  
251 lecturer and you have now said only once a week it is not often enough uhm  
252 that's correct right?

253 INTERVIEWEE: Ja.

254 INTERVIEWER: What are some of the reasons why you would want to spend  
255 more time with your lecturer or with a tutor?

256 INTERVIEWEE: I mean, I want to...like if I only see them once I easily get  
257 demotivated, but for instance let me say this, with Lecturer 2 I always like feel  
258 like she motivates in the sense I know COVID has a lot to do with I have to keep  
259 myself motivated but if I like see her once a week there is really a great  
260 experience and at that moment I feel like no I can do it. But at the time when I  
261 am on my own, unlike when I was on campus I really get demotivated and I  
262 know it is not a very good thing.

263 INTERVIEWER: Ja ja okay. Thank you for that.

264 INTERVIEWEE: And also those are just, like I would like to understand  
265 [inaudible0:18:44], so once a week, every month means four times a month.  
266 So I don't think that is a lot of time to get to me personally to understand it  
267 because I am, I think I am still learning. So I have to spend a lot of time to get  
268 it.

269 INTERVIEWER: Okay that's interesting.

270 INTERVIEWEE: I think.

271 INTERVIEWER: Uhm okay so I want to go back to the talk about the English  
272 language platform. Uhm would you consider that English language platform to



273 be a sort of digital tutor?

274 INTERVIEWEE: A?

275 INTERVIEWER: A digital tutor, so you know you get a human tutor uh...

276 INTERVIEWEE: Ja.

277 INTERVIEWER: And and that would be like a face to face human tutor. Do you  
278 think that the English platform could be like a sort of a digital tutor?

279 INTERVIEWEE: In many ways ja I do.

280 INTERVIEWER: And and in what ways do you think it is similar to a tutor?

281 INTERVIEWEE: I mean....You know it is a struggle to put it into words.

282 INTERVIEWER: [Laughs] It's fine you can take your time.

283 INTERVIEWEE: I still have to get my...

284 INTERVIEWER: Should I come back to that question?

285 INTERVIEWEE: Ja.

286 INTERVIEWER: Okay no problem. Okay so I am actually right almost at the  
287 end of the interview, what I want to hear from you is uhm how often did you use  
288 the English platform, language platform uhm and you know did you use it daily,  
289 weekly uhm or how often did you use it?

290 INTERVIEWEE: Daily.

291 INTERVIEWER: You used it daily?

292 INTERVIEWEE: Ja.

293 INTERVIEWER: And you accessed it from home on your laptop using your  
294 data?

295 INTERVIEWEE: Ja from home on my laptop using my data.

296 INTERVIEWER: And if I have to ask you sort of one last question what was  
297 your overall sort of experience and perception of the English language  
298 platform?

299 INTERVIEWEE: I mean like I said it has been amazing, it has been, let me just  
300 say it has been helpful, helpful.

301 INTERVIEWER: Okay. That's good to know excellent. So let's go back to that  
302 other question uhm and if you don't know how to answer it, it is fine we can  
303 leave it but you know in what way did the English language platform sort of copy  
304 what a tutor does?

305 INTERVIEWEE: It has offered, in many ways it has offered help, it did help  
306 because I think it has been very helpful. I do think that. So it has been helpful

307 it has been like [inaudible0:21:47] guidance mostly and it has guided me. Sorry  
308 for the noise.

309 INTERVIEWER: No, it's fine. So Student 2 we are at the end of the interview  
310 and I just want to thank you very much for spending the last, what was it twenty  
311 two minutes with me, telling me about your experiences, I really appreciate it.  
312 Uhm and what is going to happen is I am going to transcribe these interviews  
313 and it is going to form part of my data for my masters degree, and uhm it will  
314 then also be used for a journal article but like I said you it is completely  
315 anonymous you know we won't refer to any names or anything like that. So  
316 you must not worry about anything like that. But uhm if you do need to speak  
317 to somebody....you know if you want more information about anything you are  
318 welcome to, you have got my details.

319 INTERVIEWEE: Okay.

320 INTERVIEWER: And you can also speak to Lecturer 1 and Lecturer 2 if you  
321 have got any questions.

322 INTERVIEWEE: Okay thanks it has been a pleasure to conduct this interview  
323 with you and it is definitely helped me to reflect because I haven't thought of  
324 my experience like that. So thank you.

325 INTERVIEWER: It is a pleasure Student 2. You must enjoy the rest of your  
326 day and good luck with your studies.

327 INTERVIEWEE: Okay enjoy your day bye.

328 INTERVIEWER: Thank you, bye.

**Interview 3**



**CERTIFICATE OF VERACITY**

We, hereby certify that in as far as it is audible the foregoing is a true and correct transcript of the recording provided by you in the matter:

**(NAME OF AUDIO: INTERVIEW 3 = AB63)**

DATE COMPLETED : 04/11/2020  
NUMBER OF PAGES : 12

1 INTERVIEWEE: Hello?

2 INTERVIEWER: Student 3, hi, it's Derek Ballantyne from "the university".

3 INTERVIEWEE: H Hi there [inaudible 00:30]

4 INTERVIEWER: How are you?

5 INTERVIEWEE: I am okay.

6 INTERVIEWER: You're okay, that's good.

7 INTERVIEWEE: Yes.

8 INTERVIEWER: Are you at home? Where are you at the moment?

9 INTERVIEWEE: I am at home at the moment but uhm there's children uhm in  
10 my area now so I won't be able to hear like really, good right now but it's okay.

11 INTERVIEWER: Shame man, make yourself comfortable and it won't take too  
12 long, the interview uh, I've done two yesterday and they last about twenty  
13 minutes but the time goes quickly if it doesn't feel like twenty minutes so uh.

14 INTERVIEWEE: Okay, Sir.

15 INTERVIEWER: [cross talk 01:08]

16 INTERVIEWEE: So uhm I will just change rooms so will uhm Sir just give me  
17 like five minutes at the most?

18 INTERVIEWER: Then I'll phone you back okay perfect.

19 INTERVIEWEE: Okay, thank you.

20 INTERVIEWER: Thank you, bye.

21 INTERVIEWEE: Bye.

22 INTERVIEWEE: Hello?

23 INTERVIEWER: Hi Student 3 are you able to speak now?

24 INTERVIEWEE: I am.

25 INTERVIEWER: Excellent, sorry I just need to put my speaker on, here we go.

26 Okay, so Student 3 uhm all of the question I'm going to uhm or the interview  
27 questions I'm going to ask I need you to think back to the online English  
28 platforms that you guys were working on earlier in the year uhm...

29 INTERVIEWEE: Okay.

30 INTERVIEWER: That I came to introduce to everyone I don't know if you  
31 remember me coming on campus and talking to everyone.

32 INTERVIEWEE: Yes, I still remember, Sir.

33 INTERVIEWER: Okay, good. So, uhm it's all to do with my research on this ah  
34 online uhm platform and to understand what the students' perceptions uhm of  
35 the platform were. So, before I start the interview, I just want to uhm give you  
36 a bit of background and some information and then we can jump into the  
37 questions, okay?

38 INTERVIEWEE: Okay.

39 INTERVIEWER: Good. So, uhm you know my name is Derek Ballantyne. I'm a  
40 Master student at "THE UNIVERSITY" and uhm I've been conducting research  
41 interviews on this online platform which was used in your English class and  
42 uhm it's- the research forms part of my dissertation, my thesis for my Masters  
43 and it will also form part of a journal article which we will publish.

44 INTERVIEWEE: Okay, that's good.

45 INTERVIEWER: So, I just want to talk to you now about uhm your confidentiality  
46 and your anonymity uhm, so all of the data that's been gathered or has been  
47 gathered is ah going to be kept completely confidential and the data that's  
48 collected ah is completely anonymous uhm as well as the name of the  
49 University where this research has taken place. So, uhm all the participants in  
50 the class that worked on the platform were given pseudonyms uh to ensure

51 your anonymity and your confidentiality so that no-one would know, you know  
52 who...

53 INTERVIEWEE: Yes.

54 INTERVIEWER: And that's just to protect you uhm as a student uhm and I've  
55 also been given uh ethical clearance by the University. Which means that uhm  
56 I'm obligated to make sure I protect your rights uhm and personal information  
57 as well as the University's and uhm anything that you say in the interviewer  
58 won't be held against you, because uhm everything is anonymous and  
59 confidential. So, you mustn't worry about uhm anything in the interview uhm,  
60 you know it's kept completely confidential uhm.

61 INTERVIEWEE: Okay

62 INTERVIEWER: So, sometimes some people are a bit nervous to be open and  
63 honest, you must just be as honest as possible and that you know it won't be  
64 like held against you.

65 INTERVIEWEE: Okay.

66 INTERVIEWER: Okay, good. So, I also want to just say to you that uhm you  
67 know that, no harm will come out of this interview in any way and uhm you know  
68 if there's a question you don't want to answer, you are welcome to say that you  
69 would prefer not answer the question and uhm at any point of the interview if  
70 you feel that you don't want to continue with the interview, you can just tell me  
71 and then we will stop the interview uhm...

72 INTERVIEWEE: Okay, I understand.

73 INTERVIEWER: So, that was my next question, was just to have you say that  
74 you uhm understand everything that I have explained to you so far.

75 INTERVIEWEE: I have, I understand everything.

76 INTERVIEWER: Good. Then uhm I, just to make sure I have everything exactly  
77 as you have said it and what I have said. I'm going to be recording the interview  
78 so I just need you to give me your permission and I'm allowed to record the  
79 interview.

80 INTERVIEWEE: You are allowed, Sir.

81 INTERVIEWER: Okay, fantastic, thank you. So, there's not a lot of questions  
82 but uhm I'm not going to rush through it. I want you to think uhm and uh  
83 obviously, everything is related to the English platform. I want you to give me  
84 sort of full answers as you can uh so don't hold back uhm. The first question is  
85 about your technology experience at home and when I speak about technology,  
86 I'm talking about devices that are available to you uhm at your home uh in order  
87 for you to have done the work on the English platform?

88 INTERVIEWEE: Okay, so I am not like- I am not wise with technology and the  
89 media and whatsoever that is uhm with technology but I have learnt a lot by  
90 working from home but my circumstances at home is not so good and my  
91 mental health has been down the road all the way but I got back up and I just  
92 keep on pushing because I have to learn how to use technology for future uses  
93 and how it will affect my learners for [bake? 06:47], for the future. So, I just try  
94 to use everything that I have. I have a laptop at home...

95 INTERVIEWER: Okay.

96 INTERVIEWEE: It broke down in the beginning but I fixed it and I have a laptop  
97 at home and I have a printer but the ink is not always there so yes, and I have  
98 a cell phone and data that the University gives me, the data, so yes totally sums  
99 up everything about technology.

100 INTERVIEWER: Okay, and I'm glad you are feeling a bit better now and uhm a

101 little more positive and motivated. It's good to hear uhm...

102 INTERVIEWEE: Thank you.

103 INTERVIEWER: So, if you have to describe the difference between your sort  
104 of technology experience at home compared to your technology experience  
105 uhm on campus. How was it different for you?

106 INTERVIEWEE: For me it was different because at campus I can ask someone  
107 if they want to help me with something or there's always someone to assist me  
108 and to help me with something if I am not on the right path with technology and  
109 at home no-one is like completely a genius in technology. So, it's difficult being  
110 at home and learning through the technology of today, so yes.

111 INTERVIEWER: Okay.

112 INTERVIEWEE: But basically it's a good thing that we have technology  
113 otherwise we wouldn't have studied this year.

114 INTERVIEWER: Yes, that is true hey. It's been a bit of a crazy year.

115 INTERVIEWEE: Yes.

116 INTERVIEWER: Uhm okay, so my next question to you Student 3 is uhm, what  
117 is your internet access like at home?

118 INTERVIEWEE: I- my grandfather uhm bought me uh, a sim card that you can  
119 use for your work, my work, especially for my work, so I can just- he pays for it  
120 like I don't know I think it's R500 for the sim card. So, I'm okay with the data  
121 and everything, so yes, it's okay.

122 INTERVIEWER: Okay, so that's good to know and if you have to sort of describe  
123 your uhm your internet access at home compared to the University, what's the  
124 difference for you?

125 INTERVIEWEE: At home I have to give out money for my internet access and



126 at campus I just can connect to the Wi-Fi and just be there and do everything  
127 that I have to do so, it is a bit difficult being at home and away from campus but  
128 we have to do, what we have to do.

129 INTERVIEWER: Yes, and when you access the English online- online English  
130 platform, you accessed it on your laptop using the data and the internet that  
131 your granddad gave you?

132 INTERVIEWEE: Uhm I don't use my laptop that much because my eyesight is  
133 not just- it's not so good and it's burning my eyesight. So, I use my phone and  
134 low bright- my brightness is on low and I uhm did the online- English online  
135 thingy on my phone.

136 INTERVIEWER: Okay, so you used your phone for that, okay [cross talk 10:03].

137 INTERVIEWEE: Yes

138 INTERVIEWER: Uhm perfect, thank you. So, uhm let's talk about uhm  
139 something slightly different now uhm. How- what do you prefer, do you prefer  
140 face to face learning or online learning?

141 INTERVIEWEE: First of all, I have anxiety so I wouldn't prefer exactly face-to-  
142 face because I'm not like that child who raises a hand and answer question and  
143 I have anxiety so if someone put you on the spot for- give me an answer I will  
144 like freeze and wait a minute and then I will answer, but I would prefer it anyway  
145 because this distance learning is not for me and I think I'm speaking on behalf  
146 of many other children and learners because at home there are- there's a lot of  
147 things that's going on around you and you don't have that study environment  
148 about and you don't have the assistance to- how you need to do a specific thing.  
149 So, it's a bit difficult, I would prefer face-to-face learning.

150 INTERVIEWER: Okay, and if you were in a classroom environment, in a face-

151 to-face classroom environment and you have difficulties or issues or problems  
152 or something, what do you do?

153 INTERVIEWEE: Normally when I have something like that, I would just wait a  
154 few minutes and if someone asks a question I would like get the answer from  
155 Teacher or the Lecturer but if I really need to know the answer to something I  
156 will raise my hand or I will ask the Teacher afterwards about the question that I  
157 have.

158 INTERVIEWER: Okay, yes, that makes sense; uhm and if I have to ask you-  
159 so you've said to me you prefer face-to-face instead of online learning uhm but  
160 if I had to ask you about your overall perception of the online English platform.  
161 Overall, what did you think of it?

162 INTERVIEWEE: Overall, I thought it was- in the beginning I thought it would be  
163 nice to be at home with the family and just be close to them because we aren't  
164 a close family and now that it's lockdown and distance learning I can be with  
165 my family and spend time with them but as it goes on I preferred the campus-  
166 on campus learning because normally I don't understand a few of these things  
167 because I weren't at the Orientation week so blackboard and I aren't really good  
168 friends and neither am I in technology and I can speak for a few of us if I say  
169 that we weren't there on Orientation week and we don't know our way exactly  
170 around campus and with blackboard and our emails and so on but we kept on  
171 learning and trying to help each other out.

172 INTERVIEWER: That's good at least you had friends that you know could turn  
173 to and ask for help uhm...

174 INTERVIEWEE: Yes.

175 INTERVIEWER: ... and things like that. So, when we talk about the online

176 English platform, what were the biggest challenges for you in completing the  
177 work on the online English platform?

178 INTERVIEWEE: I'm not an- I'm not an English person, I don't speak English at  
179 all. At my home I speak Afrikaans, with my friends I'm Afrikaans, where ever I  
180 go I speak Afrikaans and I've only like two friends that are English so I only talk  
181 English to them but they understand Afrikaans. So, for me it was difficult being  
182 just with English work and understanding big words and so on but as I get an  
183 assignment or I gotten- I go on the platform and I don't understand something  
184 I would just look in the dictionary or I would just search the word and then get  
185 the meaning so then I can understand the work that is given to me better, so  
186 yes that's.

187 INTERVIEWER: Okay, so if I'm hearing you correctly, you saying the biggest  
188 challenges with the online English platform for you was that you're an Afrikaans  
189 speaker, that you can't- the words are quite difficult uhm and also you aren't  
190 that good with technology so you found that side a bit difficult.

191 INTERVIEWEE: Yes, I do.

192 INTERVIEWER: Okay, that make sense. Uhm so how did that online English  
193 platform affect your overall learning experience at the University?

194 INTERVIEWEE: It definitely made me wiser, it did. And I've learnt a lot in which  
195 is that online platform I've learnt a lot because I know that maybe in the future-  
196 in the near future if there is anything again like this I would know how to work  
197 with my students or my learners or so on. I would exactly like help people who  
198 aren't good in- if they feel they aren't good enough I can help them with that  
199 because I feel like I'm never going to make it with English and so on but I try  
200 my best so I would just prove them that they can do it as well. If I can make it,

201 they can make it and if you put your mind to something you can definitely do it.

202 INTERVIEWER: Exactly, that's wise, very wise words.

203 INTERVIEWEE: Thank you.

204 INTERVIEWER: So, Student 3 tell me uhm how often do you get to spend time  
205 face-to-face with your Lecturer?

206 INTERVIEWEE: Uhm, almost never because I can't just go on with the  
207 blackboard collaboratives because I have to babysit and then I also have to  
208 take a look around the house. I have to look at somethings and I also have to  
209 work often but yes, I try to keep up and I try to do my physical health too, my  
210 mental health which haven't been good lately and I try to be emotionally stable  
211 and mentally stable and academically I need to achieve my goals for this year  
212 so that's it.

213 INTERVIEWER: Okay, and what would some of the reasons be why you want  
214 to spend more time with your Lecturer face to face?

215 INTERVIEWEE: I would want to spend more time with my Lecturer face-to-face  
216 to get the- to ask questions and to get the right information if there is something  
217 you don't understand because normally Lecturers can see in your face if you  
218 don't understand something or if it's weird to you or something. They would  
219 just explain it and they would ask, do you understand it, don't you understand  
220 it? If you don't it means this or it means that. So I would prefer it that way, yes.

221 INTERVIEWER: That make sense uhm and uhm so now we've spoken about  
222 Lecturers. Do you get to spend uhm one-on-one time with the Tutors?

223 INTERVIEWEE: No, I don't. I hardly have time.

224 INTERVIEWER: Okay, so it's the same sort of situation as with the Lecturers?

225 INTERVIEWEE: Yes.

226 INTERVIEWER: Okay, and if the online English platform uh was able to act like  
227 a sort of a digital Tutor. Do you think that would help?

228 INTERVIEWEE: I'm not sure if it would exactly help because it won't be the  
229 same as being in class with the Lecturer being face-to-face so I don't think it  
230 would actually help a lot.

231 INTERVIEWER: What do you think the difference would be?

232 INTERVIEWEE: The difference would be, in class we would like interact with  
233 each other- even though we can interact with the digital and so on but it won't-  
234 it just won't be the same, the presence is for me, the presence is the most uh  
235 effective because you can just feel something and you can do exactly what you  
236 need to do and ask someone next to you, what should we do? Should we do it  
237 this way or that way? So, yes, that is the difference for me.

238 INTERVIEWER: Okay, make sense uhm what influenced you to use the online  
239 English platform?

240 INTERVIEWEE: Excuse me, can you ask me again, Sir.

241 INTERVIEWER: So, what influenced you or what motivated you to use the  
242 online English platform?

243 INTERVIEWEE: I personally want to be better in English and I want to achieve  
244 my goals as I said earlier. So, I have to- my will power had to motivate me and  
245 to do exactly as I want to do, even though I didn't have the physical power to  
246 do it. I just had to be better and to improve myself and to evolve.

247 INTERVIEWER: Yes, okay. That's good uhm you may be touched on some of  
248 these points already but uhm I just want to sort of hear you uhm explain it again.  
249 If you can tell me about how, why and where you used the online English  
250 platform. So, how did you use it? Why did you use it? And where did you use

251 it?

252 INTERVIEWEE: I use it at my home with my own data or the campus data and  
253 I use it to do my work and to do research about things that might be interesting  
254 in the education uhm phase and I just, yes. I had to do that to keep on pushing  
255 through the year and to be better than I was last year or in the beginning of the  
256 year.

257 INTERVIEWER: Yes, okay, that's good. So, uhm last question uh Student 3 is  
258 uhm, if you have to sort of think about on the online English platform, what was  
259 your sort of overall experience or perception of it?

260 INTERVIEWEE: Uhm I saw it as a opportunity that someone will hear me out,  
261 that someone will eventually listen to me, when I am on here and then I can do-  
262 even with the survey we did, I thought they will eventually look through this and  
263 see that there's a opinion about something or I'm speaking on behalf of a few  
264 of my friends or so on, and I uhm, yes, I think that's it.

265 INTERVIEWER: That makes sense. So, Student 3 uhm I just want to say thank  
266 you very much for your time uhm it sounds like you're a busy, a busy lady with  
267 uhm lots to do so...

268 INTERVIEWEE: Yes.

269 INTERVIEWER: So, I appreciate spending uhm about twenty-five minutes with  
270 me uhm so thank you so much for your time uhm so uhm the next step for me  
271 is to uhm uh finish with my data and uhm write-up my thesis which is almost  
272 done and submit that and then get the journal article uhm written, but if you've  
273 got any questions uhm about anything uh like this interview or the survey or  
274 whatever you are come to contact me or you can speak to your Lecturers uhm  
275 Lecturer 2 or Lecturer 1 uhm so you've got everyones' details if you want to

276 know more information.

277 INTERVIEWEE: Okay, your welcome Sir and I am happy to help you.

278 INTERVIEWER: Great, thank you so much Student 3 and enjoy the rest of  
279 your...

280 INTERVIEWEE: Thank you...

281 INTERVIEWER: Week and good luck with your studies.

282 INTERVIEWEE: Bye.

283 INTERVIEWER: Bye-bye.

**Interview 4**



**CERTIFICATE OF VERACITY**

We, hereby certify that in as far as it is audible the foregoing is a true and correct transcript of the recording provided by you in the matter:

**(NAME OF AUDIO: INTERVIEW 4 = AB25)**

DATE COMPLETED : 05/11/2020  
NUMBER OF PAGES : 10



1 INTERVIEWEE: Hello?

2 INTERVIEWER: Hi, is this Student 4?

3 INTERVIEWEE: Yes.

4 INTERVIEWER: Student 4 it's Derek Ballantyne from CPUT. How are you?

5 INTERVIEWEE: I'm fine, thanks and you?

6 INTERVIEWER: Good thank you. Are you at home? Is it convenient for me to  
7 talk to you?

8 INTERVIEWEE: Yes, I am at home.

9 INTERVIEWER: Okay, fantastic and you're nice and comfortable, you sitting  
10 down got a cup of coffee?

11 INTERVIEWEE: Yes I'm comfortable, actually doing my English e-portfolio at  
12 the moment.

13 INTERVIEWER: Oh, is it? Okay, that's good to know. Uhm so Student 4 thank  
14 you first of all uhm for agreeing to be interviewed today, uhm I appreciate your  
15 time. I don't know if you uhm remember me coming at the beginning of the  
16 year, talking to everybody about the online English platform...

17 INTERVIEWEE: Hhmmm.

18 INTERVIEWER: And about research? Good, so uhm the interviews are about  
19 the uhm online English platform and uhm I just need you- with all the questions  
20 I'm going to ask just to think back to when you were using the online English  
21 platform. Uhm but before we go into that, uhm I just need to tell you exactly  
22 uhm what's the interviews are for, uhm and that sort of thing. So, uhm as you  
23 know my name is Derek Ballantyne and I am a Master student at the uhm  
24 University and I'm doing research into these online platforms and uh the  
25 research that I'm doing is forming part of my uh dissertation uhm and also form

26 part of a journal article, which I'll be writing. Uhm so that is sort of the  
27 background uhm to the interview uhm and then just to let you know that all of  
28 the data that's been gathered uhm with the interviews and the surveys that I've  
29 done with you uhm everything is completely confidential and anonymous. Uhm  
30 so the names of everyone is anonymous, the name of the University is  
31 anonymous and everybody has been give pseudonyms, so that no-one is able  
32 to sort of identify you. So, your Lecturers won't be able to identify you uhm and  
33 or anything like that, so it's completely confidential and anonymous uhm and  
34 I've also been given ethical clearance by the University to conduct the research,  
35 so it's my right or my obligation, sorry, to protect your rights uhm as the uhm  
36 participants in the survey. So, uh you're one hundred percent protected in that  
37 way, so I don't want you to feel like you need to hold back or anything. You can  
38 be as open and as honest as you need to be uhm and no-one will know sort of  
39 uhm who, you know, who you are. Uhm so just be completely honest and open  
40 like I said because your uhm confidentiality and anonymity is protected. Uhm  
41 but what I do want you to say to you is that uhm during the interview if there's  
42 a question that you feel you don't want to answer uhm you don't have to; you  
43 can just say you don't want to answer that question and that's fine we can just  
44 move on. Uhm or if at any time in the interview you feel like you want to end  
45 the interview, you don't want to continue, you can also uhm tell me that and that  
46 is your right, you can do that as well. Uhm so I just want you to confirm that  
47 you've understood that I've just said to you.

48 INTERVIEWEE: I- yes I did.

49 INTERVIEWER: Okay, great. Uhm and then uhm so just to make sure that  
50 everything is accurate uhm according to what you've said and according to what

51 I've said uhm I'm going to be recording the interview uhm, is that fine with you?

52 INTERVIEWEE: Yes, it's fine.

53 INTERVIEWER: Oh, fantastic okay. So, it's not going to take very long, it's just  
54 a couple of questions but I want you to tell me sort of uhm as much as possible  
55 uhm you know when you think back. So, uhm the first question I have for you  
56 Student 4 is, uhm I want you to describe your technology experience at home  
57 uhm compared to your technology experience on campus, so when I say  
58 technology sort of what device uhm were you working on when you were  
59 completing the online English platform?

60 INTERVIEWEE: I was working on my laptop from home. I'm lucky enough to  
61 have Wi-Fi so I didn't have any issues, actually doing the program.

62 INTERVIEWER: Okay, that's good to know. And sort of what was the  
63 experience like uhm working online at home on the platform compared to if you  
64 done it uhm on campus?

65 INTERVIEWEE: I think at home I have to do everything on my own. I have to  
66 read everything and I have to figure out everything on my own and on campus  
67 I always have support, so that was actually a big adjustment for me...

68 INTERVIEWER: Hhhmm.

69 INTERVIEWEE: Uhm and yes, I think that's it.

70 INTERVIEWER: And where-

71 INTERVIEWEE: It is the support.

72 INTERVIEWER: Okay, and when you say support on campus, what do you  
73 mean by support, you have support on campus? In what form?

74 INTERVIEWEE: Friends, definitely I can ask around, I can even ask the  
75 Lecturer if I need to understand and now I have to figure out everything on my

76 own.

77 INTERVIEWER: Okay, so if you had uhm a problem with the online platform at  
78 home uh, what did you do?

79 INTERVIEWEE: I would ask a friend, definitely.

80 INTERVIEWER: Okay, and uhm like so during lockdown it would've been via  
81 you know SMS or something like that, right?

82 INTERVIEWEE: Yes, via SMS, WhatsApp or phone call.

83 INTERVIEWER: Okay, thank you. Uhm that's good to know. Uh so you've  
84 mentioned Wi-Fi, so if I ask you about, what your internet access looks like at  
85 home? Uhm describe that to me.

86 INTERVIEWEE: Okay, so we have Wi-Fi and our Wi-Fi is actually quite good.  
87 So, I didn't have any connectivity issues, uhm only load shedding though.  
88 There was load shedding in the beginning. So, that was a bit of a problem.

89 INTERVIEWER: Okay, yes. I remember that, that was a problem for me too.  
90 Uhm so if you have to compare your Wi-Fi at home compared to your internet  
91 access at University or on campus, is it better or is it worse?

92 INTERVIEWEE: At home it's actually better or sometimes campus Wi-Fi isn't  
93 online or online at all or it's not connected. At home I experienced it bit better  
94 though.

95 INTERVIEWER: Okay. That's interesting. Good. Uhm so let me just get the  
96 next question. Okay, so uhm a lot of these questions that've come from the  
97 survey that everyone completed so I'm just trying to gather a little more  
98 information around why people responded the way they did. So, if I have to  
99 talk to you about, classroom uhm face-to-face classroom learning. Do you  
100 prefer face-to-face learning compared to online learning?

101 INTERVIEWEE: I do prefer face-to-face learning to online learning just  
102 because as I said we have to- I had to figure out everything on my own, stuff I  
103 didn't understand I had to go Google or I have to ask a friend or a Lecturer or  
104 when I'm on campus it's better for me to just sit in class and ask a question  
105 than actually being at home and ask a question.

106 INTERVIEWER: Okay, and if I have to ask you about your overall perception  
107 of the online English platform, what was your overall perception of it?

108 INTERVIEWEE: It was nice; it was time consuming though. Uhm but it was  
109 nice to do. I learnt a lot through reading...

110 INTERVIEWER: Okay...

111 INTERVIEWEE: A lot and I don't like reading at all, so that was a bit of a  
112 struggle for me but it was actually- it was interesting actually.

113 INTERVIEWER: Okay, that's good to know. Uhm okay so if I uhm have to-  
114 okay let me ask you another question first, we'll- it'll lead into my next lot of  
115 questions. So, you uhm you say you prefer face-to-face teaching and you've  
116 said it's because you can ask your friends or your Lecturers uhm for guidance  
117 uh whenever you need to. Uhm how did using the online English platform affect  
118 your learning experience at the University?

119 INTERVIEWEE: Ah, as I said, I don't like to read a lot. It actually forced me to  
120 read, uhm and if think if I was in class I wouldn't read a lot, that's one thing.  
121 Uhm and it makes stuff interesting for me because I'm not very tech savvy, so  
122 I learnt a lot about myself during the platform as well, especially when it comes  
123 to patience and actually knowledge that I already have, that I didn't actually  
124 know I had uhm I used as well, so yes.

125 INTERVIEWER: That's very interesting, thank you. So, uhm thinking about this

126 now the online English platform uhm, what was the biggest challenge for you  
127 completing the online work?

128 INTERVIEWEE: Reading, and I get bored easily. I need something that like  
129 captures me, interests me, so reading was for me was a very big issue and  
130 there was a lot of reading.

131 INTERVIEWER: Okay, yes, that make sense. Uhm let me just move to the  
132 next question uhm okay, so now let's think about your Lecturer uhm on campus.  
133 Do you get to spend enough time with your Lecturer?

134 INTERVIEWEE: On campus?

135 INTERVIEWER: Yes, so if you've got a problem for instance, do you get to see  
136 your Lecturer often enough? Or do you get to speak to your Lecturer often  
137 enough?

138 INTERVIEWEE: Yes, I do.

139 INTERVIEWER: So, whenever you got a problem, you can either message  
140 them or how does it work?

141 INTERVIEWEE: Uhm we work through a class representative uhm and if the  
142 class rep uhm can't answer you or if the Lecturer hasn't answered the class rep  
143 yet, you can actually ask in class or you can make an appointment or ask the  
144 Lecturer anything that you want.

145 INTERVIEWER: Okay, so you get to see your Lecturers whenever you need  
146 to, there's no problem there?

147 INTERVIEWEE: Yep.

148 INTERVIEWER: Okay. Uhm can you give me some reasons why you would  
149 want to spend time with your Lecturer?

150 INTERVIEWEE: When I don't understand something or when I don't want to

151 ask something in class, I would rather ask her face-to-face or make an  
152 appointment with to ask her something if I didn't understand something or when  
153 it's regarding my marks I would definitely ask or talk to my Lecturer.

154 INTERVIEWER: Okay. Why wouldn't you want to ask the Lecturer something  
155 in class, what would that reason be?

156 INTERVIEWEE: Judgement in class.

157 INTERVIEWER: Okay...

158 INTERVIEWEE: Everyone looks at you; people wonder why you're asking the  
159 question. Sometimes people think you asking a stupid question, so sometimes  
160 you prefer to ask her face-to-face or alone or make an appointment for yourself

161 INTERVIEWER: Okay, that makes sense. Thank you and uhm so let's move  
162 away from the Lecturer now, uhm let's speak about Tutors on campus uhm, do  
163 you get to spend uhm one-on-one time with Tutors often enough? Or get to  
164 speak to the Tutors often enough?

165 INTERVIEWEE: No, actually because of the striking that happened and  
166 Coronavirus, we weren't actually introduced to a lot of students.

167 INTERVIEWER: Okay, uhm so how did that sort of affect you. I mean uhm  
168 normally I mean, why would you normally spend time with a Tutor on campus?

169 INTERVIEWEE: Also, to explain work that you didn't understand something,  
170 uhm especially when it comes to academic writing and stuff uhm someone that  
171 can actually help you or guide you or show you how to do certain assignments  
172 or how to structure assignment on are uhm but we didn't. We didn't spend that  
173 much time on campus to actually do so.

174 INTERVIEWER: Okay, yes that makes sense. So, now I want you to think  
175 about what a Tutor does and I want you to think about the online English

176 platform. Do you think there's similarities between the online English platform  
177 and what a Tutor does?

178 INTERVIEWEE: Yes, basically. The only difference is, a Tutor is another  
179 person and the online platform you just- I just read everything.

180 INTERVIEWER: Okay...

181 INTERVIEWEE: So, I actually taught myself something.

182 INTERVIEWER: Yes. So, if the online platform perhaps behaved more like a  
183 uhm like a human Tutor uhm it could've been perhaps a different experience?

184 INTERVIEWEE: Yes, that- yes definitely.

185 INTERVIEWER: Okay. That's interesting to hear, thank you. So, we're coming  
186 towards the end of the interview. I just want to see if there's anything else.  
187 Okay, so uhm your overall experience of the English platform. What was that  
188 like?

189 INTERVIEWEE: It was nice, interesting. It was, as I said, time consuming, lot  
190 of reading but it was a very nice experience and I actually learnt a lot of new  
191 things.

192 INTERVIEWER: Good, thank you. Uhm what motivated you to do uhm the  
193 work on the online English platform?

194 INTERVIEWEE: Actually me and my friends. We have this thing where when  
195 we get work to do, we would actually motivate and push each other to do it and  
196 check up on each other all the time to do the work.

197 INTERVIEWER: Okay. You're good friends. You look after each other.

198 INTERVIEWEE: Very good friends.

199 INTERVIEWER: So, you told me you accessed the online English platform on  
200 your laptop and you were using your Wi-Fi, how often did you access the



201 platform and were there sort of certain times of the day or certain days that you  
202 did it?

203 INTERVIEWEE: I would usually do it when I have my English class or on my  
204 timetable when I have English I would usually take that time slot to do the  
205 platform.

206 INTERVIEWER: Okay, great. So, I've asked you uhm just about all of the  
207 questions that I have, thank you very much. So, uhm Student 4 just to let you  
208 know, first of all, thank you for your time I appreciate you taking the time to be  
209 interviewed. Uhm, and uhm just to let you know so like I've said this interview  
210 forms part of my dissertation uhm and part of a journal article but like I said  
211 there's nothing to worry about, everything is anonymised so no-one would be  
212 able to tell who said what and uhm that sort of thing but, if you got any uh  
213 questions that you want answered or anything like that you can either contact  
214 myself or you can contact ah Lecturer 1 or Lecturer 2 uhm and we'll be able to  
215 answer any of your questions.

216 INTERVIEWEE: Okay.

217 INTERVIEWER: Okay, great. Thank you so much Student 4 good luck with the  
218 rest of your uhm studies uhm and, yes good luck.

219 INTERVIEWEE: Okay, thank you.

220 INTERVIEWER: Thank you.

221 INTERVIEWEE: It was a pleasure though.

222 INTERVIEWER: Thank you so much, keep well.

223 INTERVIEWEE: Bye.

224 INTERVIEWER: Bye-bye.

**Interview 5**



**CERTIFICATE OF VERACITY**

We, hereby certify that in as far as it is audible the afore-going is a true and correct transcript of the recording provided by you in the matter:

**(NAME OF AUDIO: INTERVIEW 5 = AB14)**

DATE COMPLETED : 09/11/2020  
NUMBER OF PAGES : 7

1 INTERVIEWEE: Hello.

2 INTERVIEWER: Hi Nic....

3 INTERVIEWEE: Hello, hello.

4 INTERVIEWER: Hello Nicole, how are you? It's Derek Ballantine, I'm from  
5 CPUT.

6 INTERVIEWEE: Hello.

7 INTERVIEWER: Can you hear me Nicole?

8 INTERVIEWEE: Hello.

9 INTERVIEWER: Hello Nicole, I'll phone you back.

10 INTERVIEWEE: Hello.

11 INTERVIEWER: Hi Nicole, it's Derek Ballantine from CPUT, how are you?

12 INTERVIEWEE: I am fine thank you and yourself?

13 INTERVIEWER: Hi. I'm fine thank you. Is it convenient to chat?

14 INTERVIEWEE: Yes it's fine.

15 INTERVIEWER: Fantastic. First of all thank you so much for offering to be  
16 interviewed today. I don't know if you remember me coming up at the beginning  
17 of the year to talk about the online English platform to everyone and my  
18 research?

19 INTERVIEWEE: Yes I remember, didn't we do a test?

20 INTERVIEWER: We did a test as well, yes, yes that's correct and you've  
21 recently done the survey for me and now after the survey I had a couple of  
22 questions that I wanted to ask. So that's why we are having the interview. So  
23 the interview is all about my research into that online English platform and it's  
24 going to be used in my Masters Dissertation and in a journal article. So that's  
25 the whole sort of background as to why we are doing the interview. So before  
26 we continue I just want to read a couple of things to you just to make sure that  
27 you know what it's about and everything like that so what I'm currently doing is  
28 that I'm gathering data for my research and all of this data is completely  
29 anonymous as well. So the names of the students like yourself are kept  
30 anonymous and the name of the university is kept anonymous and everyone is  
31 given pseudonyms and no one is able to sort of know who it is and I've also  
32 been given ethical clearance by the university which says that I'm obligate to  
33 protect your rights of personal information. So everything we do and say is  
34 gonna be completely confidential.....

35 INTERVIEWEE: Confidential.

36 INTERVIEWER: ja, so you mustn't worry about it. So you can be completely  
37 open and honest as no one is going to know who you are [inaudible 02:40] okay.  
38 And so like I said your rights are completely protected, so no harm will come to  
39 you, you know so you can be open and completely honest with me but then  
40 what I also want to say to you is that at any point of the interview there's a  
41 question that you don't want to answer you can just say you don't want to  
42 answer the question and we can move on or if you feel that you don't want to  
43 continue with the interview, you can tell me and we will end the interview as  
44 well. It won't take very long so you don't have to worry about it taking a long  
45 time. I just need you to confirm that you have understood everything I've just  
46 told you.

47 INTERVIEWEE: Yes, I understand.

48 INTERVIEWER: Okay fantastic. So Nicole just to make sure that I get  
49 everything 100% correct according to what you say and I say, I'm recording this  
50 interview. Are you happy for me to continue recording?

51 INTERVIEWEE: Yes, it's fine.

52 INTERVIEWER: Okay fantastic, right, so I'm gonna go right ahead to the  
53 interview questions and I want you to think back to when you were using the  
54 online English platform. So the first question I have is can you describe your  
55 technology experience at home? and when I talk about your technology  
56 experience, I'm talking about the sort of device that you were working on when  
57 you were doing the work on the online English platform.

58 INTERVIEWEE: I used my laptop.

59 INTERVIEWER: Your laptop okay, how was your experience working on the  
60 platform at home compared to if you were to do it on campus?

61 INTERVIEWEE: It was quite easy.

62 INTERVIEWER: Okay so in what way was it easy for you?

63 INTERVIEWEE: Technology for me is very easy to understand so and working  
64 on my own ...

65 INTERVIEWER: Okay.

66 INTERVIEWEE: is more effective for my own school work that I do and I don't  
67 really like to work in groups because sometimes I feel like not everyone is  
68 contributing the same amount.

69 INTERVIEWER: Okay so you found the experience to be pleasant, better than  
70 campus?

71 INTERVIEWEE: Yes.

72 INTERVIEWER: Or worse?

73 INTERVIEWEE: No it was a very pleasant experience.

74 INTERVIEWER: A pleasant experience, okay that's interesting, thank you. Can  
75 you tell me about your internet access at home?

76 INTERVIEWEE: We have Wi-Fi so and I get monthly data on my own phone,  
77 my phone contract so ja.

78 INTERVIEWER: And if you had to compare your internet access or your Wi-Fi,  
79 your data whatever, if you had to compare that to what you get on campus, how  
80 was it different, is it better, is it worse?

81 INTERVIEWEE: The campus Wi-Fi is actually better because here it's kind of  
82 slow.

83 INTERVIEWER: Okay so it's faster on campus.

84 INTERVIEWEE: Yes.

85 INTERVIEWER: Okay that's fine thank you and then so you now said to me  
86 that you prefer online learning compared to face to face learning, correct?

87 INTERVIEWEE: Yes.

88 INTERVIEWER: Give me a couple of reasons again why you prefer online  
89 learning versus face to face.

90 INTERVIEWEE: It's more about the group work but if I worked individually, it's  
91 fine when I'm on campus but why I prefer to study at home is because I feel like  
92 I spend more time on my studies seeing that I have access to my home Wi-Fi  
93 and my laptop and I can go to my teachers from my school and ask them for  
94 help if I struggle with something. I just feel like it's better for me.

95 INTERVIEWER: Okay, so if you experienced any difficulties with your online  
96 learning you say you turn to your high school teachers?

97 INTERVIEWEE: Yes.

98 INTERVIEWER: And why is that? Why would you turn to your high school  
99 teachers as opposed to your lecturer or a tutor?

100 INTERVIEWEE: Sometimes the lecturers or the tutors they take very long to  
101 respond maybe and sometimes they don't explain in detail and when I go to my

102 teachers they can give me advice and can show me examples of what I'm  
103 asking them of what the work is supposed to look like.

104 INTERVIEWER: Okay that makes sense. So while we're talking about  
105 lecturers now, let's move onto that question. Do you think or do you feel that  
106 you get to spend enough time with your lecturers?

107 INTERVIEWEE: Yes.

108 INTERVIEWER: So you get to see them enough?

109 INTERVIEWEE: Ummm..

110 INTERVIEWER: And they... so if you had a problem they are available to you  
111 and you can make contact with them?

112 INTERVIEWEE: Yes.

113 INTERVIEWER: Okay and is that the same for the tutors on campus?

114 INTERVIEWEE: I don't actually use a tutor so I don't ask them anything  
115 because I think that you sort of sign up if you want a tutor at the beginning of  
116 the year.

117 INTERVIEWER: Okay, okay, that makes sense. So Nicole what was your  
118 biggest challenges when you had to work on the online platform?

119 INTERVIEWEE: I don't think there were any challenges. It was just myself,  
120 you know when you put something off to the side and say like okay you can  
121 finish it later, you can finish it later and then you just take so much of your time  
122 and can't really focus on the work as much as you wanted to.

123 INTERVIEWER: So like procrastination, you were procrastinating. Okay so  
124 then what motivated you then to work on the platform?

125 INTERVIEWEE: The deadlines.

126 INTERVIEWER: It should be more deadline driven.

127 INTERVIEWEE: I'm like if I know this thing is due tomorrow then I know I'm  
128 gonna give my all and I'm gonna do research so that I can just finish it but if the  
129 lectures are gonna be in line 2 weeks prior to the due date then I'm just going  
130 to leave it for a little while.

131 INTERVIEWER: Until it gets that pressure.

132 INTERVIEWEE: That pressure.

133 INTERVIEWER: So if we think about the online platform and your online  
134 learning experience, how did the online platform sort of affect your learning  
135 experience?

136 INTERVIEWEE: It made me realise that I should really focus on my work. I am  
137 someone who wants to understand it myself, I don't really want someone to  
138 explain stuff to me so I took the extra time to learn the new words or if I don't  
139 know something it would just make me more eager to go look it up and see  
140 what it means, so that it has built my, how can I say it now, it has given me the  
141 chance now to do more research and better myself.

142 INTERVIEWER: Okay so now let's think about the online digital platform or the  
143 English Platform, would you consider the platform to be a type of digital tutor or  
144 lecturer?

145 INTERVIEWEE: Yes.

146 INTERVIEWER: And in what way would it be similar or different?

147 INTERVIEWEE: I feel like the platform will always be there so if you want to  
148 look at something so it's gonna be there and it doesn't take necessarily or you  
149 don't have to wait so long to get what you're looking for.

150 INTERVIEWER: Okay, okay that makes sense. I'm just trying to see if there's  
151 anything else that I left out here. Let's have a look. So if you had to describe  
152 your overall experience of having used the English online platform, what would  
153 that experience be?

154 INTERVIEWEE: For me it was amazing because it helped me grow and it  
155 taught me to work more on my own and do my own research rather than just  
156 asking everyone what their opinion maybe is on this or that or what they know  
157 about this.

158 INTERVIEWER: Okay, so when you think about how you used the platform, I  
159 need you to just think about this, how did you use the platform and where and  
160 how often did you use the platform?

161 INTERVIEWEE: Hello.

162 INTERVIEWER: Hello, can you hear me?

163 INTERVIEWEE: Hello.

164 INTERVIEWER: Hello can you hear me?

165 INTERVIEWEE: Hello.

166 INTERVIEWER: Hello?

167 INTERVIEWEE: The mike is breaking up, I can't hear anything.

168 INTERVIEWER: Can you hear me now?

169 INTERVIEWEE: Hello.

170 INTERVIEWER: Can you hear me now Nicole?

171 INTERVIEWEE: Hello.

172 INTERVIEWER: I'll phone back.

173 So have tried to contact the student back and she's not picking up her phone,  
174 it's going through to voicemail. So I basically have asked all the questions that  
175 I needed to have asked. I will just send the student a Concluding Statement  
176 thanking her for her time and giving her contact details if she wants to ask any  
177 further questions with regard to the interview.



**Interview 6**



**CERTIFICATE OF VERACITY**

We, hereby certify that in as far as it is audible the afore-going is a true and correct transcript of the recording provided by you in the matter:

**(NAME OF AUDIO: INTERVIEW 6 = AB28)**

DATE COMPLETED : 09/11/2020  
NUMBER OF PAGES : 8

1 INTERVIEWEE: Student 6 hello.

2 INTERVIEWER: Hi Student 6 it's Derek Ballantine from THE UNIVERSITY, how  
3 are you?

4 INTERVIEWEE: I'm very well thank you and yourself?

5 INTERVIEWER: I'm good, I'm good thank you. First of all thank you so much  
6 for being willing to do the interview today, I really appreciate it.

7 INTERVIEWEE: No problem.

8 INTERVIEWER: Excellent, Student 6, so I don't know if you remember me  
9 coming to class at the beginning of the year and telling everyone about the  
10 research that I'm doing and online platforms and things like that?

11 INTERVIEWEE: I do, I remember.

12 INTERVIEWER: Okay, good, so I'm coming towards the end of that research  
13 and I've now done the surveys with all of you so you guys completed the survey  
14 recently and then what I've done is I've selected certain participants just to do  
15 the interview with me. And like I said at the beginning of the year, this will be  
16 part of my Masters dissertation and I'll also be writing up a journal article about  
17 the results. So before I start going into the interview I just want to read a couple  
18 of things to you. So all of the data in the research that I'm collecting is  
19 completely confidential and the data collected will be completely anonymous as  
20 well as the name of the university where the research has taken place. So all  
21 of the participants like yourself in this research have been given pseudonyms  
22 so that is to ensure that no one is able to identify you so that you remain  
23 anonymous and confidential. So basically whatever you tell me today is  
24 completely confidential and anonymous and you don't have to worry about  
25 anyone being able to identify you. So you can be as open and honest as you  
26 want to be without having to worry about anything and I've also been given an  
27 Ethical Clearance Certificate by the university which means that I'm obligated  
28 to protect your rights and personal information as well as of the university. So  
29 there's nothing to worry about in regard to that. Then I also want to say to you  
30 that during the interview now it won't take very long but if you feel there's any  
31 questions that you don't want to answer you can just say to me you don't want  
32 to answer the question and we can move on or if you feel at any point you want  
33 to end the interview then you say to me you want to end the interview and that  
34 won't be an issue.

35 INTERVIEWEE: I understand.

36 INTERVIEWER: Fantastic so I just need you to confirm that you've understood  
37 everything that I've said to you.

38 INTERVIEWEE: I do understand.

39 INTERVIEWER: Okay fantastic. Then one last thing just to make sure that  
40 everything I say and do is completely accurate according to what you've said,  
41 I'm gonna be recording the interview. Are you okay with me recording the  
42 interview?

43 INTERVIEWEE: No problem, that's fine.

44 INTERVIEWER: Perfect. Okay, fantastic so let's jump into it. I know it's late  
45 in the afternoon and you've probably got better things to do. So the first question  
46 I want to ask you Student 6 is I want you to describe your technology experience  
47 and when I talk about technology experience at home I'm talking about your  
48 sort of your device, your technology and device that you have available to do  
49 online learning at home.

50 INTERVIEWEE: [inaudible 03:30] I was struggling with the phone. The phone  
51 I had [inaudible 03:44] the memory of the phone is too small for any documents  
52 or PDF that I had to download it, like right now I'm battling [inaudible 03:56].

53 INTERVIEWER: Okay so Student 6 your phone is breaking up, are you ....

54 INTERVIEWEE: Can you hear me now?

55 INTERVIEWER: I can hear you now ja, so I just want to confirm, you were  
56 using your phone to complete the online platform work?

57 INTERVIEWEE: [inaudible 04:21]

58 INTERVIEWER: Sorry I can't hear that.

59 INTERVIEWEE: I was using my phone to complete the platform and then I  
60 found out that the phone wasn't really sufficient because some of the question  
61 that there was I had to drag like an arrow and my phone wasn't capable of doing  
62 that. So I had to get a laptop [inaudible 04:45] it was better to do the platform.

63 INTERVIEWER: Okay. Is your data experience at home better or worse than  
64 [inaudible 05:01]?

65 INTERVIEWEE: Pardon. [Inaudible 05:10] let me just find a better spot...

66 INTERVIEWER: I can hear you now, it's breaking up a little bit. Are you on  
67 speaker or?

68 INTERVIEWEE: No I'm not on speaker I'm outside, I'm trying to find a better  
69 spot so I am moving around a little bit...[inaudible 05:30].

70 INTERVIEWER: Shame that's actually much better now hey. I can hear you  
71 much clearer now.

72 INTERVIEWEE: Now I'm right in front of [inaudible 05:36].

73 INTERVIEWER: Oh shame.

74 INTERVIEWEE: How's that, is it fine? [inaudible 04:43].

75 INTERVIEWER: Shame, my question was your data experience, your  
76 technology, sorry, experience at home is it better or worse than on campus?

77 INTERVIEWEE: For me it's better. On campus you often have to wait for the  
78 like the computer or something but at home I have my own. I work with data  
79 that's been given, I can use it and work much better and according to my time.

80 INTERVIEWER: Ja, ja okay cool. So now you've mentioned data that you were  
81 given, tell me about your internet access at home compared to your internet  
82 access on campus?

83 INTERVIEWEE: Internet access at home is again well I say [inaudible 06:31]  
84 about a month ago we had fibre installed so when my data is up I still have the  
85 fibre whereas at campus the Wi-Fi often breaks up and [inaudible 06:46].

86 INTERVIEWER: Okay so you say it's better for you at home because if your  
87 data runs out you've got fibre and it's a faster experience for you.

88 INTERVIEWEE: Yes [inaudible 06:59].

89 INTERVIEWER: Okay, okay, thank you. Okay so let's talk about something  
90 slightly different, I want you to tell me if you prefer face to face teaching like in  
91 class or if you prefer online learning and what your reasons are for that.

92 INTERVIEWEE: I definitely prefer that [inaudible 07:23] some of the stuff we  
93 don't understand [inaudible 07:29] for example we have like this [inaudible  
94 07:35] and the information that was given on WhatsApp or on [blackboard?  
95 07:42] is not what it would have been if you were back in class... like now we  
96 only have like slides and [inaudible 07:51] blackboard sessions but at the end  
97 of the day there's no [inaudible 08:01] as what we must do [inaudible 08:02].

98 INTERVIEWER: Okay, what was the overall perception of the online platform?

99 INTERVIEWEE: My [inaudible 08:23] at the beginning, I'm a [normal? 08:25]  
100 person so the normal part of the platform was very nice but towards the end  
101 [inaudible 08:32].

102 INTERVIEWER: Okay.

103 INTERVIEWEE: But overall [inaudible 08:38] nice thing to do and it was nice  
104 to see also my capabilities, what I'm capable of [inaudible 08:46]

105 INTERVIEWER: Okay so [inaudible 08:51] how did this affect your [inaudible  
106 08:57]

107 INTERVIEWEE: Pardon?

108 INTERVIEWER: How did the online platform affect your learning experience  
109 you know compared to like how you would normally learn in a classroom?

110 INTERVIEWEE: Definitely because we have so many [inaudible 09:14] it was  
111 a question of if I didn't do according... if I wasn't satisfied with my first attempt  
112 I could've gone back and done a second attempt and then in that I better myself.  
113 So definitely it was an exercise question for me, I could definitely go check  
114 where I didn't do so well and I could fix it.

115 INTERVIEWER: Okay that's interesting, thank you. So that's gonna lead into  
116 a question that I have just now but before I get there I want to ask you about  
117 the lecturers. Do you get to spend enough sort of face to face time with your  
118 lecturers?

119 INTERVIEWEE: Like now with the online lessons?

120 INTERVIEWER: Ja, so ....

121 INTERVIEWEE: I would say no, not as much as I would like to.

122 INTERVIEWER: And why would you want to see your lecturers more often?

123 INTERVIEWEE: Any question that I have, they ask me to if I have a question  
124 [inaudible 10:19] on laptop or whatever the case may be. But like I said the  
125 message isn't always brought over properly over social media [inaudible 10:25]  
126 so sometimes it's a little confusing for either myself or the lecturer, we don't  
127 always feel like we understand each other as much as we would have  
128 understood it the class.

129 INTERVIEWER: Okay, okay and do you get to see or deal with tutors regularly  
130 enough?

131 INTERVIEWEE: No I don't. I have a mentor and she tries to [inaudible 10:57]  
132 as far as possible as she can but there's no tutor that I can go to when I'm stuck  
133 or when I have a problem.

134 INTERVIEWER: Okay so if I'm hearing you correctly, if there was a tutor  
135 available you would potentially want to go to them more often if you had  
136 problems that you want ....

137 INTERVIEWEE: I would definitely, I would always want to make sure that  
138 whatever assignment or whatever test I'm about to do if I'm approaching it the  
139 correct way so I would always like to [inaudible 11:30] them from a tutor let's  
140 say.

141 INTERVIEWER: Ja, ja okay, so I want you to think about a human tutor, what  
142 a human tutor does and then I want you to think about the online English  
143 platform you used, do you think the online English platform could be a sort of a  
144 digital tutor?

145 INTERVIEWEE: I do consider it as one. Like I said it gave me the opportunity  
146 to go back and see where I didn't do as well and I could always better myself  
147 and more or less I do consider the platform as a tutor, [inaudible 12:11] just for  
148 me to go and put myself out there to fix that.

149 INTERVIEWER: Okay good, so your overall experience and perception of the  
150 online English platform, what was that?

151 INTERVIEWEE: My overall perception, it helped me further [inaudible 12:32]  
152 the first term I did that with confidence and by the end of the term my marks  
153 were [inaudible 12:41] wasn't what I expected and I [inaudible 12:44] what I did  
154 in class, this was the practice that I did on my own at home with the English  
155 platform that did it for us. So I do, I definitely [inaudible 12:54] and it was nice  
156 to find myself and find my feet throughout this platform.

157 INTERVIEWER: Okay that's good to know. So what motivated you to use the  
158 platform?

159 INTERVIEWEE: Well I'm very scared of failing so [inaudible 13:11] if we fail  
160 you somehow have a mark that they can fall back on and always get the pass.  
161 So that was my motivation, I want to pass my first year, I want to finish my  
162 studies so do what you have to do.

163 INTERVIEWER: Okay and how often did you use the platform and sort of where  
164 did you use the platform, how did you access it?

165 INTERVIEWEE: I also I started very, very late until [inaudible 13:40] this one  
166 day she said I must give me the details of the platform and I started doing it on  
167 my phone and by that time we had already received [inaudible 13:54] and I was

168 actually talking to a friend of mine about this platform but she was doing a  
169 different one and she said no don't use a phone, use a laptop, the laptop is  
170 sufficient. And I start using the laptop throughout the platform in the beginning  
171 [inaudible 14:12] I'm in love with that. I really love it. I started doing the platform  
172 and over 3 days I finished it.

173 INTERVIEWER: Excellent.

174 INTERVIEWEE: [inaudible 14:24]

175 INTERVIEWER: So think about [inaudible 14:32]

176 INTERVIEWEE: Sorry?

177 INTERVIEWER: If you had to think about the online platform what were your  
178 biggest challenges accessing it?

179 INTERVIEWEE: I had no challenges accessing it, none whatsoever. With my  
180 cell phone, you knew I stopped my cell phone to the laptop and with the  
181 documents there is no problem physically with getting the platform done, so  
182 there was nothing, none of that.

183 INTERVIEWER: Okay so what were your reasons again for starting it late?

184 INTERVIEWEE: I actually completely forgot about the platform. I really did, I  
185 [inaudible 15:12] I was like, now [inaudible 15:15] it done. So it was completely  
186 my fault but it wasn't because I didn't like the platform, I [inaudible 15:21] didn't  
187 know the platform [inaudible 15:23] and I decided to start with it [inaudible  
188 15:26].

189 INTERVIEWER: Okay that makes sense.

190 INTERVIEWEE: It was actually just out of laziness I think.

191 INTERVIEWER: [inaudible 15:34]

192 INTERVIEWEE: Pardon?

193 INTERVIEWER: I said there was just so much happening with Covid.

194 INTERVIEWEE: [inaudible 15:40] and then by the time I also started campus,  
195 classes, everything just dropped on our head and the platform took a backlash  
196 so ....

197 INTERVIEWER: Ja, I hear you. Okay so last question Student 6 is describe  
198 the difference between online learning with the platform and learning on  
199 campus face to face.

200 INTERVIEWEE: It's different.

201 INTERVIEWER: Ja.

202 INTERVIEWEE: The difference for me is like I said I would definitely want  
203 [inaudible0:16:15] in class especially with other learners, with other students  
204 also together in class. You get a lot of opinions and perceptions and you can  
205 take it and you can think about it and you can form your own opinion and your  
206 own question out of that. So contact class is also not a bad thing for me but  
207 neither is the online learning. I can't really choose between the 2, I'd say they  
208 support each other.

209 INTERVIEWER: Ja, that's makes sense. So we're at the end of the interview  
210 Student 6, thank you I really appreciate you taking the time out of your day to  
211 talk to me and the next steps is this forms now like I said part of my research  
212 and that will come to an end. And I just want to wish you the best of luck with  
213 your studies, I hope that you do really well and if you're got any questions about  
214 the interview or anything like that you're really welcome to contact me or you  
215 can contact your lecturers and they can assist you as well.

216 INTERVIEWEE: Thank you Mr Ballantine, it's a pleasure.

217 INTERVIEWER: Okay enjoy your evening, keep well.

218 INTERVIEWEE: You too. Bye bye.

219 INTERVIEWER: Bye



## Glossary of terms

	<b>Terms/Acronyms/Abbreviations</b>	<b>Definition/Explanation</b>
1	AT	Activity Theory is a framework that considers work or activity systems beyond just one actor or user.
2	CAI	Computer-Aided Instruction - Teaching with the aid of a computer.
3	CALL	Computer-Aided Language Learning - Language teaching with the aid of a computer.
4	CBT	Computer-Based Teaching – Teaching learning units on a computer in the form of computer-based activities and exercises.
5	CEFR	Common European Framework of Reference – A globally recognised framework of reference for languages.
6	CHAT	Cultural Historical Activity Theory – Activity Theory is an umbrella framework, and often also referred to as CHAT.
7	ELT	English Language Testing – Testing of English language proficiency.
8	EMI	English Medium of Instruction – The medium of instruction, in this case, English.
9	ETS	Expert Tutoring System – An alternative name for Intelligent Tutoring System.
10	FET	Further Education & Training
11	ICAI	Intelligent Computer-Aided Instruction – An alternative name for Intelligent Tutoring System.
12	IP	Intermediate Phase
13	ITS	Intelligent Tutoring System – A computer based or internet-based tutoring system that can adapt to individual learner needs.
14	MOOC	Massive Open Online Course
15	SARS-CoV-2	Severe Acute Respiratory Syndrome Coronavirus-2
16	SP	Senior Phase
17	URL	Uniform Resource Locator
18	WHO	World Health Organisation
19	ZPD	Zone of Proximal Development – A theory that considers an individual's ability and what they can do at present, and then looks at how they will perform with assistance.