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My Speech Trainer: predicting acceptance of a language learning application for academic English speaking skills

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Abstract

While English as the language of instruction becomes more and more common at Dutch universities, students' speaking abilities often lack the needed level of proficiency. Incoming foreign students do not have enough opportunities for practice before the start of their studies and Dutch students struggle with transition to the appropriate level of formality. Considered that there is not enough time for speaking practice in language classrooms, this gap could be filled by computer-assisted learning. However, such applications should be rigorously tested and evaluated to ensure their relevance and effectiveness.

This thesis presents the evaluation of My Speech Trainer, a pilot application, powered by automatic speech recognition (ASR) technology. The application aims to improve the English academic speaking skills of students at Dutch universities. The theoretical framework UTAUT2 (Venkatesh, Thong and Xu, 2012) was chosen for the early evaluation as it allows predicting whether students would accept and use My Speech Trainer. Therefore, the first research question asks what factors influence students' decision to adopt My Speech Trainer. The second research question is posed about the opinions of students. Understanding these factors would allow developers and institutions to timely adapt and improve the learning tool.

The study was realized in the form of a quantitative study with a UTAUT2-based questionnaire. To this end, 48 students from two Dutch universities tested the application and filled out an online questionnaire. The results show that social influence and attitude are the key determinants of the participants' intention to use My Speech Trainer. It means that in order to ensure the use of this learning application, important people should encourage the students to use it and positive attitudes should be formed. Despite a number of technical issues, the students reported positive opinions about My Speech Trainer, in particular regarding the innovative feature of automatic speech recognition.

This research shed some light onto acceptance of a language learning application for speaking skills at Dutch academic institutions. It may be useful for stakeholders such as content creators, IT developers, lecturers, language centres and administrative staff at Dutch universities. Further research can investigate the effectiveness of My Speech Trainer after creating and testing more content in a longitudinal study.

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1. Introduction

English dominates Dutch universities more and more every year. The number of degrees offered in English is growing. This trend opens doors to broadening horizons and establishing international connections, but also poses a challenge to all parties involved who are studying or lecturing in a non-native language (Andrade, 2006; Gan, 2012). Although universities require a certificate of English language knowledge before being accepted to the university, the speaking skills are often not sufficient and students need more training (Cheng et al., 2004). Students experience difficulties while speaking in English, making errors in pronunciation, grammar, fixed expressions and formal register. This problem is more common at the offset of the studies and tends to diminish during their study for most students as their language skills improve. Nevertheless, the lack of speaking proficiency negatively influences their grades (Ghenghesh, 2015). In order to support freshmen students who are non-native speakers of English, universities should offer more linguistic assistance (Cheng, Myles and Curtis, 2004).

The students at Radboud University have shortcoming in speaking skills irrespective of their origin. In the needs analysis that had been carried out prior to this study, it was found that the problems often stem out of students' first language and vary per country of origin. Although Dutch students generally have a better level of English than international students, they still struggle with formality, pronunciation, fixed expressions etc. Fortunately for some, a number of Bachelor programmes include academic English training in their curricula. However, these courses do not allocate enough attention to speaking skills. There is not enough time for sufficient oral practice and feedback for all students.

Computer-assisted language learning (CALL) can be the answer to the lack speaking practice (Hsu, 2016; Strik, 2012). Digital learning programs can be accessed anywhere, anytime. It can be blended with classroom activities or used in an individual study. Provided there is automated feedback, a student can practice and improve speaking skills at their own tempo and according to their needs.

The major problem with CALL is that its potential is often taken for granted. Language learning with the use of technology has a lot of benefits, but also drawbacks. The latter tends to be underestimated (Hubbard, 2009). On the one hand, technology-enhanced learning can be efficient, effective, accessible, convenient, motivating and scalable. Learning happens faster or with less effort. While learning new materials, deeper associations with the learned words or images can be created which leads to longer retention. Computer or online websites provide access to materials, speakers or speech varieties that otherwise would not be available to the learner. The learning activities can be performed at a convenient place and time for the learner. Digital activities can be more engaging. Such tools also reduce costs for institutions as no or less instructor time is needed.

On the other hand, if these tools are developed without proper research, the technological or pedagogic insufficiencies are stronger than potential benefits. Careful research and frequent testing are needed to ensure the learning success. The research on both computer and mobile language learning lacks systematic approach, sound study design, and strong evidence for the findings (Chwo, Marek and Wu, 2018; Golonka, Bowles, Frank, Richardson and Freynik 2012). The studies have serious flaws, as their findings cannot be trusted and compared. Therefore, rigorous and

comparable research must take place before launching learning tools and claiming their relevance and effectiveness.

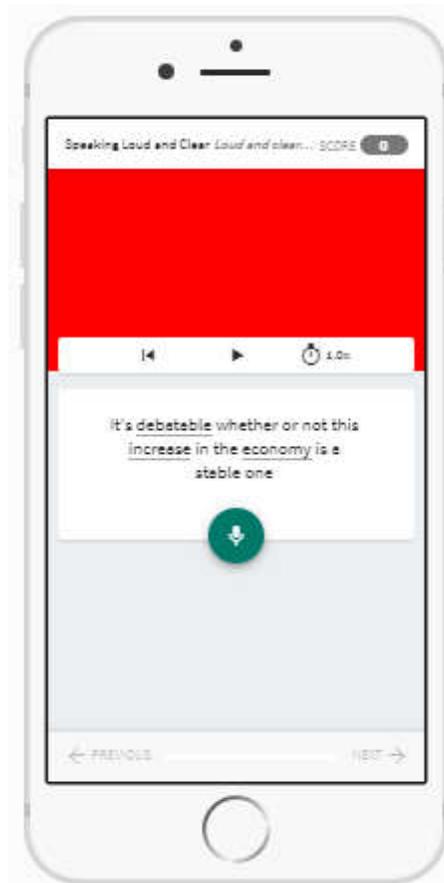


Figure 1. A screenshot of My Speech Trainer

This thesis presents an application for academic English speaking skills and its evaluation. The innovativeness of My Speech Trainer is that it is based on automatic speech recognition (ASR) technology with sensitive pronunciation feedback. The technology of speech recognition is well-suited for individual speaking practice. Students can record their utterances, get immediate feedback, and practice as many times as they need. Twenty-four exercises were created in the Novo Studio, a program of a Nijmegen-based company NovoLearning (NovoLearning, 2020). Figure 1 provides a screenshot of the application.

The purpose of this study is to evaluate My Speech Trainer at the early stage of development using a validated theoretical framework. Different aspects could be evaluated, for instance whether the target users like using the technology, whether it will be used, and whether the learning will be effective. As the number of exercises in the application is limited, it is too early to measure effectiveness of the application. Instead, this thesis aims to discover which factors define students intention to use this application and what are their overall opinions about it. Understanding these questions is important to ensure that the application will actually be used and the learning will

take place. With such outcome, there is more chance that the learning will be effective and the goal of communicating in English at a higher level will be reached.

The research questions will be answered with the help of the unified theory of acceptance and use of technology (UTAUT) (Venkatesh et al., 2003). The UTAUT model shows which behavioral factors are dominant in the user's decision to accept a system. Applying the UTAUT framework in this research also contributes to improving the state of CALL research. Many studies failed to use comparable theoretical frameworks, whereas the UTAUT survey can be easily adapted, reproduced and compared in many settings.

This thesis is further organized as follows. Section 2 provides description of the CALL field, research issues, technology acceptance models and recent CALL studies that use acceptance models. Section 3 describes the methods used in this research, including the detailed description of My Speech Trainer, the survey, the sample and the approach used for data analysis. Further, section 4 reports on the results. Section 5 discusses and compares the findings in light of broader research, makes suggestions for stakeholders, provides recommendations for future research, and concludes the thesis. Section 6 concludes the thesis with the overview of key insights.

2. Research background

This chapter describes the field of CALL, in particular definitions, brief history and current trends for the reader to understand that state of the discipline. Next, the focus of the review moves to technology acceptance models. Finally, it reviews the studies that evaluated learning applications in educational context with the use of acceptance frameworks.

2.1. CALL as a field of research

Several prevailing definitions of CALL have been proposed. Levy (1997: 1) defines CALL rather broadly as: *“the search for and study of applications of the computer in language teaching and learning”*. The definition of Beatty is similarly broad (2013: 7): *“any process in which a learner uses a computer and, as a result, improves his or her language”*. These definitions differ in a way that Levy (1997) sees CALL as a research subject, while Beatty (2013) focuses on its use and learning results. Both meanings have been used interchangeable in the research. Further, Beatty (2013) names a wide spectrum of computer technologies to belong to CALL: those that were developed specifically for language learning, and generic computer technologies that can be adapted for language learning purposes. Davies (2006), on the contrary, recognizes only the tools that were exclusively developed for language learning, and thus excludes other generic software tools. Although these definitions differ on the types of technologies and purpose of the field, they overlap in their reference to the technologies for language learning.

CALL is relatively young field of research. Its history began in the 1960s with the first computers and research projects that appeared at universities (for a more detailed overview see Davies, 2006). With the invention of personal computers in 1980s, the technology became accessible to broader audiences, and so CALL research started

expanding. In that period the technology was used for repetition exercises (drills), multiple choice and fill-the-gap (cloze) exercises with focus on grammar and vocabulary. Further advents in technology such as multimedia, world-wide web, CDs and DVDs in the 1990s broadened the possibilities of CALL to other areas of language knowledge (Davies, 2006). The early 2000s saw the rise of mobile phones, evolving to touchscreen smartphones about a decade later. The mobile technologies were also used for language learning and a separate branch in CALL research appeared: Mobile-Assisted Language Learning (MALL). Kukulska-Hulme (2008: 273) defined mobile learning as such that is “*mediated via handheld device and potentially available anytime, anywhere*”. The mobile learning is seen as highly flexible in regards to location and timing. The field of CALL has travelled great distances in the past six decades, along with the rapid technological development.

Nowadays the variety of technologies available for language learning is quite wide. Golonka et al. (2012) reviewed 350 publications and divided CALL tools into four main categories: classroom facilities, individual learning facilities, social-based networking systems, and portable devices. See Table 1 for examples of each kind of technology.

Table 1.

CALL technology type

Category	Examples of technology
classroom facilities	interactive whiteboard, course management systems
individual learning facilities	corpus, electronic dictionary, grammar checker, Automatic-Speech-Recognition system, intelligent tutoring system
social-based networking systems	virtual world game, chat, blog
portable devices	smartphone, tablet

Note. Adapted from Golonka et al. (2012)

CALL has a broad array of benefits, but also a number of potential flaws. Hubbard (2009) describes the affordances of the technology-enhanced language learning as follows. Technology-enhanced language learning can be effective as it supports learning at a faster pace and with less effort, helps create deeper associations and assures longer retention. It is efficient as it provides access to materials, speakers or vocal varieties that otherwise would not be available. It is accessible, convenient and engaging, as the learner can choose the place and time for learning. The use of CALL tools can reduce costs for institutions, and therefore, it is scalable.

However, these benefits lose their value if the instrument suffers technological or pedagogic deficiencies. Golonka et al. (2012) evaluated actual efficiency of the tools reported in the studies and found that only few studies were able to provide strong evidence on improved learning outcomes. Instead, the studies typically confirmed learners' enjoyment and increased motivation. According to Golonka et al. (2012), that is not the same as demonstrating the efficacy of learning. Such studies frequently admit serious failures in study design that severely harness conclusions that are drawn from the findings. Limitations such as a small sample size, lack of control groups, limited study time are common for CALL research (Golonka et al., 2012)

The benefits of mobile language learning are centered on its flexibility and accessibility. It is seen as a flexible way of learning, available anywhere (Kukulska-Hulme and Shield, 2008). Learners can access the language learning materials at their own chosen moment and place. Frequent exposure is another benefit of MALL (Petersen, Procter-Legg and Cacchione, 2013; Ushioda, 2013). The learners are likely to do small sessions of learning which can increase motivation.

Conversely, Chwo, Marek and Wu (2018) reviewed 218 MALL studies and found that expectations from mobile learning are often overestimated. It is frequently neglected that no deep learning can be expected in MALL (Stockwell and Hubbard, 2013). Although the nature of mobile learning is positively seen as accessible "anywhere, anytime", it often happens "on the go", in noisy and distracting environments, and with other distracting apps on the phone. These conditions make the learning process rather shallow. The assumption of the "anywhere and anytime" use can even be violated by learners themselves. Nah (2011) reported that students preferred to reserve a special time to use the tool in a library. Due to high stakes of learning outcomes, the students chose a quiet environment above the flexibility of learning "anywhere, anytime".

There is a relatively small body of research that is concerned with speaking skills in both computer- and mobile-assisted language learning areas. Historically, it was easier to offer practice for perceptive language skills on the screen, and hence, more research was done on listening and reading. Audio- and video-materials have been used for listening practice and drilling pronunciation since 1980s, along with multiple choice and cloze exercises for reading skills, grammar and vocabulary. Writing skills have been practiced often in a format of blended learning, when a human is needed to be involved for evaluating learner's written output. Speech, however, could only be evaluated by humans until recently. ASR-technology provides learners with automated feedback on their utterances and has a great potential for language learning (Hsu, 2016; Neri, Cucchiari and Strik, 2006; Strik, 2012).

In view of all that has been mentioned so far, CALL is certainly a promising field of research and practice. On one side, teachers, learners and institutions have a range of opportunities offered by technology-enhanced learning at their disposal. On the other side, the effectiveness of applications and research of this topic in a valid and reliable way are the points for improvement for the whole field. Technology acceptance models have a long history in information technology research and can be adopted for standardization of research in CALL as well.

2.2. Technology acceptance models

Many CALL studies lack a sound theoretical framework and suffer inconsistent research design (Chwo et al., 2018; Duman, Orhon and Gedik, 2015; Kukulska-Hulme et al., 2012). A validated theoretical framework must be adapted in the CALL research (Morton and Jack, 2010; Rapp and Kauf, 2018) in order to obtain comparable findings and ensure collaboration in the field.

One type of the frameworks frequently used for evaluating technology is the model of technology acceptance. The first technology acceptance model (TAM) was developed by Davis, Bagozzi and Warschaw (1989). This model predicts the use of a new technology based on the intention to use it, the latter being measured in a survey. The intentions to use a system in TAM are correlated with two behavioral constructs: usefulness and ease of use. If the user expects the system to improve their performance or it is easy to use, they are likely to adopt it. Understanding the users' decision to accept the tool is useful for developers and other stakeholders. This model was extensively used in research and received many extensions and modifications (see review by Marangunić and Granić, 2015).

Table 2.

Definitions of UTAUT2 constructs

Construct	Definition
Performance expectancy	'the degree to which an individual believes that using the system will help him or her to attain gains in job performance'
Effort expectancy	how easy users perceive the system to be
Social influence	'the degree to which an individual perceives that important others believe he or she should use the new system'
Facilitating conditions	the extend to which user is aware of infrastructure that supports the use of the system
Hedonic motivation	the degree of fun or pleasure from using a system
Price value	users' perception of obtained value of the system in relation to its monetary cost
Habit	behavior that is performed automatically or because of learning

Note. Adapted from Venkatesh et al. (2003) and Venkatesh et al. (2012).

The UTAUT framework is the most influential TAM follow-up model because it has the highest predictive power. It was proposed by Venkatesh, Morris, Davis and Davis (2003) who combined eight dominant but overlapping variations of technology acceptance models. The researchers identified four key determinants that predicted the variance in acceptance and actual use in the best way (70%). These predictors, in order of strength, were: *performance expectancy*, *effort expectancy*, *social influence* and *facilitating conditions*. The definitions of these constructs are provided in the Table 2. According to Venkatesh et al. (2003), these behavioral constructs are moderated by age, gender, experience and voluntariness of use.

Many studies modified or extended the original UTAUT model attempting to suit their research questions or improve the variance explained. Venkatesh, Thong and Xu (2012) extended the model by adding the constructs of *hedonic motivation*, *price value* and *habit* (see Table 2 for definitions). This extension, named UTAUT2 (Figure 2), considerably improved explained variance of behavioral intention and actual use (by 18% and 12% respectively).

Dwivedi, Rana, Jeyaraj, Clement and Williams (2017) challenged the original UTAUT model on the question of excluding the construct of *attitude* from the predictors. Venkatesh et al. (2003) did not include this construct because no significant relationship was observed between attitude and intention in the statistical analyse. However, Dwivedi et al. (2017) carried out a meta-analysis of 162 studies and determined that attitude did have a direct effect on behavioral intention and actual use. This showed that attitude is an important predictor and moderator of both intention and use, and hence, should be included into the research in order to improve the predictive power of the UTAUT model (Figure 3).

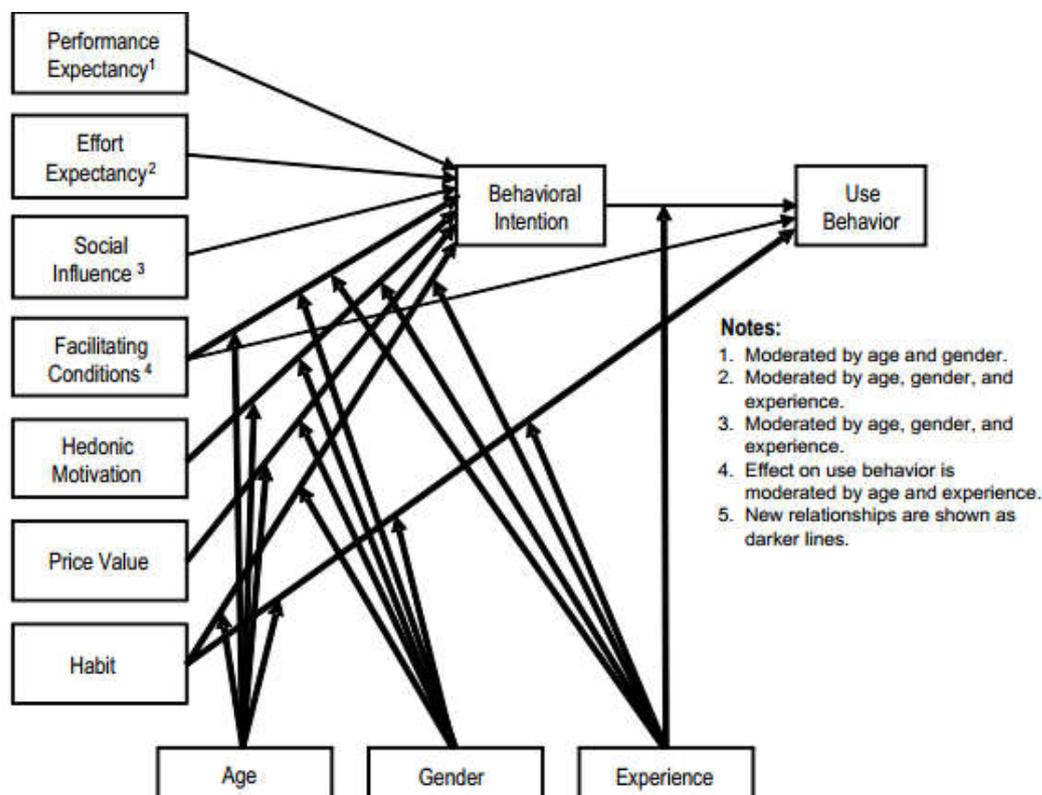


Figure 2. UTAUT2 model. (Venkatesh et al., 2012)

Attitude is defined as a subjective reaction of an individual towards an object (Bohner and Dickel, 2011; Mantle-Bromley, 1995). Venkatesh et al. (2003) defined the attitude toward using technology as “*an individual's overall affective reaction to using a system*”. It is hard to define and measure attitude as it is highly subjective. However, it has a strong influence on user’s irrational decision to use a new product (Dwivedi et al., 2017) and thus is worth including in the survey.

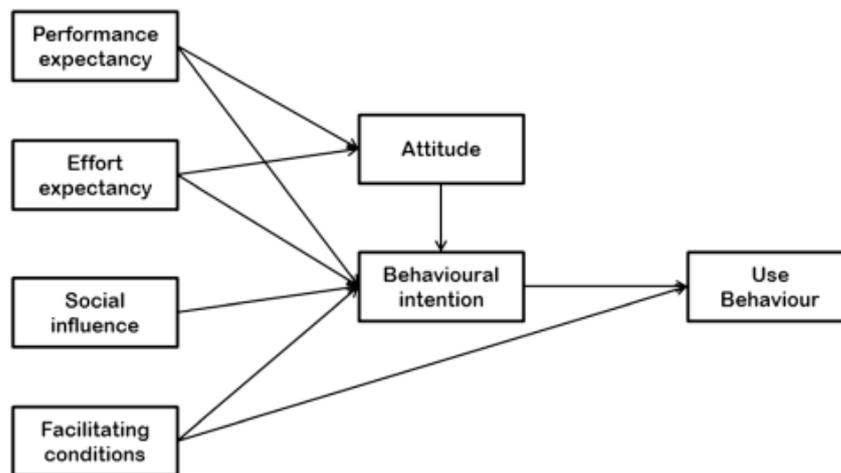


Figure 3. Adjusted UTAUT model including attitude (Dwivedi et al., 2017)

Viburg and Groenland (2013) investigated attitudes towards mobile technologies for language learning and the correlation of these attitudes with cultural norms. Questionnaire results from 345 students in Sweden and China showed that about 70% students are positive towards MALL. The nationality as in Hofstede dimensions did not matter in the attitudes. Authors suggest that this could be a notion of new technological era, where technology shapes culture. Indeed, students from both countries that are so different in their culture (individualist vs. collective, different power distance etc.) were equally interested in using technology for their learning. It is even more surprising because Swedish students already receive language training exclusively online, and Chinese only face-to-face. Surprisingly, there was a strong influence of gender on attitude. Female students were more positive about use of MALL. In development of MALL, authors advice to focus on using socio-cultural framework by Kearney et al. (2012) model (individualization, collaboration and authenticity) in combination with pedagogic principles.

The UTAUT model was criticized for its complexity and a high number of disparate predictors (Bagozzi, 2007; van Raaij and Schepers, 2009). Bagozzi (2007) found that the combination of predictors with moderators resulted in 41 variable which can be of little guidance to decision-makers. Nevertheless, UTAUT has been widely used by numerous studies and in various fields, due to the validated and easily adaptable survey format, comparable findings and high degree of prediction power.

Various types of innovative technologies have been tested with UTAUT. Williams, Rana and Dwivedi (2015) reviewed 174 studies that used this model. They divided the tested technologies in several groups: general, communications,

specialized and office technologies (see Table 3 for details). The outcomes of the studies vary naturally due to different settings. Interestingly, performance expectancy and behavioral intention seemed to be the best predictors of behavior and actual use (Williams et al., 2015). Frequent limitations in UTAUT studies include small unnatural settings with overly focused tasks, using non-target participants, small sample and short period of study. This framework has proved to be a popular method for reviewing technologies, and although still in development, researchers can use it and improve state of research by avoiding these common pitfalls.

Table 3.

Types of technology in UTAUT research

Type	Examples
General	Digital learning, Windows, internet, personal computer etc.
Communications	Mobile phones, online banking instant messaging, chat bots etc.
Specialized	Enterprise resource planning, e-voting etc.
Office	Standard office applications, databases etc.

Note. From Williams et al. (2015)

2.3. Acceptance models in CALL

Relatively few studies used the UTAUT model in the context of language learning studies. Due to the limited number of such studies, the literature investigation was expanded to papers about e-learning or digital systems in education. These studies are interesting for this research because CALL falls under the umbrella of e-learning, and so these studies can be compared. A literature search was performed using the combination of keywords “UTAUT” and “computer-assisted language learning”, “speaking skills”, “language learning”, “higher education”, “students”. The selection criterion for the papers were as follows: the study used UTAUT or TAM model, analyzed a technology for language learning or for learning in general, took place in educational or academic settings and was published within the past ten years.

The studies that were found under the above-mentioned criterion can be grouped into three segments: papers about a specific CALL tool, about the use of technology for language learning in general and about other technologies in educational or academic contexts, such as digital learning systems and virtual learning environments (see Table 4). In this order these studies are reviewed below in more detail.

Hsu (2016) investigated the influence of learning styles on the perceptions of usefulness and easiness of use of a pronunciation training tool MyET (My English Tutor). Based on the results of a 3-month long study with 341 Taiwanese students, it was found that only visual and kynesthetic styles had a significant effect and only on

perceived easiness of use. So, the look and feel of application is important for students who process information by visual or mechanic methods. For this group, the looks of the application determine the subjective perception whether the app is easy to use.

Table 4.

CALL studies that used UTAUT framework

Subject of the paper	Authors
Specialized technology for language learning	Hsu, 2016; Liu, 2013, Liu and Huang, 2015
General technology adapted for language learning	Hsu, 2012; Tan, 2015; Lai, Li and Wang, 2017
Specialized technology for other educational purposes	Khechine et al., 2014; van Raaij and Schepers 2008; Rapp and Kauf, 2018

A similarly big-scale study ($N = 418$) was carried out by Lai, Li and Wang (2017). The researchers investigated the influence of teacher support on students' acceptance of technology for language learning as a self-study, comparing universities in Hong Kong and the U.S. The study utilized a UTAUT-based questionnaire in combination with items about cultural dimensions. Interestingly, teacher's support was effective for increasing self-directed technology use in both groups, but different types of support worked better in the Asian and North American cultures. As of the UTAUT predictors, social influence and facilitating conditions are the most significant moderators that influence teacher's behavior, and thus in its turn, users acceptance.

Tan (2015) investigated the use of websites for learning English in Taiwan, collecting 176 responses to a UTAUT-questionnaire. All four predictors were found significant, with performance expectancy and social influence the strongest. This confirms the original UTAUT theory (Venkatesh et al., 2003) which suggests all four constructs to predict acceptance and use. However, it is not clear how the actual use was measured in this study.

Khechine, Lakhal, Pascot, and Bytha (2014) collected 114 UTAUT-questionnaires to investigate acceptance and use of a webinar platform Elluminate for various disciplines, including language learning. There was no previous research about the technology of webinars and it was necessary to understand students' readiness to use it. The analysis showed that performance expectancy, social influence and facilitating conditions were the significant predictors. Therefore, expectations of performance should be well met. Authors suggest making bite-sized videos for students to watch relevant pieces. Enough support should be provided, e.g. video tutorials, FAQ, phone number. Interestingly, age had moderating effect on performance expectancy: younger students (till 24 years old) wanted to use the tool because of easiness and productive way to achieve learning objectives, in line with Venkatesh et al. (2003). Also age moderated the construct of facilitating

conditions for older students (21 years and older). Perhaps, the younger students are more enthusiastic and eager when they start studying. This study has limitations. Results might have varied depending on the discipline and lecturer's engaging interaction with the online audience. If the students liked the webinar or the subject, they might accept the webinar system more eagerly. Other constructs can be included to understand intentions better, such as attitude or hedonic motivation.

Several studies utilized UTAUT framework with a considerably low number of participants. Hsu (2012) investigated the use of Moodle platform for language learning through computer-mediated communication, namely online forums. Collecting questionnaires from 47 students in Taiwan and running a regression analysis, it was found that performance expectancy, effort expectancy and social influence were the significant predictors. Reactions towards Moodle were positive. Intention to use was also highly correlated with actual usage. Facilitating conditions, in line with Wu and Chen (2006), did not predict acceptance of use for such a highly technologically developed country.

The same technology, Moodle, was investigated by Liu (2013) who investigated its acceptance and use in ESL classes in the published Master's thesis. This researcher collected responses to the UTAUT questions by means of focus groups with 13 participants in total. Also here performance expectancy was a significant predictor, followed by effort expectancy. Another construct popped up in the research, namely previous use. Students who had used Moodle previously, were easier to accept or resist the use of this technology in the classroom. This construct is reflected in UTAUT2 framework (Venkatesh et al., 2012) and is operationalized as habit. However, Liu carried out the research by means of focus groups and facilitated data from 13 students only. Hence, the data cannot be statistically compared to other cases and conclusions on significance of the constructs could be influenced by personal judgement of the researcher. Liu and Huang (2015) researched the use of Google Docs for synchronous translation practice with 27 students and found facilitating conditions, social influence and effort expectancy to be significant predictors. It was first time for these students to use this technology, which explains the student's appreciation of support in using the system and solving technical difficulties. This study would yield more valid results if they tested the technology for a longer period.

Van Doremalen, Boves, Colpaert, Cucchiarini, and Strik (2016) developed and evaluated a prototype of an ASR-system named DISCO. It provided pronunciation, syntax and morphology training. The evaluation was carried in several ways: in focus groups, with a UTAUT-based questionnaire and interviews. The students were generally positive and liked the system. However, due to a small sample ($N = 5$), the study did not carry out a statistical analysis and did not report which predictors were significant. Van Raaij and Schepers (2008) used an extended TAM-model to investigate the acceptance of a custom virtual learning environment for an MBA program in China. With a sample of 45 learners, and partial least squares regression analysis, the researchers found performance expectancy as the main predictor. Additionally, performance expectancy was found to be effected by effort expectancy and social influence. The unique trait of this study was that they provided evidence about personal innovativeness and anxiety having effect on effort expectancy. Thus, if a person likes to buy new gadgets, they may expect it to be easier in use. Vice versa, if a person feels anxious about using technology, they may expect it to be more difficult than other users.

One longitudinal study (Pynoo et al., 2011) investigated teachers' acceptance of an online learning management system for secondary schools (smartschool.be). As the tool was mandatory and already in use by ninety teachers, the researchers could compare the predicted intention with the actual use. They collected the questionnaire responses three times throughout the year and observed interesting changes in intention determinants throughout the year. In the long term, performance expectancy was found the main predictor for attitude, intention and actual use. Effort expectancy predicted attitude. Social influence predicted intention, self-reported use and actual use. Facilitating conditions predicted actual use. Re-using the same questionnaire three times is a weakness of this study as it might have caused a respondent fatigue and have negative effect on the quality of responses (Lavrakas, 2008).

The dominant predictors in the reported studies vary per tool, target audience and context. Performance expectancy is the most dominant predictor in research on CALL and e-learning systems, in line with research in other disciplines (Williams et al., 2015). Participants make the decision to use the technology because they expect it to improve their performance.

This study uses UTAUT model to bridge the gap between technology and language learning fields, tackling the problem of inconsistent methodologies in CALL research and applying a well-tested model for evaluating a tool. Furthermore, this study aims to evaluate acceptance of a tool with ASR technology, which is an innovative tool as little research has been done about speaking practice in CALL. Although the system is expected to be beneficial by stakeholders, it yet needs to be accepted by target users. The UTAUT-based questionnaire study will help understand what influences the acceptance of My Speech Trainer.

2.4. Research questions and hypotheses

2.4.1. Research question 1

Which factors define the intention of students to use My Speech Trainer?

This study aims to bridge the gap in the research about speaking skills in CALL. My Speech Trainer is an electronic application which utilizes ASR in an innovative way and thus its acceptance can be predicted through UTAUT model. In total, seven behavioral constructs were studied: six of the seven behavioral constructs from UTAUT2 framework (Venkatesh et al., 2012; Price value was removed), with the addition of the construct of attitude (Dwivedi et al., 2017). All seven constructs are hypothesized to have effect on students' intention to use this tool (Table 5).

Knowledge about which of these constructs have a large effect on the intention to use My Speech Trainer, is important for stakeholders and developers, so that they can set the priorities in further development of the app.

Previous studies reported mixed results on which constructs are significant. Originally, Venkatesh et al. (2003) showed that all four factors predict actual use: performance expectancy, effort expectancy, social influence and facilitating conditions. This combination of constructs was confirmed in study by Tan (2013). Consecutively, Venkatesh et al. (2012) proved that the degree of variance improves

Table 5.

Hypotheses to the Research Question 1

Number	Statement	Supported in
Hypothesis 1	Performance expectancy has a positive effect on the intention to use My Speech Trainer.	Khechine et al. (2014), Liu (2013), Pynoo et al. (2011), van Raaij et al. (2008), Tan (2013), Venkatesh et al. (2003)
Hypothesis 2	Effort expectancy has a positive effect on the intention to use My Speech Trainer.	Hsu (2012), Liu (2013), Liu and Huang (2015), Tan (2013), Venkatesh et al. (2003)
Hypothesis 3	Social influence has a positive effect on the intention to use My Speech Trainer.	Liu (2013), Khechine et al. (2014), Pynoo et al. (2011), Tan (2013), Venkatesh et al. (2003)
Hypothesis 4	Facilitating conditions has a positive effect on the intention to use My Speech Trainer.	Khechine et al. (2014), Liu (2013), Liu and Huang (2015), Tan (2013), Venkatesh et al. (2003)
Hypothesis 5	Hedonic motivation has a positive effect on the intention to use My Speech Trainer.	Venkatesh et al. (2012)
Hypothesis 6	Habit has a positive effect on the intention to use My Speech Trainer.	Venkatesh et al. (2012)
Hypothesis 7	Attitude has a positive effect on the intention to use My Speech Trainer.	Dwivedi et al. (2015)

when three constructs are added: hedonic motivation, habit and price value. However, no studies have been detected to find all six or seven constructs significant at the same time. Usually the combination of significant constructs varies from one study to another. This study hypothesizes all seven constructs to be significant, based on other studies, where each construct had been found significant at least once (see Table 5). Collecting data in the context of Dutch universities will allow unveiling the unique combination of constructs, significant for this setting.

2.4.2. Research question 2

What are students' opinions towards using My Speech Trainer?

No hypothesis is posed for this question as we will be open to opinions reported by students. An attempt will be made to draw conclusions based on the key themes that will appear in the collected data. This research question is important in order to understand the attitudes towards the application. Researchers agree that if students like the application, they learn better because their motivation increases (Liaw, Huang and Chen, 2007; Merisuo-Storm, 2007; Vandewaetere and Desmet, 2009). If the users

dislike the technology, the learning may be less effective if take place at all. Moreover, understanding user opinions in the early stage will help improving My Speech Trainer.

Ghorbani and Ebadi (2020) carried out interviews with students to understand their attitudes towards using chats for learning grammar. Nearly all students were enthusiast and believed in the effectiveness and usefulness of learning English with MALL. This was contradictory to the study of Pettit and Kukulska-Hulme (2008) where students did not use their devices for learning. As attitudes may be different for every context, this research will shed light on what is important for technology-aided language learning in the context of Dutch universities.

3. Methods

This chapter describes the course My Speech Trainer in details. Further, it explains reasons for choosing UTAUT framework and its modification for the current study. Finally, information about participants recruitment and the sample is provided.

3.1. My Speech Trainer

3.1.1. The content and learning objectives

My Speech Trainer is a pilot e-learning course created in the Novo app (<https://platform.novo-learning.com/player/>). This course is meant to help students who study in the Netherlands in English as the medium of instruction to improve their English speaking skills. The total of 24 exercises are grouped into four sections: pronunciation, vocabulary, expressions and grammar. Some examples are provided in Image 1. The total learning time with the existing content is estimated at 1.5-2 hours.

The general learning aims of the course are: to provide speaking practice with the most frequent academic words and phrases and to eradicate common grammar mistakes. Table 6 enlists specific learning objectives per exercise and what the learner should be able to do upon its completion. The vocabulary and expressions exercises are based on the Academic Word List (Coxhead, 2000; Coxhead, 2011). This list contains the most commonly used vocabulary in the academic setting based on several spoken and written corpora. By practicing the commonly used words and phrases, the vocabulary of learners is hoped to be expanded, they could become more fluent while speaking and be able to switch from informal to formal register easier. The grammar items are based on the mistakes that had been observed during the needs analysis and classroom observations. After doing the exercises, the learners should be more aware of the grammar rules and speak more correctly and confidently. The full content is provided in Appendix B.

Additionally, My Speech Trainer has three subject-specific activities created for Cultural Studies. These items are based on ten terms which were pre-selected by the lecturer. The learning objective of these exercises is to use the common in Cultural studies terms confidently and correctly while speaking, for example presenting or debating in the course.

3.1.2. Novo platform functionality

Novo platform is the environment where My Speech Trainer course was created. It is a platform where custom e-learning courses can be created. It can be accessed on a desktop via the website www.novolearning.com or downloaded as an app on Google Play or Apple store. To receive access, one must request an account. The administrator creates an account and grants access to the course in the Novo learning.

One unique feature of the platform is the recognition of spoken input with the ASR technology. Almost every activity elicits spoken input from the learner, for instance, multiple choice, dialogue, pronunciation exercises. Feedback for pronunciation or speech exercises is given with focus on segmental pronunciation. A content creator must pre-select potential incorrect pronunciation, to which the system will match the user's input. Another specialty of the platform is that it is user-friendly for content creators. It is easy to create exercises without prior training, and thus course instructors could use it, for instance to support their teaching in class or to provide interactive materials for self-study.

Further, there are elements of gamification in the application. For instance, scoring can be added per item which can create a feeling of competitiveness and encourage the learner to get the highest score. The user will immediately see scores

Table 6.

Sections and learning objectives of My Speech Trainer

Section	Learning objectives	Number of exercises
	<i>By the end of the activities, the student will be able to:</i>	
Pronunciation	<ul style="list-style-type: none"> - pronounce several multi-syllable words correctly in semi-formal sentences; - pronounce the words with correct stress in semi-formal sentences. 	2
Vocabulary	<ul style="list-style-type: none"> - use formal synonyms of common words; - differentiate between nouns, adjectives and verbs by their ending and context; - use appropriate parts of speech with a correct ending; - have a discussion with a superior at a university in a formal way; - differentiate between formal and informal discourse. 	7
Expressions	<ul style="list-style-type: none"> - use expressions with their correct prepositions; - speak the target expressions with correct pronunciation; - use correct form of expressions; - use expressions with fixed prepositions correctly; - ask questions to lecturer or assistant lecturer in formal or semi-formal way, using fixed expressions. 	6
Grammar	<ul style="list-style-type: none"> - use tenses correctly; - use correct word order. 	5

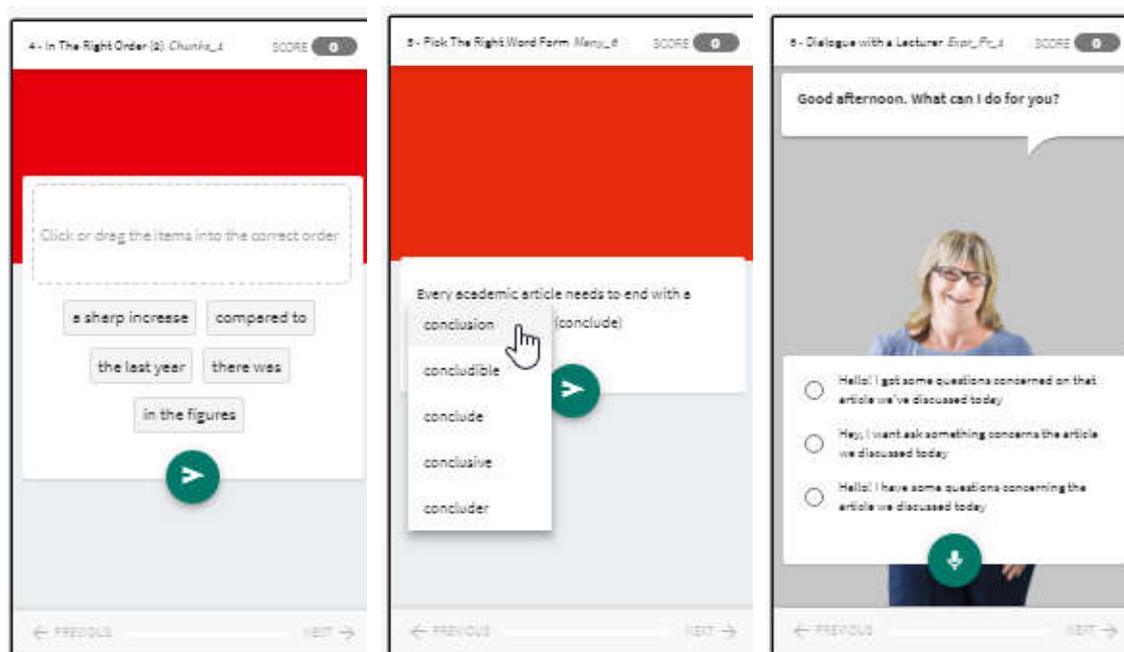


Image 1 Screenshots of grammar, vocabulary and formality exercises

added when he or she provides a correct response. No points are granted for incorrect response or second attempt. In the end of the exercise the learner will see a percentage of correctness or other criteria as implemented by content creator. The feedback message can also include a custom text with a supportive message if provided by content creator. A minimal passing bin can be pre-selected. This makes the application more engaging. However, there is also an assessment mode where the learner has only one attempt and sees the score at the end of the activity.

The user administrator can see the user logs which detail the time spent in the app, as well as scoring percentage. This is convenient for learning analytics, for understanding individual and class progress. Further, the administrator can set deadlines for completion and pre-requisites for access to a certain assignment. If users require support, they can click help button and report an issue. The reported issues are handled by Novo support team and solutions are communicated to users. We also stated in our communication with learners, that if any issues or questions occur they could contact us by email.

3.1.3. Pilot-testing

The contents of the app were quality-checked and revised by the members of the work group. This group included several linguistics students and lecturers from the language centre and Radboud University. Afterwards, My Speech Trainer course was pilot-tested with a group of 20 Master's students of General Linguistics program in April 2018. The reviewers reported some technical and content issues that were fixed accordingly. The questionnaire was pilot-tested by the members of the research team and by one student from the target audience. After the suggestions were taken into account, the questionnaire was improved and ready for distribution.

3.2. UTAUT modification

In order to investigate the first research question, an adapted UTAUT2 model will be utilized (Venkatesh et al., 2012). This model, as depicted in Figure 4, allows understanding which behavioral factors influence user's decision to use a new technology. If My Speech Trainer is accepted and used by students, they will be able to improve their speaking skills.

The theoretical framework UTAUT was chosen for this research because it is recent and generally recognized framework in technology acceptance research (Williams et al., 2015). Its first version was developed for organizational context (UTAUT: Venkatesh et al., 2003) and later modified by adding several constructs for consumer context (UTAUT2: Venkatesh et al., 2012). One of the most important benefits of this model is that it has the potential to explain the variance in user intentions at the highest statistical value compared to preceding technology acceptance models (70 percent) (Venkatesh et al., 2012). The more variance is explained, the more clarity and confidence the stakeholders possess to inform their decisions while developing an innovative learning tool. Further, this model provides questionnaire statements that were validated multiple times and that are easily adaptable for any innovative technology or application. Finally, it was used in a number of studies in language and education research. Therefore, the findings of such studies can be compared to this one and contribute to the overall knowledge in the field.

Several changes were done to the original model (Venkatesh et al., 2013). First of all, the construct of price value was removed as the application is offered for free. Removing irrelevant questions and reducing the size of the questionnaire helps reducing questionnaire fatigue (Dörnyei, 2003). Secondly, the construct of attitude is added. As discussed in the literature review section, this factor was erroneously neglected in the original UTAUT as it provides important insights for the acceptance and actual use. Therefore, adding the construct of attitude would improve the model (Dwivedi et al., 2017). Next, the moderators of gender, age, experience and voluntariness of use are dropped. This was done in order to simplify the model and the analysis. When one includes these moderators, a high number of variables occurs which may lead to confusion and misinterpretation (Bagozzi, 2007). The adapted model in this study is hypothesized to provide valuable insights onto acceptance and use of My Speech Trainer for students bettering of their speaking skills.

3.3. The questionnaire

The questionnaire consisted of three parts (Table 7). The first part contained a consent form in order to obtain students' permission to process their data. There was also a field to fill in the email. Collecting the emails was necessary in order to distribute rewards to five randomly selected participants later. The second part consisted of 26 UTAUT statements that provide data for the first research question. They were rated on Likert 7-points scale, conform to other UTAUT studies. The values of the scale

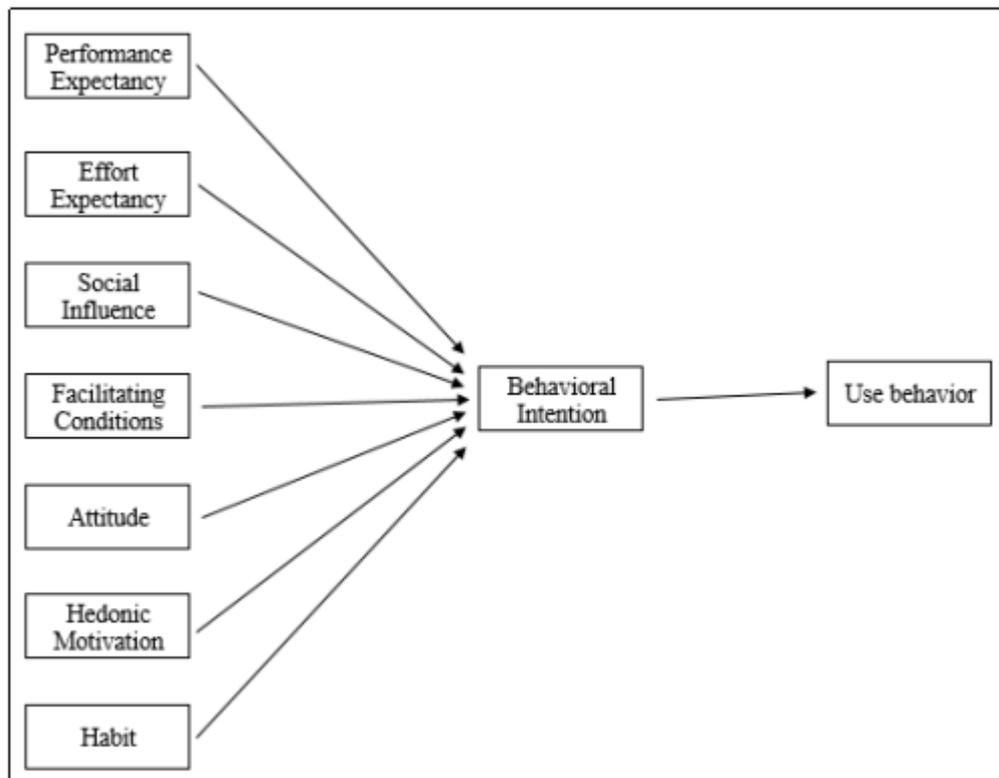


Figure 4. The theoretical framework used in this study

Note. Adapted from Venkatesh et al. (2013) and Dwivedi et al., (2017).

Table 7.

The layout and contents of the questionnaire

Parts	Content	
(1) Introduction	Description of research, consent form and students' email	
(2) Main research data	UTAUT2 statements and the open-ended question	
(3) Demographic data	Personal	Gender, age, nationality
	Linguistic	Native language, self-assessment of English knowledge
	Educational	University, degree level, program of enrolment

Table 8.

Likert scale values

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

Table 9.

UTAUT2 statements in the questionnaire

Construct	Number	Statement
Performance Expectancy	PE1	I would find MyST useful in my studies.
	PE2	Using MyST would enable me to speak academic English better.
	PE3	Using MyST would improve my academic English speaking skills.
	PE4	If I use MyST, I will increase my chances of studying successfully.
Effort Expectancy	EE1	It would be clear and understandable to me how to use MyST.
	EE2	I would find MyST easy to use.
	EE3	Learning to use MyST is easy for me.
Social Influence	SI1	People who influence my behavior think that I should use MyST.
	SI2	People who are important to me think that I should use MyST.
	SI3	People from my university are encouraging the use of MyST.
Facilitating Conditions	FC1	I have the resources necessary to use MyST.
	FC2	I have the knowledge necessary to use MyST.
	FC3	The system is not compatible with other systems I use.
	FC4	A specific person is available for assistance with MyST difficulties.
Attitude toward using technology	At1	Using MyST is a good idea.
	At2	MyST makes language learning more interesting.
	At3	I like learning with MyST.
Hedonic Motivation	HM1	Using MyST is fun.
	HM2	Using MyST is enjoyable.
	HM3	Using MyST is very entertaining.
Habit	Ht1	The use of language learning apps has become a habit for me.
	Ht2	I often learn language(s) in mobile or computer applications.
	Ht3	I must use mobile or computer applications to learn languages.
Behavioral intention to use the system	BI1	I intend to use MyST in the next 3 months.
	BI2	I predict I would use MyST in the next 3 months.
	BI3	I plan to use MyST in the next 3 months.

points are provided in Table 8. The statements as listed in Table 9 were entered in the survey in a randomized order. This was done to make sure that participants paid attention, especially for similarly formulated statements. Finally, the third part of the questionnaire contained questions on personal, linguistic and educational backgrounds. Placing the demographic data items at the end was another measure to prevent fatigue and to ensure that the most attention was given to the UTAUT statements. The questionnaire was created using Qualtrics software (version April 2018) and could be accessed through an internet link. The full version of the questionnaire is provided in the Appendix B.

3.4. Participants

3.4.1. Recruitment

Participants were recruited in several different ways. First of all, we approached lecturers from the first-year Bachelor programs and study advisers at the faculties of arts, social sciences and applied sciences of Radboud University in May and in September 2018. Six lecturers from Radboud University and two teachers from the language centre Radboud In'to Languages were interested in the project and agreed to collaborate. At the time agreed upon with the lecturers, we came to the classes to briefly present My Speech Trainer to the students. After the presentation, we collected emails of the students who were willing to participate. Unfortunately, this approach yielded low participation rate. Although the students readily provided their emails and seemed interested, only few actually completed the exercises in My Speech Trainer, in spite of the personal reminders from us and from the lecturers. For the course of cultural studies, we collaborated with the lecturer and created a customized set of three exercises linked to the terms used in the course. Regretfully, this group did not use these exercises actively.

Next, we sent out emails to study advisors at the Utrecht University, University of Delft and Hochschule Rhein-Waal (Kleve, Germany) with a suggestion for students to try out My Speech Trainer, help research and improve their speaking skills for free. This yielded no substantial results. Several messages were posted in Facebook groups of the respective universities, inviting students to participate in the research, however this was also not successful.

Finally, it was decided to approach students at the campus directly and involve them in the testing on the spot. This was done in the Rafter canteen and the canteen in the Huygens building at Radboud University and at the campus of Utrecht university. We asked students whether they recently started their studies or wanted to improve their English speaking skills and had approximately 20-30 minutes of free time. In exchange for participation, we would reward them with a pack of chocolate bars. Students who agreed to participate, were asked to try out the application by completing two-three exercises of their choice, or using it for 10-15 minutes until they became familiar with the application. They could choose to use the researcher's account, or receive their own account, in order to access more exercises in their own time. The participants used My Speech Trainer using one of the two laptops and one smartphone that we prepared for them. Right after that, they filled out the questionnaire on the same device and received their reward.

There were a several rewards for participation. The participants who were approached at the campus, were offered a chocolate as a reward. After the data collection was complete, five participants were randomly selected by an online loting of the anonymized IDs. The five winners were approached by email and each awarded a coupon of 10 EUR worth at a personal appointment at the university campus.

3.4.2. The sample

The target participants were non-native speakers of English who studied at a higher education institution in the Netherlands with English as the main language of instruction. Originally, the preference was given to the students of Bachelor programs in the first year or those with self-estimated speaking skills at the CEFR levels B1-B2. However, due to low participation rate of the first-year Bachelors' students, this condition was lifted and a broader audience was approached. The content of My Speech Trainer can be created for a wide range of language needs at different levels, and therefore we approached students from different study years.

Table 10.

Description of the sample

Category	Subcategory	N	%
Gender	Female	28	58
	Male	20	42
	Total	48	100
Age	18-20 years	23	48
	21-24 years	18	38
	25 years and older	7	14
The program of enrollment	Bachelor's	40	83
	Master's	8	17
	Social Sciences	17	35
Faculty of enrollment	Arts	15	31
	Applied Sciences	10	21
	Others	6	13

Out of 95 students who received access to My Speech Trainer, a total of 54 questionnaires were filled out and collected. Six questionnaires were incomplete and were excluded from the further analysis. Among the remaining participants, 28 were female (58.3%) and 20 male (41.7%) (see Table 10). Most participants were 18 to 24 years old (85.4%), and the remaining 14.6% participants were older than 25 years. The participants were mostly Dutch (N=35, 72.9%) and German (N=5, 10.4%). Among other nationalities, there were one Chinese, two Italian, one Belgian, one

Romanian, one South Korean and one Syrian Arab Republic nationals. The native languages of the participants were respectively Dutch, German, Chinese, Italian, French, Romanian, Korean and Arabic. Most of the participants were enrolled in a Bachelor's program (N=40, 83%). 17% participants were enrolled in a Master's program. Most studied at the Social Sciences faculty, followed by Arts and Applied Sciences.

3.5. Data analysis

Analyses were run in the software IBM SPSS Statistics, version 25 (IBM Corp, 2017). To reduce bias in the dataset, the sample was checked for outliers as advised in Field (2013, p.167). Outliers can be a source of bias, affecting the mean and standard error. The outliers were identified through inspecting boxplots for each statement (Field, 2013, p. 176). SPSS software detected extreme scores. One of the ways of dealing with outliers is winsorizing, that is replacing the outliers by the next highest score (Field, 2013, p. 198). It is assumed that the outlier is very unrepresentative of the sample and would bias the mean and other parameters, therefore it is considered acceptable to replace it by a nearest value that is less suspect. Another way of dealing with outliers is bootstrapping (Field, 2013, p. 198) however, this option was not available for stepwise regression in the IBM SPSS Statistics version 25. Therefore, winsorizing was performed.

Reliability of the scales was checked to control for consistency of the measurement and whether the observed values were measured correctly. Cronbach's α is a often used to determine scale reliability, with the recommended threshold value of 0.7 (Field, 2013, p.709). Items with Cronbach's $\alpha < 0.7$ were removed to increase the reliability of the measurement. Although there is no consensus in the research on how to interpret the Likert-scale data, the data is assumed as continuous and so Pearson correlation was used. The validity of the statements used in the questionnaire and that they indeed measure the constructs they intend to measure were validated in the previous research (Venkatesh et al. 2003; Venkatesh et al., 2012).

Multiple linear regression was used to answer the first research question. This analysis helps identify which predictors influence the outcome variable. Regression was chosen based on the literature review by Williams et al. (2015) who found the regression analysis to be one of the most frequently used methods in the UTAUT studies. Regression analysis allows to predict by how many units will the dependent variable change, with one unit of change in the independent variable (while other predictors are held fixed). Outcome or dependent variable in this study was the construct behavioral intention to use MyST. The predictors or the independent variables were the constructs of performance expectancy, effort expectancy, social influence, facilitating conditions, attitude, habit and hedonic motivation.

The second research question was analyzed with the method of thematic analysis (Braun and Clarke, 2006). This approach is used for analyzing data collected from participants answers in form of an open-ended text entry or interviews. Originated in the field of psychology, this method is widely used in the CALL research (Halverson, Graham, Spring, Drysdale and Henrie 2014; Alresheed, Raiker, Carmichael 2016, Bueno Alastuey, 2011; Ghorbani and Ebadi, 2019). The analysis consists of

familiarizing with the data, identifying interesting aspects, coding them, identify themes at a broader level and analyze the meaning. Each comment is tagged with a theme that it discusses. If a comment mentions more than one theme, both are tagged. Then frequency or percentage of instances each theme is mentioned will be calculated. This allows to notice patterns in responses and to pinpoint the important meanings. This approach is chosen because it allows inducing meanings from the data and is data-driven, as opposed to deductive analysis where one tries to find the meanings based on the research question and hypotheses that had been made. The thematic analysis allows the researcher some degree of freedom in the relation to what can be found and what conclusions can be made. One does not need to search for confirmations of what they expect to find and allow themselves to really listen to the opinions of the participants by looking for meanings and patterns in the dataset.

4. Results

This chapter reports on the analysis results. After the data collection was complete, the dataset was prepared for the analysis in the IBM SPSS Statistics, version 25 (IBM Corp, released 2017). The identities of the participants were anonymized by replacing these with an random ID. Four incomplete responses were removed. The responses to statement FC3 “*MyST is not compatible with other systems I use*” were reversed by re-coding its values in opposite order.

4.1. UTAUT constructs

The winsorization procedure was performed for 14 statements that had outliers (At1, At2, EE1, EE2, EE3, FC2, HM1, HM2, HM3, PE1, PE2, PE3, SI3). In these questions, 1 to 4 cases were changed, total of 34 cases. This constitutes 2% to 8% of changed data per question. In relation to all data (48 respondents x 26 questions = 1248 cases), 2.8% of data was winsorized, which is acceptable. Item SI1 was problematic, because it had 14 outlying values as identified by SPSS. No changes were made to the responses in this question, instead it was removed from further analysis. The winsorization improved reliability and inter-item consistency of the scales effort expectancy, facilitating conditions and attitude. The standard deviations slightly reduced for most scales as well.

Reliability checks were run per scale (see Table 11). Most Cronbach’s alphas were above the recommended threshold ($> .7$) (p. 829, Field, 2013). The reliability of the effort expectancy scale was lower than recommended (3 items; $\alpha = .65$). After deleting the item EE1 “*It would be clear and understandable to me how to use MyST*”, the reliability of the effort expectancy scale improved (2 items; $\alpha = .72$). The construct of facilitating conditions had a low Cronbach alpha value (4 items; $\alpha = .36$) and was improved after deleting items FC1 and FC3 ($\alpha = .63$). The Cronbach alpha’s of other scales were higher than 0.7 and thus, the measurements could be considered internally consistent.

Next, scale means were calculated for all constructs. As reported in the Table 11, effort expectancy scale had a high mean value ($M = 6.12$, $SD = 0.68$) which suggests

that most users found My Speech Trainer easy to use. Users somewhat agreed with the statements that it could improve their academic performance ($M = 5.49$, $SD = 1.01$). Support and conditions were found sufficient ($M = 6.44$, $SD = 0.68$). The participants attitude was positive ($M = 5.57$, $SD = 0.85$). It was enjoyable and fun to use ($M = 5.49$, $SD = 0.92$). The participants were rather neutral about their intention to use the app in future ($M = 4.04$, $SD = 1.64$). Finally, the participants were on average neutral regarding the statements about Social Influence ($M = 3.72$, $SD = 1.43$) and Habit ($M = 3.67$, $SD = 1.75$).

Table 11.

Reliability, correlations and scale means

Scale	N items in the scale	Cronbach α	Inter-item correlations	Scale M	SD
BI	3	.96	.89	4.04	1.64
PE	4	.73	.41	5.49	1.01
EE	2	.72	.56	6.12	.68
FC	2	.63	.47	6.44	.68
SI	3	.77	.52	3.72	1.43
Ht	3	.82	.61	3.67	1.75
HM	3	.87	.70	5.49	.92
At	3	.83	.63	5.57	.85

Table 12.

Pearson's correlations between the constructs

	BI	PE	EE	FC	SI	Ht	HM	At
BI	1.00							
PE	.51*	1.00						
EE	.30*	.36*	1.00					
FC	.10	.08	.52*	1.00				
SI	.67*	.57*	.21	-.16	1.00			
Ht	.33*	.37*	.28*	-.01	.41*	1.00		
HM	.46*	.40*	.54*	.29*	.26*	.06	1.00	
At	.57*	.64*	.56*	.29*	.41*	.36*	.78*	1.00

Note: all values with an asterisk (*) are significant ($p < .05$)

Pearson's correlations were checked between all constructs to search for signs of multicollinearity (see Table 12). Multicollinearity is a phenomenon in multiple regression analysis, when there is a high linear relationship between two variables. If there is multicollinearity in the dataset, it would make predictions less precise.

No substantially high correlations were found in the data set (higher than .9). Hence, no multicollinearity was observed. Further, all predictor variables, except for facilitating conditions, were found to have significant large positive correlations with the outcome variable. Behavioral intention correlates the best with social influence ($r(48) = .67, p < .05$), followed by attitude and performance expectancy. Other predictors also have significant correlations between each other, except for facilitating conditions. Attitude and hedonic motivation have a large significant correlation ($r(48) = .78, p < .05$).

Before running the multiple regression analysis, the assumptions of linearity and normality were checked. A linear relationship between the predictor and outcome variables is a prerequisite for using the linear regression method (pp.228, 395, Field, 2013). The linear relationships were checked by using the scatterplots function in SPSS (p.395, Field, 2013). The linear relationships of behavioral intention were observed only with performance expectancy, social influence, hedonic motivation and attitude. The rest of the predictors do not show a linear relationship in the given sample, which partially violates the assumption.

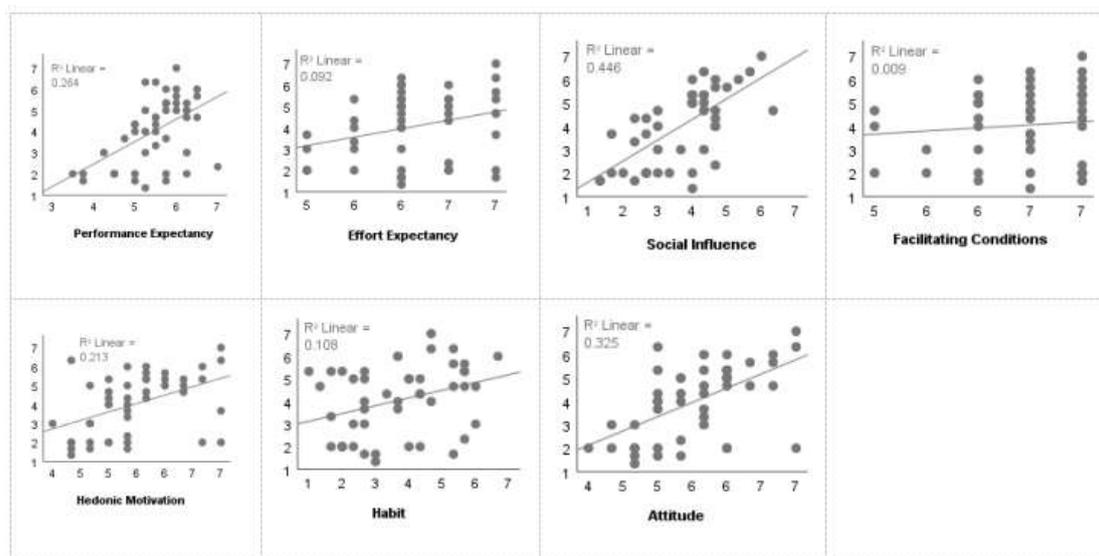


Figure 5. Scatter-plot matrix of the relationships between the outcome behavioral intention (Y-axis) and predictor variables (X-axis)

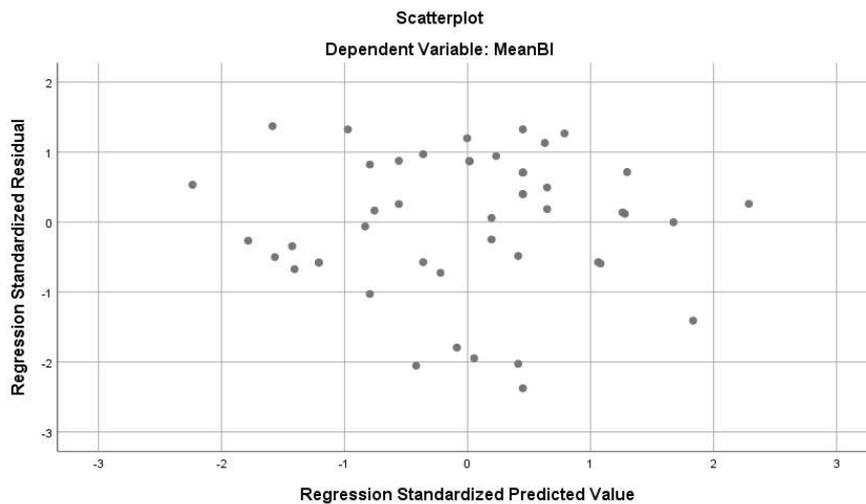


Figure 6. Scatterplot showing homoscedasticity

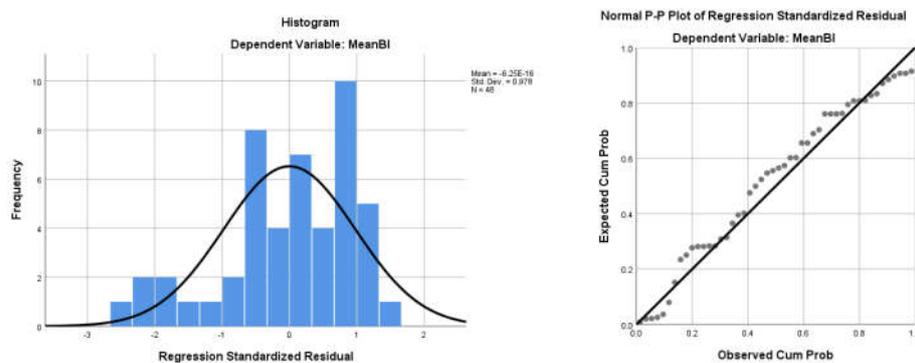


Figure 7. Histogram and P-P plot of the residuals

Multiple regression analyses were run to test which behavioral constructs influenced students' decision to use My Speech Trainer application. First, a linear multiple regression (forced entry) analysis was run with all seven predictors, with bootstrapping (based on 1000 samples). The results indicated that the seven predictors explained 57% of variance ($R^2=.57$, $F(7,40)=7.47$, $p<.01$). It was found that only social influence significantly predicted the behavioral intention ($\beta = .74$, $p<.01$). As the first model with all predictors had only one significant predictor, it was decided to run a regression with only those predictors that met the assumption of a linearity (performance expectancy, social influence, hedonic motivation and attitude). The model with the four predictors explained nearly the same level of variance ($R^2=.56$, $F(4, 43)=13.5$, $p<.01$). In this model, social influence still remained as the sole significant predictor ($\beta = .71$, $p <.01$).

Stepwise regression was used to find out which of predictors contribute the most to the outcome variable. Stepwise regression was run with all seven predictors, to see if any other predictors except of social influence, were significant. The scatter-plot of

standardized residuals shows that the data points are randomly distributed (see Figure 6) (p.254, Field, 2013). This verifies that the assumption of homoscedasticity is met. The assumption of multicollinearity is also met: the tolerance value of the significant predictors are smaller than 10 (.83) and VIF value is near 1 (1.205) (p.405, Field, 2013). P-P plots show that the residuals are not quite normally distributed (see Figure 7), thus caution should be taken while interpreting the results.

This model confirmed social influence as the significant predictor ($\beta = .7$, $p < .01$) and also brought another one into light. Attitude ($\beta = .76$, $p < .01$) was found the second significant predictor of behavioral intention. This model explained 55% variance ($R^2 = .55$, $F(2,45) = 27.58$, $p < .01$). The coefficients of the predictors are reported in Table 13. The findings coincide with the results of the analysis that was run in the statistical program R for comparison.

Table 13.

Coefficients in stepwise regression model

	B	t	p
Constant	-2.78 (SE=1.2)	-2.32	0.03
Performance expectancy	-.02	-.12	.91
Effort expectancy	-.003	-.03	.98
Facilitating conditions	.09	.80	.43
Social influence	.67 (SE=.15)	4.75	.00
Habit	-.02	.17	.87
Hedonic motivation	.12	.76	.45
Attitude	.76 (SE=.24)	3.25	.002

Note: the dependent variable is Behavioral Intention

4.2. Student opinions

The total of 21 comments were collected, meaning that nearly a half of participants provided feedback (44%). The answer to this research question was sought by collecting feedback to an open-ended question at the end of the survey:

“Would you like to share something else about your experience with My Speech Trainer? If you have any suggestions or remarks, please write them down here. For example, what is one thing you liked best / least about MyST?”

The comments were analyzed by the method of inductive thematic analysis (Braun and Clarke, 2006). A number of themes were identified. The following themes were mentioned in a positive tone: general attitude, appreciation of ASR, easiness of use, content, fun and gamification, feedback. Criticism was expressed about the following themes: malfunctioning of ASR, usability and technical issues, need for more feedback. They noticed that this application, unlike others, provides a lot of speaking practice: *“I like that you have to talk out loud”*, *“I like that the app gives the user to*

chance to advance their pronunciation, which not many other apps focus on.”, “The app is very easy to use, and very usefull because you really have to pronounce all the different words carefully.”, “I like the way it learns you how to speak. And the feedback is good.”. Other positive comments complimented on the look and feel of the app: “It looks fun”, “Easy to use and entertaining with the game-like aspect, very useful for practicing language learning”, “Helpful and clear concept. Good visuals and not complicated to use.”.

There were also some critical comments or suggestions that reported bugs, oversensitivity of ASR or suggested improvements in the user interface. Students reported the following improvement points regarding the ASR performance: “[...] *In the pronunciation exercise I had trouble, although I was pronouncing the words right. [...]*”, “[...] *the microphone doesn't always hear what is being said correctly [...]*”, “[...] *It's probably a very sensitive program, so some of my answers were counted wrong, when I spoke them right. Sometimes this makes it very frustrating to work with a program.*”. Others noticed that the application does not work properly in the noisy environments: “[...] *MyST is not suitable for crowded environments.*”, “[...] *Sometimes I pronounced a word correctly, but the result didn't correspond. This may be due to the noise around me.*”. This finding was reported to the IT-team of Novo, and indeed the performance of ASR improved when used in quiet environments with a headset.

Finally, one student reported a bug in the drag-and-drop exercises: “[...] *There was a bug in one of the exercises where you have to put words into the correct order.*”. Indeed, there was a bug and it was not possible to move the blocks around as the app recognized the move as swiping and proceeded to the next slide. This was reported to the IT-team and they fixed this issue. The full text of students’ remarks is provided in Appendix C. The next section discusses these findings and compares them to other papers.

5. Discussion

This chapter discusses the results of the study and their place in the broad research. The first aim of this study was to understand what drives students’ decision to use an innovative online learning application. The application, My Speech Trainer, was created for improving students’ academic English speaking skills by means of the ASR technology. The innovativeness of the technology was in providing practice for speaking on academic level with automated feedback, while there nearly no other similar applications. To investigate the aforementioned aim, a modified UTAUT2 framework (Venkatesh et al., 2012) was chosen, for the reason that it is considered reliable for predicting acceptance of new technologies.

Seven behavioral factors were hypothesized to have a positive effect on the intention to use My Speech Trainer: performance expectancy, effort expectancy, social influence, facilitating conditions, hedonistic motivation, habit and attitude. The results showed that significant effects were found for only two constructs: social influence and attitude (hypothesis 3 and 7, see Table 14).

The second aim was to understand students opinions about the application. It was investigated by means of an open-ended question. Students’ suggestions and remarks

Table 14

Confirmation of hypotheses for RQ1

Number	Statement	Result
H1	Performance expectancy has a positive effect on the intention to use My Speech Trainer.	rejected
H2	Effort expectancy has a positive effect on the intention to use My Speech Trainer.	rejected
H3	Social influence has a positive effect on the intention to use My Speech Trainer.	supported
H4	Facilitating conditions has a positive effect on the intention to use My Speech Trainer.	rejected
H5	Hedonic motivation has a positive effect on the intention to use My Speech Trainer.	rejected
H6	Habit has a positive effect on the intention to use My Speech Trainer.	rejected
H7	Attitude has a positive effect on the intention to use My Speech Trainer.	supported

revealed several themes: general positive attitude, appreciation of speech technology, reporting technical issues. These findings, their place and implications in the broader research, as well as limitations and suggestions for future research are discussed below in more detail.

5.1. Research Question 1

Which factors define the intention of students to use My Speech Trainer?

5.1.1. Supported hypotheses

Social influence

The results revealed that social influence was the strongest significant predictor of the intention to use My Speech Trainer. The third hypothesis was thus supported. Social influence is the degree to which the user decides to use a new technology because their peers, or important others would support or expect that behavior. In the context of My Speech Trainer, peers could be other students, lecturers, university staff, parents.

Social influence was also a significant predictor in the studies of Lai et al. (2016), Liu and Huang (2015), Khechine et al. (2014). This is also in line with the follow-up investigation at Utrecht university, where social influence was also found the dominant predictor in a more longitudinal study (Strik, Ovchinnikova, Giannini, Pantazi and Cucchiarini, 2019). However, this finding is contradictory to the UTAUT2 research by Venkatesh et al. (2012) who wrote that the construct of social influence is significant only in mandatory settings. On the contrary, our results showed that social influence can also be significant in voluntary settings. Thus, the influence of important others determines people's decision and intention to use a technology in both voluntary and mandatory settings. If others reflect positively about My Speech Trainer, the students are more likely to do adopt it. Having other students and professors talk about it would boost students' intention and actual use.

Attitude

This is an innovative finding as the original UTAUT theory dismisses the construct of attitude as not important. The results of the study indicate that attitude plays a significant role for the given group of users in their intention to use My Speech Trainer. Thus, the seventh hypothesis is supported. Attitude is understood as a sum of subjective feelings towards an action. This finding supports Dwivedi et al. (2017) who suggested bringing the construct of attitude back into the UTAUT2 theoretical model as it plays a central role in adoption of innovations and increases the explanatory power of the model. This is also consistent with Thomas, Singh and Gaffar (2013). Therefore, the construct of attitude should not be overlooked in UTAUT research.

When the target audience generally like the new technology and think it is a good idea to use it, the tool is likely to be used. Therefore, if the students feel positive about using My Speech Trainer, they are likely to adopt it and use it. As findings to the second research question demonstrate, the students felt positive about the app. They appreciated its novelty in terms of voice-recognition technology. If the attitude were negative, and students do not like it for some reasons, they might be reluctant to use it, even if there were other obvious gains from its use. Considering that My Speech Trainer is a tool provided on voluntary basis, the attitude is especially important, since the users are not forced into using it.

When launching an innovative learning application, efforts must be taken to make the IT feel amiable and likeable. This can be achieved in various ways, starting with communication about it, that comes from the teachers, should be positive and encouraging. If any problems occur, they should be investigated and solved, so that users retain their positive attitude towards the product and do not feel annoyed by technical issues. Gathering and implementing user opinions about the app interface and content may also be helpful, to make the users feel that their voices matter and are heard. Future research on attitude can investigate the links between attitude and other behavioral constructs. As Dwivedi et al. (2017) found, it influences all other aspects of decision-making behavior, and thus it would be interesting to investigate and understand the interplay of these constructs better.

5.1.2. Rejected hypotheses

Performance expectancy

Surprisingly, the construct of performance expectancy was not significant in the given study, in the contrary to many other studies where this construct is the most significant (Khechine et al., 2014; Pynoo et al., 2011, Tan, 2015; Onaolapo and Oyewole, 2018; Salini and Johnson, 2020; Nikolopoulou, Gialamas and Lavidas, 2020). The first hypothesis is thus rejected. Performance expectancy is the degree to which users expect the new technology to improve their performance. The intention to use My Speech Trainer is, therefore, not defined by the expectations to improve one's performance. This finding was also reported by Liu and Huang (2015) and by Moorthy, Yee, Ting and Kumaran (2019). The former was carried out with a relatively low number of participants (N=29). It is possible that if there were more data, this construct would have more significance statistically in either study. Collecting data from more participants would allow researchers to check for this assumption. On the other hand, it could be that the students from both studies did not believe that the tested technologies would help improve their performance, or did not deem the performance important. This line of thought is discussed below.

The discrepancy between the majority of the studies and the result in the given study could be explained by the difference in academic cultures. In the study of Khechine et al. (2014), the significance of performance expectancy was explained by the nature of students who were young and ambitious. Similarly, Pynoo et al. (2011) argued that the teachers in their study cared about their performance and thus wanted to improve it by using the new learning management system. By contrast, Dutch higher education system appears to "suffer" from the culture of low academic achievement (Onderstal, 2015, p. 56). This is referred to in Dutch as "*zesjescultuur*", a culture of sixes, the minimal passing grade. Students do not feel the need to gain high grades as long as they pass the minimum requirement. In other words, performance is of no or little importance to students at Dutch universities. Hence, students are not interested in bettering their performance, and have no intention to use a new learning application for that. This could explain why performance expectancy did not predict the intention to use My Speech Trainer.

Several other explanations to the discrepancy of this finding with other studies are proposed further on. Firstly, as the students already had been admitted to the university and thus, passed the language requirements, they might consider their English skills sufficient. They might feel no need to improve their linguistic performance. Secondly, it could be that the linguistic performance is not perceived identical to the performance in students' degree program. Students who care about their grades in their courses are sometimes not aware of the fact that their grades are also influenced by their language proficiency (Ghenghesh, 2015). Making language mistakes or being not fluent enough will influence the grade of an assignment such as a presentation. The perceptions of students about their achievement in relation to their linguistic skills could be investigated to fully understand the weight of this behavioral factor.

Effort expectancy

The construct of effort expectancy was found not significant in predicting users' intentions to use My Speech Trainer. The second hypothesis was rejected. Effort expectancy is how easily users expect the new technology to be when they would use it. Therefore, the efforts for using the app did not define the decision to use My Speech Trainer.

This finding is in line with Khechine et al. (2014) who pointed out that technologies had already been part of the culture at their Canadian university and therefore, it would not be difficult for students to adopt a new tool. The situation at Dutch universities is similar. Students are expected to use computers and various tools for completing assignments in virtual learning environments, making presentations etc and thus they are accustomed to using and adopting new technologies. Furthermore, the interface of My Speech Trainer is user-friendly, and instructions were provided for each exercise. The application was intuitively easy to use, and therefore this was not an obstacle to its adoption. This could explain why effort expectancy was not a determinant in the decision to use it.

Facilitating conditions

The fourth hypothesis was rejected. The construct of facilitating conditions was not a significant predictor. This construct is defined as user's perception about the availability of technical support, troubleshooting and other conditions. This construct is argued to predict actual use (Venkatesh et al., 2003). Even though a contact person for any questions, including technical was provided in communication to students, this condition did not define their intention to use the app.

This result is contrary to Liu and Huang (2015) who found facilitating conditions to be the strongest predictor. However, in their study the technology was not straightforward to the students and facilitation was required to solve problems. The finding is in line with Hsu (2012) who argued that Taiwanese students are accustomed to an advanced technology infrastructure and so this factor would not influence their adoption of a new tool. Similarly, the Dutch universities established a technically savvy environment where online learning management systems such as Blackboard, and the programs such as Microsoft Word, Powerpoint, statistical package SPSS are used frequently. A user-friendly application such as My Speech Trainer does not require extensive support or explanations for its use. Although it is important to facilitate conditions for support to users, this factor is not crucial for adoption of My Speech Trainer by students.

Habit

The construct of habit was not significant for the intention to use My Speech Trainer, and thus this hypothesis is rejected. The construct of habit is defined as the automaticity of behavior based on prior experience with a similar technology. It was

hypothesized that if users had experience or used frequently, other language learning apps, they would be more prone to adopt My Speech Trainer. However, this turned out to be not true. The results indicated that the learners did not use other applications for language learning purposes and this factor did not have influence on intention to use My Speech Trainer.

This finding confirms the original theory. Venkatesh et al. (2012) wrote that habit has more influence on the behavior of older users. Our study focused on young students between 18-30 years old who are, thus, supposedly less prone to define their behavior with technology by habits. However, it is contrary to the study of Moorthy, Yee, T'ing and Kumaran (2019) who argued that the general increase of mobile use by youngsters leads to dependence and automaticity, and thus also shapes the intention to use the technology for learning. Although young people in the Netherlands use mobile phones as frequently, they reported no such habit specifically in regards to language learning applications. However, the questions in our survey targeted the habits of language learning with computer assistance, and not general technology use. Therefore, this construct does not have predicting power on the intention of use.

Hedonic motivation

Hedonic motivation was found not significant in students' intention to use My Speech Trainer, and thus the hypothesis was rejected. Hedonic motivation is the degree to which users gain joy and pleasure from using the technology. This may be related to the novelty, looks of the app, elements of gamification, rewards, bonuses etc. Especially because the app is provided on voluntary basis, it has to be attractive for users to start and keep using it. There are many apps and online tools for learning English. For a student to choose such an app, it has to stand out from others. Attractive interface and gamification and social elements could contribute to the enjoyment of using it, and hence, contribute to the actual use.

This finding is contrary to Moorthy et al. (2019). The latter found hedonic motivation a significant predictor and discussed that enjoyable and enticing features would increase the probability of actual use amongst Malaysian students. The research by Moorthy et al. (2019) focused on mobile learning in general, while our study focused on a specific learning tool. In case of the technology in general, the mobile learning, the students found the fun element of mobile features important and may be influenced by it in their choice. However, the participants who evaluated My Speech Trainer, would not be influenced by this factor. The explanation could lay in the different cultures of Malaysian context, where Asian have more value for attractive gamified designs. Whereas the Dutch students are more used to simple, business-like, straightforward approach which also may extend itself on learning technologies.

However, this result is consistent with the study by Tamilmani, Rana, Prakasam and Dwivedi (2019) who concluded that the construct of hedonic motivation is appropriate for investigating the technologies that focus on fun and pleasure. Whereas research on applications for other purposes, for instance e-learning, cannot draw conclusions on this construct as this is irrelevant for users.

5.2. Research Question 2

What are students' opinions towards using My Speech Trainer?

The answer to this research question was sought by collecting feedback to an open-ended question. The results revealed that students were generally positive about My Speech Trainer although some were dissatisfied with technical issues.

The students appreciated the novelty of My Speech Trainer, which lays in the possibilities for speaking practice on account of the ASR technology. Further, such components as fun, gamification and easiness of use contribute to the positive attitude towards the app. Would it be opposite, if the interface was too plain, if it was unclear how to use the app, if there were many technical issues, users could become irritated and quit or search for other more efficient tools to reach their learning goals.

The performance of the application can be considerably improved by specifying incorrect and correct pronunciations more carefully. This can easily be done in the editing mode of the Novo platform. This step is needed for the ASR-machine to compare the input it receives from the user with the statistically correct pronunciations that it expects to hear. As for the technical issues, the IT-developers at Novo acted quickly on fixing them. This contributes to the success of the application in a way that users feel heard and they know that their experience is valued and is continuously improved.

Students attempted using My Speech Trainer in noisy environment at the campus, which is in line with Nah (2011) who reported that students preferred to reserve silent study spots for mobile learning. Indeed, creating silent conditions while using the speech exercises was later recommended to all users of Novo platform. This requirement, however, contradicts the very nature of MALL believed to be the key advantage by many: “use it *any time, anywhere*” (Kukulska-Hulme et al., 2012). It turns out that the use of the application for speech practice cannot be done flexibly at a convenient for user place. The students have to search for a quiet place which is not always convenient at Dutch universities. The students often study at the library, where it is quiet but they are not allowed to speak out loud, or in the canteen or at co-working spots, where it is noisy. Also on the street or in public transport the surrounding noise could be too strong. Therefore, students' options for using My Speech Trainer are getting limited to their homes.

Such comments from users should be taken into consideration by the tool developers and content creators. Listening to the target audience ensures that problems and frustration are minimized, while fun, motivation and learning are maximized. These factors contribute to the positive attitude of students, which as can be seen from the results of the first research question, is an important predictor of students' decisions. Although the comments about My Speech Trainer are specific for this software and cannot be generalized to a wider audience, the findings to this research question set a positive example to the process of building a learning application with consideration for its users.

Overall, the students were enthusiast when using the app because it gave feedback on pronunciation and provided speaking practice. Although very few participants had an actual regular habit of using other language learning apps, as seen in responses to statements of the habit construct, students noted the novelty and

uniqueness of the ASR technology that was made available to them in the context of academic English.

5.3. Limitations and recommendations for future research

This study has some limitations. First of all, it was difficult to recruit students in completing the experiment. Although nearly hundred students were approached by making announcements before a lecture, and we also reached out to graduate classes in a high school, those students did not participate and most data was gathered by on-site recruitment in the canteens. This might have resulted in some variation in the population of the participants. Future research could collect data from more students. Maybe with more data the statistics would reveal more significant constructs.

Another limitation might lay in the procedure of the experiment, because the researchers explained to the participants that My Speech Trainer is a pilot project and it is not known whether it will become available as a full independent product or when. This might have had influence on the responses to the statement of the behavioral intention to use My Speech Trainer. As the statements are formulated like “*I intend/ predict/ plan to use MyST in the next 3 months.*”, the students might have been confused as whether this would be possible. This might have also resulted into average mean values for these statements on the Likert scale. Therefore, the researchers should be careful when explaining the conditions of the experiment to the participants.

Future research could focus on creating a course with subject-specific content for situation-based tasks, for example giving a presentation (Jordan, 1997). Collaborating with lecturers and making My Speech Trainer obligatory would allow collecting more data. Additionally, if the lecturer would be more involved in the creation and distribution of the course, it could yield interesting results to see whether the social influence will remain the key predictor, and whether other predictors will come front. Aside of that, efficiency of My Speech Trainer, or other applications for speaking practice, can be also examined in future research. For this, more content should be created, and can be investigated by means of pre- and post-tests.

6. Conclusion

Social influence and attitude are the key predictors of student’s decision to use a learning application on voluntary basis. Important others, such as teachers, classmates and friends, should encourage the use of the tool. Positive attitude should be promoted to ensure liking and, consequently, the actual use of the product. The opinions reported by students suggest that My Speech Trainer has the potential to be appreciated and actually used by students. Particularly, automated speech recognition was noticed and appreciated by students. Such positive opinions are likely to increase the engagement and successful learning.

Some behavioral factors which were significant in other studies, proved insignificant in the given study. For instance, performance may be not so important to

students at Dutch universities, where the culture of sixes prevails (Onderstal, 2015). The decision to use the application is not influenced by whether it is useful for one's performance, whether it is easy to use, fun or similar to the applications that the user already has experience with.

This research contributes to the field at several angles. Firstly, it poses one of the first attempts to evaluate a CALL application through a framework that is widely used in IT research. This directly responds to a call of researchers (Hubbard, 2009) who stated the problem that studies in CALL field lacked theoretical framework and thus could not be compared to each other. Although the UTAUT2 framework does not yet contribute to understanding of the learning efficiency of My Speech Trainer, it does allow understanding whether the students will use it and what defines their decision to do so on the early stages of the tool development. Once the tool is developed further, more content is available, lengthier research would be possible where a pre- and post-test might help investigating learning efficiency. But for now, it is a smart way to evaluate the new CALL technology and understand what moves the target users. Although each population is unique, the findings of this study can be applied or compared to roughly similar situations: academic institutions, in a technologically developed country, tools with ASR-technology, tools for speaking practice.

Secondly, this study describes and evaluates a pilot application for improving speaking skills in academic context with ASR-technology. As the literature review revealed, there has been no other similar tools or studies yet that serve this specific purpose. This study discusses an application for this audience and describes students' perspectives about it. Even though students might like the new technology for its looks and the novelty of automated feedback on speech, they still need social influence from outside to adopt the application for longitudinal use. Thus, teaching staff should encourage students to use the application, explain why it is important and demonstrate its benefits. Also it should be promoted in other ways, so that other students, friends and important people are involved and know about My Speech Trainer, so that there is interest and encouragement around the use of the new technology. Then, as this study shows, the students will be likely to adopt and use the new tool, and so, the investment will pay off and the learning goals are more likely to be reached. As such, future research may create more content in My Speech Trainer and test its learning effectiveness.

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Appendix A. My Speech Trainer content

Academic Dialogue - Dialogue with Supervisor

Question/Prompt	Answers
Hello, my name is Dr. Sukhai. I will be your supervisor this semester. How are you?	I feel fine, thank you. Hello, I am Jack. How are you? Hi, how's life?
I would like to discuss your research proposal. Did you bring it with you?	Yes, I did. Here it is. Sure! Yes, thank you.
Thank you. Can you explain why you chose this topic?	Because it's fun, that's why! I chose it because it interests me. Nice topic, don't you think?
Have you formulated your research question already?	Nope, sorry, no research questions! I ain't got none yet, man. I'm still working on my research question.
Alright, when do you think you can have this ready?	I hope to have it before our next meeting. Sometime soon, probably. I have no idea, sorry.
Have you decided on how to approach your topic?	I'll approach it at the start, of course I dunno, what do you think? I want to focus on the theoretical background first.
And what are you planning to do next?	Then I want to elaborate on my literary sources. I don't know, man. Read literature? I'm thinking of going shopping.
Those are good ideas. How is it going with your chapter outline?	There's no chapter outline. I haven't made one yet. My chapter outline is not doing fine.
For our next meeting, could you bring your research question and the chapter outline?	Yes, I'll bring them to our next meeting. Do I really have to? Okay. Sure, I'll bring it.

Good! If you have any questions you can contact me. Do you have my email address?

Sure, I'll mail you, thanks.

Yes, that's okay. I got it.

Yes, I have your email and I will message you if I have questions. Thank you.

Academic Dialogue - Academic Synonyms

Question/Prompt

Answers

I would like to **talk about** the methodology that was used. Use formal word(s): **address**

I would like to address the methodology that was used.

She hopes to **get into** the Masters(? Master's? - IH) programme. Use formal word(s): **be accepted**

She hopes to be accepted into the Masters (?Master's? - IH) programme.

I'm **doing** this research project with a group. Use formal word(s): **conduct**

I'm conducting this research project with a group.

Could you **take a look at** these numbers for me? Use formal word(s): **examine**

Could you examine these numbers for me?

You look ill, you should **skip** this class! Use formal word(s): **not attend**

You look ill, you should not attend this class!

That famous professor **quit** our university. Use formal synonym: **resign from**

That famous professor resigned from our university.

I am curious about the **aim** of this activity. Use formal synonym: **objective**

I am curious about the objective of this activity.

Keeping up this many study hours is difficult. Use formal synonym: **maintain**

Maintaining this many study hours is difficult.

This experiment will fail unless you implement **important** changes to make it work. Use formal synonym: **fundamental**

This experiment will fail unless you implement fundamental changes to make it work.

This **goes to show** that his findings are biased. Use formal synonym: **demonstrate**

This demonstrates that his findings are biased.

Academic Dialogue - In The Right Order

Question/Prompt

Answers

In order of magnitude, to write down, numbers, start

Start to write down numbers in order of magnitude.

Arrived at, the students, simultaneously, the answers

The students arrived at the answers simultaneously./The students simultaneously arrived at the answers.

To Nijmegen, to travel, on the next page, shows, the diagram, the various ways

The diagram on the next page shows the various ways to travel to Nijmegen.

President, was elected, of the student body, she

She was elected president of the student body.

To participate, you, decide, why, did, ?

Why did you decide to participate?

This, cannot, simplify, I, any further

I cannot simplify this any further.

In front of, my strongest suit, isn't, speaking, audiences	Speaking in front of audiences isn't my strongest suit.
Of, friends, which, knew, the surprise party, ?	Which friends knew of the surprise party?

Academic Dialogue - Perfect Match

Question/Prompt

Answers (correct is bolded)

During the conference, our team...

gave the best presentation.

to discuss the preliminary results
with contacts all over the world.

She's a famous professor...

gave the best presentation.

to discuss the preliminary results
with contacts all over the world.

Can you explain to me...

how to read this bar chart?

to discuss the preliminary results?
with contacts all over the world?

Can you come up...

how to read this bar chart?

with some good examples?

a ballpark figure?

Can you give me...

how to read this bar chart?

with some good examples?

a ballpark figure?

This is too complex, I'm...

in over my head.

off the top of my head.
will hit the headlines, for sure.

This groundbreaking research

in over my head.

off the top of my head.
will hit the headlines, for sure.

I don't remember this fact...

in over my head.

off the top of my head.
will hit the headlines, for sure.

This success shows...

that you've done your best.

on that internship offer.

off the top of my head.

You should follow up...

you've done your best.

on that internship offer.

that makes sense.

Expressions - Words with Many Forms

Question/Prompt

Answers (correct is bolded)

The ___ from the norm is what led to people's interest. (deviate)	deviation deviate deviated deviateness
Since there is no ___, the conclusion was rather clear. (ambiguous)	ambiguity ambiguous ambiguousness
The __ were drawn from the data. (infer)	inferences infer inferrable inferer inferable inferred
The article lacked _____. (cohere)	coherence cohesive cohered cohesion
The conclusion is clearly ___ from the results. (deduce)	deducible deduce deduction deducing
Every academic article needs to end with a ___. (conclude)	conclusion conclude conclusive concluder concludible
I have received ___ from the office. (confirm)	confirmation confirm confirmatory confirmed
The class will discuss ___ topics. (controversy)	controversial controversies controverse

They made an ___ of how many people would participate in their experiment.
(proximate) **approximation**

approximate

proximation

proximate

The participants are advised to use their ___ when it comes to filling out questionnaires. (discrete) **discretion**

discrete

discreteness

The authors remained in ___ over their views on the theory, but they could agree that there is no truly right or wrong answer. (agree) **disagreement**

disagreeable

disagree

agreement

disagreed

The team of researchers must reach a ___ before making any decisions.
(consent) **consensus**

consensual

consenting

There is a ___ in the field of linguistics.
(divide) **division**

divide

divisive

divided

The theory is difficult to ___ . (concept) **conceptualise**

conceptness

concept

concepting

conceptualising

She ___ herself in her speech.
(contrary) **contradicted**

contradict

contradiction

contrary

contraries

Expressions - A Bunch of Chunks

Question/Prompt

Answers

[a sharp increase] [compared to] [there] [in the figures] [last year] [was]	1) There was a sharp increase in the figures compared to last year. 2) Compared to last year, there was a sharp increase in the figures.
[covered a lot of ground] [we] [in class] [today]	1) We covered a lot of ground in class today. 2) Today we covered a lot of ground in class. 3) We covered a lot of ground today in class.
[quite good] [the article] [despite its shortcomings] [was] [still]	1) Despite its shortcomings, the article was still quite good. 2) The article was still quite good despite its shortcomings. 3) The article was, despite its shortcomings, still quite good
[dates back] [as a matter of fact] [this theory] [to the 16th century]	1) [As a matter of fact] [this theory] [dates back] [to the 16th century] 2) [This theory] [dates back] [to the 16th century] [as a matter of fact]
[the university's decision] [their findings could] [call into question] [meat-free Monday] [to have] [conformed to] [her ideas] [we discussed] [today] [the theory]	[Their findings could] [call into question] [the university's decision] [to have] [meat-free Monday] 1) [Her ideas] [conformed to] [the theory] [we discussed] [today] 2) [The theory] [we discussed] [today] [conformed to] [her ideas] 3) [Today] [her ideas] [conformed to] [the theory] [we discussed]
[students] [of this university] [various] [ready-made surveys] [have access to] [today] [shines a light on] [the issues] [in society] [this paragraph] [what's the next step?] [this literature review] [begs the question] [all in all] [global warming] [the paper] [argued for] [a gradual rise] [in the past decades] [there has been] [of success in education] [don't] [make sense] [the implications] [in practice] [of this study] [it's almost impossible] [factors] [the uncontrolled for] [to rule out] [are in line with] [of the study] [the hypothesis] [these findings] [a ballpark figure] [give me] [of] [the data] [I] [have been] [putting off] [going to] [the gym] [for a while] [in a nutshell] [we] [explored] [the city] [the use of] [animals] [in the show] [was] [uncalled for] [the group] [has] [expressed] [travelling] [as] [an activity] [a strong preference for] [the end of] [the semester] [is] [just around the corner] [I am] [trying to] [wrap my head around] [the fact] [that] [I am] [already at] [university] [I have] [no option] [but to sit tight]	[Students] [of this university] [have access to] [various] [ready-made surveys] [This paragraph] [shines a light on] [the issues] [in society] [today] [This literature review] [begs the question] [what's the next step] [All in all] [the paper] [argued for] [global warming] [There has been] [a gradual rise] [of success in education] [in the past decades] [The implications] [of this study] [don't] [make sense] [in practice] [It's almost impossible] [to rule out] [the uncontrolled for] [factors] [These findings] [are in line with] [the hypothesis] [of the study] [Give me] [a ballpark figure] [of] [the data] [I] [have been] [putting off] [going to] [the gym] [for a while] [in a nutshell] [we] [explored] [the city] [the use of] [animals] [in the show] [was] [uncalled for] [The group] [has] [expressed] [a strong preference for] [travelling] [as] [an activity] [The end of] [the semester] [is] [just around the corner] [I am] [trying to] [wrap my head around] [the fact] [that] [I am] [already at] [university] [I have] [no option] [but to sit tight] [and] [wait for] [a reply]

[and] [wait for] [a reply]

[I am not sure] [I] [have met him] [but] [that name] [rings a bell]

[I am not sure] [I] [have met him] [but] [that name] [rings a bell]

[we] [don't have] [much time] [so] [I'm going to] [cut to the chase]

[we] [don't have] [much time] [so] [I'm going to] [cut to the chase]

[everyone] [should] [pitch in] [with their ideas] [during] [the meeting]

1) [everyone] [should] [pitch in] [with their ideas] [during] [the meeting] 2) [during] [the meeting] [everyone] [should] [pitch in] [with their ideas]

[the only way] [to find out] [is] [to face the music] [and] [do it]

[the only way] [to find out] [is] [to face the music] [and] [do it]

[I] [see] [my old classmates] [once in a blue moon]

[I] [see] [my old classmates] [once in a blue moon]

[I] [cannot] [go to class] [today] [because] [I'm] [feeling] [under the weather]

1) [I] [cannot] [go to class] [today] [because] [I'm] [feeling] [under the weather] 2) [today] [I] [cannot] [go to class] [because] [I'm] [feeling] [under the weather] 3) [I] [cannot] [go to class] [because] [I'm] [feeling] [under the weather] [today]

[I] [went] [the extra mile] [to make sure] [everything] [goes] [according to plan]

[I] [went] [the extra mile] [to make sure] [everything] [goes] [according to plan]

Expressions - Academic Alternatives

Question/Prompt

Answers (correct is bolded)

It was difficult to **think up** an alternative.

a) It was difficult to grasp an alternative.

b) It was difficult to conceive of an alternative.

c) It was difficult to perceive of an alternative.

They **went against** popular opinion.

a) They contradicted popular opinion.

b) They conflicted popular opinion.

c) They denied popular opinion.

We should **meet up** in the lecture hall.

a) We should correspond in the lecture hall.

b) We should conform in the lecture hall.

c) We should convene in the lecture hall.

I will now **show you** how the software works.

a) I will now demonstrate how the software works.

b) I will now accept how the software works.

c) I will now verify how the software works.

The graphs **show** the data of the first experiment.

a) The graphs signify the data of the first experiment.

b) The graphs display the data of the first experiment.

c) The graphs designate the data of the first experiment.

An influential factor was **missed** due to the study's small sample size.

a) An influential factor was overlooked by the study's small sample size.

b) An influential factor was cancelled due to the study's small sample size..

c) An influential factor was neutralised due to the study's small sample size.

Most people **agree** that speaking is

a) Most people concur that speaking is easier than writing.

easier than writing.

- b) Most people correspond that speaking is easier than writing.
 c) Most people harmonize that speaking is easier than writing.

A large number of students **live** on campus grounds.

a) A large amount of students reside on campus grounds.

- b) A large amount of students abide on campus grounds.
 c) A large amount of students habituate on campus grounds.

One could say that technology partly **caused** globalisation.

a) One could say that technology partly triggered globalisation.

- b) One could say that technology partly demonstrated globalisation.
 c) One could say that technology partly attributed globalisation.

The researchers **used** two different methods to answer their question.

a) The researchers exploited two different methods to answer their question.

b) The researchers practised two different methods to answer their question.

c) The researchers utilised two different methods to answer their question.

Your views on educational matters **are the same as** hers.

a) Your views on educational matters coincide with hers.

b) Your views on educational matters dissent with hers.

c) His views on educational matters cooperated with hers.

Their work **continues** the work done by previous researchers.

a) Their work extends the work done by previous researchers.

b) Their work overruns the work done by previous researchers.

c) Their work replicates the work done by previous researchers.

There are **lots of** different articles available on that topic.

a) There are contrary articles available on that topic

b) There are distinct articles available on that topic

c) There are diverse articles available on that topic

This article is **very important** to the success of this undertaking.

a) This article is acute to the success of this undertaking

b) This article is dire to the success of this undertaking

c) This article is crucial to the success of this undertaking

There weren't **enough** people to complete the experiment.

a) There weren't substantial people to complete the experiment

b) There weren't plentiful people to complete the experiment

c) There weren't sufficient people to complete the experiment

Expressions - Tricky Prepositions

Question/Prompt

This paper has implications for education _____ the paper by

Answers (correct is bolded)

as opposed to

Levinson.

	as opposed with
	as opposed in
The topic is _____ cultural and historical factors.	associated to
	associated with
	associated as
An empirical text usually consists of a research question, hypothesis, methodology, and _____ .	so as
	so on
	so so
My experience helped me _____ write this essay.	to some extent
	with some extent
	as some extent
_____ the group of participants, they were not aware of the goal of the study.	with respect to
	with respect as
	with respect of
The authors _____ the small number of participants by analysing their development.	account in
	account for
	account with
The results are _____ the theory we discussed last week.	in line for
	in line with
	in line as
The assignment isn't our biggest worry, _____.	so to speak
	so for speak
	so with speak
Many students did well _____ the difficulty of the topic.	regardless of
	regardless in
	regardless with
It _____ if the authors were against the theory.	comes across as
	comes across to
	comes across with
_____, he did send me an email about it. I must have forgotten!	come to think of it

	come to think at it
	come to think in it
_____ university, have you already completed the assignment for our class?	speaking of
	speaking in
	speaking for
I was just _____ going to sleep when my phone rang.	on the verge of
	at the verge of
	in the verge of
Making your own dinner at home can save you money _____.	in the long run
	for the long run
	on the long run
I have been studying so hard for the exam next week. I basically studied everything _____.	by heart
	for heart
	from heart
I'd be willing to do him a favour but _____.	within reason
	for reason
	in reason
Person A: Are you available next week? Person B: I am afraid I will be _____ next week. How about the week after?	out of town
	outside of town
	around town
Person A: What will you do if you can't find a roommate? Person B: Well, that's _____. I'll do what it takes!	out of the question
	off the question
	beside the question
_____ cycling, the Netherlands is the place to be!	when it comes to
	when it comes towards
	when it comes from
Expressions - Matching Expressions	
Question/Prompt	Answers (correct is bolded)
First and foremost...	I would like to express my views on the matter.
	two full paragraphs from my essay.

As a rule of thumb...	the course considering it was quite difficult. I write the method section of my paper before everything else. I passed this week's assignment. it was about the education system.
I had to do away with...	two full paragraphs from my essay. writing a paper for Grammar and Translation. the course considering it was quite difficult.
The paper had many implications but in essence...	it was about the education system the teacher didn't assign any work for tomorrow the paper had a lot of details about the implications it made
I find that, by and large,	the course was quite difficult for most students I wrote a proposal before starting research because I'm going to be out of town during the deadline
It isn't clear where the authors draw the line...	between the two concepts proposed in the paper because I didn't pass the exam for this course when I wrote the proposal
My writing skills apparently fell short...	because I didn't pass the English exam I wrote the analysis before everything else because I'm going to be out of town during the deadline
The authors really pushed the envelope...	by exploring such a new and different area of research between the concepts proposed in the paper because I didn't pass the exam for this course
It took a lot of effort to make sense of...	the assigned reading for today by exploring such a new field of research because I didn't pass the exam for this course
I submitted the assignment in advance...	because I'm going to be out of town during the deadline between two completely different theories proposed in the paper by exploring such a new field of research
We have to keep...	the assignment in mind turning over a new leaf get on well
Fortunately, the year has gotten off...	to a good start a complete let down turned over a new leaf
Luckily my classmates and I...	get on well

	off to a bad start
	assignment due Monday
We've had enough fun but now it's time to...	get down to some work
	money for future travels
	get on well
I have been setting aside...	getting all my work done within 5 hours
	money for future travels
	a complete let down
She's so rude! I don't know...	how you put up with her
	to get all my work done within 5 hours
	that the assignment is due Monday
So far, this book has been...	a complete let down
	getting all my work done within 5 hours
	the assignment due Monday
It's time to put the past behind us and TURN	over a new leaf
	off to a good start
	complete let down
I'm not sure how this works but...	I'll definitely look into it
	I'll turn over a new leaf
	I'll get off to a new start
I have set myself a target...	to get a complete let down
	to get on well
	to get all my work done within 5 hours
Expressions - Expressions in practice	
Question/Prompt	Answers (correct is bolded)
Good morning! How are you?	Good morning, I'm fine, thank you
	Morning. I'm doing okay but I drank too much last night so I'm a little tired and my stomach hurts. I'm sorry if I am too gassy.
	Good.
You said earlier that you had a question for me?	I was wondering whether you could help me with this week's assignment.
	You could help me with this week's assignment? Yes or no?
	Yes. Help me with this assignment.
Yeah sure, what do you have difficulty with?	Off topping my head, it was questions 3 to 6
	Over the top of my head, it was questions 3 to 6
	Off the top of my head, it was questions 3 to 6
Oh, those were tricky indeed! Have you	No, I haven't. I'll keep that in mind

tried looking in the appendix?	No, I haven't. I'll keep that in mind No, I haven't. I'll keep that in mind
Was there anything else you had difficulty with?	Yes. I'm having trouble with my research project. Yes. I have troubles with my research project. Yes. I'm having troubles with my research project
Do you already have a topic?	As a matter of fact, I do As matters of facts, I do As a matter of facts, I do
That's good! What do you have trouble with?	I can't make up my mind about my research question I can't make up my minds about my research question I can't make up my head about my research question
What are your options?	Well, I'm thinking about following up on the paper by Brown, but I'm not sure if it's feasible Well, I'm thinking about follow up on the paper by Brown, but I'm not sure if it's feasible Well, I think about following up on the paper by Brown, but I'm not sure if it's feasible
Hmm. Have you already talked to your supervisor?	I haven't yet, but I'm going to schedule an appointment I haven't yet, but I'm going to make a meeting I haven't yet, but I'm going to do an arrangement
That's a good idea! Good luck!	Thank you for your help, I'll see you next week! Thank you for your helps, I'll see you next week! Thank you for your helping, I'll see you next week!

Expressions - Expressions in Practice (2)

Question/Prompt	Answers (correct is bolded)
Good afternoon. What can I do for you?	Hello! I have some questions concerning the article we discussed today Hello! I got some questions concerned on that article we've discussed today Hey, I want ask something concerns the article we discussed today
Go ahead.	It's not clear to me, whether the authors accounted for the contradictory findings? It's not clear to me, did the authors destroyed the contradictory findings? I totally don't get it. Did the authors say something about the weird findings?
As a matter of fact, they didn't. But they did write another paper that addressed these concerns.	Oh, right. Can I ask few more questions? I am asking more questions. Right. I wanna ask you more questions now.
By all means.	Do you consider the findings to be in line with the hypothesis?

	Are the findings ok, you think?
	Do you considerate the findings to be to line with the hypothesis?
Yes, I do. This is covered well in the discussion section.	Indeed, they covered a lot of ground in the discussion. I will have a look at it again.
	Yes. They cover ground. I look at it again.
	You are totally right! I thought I read something like it but I forget things.
Do you have any more questions?	Yes, just one. Which of the factors was by and large the most crucial for the results?
	OK. Which factor was, on and large, crucially to their results?
	Yes, only one. Which factor was with and large the most crucial for the results?
	I thought so too.
According to the authors, the socio-cultural factor was the most crucial as it strongly influenced participants' behavior.	It's like you're reading my mind.
	I think it also.
	Despite of some shortcomings, the study was quite thorough, don't you think?
	Despite at some shortcoming, the study was quite thorough, don't you think?
Very well.	Despite of some mistakes, it was good, right?
	Indeed. Regarding the essay on this article for the next week, how long should it be?
	Indeed. Regardless the essay on this article for the next week, how long should it be?
Yes, the study design was quite thorough.	Yep. The essay this article of next week, how many pages is ok?
	Ok, I'll keep it in mind.Thank you for your time!
	Ok, I'll keep it on minds. Thank you for your time!
1-2 pages would be sufficient.	Ok, I'll keep it in my head. Thanks miss.
You are welcome. Bye-bye!	
Expressions - Using the Correct Expressions	
Question/Prompt	Answers (correct is bolded)
	set my heart on
	sets my head on
I have _____ becoming a researcher.	set my eyes on
	put your mind to it
	set your eyes on it
If you _____ you can do anything.	do your mind with it
	do away with
	have away on
I'm going to _____ all my old notes. I don't need them anymore!	set away to

	put an end
	do an end
We have to _____ to this fight!	take an end
	to great lengths
	to big lengths
We went _____ to make this event happen.	to good lengths
	goes without saying
It _____ that we will be at your party! replace with presentation? or graduation ceremony? - AO	goes without talking
	goes without speaking
	brought into the open
Everything has finally been _____ . I feel so relieved.	come to the open
	taken in the open
	bring him around
You'll have to try to _____ to your point of view.	take him round
	assist him round
	In general
_____, it is quite cold in the Netherlands.	To generally
	With general
	On behalf of
_____ my parents, I'd like to thank you for coming. Replace parents with my class, or my group - AO	To behalf with
	With behalf to
Opposites Attract	
Question/Prompt	Answers (correct is bolded)
If you use this method, you should be able to <u>minimise</u> the effect.	maximise, enlarge,
	make bigger
	minimise
	broaden
The Industrial Revolution had a <u>major</u> effect on English society.	minor, minimal, small, little effect
	a little effect
	no effect
Her argument really <u>weakens</u> your position.	strengthens, improves
	stronger
	builds up
All these studies arrive at <u>opposite</u> conclusions.	similar, the same
	like

Arts and Science are <u>equal</u> as far as I'm concerned.	unequal, dissimilar, different unlike alike
Her participation in our group assignment was <u>involuntary</u> .	voluntary, optional free chosen
I thought he was really <u>loyal</u> to our cause.	disloyal, unfaithful unreliable
University administration is always available when you need them.	unavailable, busy, occupied limited gone
According to my supervisor I should <u>discontinue</u> my research.	continue, maintain, carry on with remain go on with
This pie charta shows the <u>preliminary</u> results of our study.	final, concluding last
The professor was <u>content</u> with the work that was submitted.	discontent, dissatisfied, unsatisfied uncontent unhappy

Finding Faults - Not Quite the Same

Question/Prompt

Answers (correct is bolded)

This **difficult** research is the basis of the course.

This **complex** research is the basis of the course.

These ideas are really **new!**

These ideas are really **innovative!**

In class we will discuss **today's** literature.

In class we will discuss **contemporary** literature.

You have to do an interview to **get** the internship.

You have to do an interview to **obtain** the internship.

Students should **talk** more with their professors.

Students should **interact** more with their professors.

The author says the earth is flat! (according to the author)

According to the author, the earth is flat!

In an English sentence subject **comes before** verb.

In an English sentence subject **precedes** verb.

Can you **be sure** that you can meet the deadline?

Can you **guarantee** that you meet the deadline?

This paper **says** the opposite.

This paper **states** the opposite.

I've decided that my thesis **comes first**.

I've decided that my thesis **takes priority**.

Follow the Tense
Question/Prompt**Answers (correct is bolded)**

Can I have your notes from last week?

Sorry, I was missing the class because I was ill.

Sorry, I miss the class because I was ill. - shouldn't we tweak these sentences so that it looks like response in a conversation?

Sorry, I missed the class because I was ill.

This professor is a great lecturer.

That's true! He is using a lot of examples in his explanation. - shouldn't we tweak these sentences so that it looks like response in a conversation?

That's true! He uses a lot of examples in his explanation.

That's true! He has used a lot of examples in his explanation.

Hi! I am looking for a partner for this week's assignment.

Great, I'm looking for a partner as well!

Great, I looked for a partner as well!

Great, I look for a partner as well!

What did you do after class?

I am going to the cinema with some friends.

I went to the cinema with some friends.

I will go to the cinema with some friends.

Why don't you join us for lunch after class?

Thanks for the invitation, I do that.

Thanks for the invitation, I am doing that.

Thanks for the invitation, I'll do that.

My science paper is due today.

Unfortunately, I haven't finished it yet.

Unfortunately, I am finishing it yet.

Unfortunately, I will finish it yet.

I always get lost in this part of the campus.

I wish I have a ground map of the campus.

I wish I had a ground map of the campus.

I wish I am having a ground map of the campus.

He is really struggling to keep up this semester.

He wouldn't spend so much time gaming.

He couldn't spend so much time gaming.

He shouldn't spend so much time gaming.

When did you attend the statistics course?

I attend that course last year.

I'm attending that course last year.

I attended that course last year.

Finding Faults - Verb Varieties**Question/Prompt****Answers (correct is bolded)**

Oh, sorry, I didn't..

meaning to interrupt your conversation.

meant to interrupt your conversation.

	mean to interrupt your conversation.
I remember...	reading my first English book. to read my first English book. have read my first English book.
If you seek to improve your English, try ...	reading books in English as often as you can read books in English as often as you can having read books in English as often as you can
This is the first time I...	understanding her lecture. have understood her lecture. had understood her lecture.
I've been meaning...	to ask for an extension. asking for an extension. to asking for an extension.
As soon as the rain...	will stop, we will go out. stopping, we will go out. stops, we will go out.
She is so nervous about the exams that she...	hasn't slept for days. having slept for days. had slept for days.
The teacher caught her...	to watch YouTube instead of taking notes. watching YouTube instead of taking notes. watched YouTube instead of taking notes.
He promised he...	studied all through the holiday. studies all through the holiday. would study all through the holiday.
I can't come this weekend, I am...	visiting my parents. visited my parents. having visit my parents.

Finding Faults - Modify the Morph

Question/Prompt

It can be ____ to use cartoons in your presentation.

Answers (correct is bolded)

effective

effect

effected

There are computers ____ at the University Library.

available

availing

	availability
This new software ___ works better than the previous one.	generation
	generates
	generating
This bachelor thesis lacks ___ in my opinion.	coherence
	coherent
	cohering
No matter what you are studying, a good research question is ___ to developing a good research paper.	fundamental
	fundament
	fundaments
I cannot face the ___ of pursuing a master's degree.	prospect
	prospectus
	prospective
More proof is ___ if you want this suspect acquitted.	required
	requirement
	requiring
Government ___ can be very confusing to foreign students.	regulations
	regulated
	regulates
Don't bother ___ all these formulas. We can bring a sheet of paper with them to the exam.	memorising
	memory
	memorise
The ___ of wealth is a recurring subject during this course.	distribution
	distributing
	distribute
It's impossible to weigh these facts in ___.	isolation
	isolated
	isolating
The poet is a genius! The way he ___ with words astounds me. (What does this mean? Can we ask the person who made it before? IH)	fences
	fence

	fencing
It can be ___ to your study to do an internship.	beneficial
	benefit
	benefitting
Have you seen this new art ___ on campus?	exhibition
	exhibiting
	exhibited
Public ___ is very punctual in the Netherlands, so don't be late or it will leave without you!	transportation
	transports
	transporting
Speaking Soundly - The good kind of stress	
Question/Prompt	Options
This bar chart shows an increase in unemployment	INcrease/inCREASE
That student over there is a total attention addict.	ADdict/adDICT
Oh thank you, what a lovely present!	PREsent/preSENT
This audio file was recorded without my knowledge.	REcorded/reCORded
My thesis paper is a work in progress.	PROgress/proGRESS
In this criminal trial the suspect was found guilty.	SUspect/suSPECT
The Dutch gas production will be decreased in the future.	DEcreased/deCREAsed
This will mean a decrease in revenue for the government.	DEcrease/deCREAse
A critical attitude is an important attribute.	ATtribute/afTRIBUTE
That is not proper conduct for a professor.	CONduct/conDUCT
The conflict in the Middle East makes the headlines again.	CONflict/conFLICT
Which of these is your favourite record?	REcord/reCORD
I'm going to present my latest research.	PREsent/preSENT
Scotland exports millions of bottles of whisky each year.	EXports/exPORTs
This lecture details all phases of pharmaceutical research.	DEtails/deTAILs
Speaking Soundly - Speaking loud and Clear	
Question/Prompt	

It's debatable whether or not this increase in the economy is a stable one	segmental pronunciation feedback
My English pronunciation exam was a complete catastrophe	segmental pronunciation feedback
The export of Scottish whisky has increased over the last years.	segmental pronunciation feedback
Climbing the mountain came easy to the adventurers, but descending it was a whole different story.	segmental pronunciation feedback
If you genuinely dislike onions, I'll take them out of this recipe.	segmental pronunciation feedback
These kitchen cupboards are too high for a person of my height.	segmental pronunciation feedback
Look at my family's photograph from last year's Christmas celebration.	segmental pronunciation feedback
My little sister was upset with her Christmas present.	segmental pronunciation feedback
This experimental research was really difficult to conduct.	segmental pronunciation feedback
Interrogations by law enforcement should be recorded.	segmental pronunciation feedback
This campaign would increase their numbers substantially.	segmental pronunciation feedback
Are you a vegetarian because you're a zoologist?	segmental pronunciation feedback
In this exercise, you need to separate the adjectives from the nouns.	segmental pronunciation feedback
When you're conducting an interview, also make a sound recording.	segmental pronunciation feedback
I am trying to be considerate, but he's not listening at all!	segmental pronunciation feedback

Appendix B. My Speech Trainer Questionnaire

Start of Block: Consent form and email

Q1 Dear Student, Thank you for testing My Speech Trainer and filling out this questionnaire. My Speech Trainer (MyST) is an online course created for improving speaking skills and academic English of students who are starting to study in English. MyST is created in Novo Studio, a platform for e-learning developed by NovoLearning BV. You can use it on the website (novo-learning.com) or the mobile app (Novo). If you need any (technical) help, please contact myspeeht@gmail.com or support@novolanguage.com; app/sms/call at +31(64)5866563.

At the moment, MyST is only a prototype and we need your feedback for evaluation and improving it. Please have a look at the exercises and then fill out the questionnaire. The survey will take approximately 10-12 minutes.

Your time and input are greatly appreciated! You get a chance to win a coupon worth of 10 EUR for your participation!

Q2 INFORMATION AND CONSENT FORM You are invited to participate in the research project 'My Speech Trainer' (MyST). This research project is being conducted by Helmer Strik, 'Centre for Language and Speech Technology' (CLST), of the Radboud University.

Bonus To thank you for participating, we will lot five coupons in value of 10 EUR among those who try out the MyST app and complete the questionnaire. **Confidentiality of the research data** The data we collect during this study will be used for scientific research. Of course, these data will be made fully anonymous. Anonymized data will be accessible to the scientific community for a period of at least 10 years.

Voluntariness You participate voluntarily in this research. Therefore, you can withdraw your participation at any time during the research. If you request to do so, we will permanently delete all data we have collected from you.

More information Should you want more information on this research study, please see <http://hstrik.ruhosting.nl/mijnst/> or <https://myspeechtrainer.webnode.com/> or contact Helmer Strik: Erasmusbuilding, room E8.14 Erasmusplein 1 6525 HT Nijmegen Tel: 024-3616104 Email: w.strik@let.ru.nl

Complaints Should you have any complaints regarding this research, please contact Helmer Strik (see above) or Margret van Beuningen, secretary Ethics Assessment Committee: Radboud University Postbus 9103 6500 HD Nijmegen Tel: 024-3615814 Email: m.vanbeuningen@let.ru.nl **Please select your choice below.**

Clicking on the "I agree" button below indicates that: • you have read the above information; • you voluntarily agree to participate. If you do not wish to participate in the research study, you can decline participation by clicking on the "I disagree" button.

I agree (1)

I disagree (2)

Skip To: End of Survey If INFORMATION AND CONSENT FORM You are invited to participate in the research project 'My Speech Tr... = I disagree



Q3 What is your email?

Please specify the email you used to receive an account for My Speech Trainer, if applicable. We will only use this information to verify that you have an account in MyST and how much time you spent on

the exercises.

We also need your email to contact you if you win the 10 EUR reward for participation.

This data will be anonymized before the analysis. We will never publish or disclose any personal information to third parties.

End of Block: Consent form and email

Start of Block: Use of My Speech Trainer (MyST)

Q4

The statements below indicate attitudes and aspects of use about My Speech Trainer (MyST) module. Please rate the statements by selecting the most applicable for you (from Strongly agree to Strongly disagree).

Q5 - 10

Please rate the statements by selecting the most applicable for you.

Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
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I would find MyST useful in my studies (1)

I predict I would use MyST in the next 3 months (2)

It has become my habit to learn languages with mobile apps (3)

Using MyST is fun (4)

A specific person (or a group) are available for assistance with MyST if I need it (1)

My teachers or instructors think that I should use MyST (2)

I have the resources necessary to use MyST (smartphone, computer, internet connection, microphone etc.) (3)

Using MyST would improve my academic English speaking skills (4)

People who are important to me think that I should use MyST (1)

MyST makes language learning more interesting (2)

MyST is not compatible with other technologies I use (3)

It would be clear and understandable to me how to use MyST (4)

If I practice English with MyST, I will increase my chances of studying successfully (1)

I must use mobile or computer applications to learn languages (2)

I plan to use MyST in the next 3 months (3)

People from my university or school are encouraging the use of MyST (4)

Using MyST is a good idea (1)

I would find MyST easy to use (2)

I intend to use MyST in the next 3 months (3)

I often learn language(s) in mobile or computer applications (4)

Using MyST is very entertaining (5)

I like learning with MyST (1)

I have the knowledge necessary to use MyST (2)

Using MyST is enjoyable (3)

Learning to use MyST is easy for me (4)

Using MyST would enable me to speak academic English better (5)

End of Block: Use of My Speech Trainer (MyST)

Start of Block: Linguistic background

Q11 The following questions are about your linguistic, educational and personal background. We collect this information only to understand the profile of our participants in general. We will anonymize your answers before analysis and won't disclose any personal information.

Q12 What is your native language?

If you have more than one native language, you can select two options.

- Chinese (5)
- Dutch (1)
- French (4)
- German (2)
- Indonesian (7)
- Italian (8)
- Spanish (3)
- Other, namely (6) _____
- Other (2), namely (10) _____

Q13 How would you rate your current spoken English proficiency?

- B1** (I can deal with most situations likely to arise whilst travelling in an area where the language is spoken. I can enter unprepared into conversation on topics that are familiar, of personal interest or pertinent to everyday life (e.g. family, hobbies, work, travel and current events). I can connect phrases in a simple way in order to describe experiences and events, my dreams, hopes and ambitions. I can briefly give reasons and explanations for opinions and plans. I can narrate a story or relate the plot of a book or film and describe my reactions.) (1)
- B2** (I can interact with a degree of fluency and spontaneity that makes regular interaction with native speakers quite possible. I can take an active part in discussion in familiar contexts, accounting for and sustaining my views. I can present clear, detailed descriptions on a wide range of subjects related to my field of interest. I can explain a viewpoint on a topical issue giving the advantages and disadvantages of various options.) (2)
- C1** (I can express myself fluently and spontaneously without much obvious searching for expressions. I can use language flexibly and effectively for social and professional purposes. I can formulate ideas and opinions with precision and relate my contribution skilfully to those of other speakers. I can present clear, detailed descriptions of complex subjects integrating sub-themes, developing particular points and rounding off with an appropriate conclusion.) (3)
- C2** (I can take part effortlessly in any conversation or discussion and have a good familiarity with idiomatic expressions and colloquialisms. I can express myself fluently and convey finer shades of meaning precisely. If I do have a problem I can backtrack and restructure around the difficulty so smoothly that other people are hardly aware of it. I can present a clear, smoothly-flowing description or argument in a style appropriate to the context and with an effective logical structure which helps the recipient to notice and remember significant points.) (4)
- I am a native speaker of English (5)

Q14 Please name other languages (except of English) that you can speak fluently.
Start with the language you can speak the best.

- Language 1: (5) _____
- Language 2: (6) _____
- Language 3: (7) _____
- Language 4: (8) _____

End of Block: Linguistic background

Start of Block: Demographic data

Q15 In which university or college do (will) you study?

- Radboud University (1)
- Other, namely (2) _____

Q16 What is the degree you are (or will be) enrolled in?

- Bachelor's (1)
- Master's (2)
- PhD (3)

Q17 What year of study are you in?

Q18 What is the title of your degree?

Please specify your specialization. Example: International Business Communication

Q19 What is your gender?

- Female (1)
- Male (2)
- Other (3)



Q20 What is the country of your nationality?

Please select the country where you have lived the longest since you were born.

▼ Afghanistan (1) ... Zimbabwe (1357)

Q21

What is your age?

▼ Under 18 (37) ... 25 or older (45)

Q22 How much time have you spent on doing the exercises in My Speech Trainer?

- I haven't completed any exercises in My Speech Trainer (5)
- 10 minutes or less (1)
- 10-20 minutes (2)
- 20-30 minutes (3)
- 30 minutes and more (4)
- I have completed all exercises in My Speech Trainer (6)

Q23 If you have not completed any exercises in My Speech Trainer, could you share with us why?

Q24 Would you like to share something else about your experience with My Speech Trainer?

If you have any suggestions or remarks, please write them down here. For example, what is one thing you liked best / least about MyST?

Q25 If you would like to be informed about the results of the study, or contribute more by for example participating in an interview, please register your interest below and we will be provide you with updates at your email.

- Yes, I would like to receive an update about the study results. (1)
- No, thank you. (2)

End of Block: Demographic data

Appendix C. Participants' remarks about My Speech Trainer

Full responses to the open-ended question are provided below.

The question:

“Would you like to share something else about your experience with My Speech Trainer? If you have any suggestions or remarks, please write them down here. For example, what is one thing you liked best / least about MyST?”

Responses

I tried out a few of the exercises apart from the pronunciation one it went well. In the pronunciation exercise I had trouble, although I was pronouncing the words right. I think the app furthermore works very well!

I like that you have to talk out loud

MyST is not suitable for crowded environments.

It was simple and easy to navigate around. The questions and objectives were clear and not confusing in any way.

It looks fun

It says to click next, but in reality there's an arrow, that makes it a bit confusing. Perhaps you could change that so it matches. Also, the microphone doesn't always hear what is being said correctly, so you could make it into a combination, where you have to click on the right answer and say the complete sentence out loud.

I like that the app gives the user to chance to advance their pronunciation, which not many other apps focus on.

It's probably a very sensitive program, so some of my answers were counted wrong, when I spoke them right. Sometimes this makes it very frustrating to work with a program.

Feedback on the answers would be an addition.

There was a bug in one of the exercises where you have to put words into the correct order. Click, hold and slide a word from left to right the app still counts is as sliding the page to the right, making your current page fade away.

The app is very easy to use, and very usefull because you really have to pronounce all the different words carefully.

We can't copy the words or the sentences in the app. There are some words which we don't know what it mean, and it is very handy if we can copy this words to translate it. - There aren't so many exercises. - In the app we can see the members! But I don'

Sometimes I pronounced a word correctly, but the result didn't correspond. This may be due to the noise around me.

I had almost every answer right, but I would like to get an explanation for the answers that I didn't get right

I like the way it learns you how to speak. And the feedback is good.

Easy to use and entertaining with the game-like aspect, very useful for practicing language learning

I'm not fully understand member in the app, but I like the sound.

It is very good at hearing what you are saying.

sometimes it can't discern my speaking

Helpful and clear concept. Good visuals and not complicated to use.
