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List of abbreviations

CALL	Computer-Assisted Language Learning
CALT	Computer-Assisted Language Teaching
CMC	Computer-Mediated Communication
EFL	English as a Foreign Language
ESL	English as a Second Language
iCALL	intelligent Computer-Assisted Language Learning
ICT	Information and Communication Technology
IQ	Intelligence Quotient
LMS	Learning Management System
MALL	Mobile-Assisted Language Learning
MC	Multiple Choice
PPP	Presentation-Practice-Production
PPT presentation	PowerPoint presentation
SAMR model	Substitution Modification Augmentation Redefinition model
SLA	Second Language Acquisition
TELL	Technology-Enhanced Language Learning
VLE	Virtual Learning Environment

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1. Introduction

> There's a dark little joke exchanged by educators with a dissident streak: Rip Van Winkle awakens in the 21st century after a hundred-year snooze and is, of course, utterly bewildered by what he sees. Men and women dash about, talking to small metal devices pinned to their ears. Young people sit at home on sofas, moving miniature athletes around on electronic screens. Older folk defy death and disability with metronomes in their chests and with hips made of metal and plastic. Airports, hospitals, shopping malls–every place Rip goes just baffles him. But when he finally walks into a schoolroom, the old man knows exactly where he is. "This is a school," he declares. "We used to have these back in 1906. Only now the blackboards are white." (Wallis & Steptoe 2006: 51)

Notwithstanding that in reality the situation in Austrian schools is self-evidently not as dramatic, there is still a grain of truth in the outlined scenario. As a matter of fact, most aspects of life have reached the 21st century, except for the most part the teaching practice. This became particularly conspicuous during Mag. Waba's university course on "Specific Issues in EFL Teaching- Technologically supported language learning and teaching" and in this way even laid the grounds for the thesis at hand. The reason for this is that the course opened up completely new perspectives on the manifold application possibilities of modern technology with regard to education, and thus led to a persistent feeling of fascination. However, given the novelty and unfamiliarity of the media-enhanced language learning approach, profound research is necessary in order to pave the way for a truly comprehensive and efficacious dissemination. For this purpose, the present paper sets out to further shed light on the subject matter by means of both a theoretical and empirical analysis. However, given the complexity of second language acquisition, the paper's analysis is restricted to the subfield of grammar acquisition. Consequently, the main objective of this thesis is to establish whether the application of computers in the language classroom positively impacts learners and if so, how to best tap this potential. In this context, the effectiveness of digitized grammar acquisition is, however, not only evaluated on a general level but also with regard to the Austrian EFL context.

The thesis as such is divided into two main parts: Part I provides the reader with necessary theoretical background knowledge whereas Part II is dedicated to an empirical research project that establishes a link between the aforementioned theory and the Austrian reality. In particular, Chapter 1 sets out to define the application of computers for educational purposes and thus condenses the historical developments, based on Warschauer and Healey's (1998) findings. Besides this, related concepts are examined,

indicating that even though the paper focuses on the potential of computers, a clear separation from mobile devices is, due to the technological progression, hardly possible. Chapter 2 continues with an analysis of theoretical foundations that justify the application of computers in the EFL classroom. On that point, a short overview of main SLA theories and psychological factors is provided and the paper unveils how the consequent understanding of SLA supports digitized learning. Chapter 3 then illustrates major large-scale management strategies and in this regard characterizes the concepts of the flipped, blended and gamified classroom. This chapter is subsequently complemented with Chapter 5 which presents a selection of less extensive application possibilities. Prior to that, Chapter 4, however, examines the accuracy of Colpaert's (2013: 17) assertion of "if your teaching is good, it includes technology". To this end, the potential of modern technology is evaluated by means of an analysis of its numerous advantages and possible downsides as well as a literature review of previous studies. To round off the analysis of modern technologies in the EFL classroom and to provide a basis for the empirical study, Chapter 5 then outlines major guidelines regarding both traditional pen-and-paper and digitized grammar instruction. In addition, the aforementioned collection of tools and applications shows how, in tangible terms, the computer can be employed most effectively. Subsequently, the aim of the 2nd part of the paper is to set the knowledge gained from the preceding chapters into context. To this end, the question to answer is whether the findings of previous studies as well as the analysis of benefits and drawbacks likewise apply in the Austrian EFL context. Accordingly, two short grammar courses were designed, one following the traditional pen and paper and the other a computer-assisted way of grammar instruction. Chapter 6 subsequently displays the obtained research results whereas the findings are divided with regard to students' performance and attitude. Ultimately, derived from these results, the paper concludes with implications and clear suggestions for future grammar and thus, hopefully, paves the way for a future EFL classroom that is characterized by the highest possible level of teacher and student satisfaction.

2. Conjunction of modern technologies with the EFL classroom

> Recent years have shown an explosion of interest in using computers for language teaching and learning. A decade ago, the use of computers in the language classroom was of concern only to a small number of specialists. However, with the advent of multimedia computing and the Internet, the role of computers in language

> instruction has now become an important issue confronting large numbers of language teachers throughout the world. (Warschauer & Healey 1998: 57)

Even though this statement sounds as if Warschauer and Healey comment on the present situation, it actually refers to the year 1998. Thus it can be taken for granted that by now, the prevalence of modern technologies in combination of SLA has increased even further. In fact, personal computers have only been available for approximately 40 years, but, still, Heim and Ritter (2012: 11) reason that "it is an understatement to say that they have changed the world, including the educational world, since". The rapid growth of educational technologies has paved the way to revolutionary classrooms that redefine language learning in terms of the what, how and when to a greater extent than any prior educational development (Warschauer 2007 in Sumakul 2014). Concurrently, Beatty (2010), however, observes that the use of computers in the foreign language classroom has not yet been entirely investigated. Instead, due to constant technical innovations, its application is undergoing steady changes and permanently gives rise to novel developments. Beatty thus draws comparisons to a map showing new territory that needs to be further explored. To this end, it appears useful to start this thesis with a discussion of the definition and history of Computer-Assisted Language Learning.

2.1. Definition of CALL

Ever since computers and language learning have merged, this approach has been referred to as Computer-Assisted Language Learning or CALL for short. In terms of a clear-cut definition, researchers most commonly refer to Levy's (1997:1) explanation who specifies CALL as "the search for and study of applications of the computer in language teaching and learning." Accordingly, Ahmad et al. (1985: 45) suggest a triad of interacting factors, namely the learner, the language and the computer. Son (2000 in Son 2002), though, considers this model as incomplete as it only describes self-access or distanced learning situations which can be rather defined as e-learning (electronic-learning) than CALL. Consequently, Son drafts the subsequent extended model which adds the teacher as a 4th important factor in the context of the CALL classroom. As shown in Figure 1, Son's model proposes that only the interplay of the learner, the computer and the teacher can enable effective language learning.

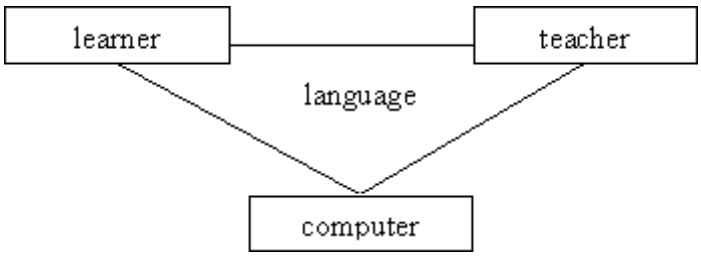

Figure 1 Son's (2000 in Son 2002: 240) model of the main components of the CALL classroom

This perception of extending the traditional EFL classroom with the computer as one out of three fundamental pillars of language acquisition, however, also implies the necessity of changes in all aspect of the language classroom. Accordingly, the sole replacement of the schoolbook with a computer or laptop would not lead to satisfactory results. On the contrary, as elaborated on in the 2nd part of the paper, not only the role of the teacher or student needs to be subject to change but equally, task design or content delivery. At the same time, it should be, however, clarified that CALL is not a self-contained teaching approach (Tuan & Doan 2010). Instead, it rather provides a suitable framework for different teaching styles and educational perspectives. This fact is reflected not only by the great freedom of choice with regard to task creation or applied teaching models but also by its numerous subareas and related acronyms. Accordingly, even though all of them are closely connected to CALL and overlap to a certain extent, they still represent differentiating subtopics or. Most important in this respect is the differentiation between CALL (Computer-Assisted Language *Learning*) and CALT (Computer-Assisted Language *Teaching*). Even though both approaches are, in principle, concerned with the acquisition of a foreign language by means of the computer, they still differ with regard to whether the learner or the teacher is in the focus of attention. Another vital discrimination concerns the type of applied technology. Thus, strictly speaking, a distinction has to be made between CALL (*Computer*-Assisted Language Learning), TELL (*Technology*-Enhanced Language Learning) and MALL (*Mobile*-Assisted Language Learning). However, given the huge technological developments, this segmentation as proposed by Beatty in 2010 appears no longer appropriate. On the contrary, as nowadays, computer, laptops, tablets and smartphones are capable of performing the same tasks, it seems reasonable to only speak of TELL. Yet, the possession of the latest technical devices is also associated with high costs. Accordingly, with regard to the empirical investigation, there was reason to fear that not all participants were in possession of the necessary

technological devices. On that account, it was agreed to conduct the study with the help of the school's computer lab and to consequently, in order to avoid misunderstandings, devote this paper to the application of computers and their potential. Besides, even though this paper is written from the perspective of a prospective English teacher and aims at formulating clear-cut recommendations for future teaching practice, the language learner is and remains at the forefront of thinking. Hence, the paper will henceforth employ the term CALL as proposed by Son (2000 in Son 2002), while still taking the vital contributions of the teacher similarly into account.

2.2. Brief history of CALL

Based on the common saying that only the one who knows the past can understand the present and plan for the future (source unknown), this chapter aims to thoroughly analyze both the history and current situation of CALL in order to formulate assumptions about its future developments. Thus, Heim and Ritter (2012) detected that even though throughout the past few decades, numerous attempts were made to establish suitable categorizations, most publications trace back to Warschauer and Healey. In 1998, they famously identified three stages in the history of CALL, namely the "Behavioristic," "Communicative" and "Integrative" phase (1998). Warschauer and Healey admitted that all three phases tend to overlap each other, but in 2000, Warschauer presented a clear-cut visualization of the course of events as illustrated in Table 1.

Table 1 History of CALL (Warschauer 2000 in Bax 2003: 15)

Stage	1970s-1980s: Structural CALL	1980s-1990s: Communicative CALL	21st Century: Integrative CALL
Technology	Mainframe	PCs	Multimedia & Internet
English-teaching paradigm	Grammar-translation and audio-lingual	Communicate [sic] language teaching	Content-Based, ESP/EAP
View of language	Structural (a formal structural system)	Cognitive (a mentally constructed system)	Socio-cognitive (developed in social interaction)
Principal use of computers	Drill and practice	Communicative exercises	Authentic discourse
Principal objective	Accuracy	And fluency	And agency

Accordingly, Warschauer's illustration clearly displays that CALL began being implemented concurrent to the invention and widespread dissemination of punchcard-based mainframe computer technologies in the 1970s. Besides, given the fact that CALL was also not an independent approach back then, but rather a supplement to prevailing teaching paradigms, it is only natural that throughout its course of development, it always was adapted to the established language acquisition theories and styles of the time.

Thus, the earliest stage of CALL was strongly influenced by a behavioristic and conditioning perception that understood language learning according to the stimulus-response theory. In line with that theory, students encountered repetitive drill exercises that only focused on language accuracy in a controlled context. The computer was thus employed as a tutor who provided instant feedback and correction (Bax 2003). The best known example in this respect remains up until today the Plato project, which was developed by the University of Illinois in the late 1970s in order to support the acquisition of a number of foreign languages, including EFL, French, German, Arabic or Hebrew (Chapelle 2001:6). This computer system, which was strongly based on the grammar translation approach, provided students with an impressive body of exercises that required more than 70 hours of work and included vocabulary and grammar drills and translation exercises, as well as corrective feedback and spelling and grammar checkers (Blake 2008: 50).

However, with the increasing rejection of the behavioristic approach, a new view on language acquisition emerged, namely the cognitive paradigm. With that, learning was no longer perceived as an automatic process but was rather oriented towards conscious comprehension and retention of information. Consequently, the practical use of language came into focus and exercises that generated manipulated and prefabricated language were replaced by those that aimed towards more fluency and original utterances (Hinkel & Fotos 2002:4). Thus, CALL was likewise adjusted to the modified paradigm, which resulted in the emergence of the second or communicative phase (Warschauer & Healey 1998: 57). Associated with this, grammar was no longer taught explicitly but rather implicitly and learning as such was perceived as "a process of discovery, expression and development" (Warschauer & Healey 1998: 57). As part of these alterations, computers changed their role from tutors to tools that provided students with the opportunity to

write, present, research and thus construct their knowledge through trial and error (Walker and White 2013: 4). Following this trend, programs with more flexible types of feedback as well as the first chatterbot programs emerged, as experts started to understand the importance of fluency. The most well-known program of this kind is *Eliza* by Weizenbaum (1976). Even though at the outset this program was not intended to facilitate language learning, it still offered extensive reading and writing practice. By means of "a series of general comments, requests for explanations and paraphrasing/rephrasing of the learner's comments […]" the program "simulate[d] a sympathetic listener" and thus encouraged students to use language for in fact pseudo-communicative purposes (Beatty 2010: 32). Nevertheless, Warschauer and Healey (1998:58) point out that at the beginning of the 21st century, the cognitive approach was strongly criticized for neglecting "language use in an authentic social context." Hence they conclude that therewith the integrative phase was initiated which comprised this demanded authentic discourse (Warschauer 2000 in Bax 2003). At this point, Warschauer's analysis is, however, commonly criticized as his notion of communicative language learning does not at all correspond with the common idea of CLT (Bax 2003). Instead, what Warschauer attributes to the integrative phase, namely, authentic learning environments and real-life communication, is in fact at the heart of communicative language learning. That is why Bax (2003: 20) recommends a change of terminology, though without providing concrete proposals. He thus only suggests that the 2nd phase would need a completely new label, whereas the 3rd phase should ideally be renamed the communicative phase as only then can an erroneous representation of the communicative language teaching approach be avoided.

Keeping that in mind, one can return to Warschauer's (2000) analysis and look more closely at the final phase of CALL, which follows a socio-cognitive view that focuses on "task-based, project-based and content-based approaches" (Warschauer & Healey 1998: 58). Here, integrative refers, according to Warschauer (2000), to the integration of the four language skills and a thorough consolidation of technology within the process of language acquisition. Another main element of this phase is the high level of student involvement which is, however, in contrast to the 2nd phase, not limited to interacting with the computer. Instead, the rise of the internet, allows for new forms of interaction and channels of communication, including both peers and native speakers (Warschauer & Healey 1998: 58). Hence, Walker and White (2013: 5) note that the computer therefore

takes on yet another role, namely that of the medium that enables this global communication.

The reasons for these fundamental shifts are diverse. Firstly, Warschauer and Healey (1998: 58) quote the aforementioned change of the pedagogical paradigm. Modern education has greatly developed from its original concept, where the teacher is the source of wisdom who pours information into the heads of willing students; today, the leading view is that learners should actively interpret and construct their knowledge. Additional explanations for these developments are to be found in the economic and social transformation. Due to the globalization of the world, the wealth of available information has risen strongly which in turn has had the consequence that new ways of learning became necessary. This implies that rote memorization has lost its significance and is indeed viewed in a negative light. Instead, today's society requires flexibility and the ability to respond to changes, communicate effectively across cultures and possess knowledge about research strategies (Warschauer & Healey 1998: 58). In line with this, teachers must accordingly develop new understandings of their roles. Instead of acting as "content deliverers" or "subject experts," modern teachers are confronted with a strongly modified occupational profile that frames the teacher as a "guide, facilitator, adviser, enabler, consultant, organizer, co-operator and creator (of new materials)" (Littlemore 2001: 50). Yet, these modifications are fluid and require time to be implemented. Thus, Warschauer and Healey (1998: 58) conclude that "current uses of computers in the language classroom correspond to all three of the paradigms mentioned […]". Bax (2003: 23) similarly clarifies that, in terms of communicative capabilities, we have certainly reached the 3rd phase, but software products and teacher training are still lagging behind. He identified a true implementation of the 3rd phase as the ultimate goal for CALL. True implementation and integration, as he understands it, would manifest in a "normalisation" of the approach (Bax 2000: 202), which he describes as follows:

> This concept is relevant to any kind of technological innovation and refers to the stage when technology becomes invisible, embedded in everyday practice and hence 'normalised' […] CALL has not reached this stage, as evidenced by the use of the acronym 'CALL' – we do not speak of PALL (Pen Assisted Language Learning) or of BALL (Book Assisted Language Learning) because those two technologies are completely integrated into education, but CALL has not yet reached this normalised stage. (Bax 2003: 23)

Thus, the future agenda of CALL is clear. Once the application of technology is considered as standard as of books or pens in learning, further development in terms of adjustment to learners' needs as well as in practicality and convenience will be required. Concurrently, only "a change of attitudes, in approach and practice among teachers and learners [… and] a fuller integration into administrative procedures and syllabuses" (Bax 2003: 27) will ultimately, guarantee its future success. Clearly, CALL has still a long way to go, though given its short history and its fast developments, its further progress shows much promise and potential.

3. Theoretical underpinnings of CALL

As repeatedly stated, it is important to be aware of the fact that CALL is not a single methodology such as the Grammar Translation or Audio-lingual method. However, this paper has not yet revealed how CALL can instead be classified, which will now be elucidated in the following chapter.

First and foremost, CALL can be described as a "methodologically neutral" (Blake 2008: 2), interdisciplinary field that unities different education-related disciplines and pedagogical perspectives. In fact, it draws from a synergy of Language Education, Second Language Acquisition, Applied Linguistics, Pedagogy, Psychology, Artificial Intelligence, Computer Science, Instructional Technology and Human Computer Interaction (Levy 1997:47; Heim & Ritter 2012: 12). All of the mentioned influences are crucial in the understanding of CALL. The knowledge about the interplay of second language learning theories and individual differences in connection with their technological implementation are considered especially valuable from the perspective of a prospective language teacher. Hence, Chapters 3.1 and 3.2 set out to illuminate in more detail the intersection of SLA, Psychology and CALL.

3.1.Second Language Acquisition

"Second Language Acquisition (SLA) refers to the study of the processes through which learners acquire a new language" (Beatty 2010: 86). It is therefore implied that teachers must be aware of these processes and ground their teaching in a valid theory. However, that is certainly easier said than done as there are "at least forty claims, arguments, theories, and perspectives that attempt to describe and explain the learning process" (Peterson 2013: 52). At the same time, research has shown that for the language

classroom, one single approach is probably too narrow, and that various theories and models overlap. This is because language learning is a fluid process that depends on many personal variables that might not even be observable at once. As a result, ideally, teaching needs to be very flexible and constantly adapt to individual learners, their momentary needs and different styles of learning. Traditional teaching methods are commonly based on one specific pedagogical theory with restricted procedures, or in other cases, teachers simply follow the schoolbook, thus failing to fulfill this requirement. In contrast, with the application of the computer, teachers are invited to draw on a plethora of approaches which raises the chance to reach every single student in the classroom. Yet one needs to be conscious of the fact that not all of the further mentioned learning models are consistent with the modern language learning perspective. Instead, in isolation, these single theories are often criticized for their simplicity and the fact that they discount current insights into the language learning process. In spite of this, their interplay certainly has the potential to overcome their limitations when implemented singularity. For this reason, this chapter sets out to briefly review[1] the most influential theories and to relate them to the bigger picture of CALL. That way, the concept of CALL becomes not only more understandable, but its application is simultaneously strengthened and justified by academic theories.

3.1.1. Input and output hypothesis

Throughout the course of history, numerous theorists and their respective views on language learning have emerged and disappeared. Some have only temporarily influenced educational practice, while others have set the ground for the development of the most prevailing approaches. The latter applies to Stephen Krashen, who is believed to be the founding father of the varied communicative language teaching approaches (Blake 2008: 17). In five "hypotheses," Krashen (1981) identifies innate processes that strongly affect SLA. Even though his model was highly controversial, parts of it still greatly influence today's practice and are generally accepted. One of the acknowledged principles is Krashen's input hypothesis, which claims that learners only acquire a language if they are extensively exposed to comprehensible input that is just beyond the learner's current level of competence (also referred to as 'i+1'). Over time, "comprehensible input" has been slightly altered to "comprehended input", meaning only noticed input is significant,

[1] For a more detailed analysis of the individual theories, please see one of the numerous introductory books available.

though, the general idea of maximizing L2 input remained effective (Blake 2008: 18). Yet, Ellis (2005: 218) unambiguously reports that "if the only input students receive is in the context of a limited number of weekly lessons based on a course book, they are unlikely to achieve high levels of proficiency." This statement underscores the need for CALL as it has the potential to completely solve this issue. It a) expands the opportunities for language input outside the classroom, b) offers an inexhaustible repertoire of resources and c) can be adapted and selected according to the student's competence level and interests.

Swain (1995), though, emphasizes that only input is not sufficient either. Instead, successful language learning also requires opportunities to produce comprehensible output. Ellis (2005: 218) notes that students need to get the chance to equally use the target language and to produce meaningful utterances in the course of both oral and written tasks. Again, CALL has the potential to accomplish this goal by offering opportunities for both controlled and extended practice as recommended by Ellis (2005: 219). In terms of controlled practice, interactive exercises or quizzes are most frequently utilized. Production of long turns and social interaction can, however, be realized by computers as well. On that account, Reeves and Nass (1996: 5) argue that "[p]eople's interactions with computers […] and new media are fundamentally social and natural, just like interactions in real life." In other words, even though computers are not human beings, they still are able to stimulate human interaction and augment the opportunities of practicing language use. Additionally, researchers feel confident that via the further development of iCALL, learning with computers can reach completely new dimensions. Concretely speaking, the acronym iCALL stands for an advancement of CALL as it means intelligent Computer-Assisted Language Learning and describes a software that reacts to the leaner's input and produces individual feedback (Beatty 2010:10). By this means, feedback and error correction will become even more effective and supportive in the language development process. Further, computers certainly also allow for global communication. In fact, there are no limits to one's creativity in engaging students in meaningful long turn activities that include authentic language production. For example, students could write blog entries, converse via Skype with native speakers, or record a video themselves, addressing a global audience. That way, language production cannot only be extended to outside the classroom walls but can likewise be complemented by

authenticity and meaningfulness as well as a true goal which significantly increases students' motivation and learning outcomes.

3.1.2. Traditional learning theories

Other well-known learning theories have, considering the historical developments in the field of SLA theory as touched upon in the analysis of Warschauer and Healey's phases of CALL, also justified its practice over the years. Despite the fact that behaviorism, cognitivism and socio-constructivism in their purest form are nowadays perceived as too narrow, researchers agree that certain aspects have some merit and in combination with additional theoretical assumptions, undergird with good reason current CALL practice (Warschauer & Healey 1998; Bax 2003; Beatty 2010). Accordingly, Holmes and Gardner (2006) both share this assumption and understand CALL[2] to essentially be the intersection of three main branches as illustrated in Figure 2.

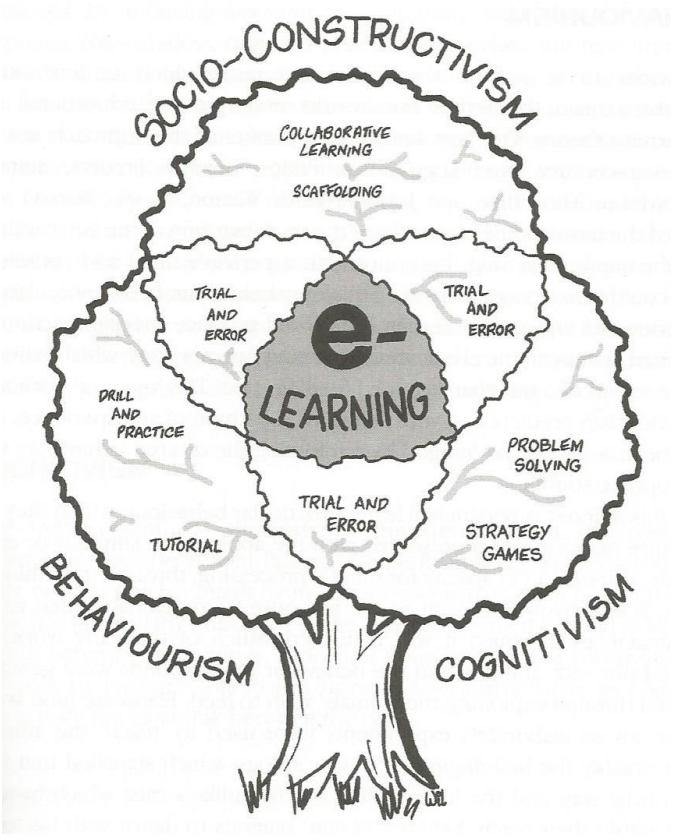

Figure 2 Overlapping SLA theories (Holmes & Gardner 2006:79)

[2] Even though Chapter 2.1 suggested a differentiation between CALL and e-learning, the figure at hand applies for both as it displays the theoretical underpinnings, which, due to their strong relatedness, hold true for both.

First, behaviorism or operant conditioning (in contrast to classic conditioning) as theorized by Frederic Skinner is considered one of the key elements. Skinner (1968) suggested that based on the stimulus-response theory, learning content should be divided into smaller instructional parts and sequenced activities. Students should then acquire knowledge and develop rote learning by working through these activities or repetitive drills, whereby failure or mistakes results in a repetition of activities. Correct responses, however, are rewarded by allowing the student to move on to the next level (Beatty 2010: 95). Thorndike referenced and further developed this concept in 1912, when he proposed the idea of an automated book: "If, by miracle of mechanical ingenuity, a book could be so arranged so that only to him who had done what was directed on page one would page to become visible, and so on, much that now requires personal instruction could be accomplished by print" (Thorndike 1912: 165 in Beatty 2010: 95). Half a century later, CALL first performed this "miracle" and facilitated sequencing and learner "autonomy" in terms of programmed learning. However, here, the term learner autonomy cannot be equated to our contemporary understanding of autonomy but rather refers to independent or self-reliant learning. In addition, McArthur (1983:76) further specifies that "[these p]rograms can be either linear, in which all students go through the same sequence of frames, or branching, in which a variety of paths through the program is provided" (McArthur 1983: 76) and basically draw on multiple choice questions or constructed response answers. More advanced programs can be, however, "set up as adventure games or include [Skinner's suggestion of] positive reinforcement in the form of points, and virtual items to be collected by the learner/player" (Beatty 2010: 97f).

At the same time, CALL has been influenced by its history and the (socio-)constructivist development, and it is therefore understood by pedagogues today that the learner's state of mind is not that of a tabula rasa but rather learners come with a set of experiences and that teaching must be able to account for such diverse backgrounds. As learners construct new ideas by relying on previous knowledge and schemata, learning material should likewise be problem-orientated, contextualized, purposeful and, if nothing else, augmented by the third dimension of interaction (besides that of the learner and the environment), namely social and collaborative learning (Holmes & Gardner 2006: 84). Closely associated with this notion is Lev Vygotsky (1978), a highly influential cognitivist theorist, who argued that "learning is constructed first through social interaction and then on the individual plane" (Walker & White 2013: 5). He further

indicated the "zone of proximal development" (ZPD), which he understands as the "gap between what a learner already knows or can do and what the learner can achieve when working in collaboration with someone who is a little more capable (more able peer)" (Walker & White 2013: 5). The CALL approach undoubtedly accounts for these theories as it promotes the aforementioned single- and multi-user games (often involving problem solving or strategic reasoning tasks), group projects, collaborative mind mapping, or simulations that incorporate one-to-one, one-to-many or many-to-one interactions[3] (Holmes & Gardner 2006: 85).

3.1.3. Contemporary learning theory

Lastly, CALL is also frequently associated with the only recently emerging learning theory of connectivism, which is commonly referred to as the "learning theory of the digital age" (Siemens 2005). Siemens points out that the learning needs of the 21st century are fundamentally different from those of previous centuries. As an example, Gonzalez (2004) mentions the "shrinking half-life of knowledge. […]Half of what is known today was not known 10 years ago. The amount of knowledge in the world has doubled in the past 10 years and is doubling every 18 months according to the American Society of Training and Documentation (ASTD)." As a consequence, learning has become a lifelong process that not only requires and involves "know-how" and "know-what," but also "know-where," in other words, the knowledge of where to find the required information (Siemens 2005). Additionally, it was recognized that knowledge is not solely acquired through personal experience but instead derives, as already indicated in 1987 by Vygotsky, from forming connections as well. Cormier (2008) further elaborates that as part of the connectivist theory, learning is not an individualistic process but rather a collaborative one that is grounded in a networked environment and based off of the permanent exchange between its participants, who share information by both accessing and generating knowledge. In doing so, the computer functions as the storage medium that connects its participants and thereby facilitates the construction of shared or "rhizomatic knowledge" (Cormier 2008), which inherently involves a constant change and progression.

As a consequence, teaching must react to these tectonic shifts in society and equip learners with the required skills in to being able to meet the challenges of the digital age.

[3] See Chapter 6.3.

One core competence in this regard is the ability to make elaborate decisions regarding what is important to learn, as well as which sources to draw from, as topicality of information and "[o]ur ability to learn what we need for tomorrow is more important than what we know today" (Siemens 2005). In addition, as learning is perceived to be a creative process it needs to be connected with actuation. Accordingly, learning takes place in diverse modes, including in informal settings, work-related tasks or personal networks. However, it is critical to understand that learning should no longer occur for the sake of learning or gaining information for personal benefit, but rather, this information should in some way be fed back to the world. Possible tools in this respect include e-mail conversations, the use of forums and blogs, the creation of YouTube videos or any other way of engaging in dialogues with others. That way, students can create valuable world-wide networks and can learn from and with others (Harris 2014). In addition, by implementing the concept of connectivism into one's CALL practice, learning can be further individualized and easily extended beyond the walls of the classroom.

As this chapter has outlined, the theoretical landscape behind SLA and CALL is very broad as it combines highly diverse and even contrasting approaches. However, together, they form a profound basis for the application of computers in the language classroom as well as the development and evaluation of CALL materials.

3.2.Learner characteristics

Successful language learning is at the same time, however, also strongly influenced by personal characteristics that influence the learning performance. In fact, classroom research has demonstrated countless times that even when exposed to identical instruction, some students consistently make great progress while others experience huge difficulties. According to Lightbown and Spada (1999: 51), these differences can be attributed to individual learner characteristics regarding intelligence, aptitude, motivation, attitudes, personality and learning preferences.

3.2.1. Differences on the cognitive level

Cognitive differences, meaning intelligence and aptitude, can be, in contrast to affective differences, relatively easily measured by tests. In this process, many studies revealed a correlation between IQ scores and language learning success. However, more recent analysis suggests that intelligence only plays an important role in language analysis and rule learning, as well as the development of reading and writing skills. Contrastingly, in

the communicative language classroom, which focuses on communication and interaction, intelligence is perceived as a rather weak factor influencing learning outcomes (Lightbown & Spada 1999: 52). A similar pattern can be observed with regard to language aptitude. In this context, the Modern Language Aptitude Test (MLAT) or the Pimsleur Language Aptitude Battery (PLAB) are used most commonly in order to obtain informative results on "the four components [of aptitude]: auditory ability, grammatical sensitivity, inductive language learning ability, and memory" (Hedge 2000: 17). These factors again indicate that aptitude primarily plays a role in language form, but only plays a minor role in the process of communicative language learning. Still, Lightbown and Spada (1999: 53) argue that being aware of student's aptitude and intelligence profiles and their responding strengths and possible weaknesses might indeed be useful. For example, they propose grouping students according to their profiles and assigning appropriate activities, or at least ensuring that teachers vary instruction to the greatest extent possible in order to address all sorts of aptitude profiles. This idea of differentiation is in fact one key element of CALL. In contrast to traditional schoolbooks, which follow the "one size fits all" principle, digitalized learning offers multiple paths to accommodate individual preferences and needs. How this concept can be put in practice, however, will be discussed in Chapter 6.

3.2.2. Differences on the affective level

In contrast to the aforementioned cognitive characteristics, affective differences such as personal traits, motivation and attitudes indeed significantly affect second language learning even though conducting empirical research on this has proved to be rather difficult. Studies are largely based on introspective methods, self-observations and self-revelations and are, as a result, contingent upon the learner as well as both the clarity and accurateness of his or her replies (Hedge 2000: 16f). Furthermore, studies on the relationship between personality traits and success in language learning have revealed contradictory results, depending on which trait (extroversion/introversion, inhibition, self-esteem, empathy, dominance, talkativeness or responsiveness) in combination with which language skill was the focus of attention (Ellis 1985: 119f; Lightbown & Spada 1999: 54f). Whereas some researchers suggest that, for instance, learners with an outgoing personality obtain more input and practice and are therefore more successful learners, others claim that inhibition and the lack of risk-taking only negatively impact pronunciation skills but do not affect language acquisition in general (Lightbown &

Spada 1999: 54f). Either way, assuming that introverted or inhibited students acquire the same level of proficiency, in many cases they still experience feelings of discomfort and anxiety whenever it comes to oral participation. As a result, they frequently avoid contributions which results in poorer grades and scarcer opportunities to learn from mistakes and, if nothing else, meaningful input and valuable thoughts often go unheard. Once again, CALL can be used as a remedial action as it allows students to work within a protective environment that supports trial and error practice at one's own pace without constant fear of evaluation. Additionally, students can also participate in collaborative work but, as digital learning is independent of both time and location, the pressure to immediately respond is considerably lowered as students can rewrite posts or seek assistance through online and offline resources. As a consequence, students experience positive rewards and affirmation and thus develop better self-esteem and become more self-confident, which again positively effects their offline participation.

Additionally, Ellis (1985: 101) mentions group dynamics as another aspect of personality which can, when well-implemented, serve as an advantageous stimulus for learning. Overt comparisons with other learners and competitiveness often lead to "emotive responses to language learning" and thus enhance learning. However, in case these comparisons lead to a feeling of low self-esteem, the exact opposite occurs, meaning that learning efforts can be completely abandoned. On that account, any humiliation must be avoided at all events and competitions should be alternated with co-operative work. In addition, Ellis points out that in the course of a competition, teaching might also run out of control and end in chaos as students might shout out answers or get distracted. Any of these risks can be easily prevented through a digitalization of gaming. As Chapter 4.3 will outline in more detail, gamified learning revolutionizes the principle of games in education by offering all familiar advantages while simultaneously avoiding any of the perils. For example, players can use pseudonyms and with the help of the computer, competitions can be carried out in an orderly manner, without any distractions from other students.

Finally, motivation and attitudes are the 3rd crucial element of language learning success on the affective level. Motivation is a highly complex phenomenon that strongly correlates with language learning success. Furthermore, Gardner and Lambert (1972 in Hedge 2000: 23) mention two kinds of motivation for learning English: integrative and instrumental motivation. Whereas the former describes the desire to learn a language "for

personal growth and cultural enrichment," the latter refers to "language learning for more immediate or practical goals" (Lightbown & Spada 1999: 56), such as work or study-related purposes. In 1981, Gardner and Smythe (in Hedge 2000: 23) however, provided an additional approach to motivation by breaking it down into four categories: a) desire to learn a language, b) attitudes toward the target language group, c) attitudes towards the language teacher and d) level of anxiety when using the language in the classroom situation. Hedge thus suggests that awareness about these variables and the teacher's willingness to integrate them into his or her teaching greatly impacts learning and language learning success. Accordingly, Kong (2009) recommends numerous ways to motivate students including the selection of diverse and interesting activities, the involvement of new and effective techniques, the application of praise and rewards, the creation of a positive learning environment, and the use of co-operative activities as well as sufficient opportunities to experience success. As the following chapters will further demonstrate, CALL has the potential to easily fulfill all of the proposed priorities. In short, the unlimited potential of the internet not only allows for diverse tasks, but also piques the students' interest and curiosity as it offers real-life activities and authentic material for all levels of proficiency. As a result, students experience learning as fun and as relaxed, in addition to feeling successful in their language acquisition. Moreover, cooperative learning is taken to the next level, allowing for world-wide collaboration and finally, through iCALL and the gamification of learning, immediate praise and rewards are steady components of learning.

3.2.3. Differences on the personal level

The 3rd category of learner differences corresponds to the personal level that is the individuality of learner preferences and beliefs.

Learner preferences, commonly also referred to as learning styles, are generally defined as the "individual's natural, habitual, and preferred way of absorbing, processing, and retaining new information and skills" (Reid 1995 in Lightbown & Spada 1999: 58). Reid (1987: 89) suggests that learners draw on "four basic perceptual learning channels: (a) visual learning, (b) auditory learning, (c) kinesthetic learning and (d) tactile learning." Recent studies have shown that these categorizations need to be even further expanded to include the concepts of cognitive, metacognitive, communication and socio-affective strategies (Hedge 2000: 77f). Typically, learners cannot, however, be ascribed to just one learning type, as they tend to draw on different styles or a combination of styles

depending on the context. Still, learners undoubtedly have preferences that strongly influence their learning process. This being the case, a teacher's awareness of this phenomenon is crucial in order to support learners in the way best suited to them and, if necessary, help them expand their repertoire as to become more autonomous learners (Hedge 2000: 59). Moreover, Lightbown and Spada (1999: 58) note that this variety of styles needs to likewise be reflected in teaching practice as teachers should be "skeptical of claims that a particular teaching method or textbook will suit the needs of all learners." Unsurprisingly, this is where CALL comes again into play, considering that it is not a single pedagogical methodology but rather a combination of different approaches, which makes it an efficient alternative to rigid traditional learning approaches. Notwithstanding, it is still the teacher's ultimate responsibility to select methods of instruction or practice suitable for the various learning styles, by means of the utilizing a greater range of material and multimodal formats, the chances of achieving this objective are significantly higher.

Beside differences in how students themselves go about learning, they similarly have different beliefs about "how their instruction should be delivered" (Lightbown & Spada 1999: 59). Studies have shown that deviations from student's expectations commonly lead to high levels of dissatisfaction. Prevailing beliefs are in turn, for the most part, context and culture specific and are often based on previous learning experiences. Teaching principles that might be successful in one situation can therefore completely fail in another. Yorio (1986), for example describes a study on international ESL university students in a program that only focused on meaning and spontaneous communication. A subsequent questionnaire then exhibited that in fact "the majority of students expressed concerns about several aspects of their instruction, most notably, the absence of attention to language form, corrective feedback, or teacher-centred instruction" (Yorio 1986 in Lightbown & Spada 1999: 59). More recent studies revealed that CALL harbors a similar risk, especially in countries where students traditionally take a rather passive or receptive role in learning such as in Japan (Jamieson & Chapelle 2010). While in the course of the 2nd part of this paper it will be reveal whether the same holds true for Austria, it is still necessary to gradually acquaint students with web 2.0 tools and the associated greater degree of autonomy.

In summary, it can therefore be stated that individual characteristics appear on several levels. These different features are, however, exceedingly complex, intangible and

interdependent, and therefore research often arrives at diverse conclusions. Still it is generally agreed that at the end of the day, this interplay of features decisively determines a student's language learning success. In addition it became clear that a sensitive teacher and an appropriate teaching method on their part are conducive to this success. Only when learners find themselves in an appropriate learning environment, can they fully reach their potential. In contrast to traditional teaching methods, CALL has in that way proven highly beneficial. Supported by well-recognized theoretical approaches and psychological principles about SLA, it allows for the urgently required individualization and excitement, among other benefits. The following chapters should now reveal how its application might look in practice.

4. CALL management strategies

In view of the sheer infinite technological tools and applications, a natural question that arises is how to organize, process and deliver these resources. Depending on the level of implementation, teachers might apply modern technologies only at irregular intervals, for instance by presenting content via YouTube videos or using Dropbox as a means of delivery system for handouts. Three main models have emerged in parallel that conceive, each in its own way, the application of technologies more systematically and on a larger scale.

4.1. The flipped classroom

"Flipping the classroom" has recently become a catchphrase and synonym for a small revolution in education. Its possible pedagogical firepower in fact grows apparent considering Muldrow's (2013) notion that this novel paradigm has generated worldwide interest or Fulton's (2012: 13) description as "an educational innovation with legs, if not wings." Therefore, its general definition of "students watch or listen to lessons at home and do their 'homework' in class" (Fulton 2012: 13) is far too simplistic and lacks fundamental considerations. Instead, Brame (2013) explicates the idea of the flipped or inverted classroom by reference to Bloom's revised taxonomy (2001).

Figure 3 Bloom's revised taxonmy (2001 in Brame 2013).

As proposed in Figure 3, Bloom's revised taxonomy suggests that the mastery of learning objectives can be hierarchically organized into six stages. Students first need to accomplish lower levels to be able to then rise towards higher-order levels. On this basis, the central idea of the flipped classroom is as follows:

> Students are doing lower levels of cognitive work (gaining knowledge and comprehension) outside of class, and focusing on the higher forms of cognitive work (application, analysis, synthesis, and/or evaluation) in class, where they have the support of their peers and instructor. (Brame 2013)

Therefore, students initially are exposed and introduced to content prior to class by means of various technology-based resources such as readings, lecture videos, PowerPoint presentations or podcasts. These materials, particularly videos, can thus either be found online or created by the instructor. In that case, Muldrow (2013), however, cautions against boring videos as they do not enhance the learning experience; he advocates instead for the use of existing material as provided by YouTube, the Khan Academy, BBC learning English or similar resources. Additionally, Muldrow proposes a variety of sources and presentation styles as well as permission for students to use other resources as long as they still arrive at the same goals and objectives. Additionally, as to ensure that students in fact come to school well-prepared, students are commonly prompted to take notes, complete worksheets or quizzes. These quizzes can either be conducted prior to class or during class time and should be used to help teachers assess student comprehension. Class time can then be most effectively spent on practice in a guided setting and promotion of deeper understanding. Instead of abstract, teacher-centered instruction, learning this way means students gather knowledge through discussions, group activities, peer instruction or individual assistance (Brame 2013). Hereby, both the interactive as well as the emotional quality of the lesson decisively increases. Khan

(2011) even speaks about "humanizing the classroom" by a factor of five to ten due to the enhanced peer interaction and the change of teacher roles. Just as Hawks (2014: 268) notes, teachers in the flipped classroom are no longer the "'sage on the stage' but rather the 'guide on the side'" who allow learning in a social environment with a learning coach at hand who maximizes face-to face time and assists with immediate feedback and support.

In addition, Muldrow (2013: 29) remarks a considerable increase of efficiency which she ascribes to the notion of "having a student in front of you doesn't mean that they are engaged with the content." Hartley and Cameron (1967 in McLaughlin et al. 2014:1) hence reason that during traditional lectures, students' attention generally declines rapidly after the first ten minutes, resulting in the fact that only 20% of the material presented during class is retained. The flipped classroom, in contrast, offers the chance to acquire knowledge at one's own speed, including pausing, rewinding and adapting towards one's learning style if necessary. Efficiency, however, also results from the elimination of ineffective homework assignments that result from a lack of understanding. Instead, "students practice and apply their learning in the classroom, under the watchful eye of the teacher" (Goodwin & Miller 2013:79), which makes such tasks up to four time more effective.

For all that, Muldrow (2013) concludes that flipping the classroom might not be best choice for everyone and in every setting. On the contrary, teachers and students need to feel comfortable, meaning that videos might only be applied as review or if a student missed a class. Every teacher needs to find a balance. "Sometimes students can learn independently, and sometimes you will need to take time to explain something in class. [I]t is about meeting the students' needs" (Muldrow 2013: 31). The blended learning approach, which will be discussed in the subsequent chapter, might be able to achieve this desired balance.

4.2.The blended classroom

As foreshadowed, blended learning or "hybrid learning" as it is also commonly referred to, implies a combination of pedagogic approaches or teaching strategies (Oliver & Trigwell 2005: 17). However, as this interpretation does not necessarily include the application of technology, Sharma and Barrett (2007: 7) provide a more precise definition, saying that "blended learning refers to a language course which combines a

face-to-face (F2F) classroom component with an appropriate use of technology." How this conjunction looks in practice, though is not strictly defined but rather remains up to the teacher. Along those lines, Sharma (2010: 457) divides the various faces of blended learning into two main approaches: the dual track and the integrated approach. In essence, the dual track procedure considers digital material to be a supportive tool to classroom work. By providing class notes, PPT presentations or videos, students are offered the possibility to review content after face-to-face classroom sessions. Additional online assessment quizzes can then even further enlighten students and serve as self-checkers that show students if supplemental practice is necessary (Pape et al. 2012: 19). In the integrated approach by contrast, digital resources are applied to accompany class work. That way, students are required to accomplish tasks between face-to-face classes (Sharma 2010). These tasks often take a collaborative format, asking students to continue class discussions or group works. Similarly, pre-lesson self-study components and the preparation of pending content (as illustrated in Chapter 4.1.) are two other common ways of practice. As these tasks are commonly embedded into virtual learning environments (VLEs)[4], they are as well complemented by connected chats or message boards for students seeking assistance (Pape et al. 2012: 19). Lately, publishers have likewise sensed an increasing demand for blended learning tools and now gradually provide appropriate material. On that account, online versions of schoolbooks are being published or traditional schoolbooks are becoming extended by video content or cyber-homework (Muldrow 2013: 29). Much attention is once more attached to personalization, learner autonomy and an increase of interest and motivation. Considering the variety of potential applications, Sharma and Barrett (2007) however, caution against a lack of coherence. In fact, blended learning can only have a favorable effect on the language learning experience if based on a "thought-through pedagogical relation between parts of the blend" (Sharma 2010: 457).

4.2.1. The virtual classroom or VLE

VLEs (Virtual Learning Environments), LMS (Learning Management Systems) or CMS (Course Management Systems) are synonyms for "web-based platform[s] designed to support teachers in the management of online educational courses" (Sharma & Barrett 2007: 103). Warth-Sontheimer (2011: 4) provides a more comprehensible explanation and compares these platforms to "a school with many classrooms". In that sense, teachers

[4] See next chapter.

can create an online classroom that students can attend anytime and anywhere. For this reason, VLEs and in particular Moodle, as one of the most popular VLEs, are commonly used for distance learning purposes or for the aforementioned flipped or blended learning approach.

Apart from several preinstalled features, VLEs generally start out empty so that teachers can fill them with content and material themselves. In doing so, teachers can decide between Moodle as a material host and delivery system or as a learning course. Regarding the former practice, teachers can, instead of printing out quantities of material, share and deliver information by uploading material such as word documents or PPT presentations which students can then download and, if necessary, print out. Likewise, students are able to easily hand in assignments themselves without having to write e-mails (Sharma & Barrett 2007: 103f). On the other hand, teachers can also design sophisticated courses, so called learning paths. These paths can either be independent or function as the digital part of blended learning courses. In that case, teachers create the content of the course or so-called "learning objects" (Sharma & Barrett 2007: 105) themselves and combine and contextualize them. Sharma and Barrett explain learning objects as "self-contained piece[s] of learning material with an associated learning objective, which could be of any size and in range of media" (105). Thus, learning objects can range from audio or video files to web quests or extensive group projects. In addition, teachers can integrate testing and assessment tools either in the form of (automatically graded) tests that unlock the next steps of the path if successful or by asking students to conduct quizzes or to upload exercises. Related to student's assessment, Moodle also supports learning control by means of feedback, evaluation and tracking statistics and offers tutorial guidance via synchronous (e.g. chat, e-mail) and asynchronous (e.g. forum) communication tools (CMC) (Warth-Sontheimer 2011: 4). That offers the greatest opportunity of working online and still having a real audience to interact with. In other words, students can work together and help each other just as teachers can intervene for support. Sharma and Barrett (2007: 105) also point out that CMC helps to promote different skills. According to this, communication that occurs in real time can help develop fluency whereas delayed communication fosters deeper thinking skills and accuracy. However, Moodle or similar VLEs also provide various general advantages. First of all, as previously mentioned, they bring together many tools and features under one roof, making the dissemination, storage and re-use of material very easy. Another advantage is that no programming knowledge is

required. In fact, many features are self-explanatory and quite intuitive. However, in order to acquire more advanced Moodle skills, teachers may wish to take a course or utilize self-study handbooks (Sharma & Barrett 2007: 105). Students, on the contrary, require little to no special knowledge, basic computer literacy aside. Instead they profit strongly from the easy accessibility of the materials and the change of routine, which positively affects their achievement and motivation (Al-Ani 2013: 98). A final benefit is related to its high level of security. Since every Moodle course can only be accessed through its respective passwords, Warth-Sontheimer (2011:4) emphasizes that protection of both data and users can be ensured.

4.3.The gamified classroom

Anyone who makes a distinction between games and education clearly does not know the first thing about either.

- Marshall McLuhan (source unknown)

The fact that games contribute positively to language learning is indeed nothing new. Teachers traditionally have tried to cover educational content with games such as memorys or quizzes. In the digital age, gamified education can be taken one step further, resulting in an ultimate gamification of learning today. In light of Lee and Hammer's (2011: 1) definition of gamification as "the use of game mechanics, dynamics, and frameworks to promote desired behavior," it quickly becomes clear that well-crafted domino cards no longer suffice for student's engagement. Instead, underpinned by the self-determination and flow theory, gamification questions, which stimuli systemically motivate students and promote deeper engagement (Steinbach & Stöcklin 2016). According to Werbach and Hunter (2012: 26), the answer is classical game-elements and game-design techniques. In practice, learning tasks and objectives become quests, students become parts of teams or guilds to accomplish collaborative activities and, in lieu of grades, progress mechanism such as points, badges, levels or leaderboards are in place. Further important elements are clear rules, a final goal and immediate feedback, as well as a narrative that connects quests, an autonomous course of the game that involves a range of choices and, most importantly fun. However, as gamification can occur on different levels, ranging from single tasks to units, terms or even entire schools, not all of these elements are always to be found (Steinbach & Stöcklin 2016). At a lower level,

Learningapps[5] for instance provides short, gamified exercises, mainly for the purpose of additional practice. *QuesTanja*[6] goes one step further, proving a game environment with a frame story and pointification tools (e.g. badges), thus offering the chance to embed whole teaching units into its game framework. On the other side of the spectrum, Lee Sheldon (2010) has highly successfully shown how to gamify an entire university course by transforming it into a multiplayer game. For that to happen, students chose avatars, collaborated in guilds, completed quests instead of homework, accomplished fighting monster challenges rather than exams and did not earn grades but rather, experience points. Finally, *Quest to learn* (2016) even stands for the gamification of an entire school and the attempt to transform the whole curriculum into playful missions and quests.

Usually, gamification in the context of the EFL classroom is, however, only one tool within a teacher's methodological and didactical repertoire. For though Lee and Hammer (2011: 4) conclude that gamification of learning has the potential "to give students the tools to become high scorers and winners in real life," decisions about its application always need to take into consideration its advantages and disadvantages[7]. In how far the efficacy of gamification, blended learning or CALL applications in general also depend on the individual classroom situation or if generalizations are possible, shall now be illuminated in the following chapter.

5. "If your teaching is good, it includes technology"

Jozef Colpaert (2013: 17), university professor, editor of the annual CALL Journal and prominent scholar in the field of educational technology, takes the clear view that "if your teaching is good, it includes technology." He draws on Tapscott's (1998) and later Prensky's (2001) argumentation that schooling needs to adapt to the living environment of its learners in order to be effective. In this particular case, its learners can be labeled as "digital natives" (Prensky 2001) or the "Net Generation" (Tapscott 1998) whose everyday lives are inextricably linked with modern technologies. As a result, schooling needs to equally incorporate technologies into its teaching practice in order to keep pace with society (Holmes & Gardner 2006: 61). In reality, the situation is, however, often very different. In fact, Holmes and Gardner (2006: 61) argue with reference to Tapscott's

[5+6] Chapter 6.3 provides further details.

[7] Chapter 5.1 and 5.2 provide further details.

(1998) observations that "schooling has remained modern, with its fixed notions of what must be learned and how it is to be learned, while lagging behind a society that has become postmodern." The reasons for this circumstance are quite obvious for Prensky (2001). He observes that the majority of teachers belongs to a generation that has not naturally developed the required fluency in handling technology. Prensky thus coined the term "digital immigrants," meaning that this group of teachers will "always retain traces of outdated practices, just as an adult language learner is likely to have a 'foreign accent'" (Walker & White 2013: 23). Walker and White (2013: 24) themselves take a considerable less pessimistic view, however, as they argue that there is no real evidence to support the notion that elder teachers cannot develop this competence later on in life through self-education or adequate teacher training. Indeed, nowadays, technology as a means of the digitalization of teaching and learning is ubiquitous and has definitely found its way into classrooms all over the world (Cuban 2001; Garrett 2009; Walker & White 2013). However, experts in the field are divided over its actual efficiency. Whereas a great number of researchers are firm believers in the computer as the most effective tool in education (Eyüp 2012; Hargreaves et al. 2004), others urge vigilance. Whyte and Alexander (2004) for instance warn of the erroneous assumption that the application of modern technology automatically results in effective teaching practice. Fullan (2001) even goes one step further and not only cautions against a glorification of the current state of affairs, but even makes the argument that technological developments have actually led to an educational regress due to the lack of a concurrent pedagogical transformation. Similarily, Cuban (2001: 71) posits that "when teachers adopt technological innovations, these changes typically maintain rather than alter existing classroom practices." Instead of exploring the infinity of new opportunities, they tend to only change oral forms of instruction to PowerPoint presentations or regard the substitution of pen and paper assignments with word-processing software as the ultimate goal. For this reason, it is hardly surprising that Cuban (2009: 158) arrives at the disillusioning conclusion that computers are "oversold und underused" and accordingly not worth the effort to integrate into classroom learning. Although Garrett (2009: 719) agrees with Cuban to the point that inexperience among teachers frequently leads to these mentioned limitations, she makes a case for not confusing "these uses of technology" with "CALL proper." She then further explains that "CALL is not shorthand for 'the use of technology' but designates a dynamic complex in which technology, theory, and pedagogy are inseparably interwoven" (719f). Thus she arrives, just as Walker and White (2013), at the contrary

conclusion that if these three principles are closely joined together, in addition to extensive teacher training, effective CALL is highly possible and has the potential to sustainably improve language acquisition. In view of this, one might be inclined to assume that in fact even the reverse of Colpaert's (2013) statement, namely "if your teaching includes technology, it will be good" is true. Thus, the following subchapters set out to determine whether this actually is the case.

5.1. Benefits of using technology in the EFL classroom

As a general rule, CALL should not be perceived as a universal panacea to solve all problems in education but rather as a supplement or enrichment which, when well-conceived, has great potential, as the aforementioned studies have proven. Holmes and Gardner (2006: 31) even suggest that the use of computers as educational tools has moved the "classroom culture closer to that of an 'ideal classroom'." Al-Ani (2013: 98) observes that the numerous advantages can be ascribed to three main fields: a higher level of learning achievement, a greater degree of learner motivation and more learning communication and collaboration.

To begin with, researchers are divided over which factors of CALL make the greatest contributions to learning success. Considering the individuality of each student and classroom, any generalization would, however, be nearly impossible. Therefore, the following analysis only offers a general picture of possible advantages.

Firstly, the precedent analysis of learner differences has already demonstrated the necessity of diversity in terms of presentation and learning styles. Different from traditional schooling, CALL does not fail to respond to this demand. Instead, by virtue of its multimodal format, that is "the complex interweaving of word, image, gesture and movement, and sound, including speech" (Bearne & Wolstencroft 2007: 20), students can choose what fits their learning preference best and can consequently get the most out their learning. In other words, the learning process becomes significantly individualized and students become more actively involved in their learning, which effectively eliminates teacher-centered classrooms and the notion of students as purely receivers of knowledge (Lai & Kritsonis 2006). On the contrary, students are actively involved in the creation of knowledge through interactive, autonomous, self-directed and self-paced learning. Students who need extra practice or suffer from concentration difficulties especially benefit from the opportunity to repeat activities or, for instance, re-watch instructional

videos such as is possible in the flipped classroom. As a consequence, a lack of comprehension or a diminishing of concentration no longer implies that the students' falling behind, in stark contrast to traditional classroom settings. In addition to this, CALL is completely independent of time or location (Tuan & Doan 2010: 65), opening CALL to completely new possibilities. Some of the many potential new uses of CALL include adapting learning to one's biorhythm, allowing hospitalized students to still follow lessons or bringing education to developing countries with limited educational infrastructure (Holmes & Gardner 2006: 67). Another advantage of CALL is, as Lai and Kritsonis (2006: 2) remark, that "computers can capture, analyze, and present data on second language students' performances during the learning process." That way, differentiation regarding special needs and heterogeneous levels of proficiency can be more easily tracked and analyzed. Through such possibilities as leaderboards, as in the case of the gamified classroom, or by taking a look at quiz results, teachers receive important information about their students' progress. This knowledge can then help them to tailor feedback, propose supplementary exercises or to give additional support according to the students' needs. However, in recent years, computer applications themselves have become capable of providing helpful feedback to students. Blake (2008) refers to this development as iCALL which provides, compared to teacher feedback, the huge advantage of consistency and immediacy (Kilickaya 2015: 336). Moreover, Mason and Bruning (2004: 1) note that "unlike feedback from an instructor or tutor, this feedback can remain unbiased, accurate, and non-judgmental." Considering the importance or errors in the learning process, it becomes clear that any humiliation or unpleasant feeling in relation to error correction can have severe consequences (Hedge 2000). Therefore, shy or inhibited learners can especially benefit greatly from iCALL applications as they allow students to acquire knowledge in private and to learn stress-free from their errors through neutral correction and/or feedback. According to Robertson et al. (1987), this prevention of embarrassment may even have the potential to improve the student's self-concept and level of self-esteem. At the same time, learning in an online environment gives students more time for thinking as it offers the chance to draw on various sources in order to arrive at a final solution, thereby further promoting discovery learning. These sources do not just include browsing the internet or checking with dictionaries, they also consist of group work in various forms, which the following discussion on the increase of learner communication and collaboration will elaborate on.

Secondly, another key advantage of computer-assisted teaching is its beneficial impact on students' learning motivation. Sumakul (2014: 70) argues that "traditional classrooms are losing the ability to challenge and motivate our Internet generation students, who expect more from a class, not only lectures and books." In addition, Dörnyei (2005: 65) insists on motivation as a necessary condition for language learning success as "it provides the primary impetus to initiate L2 learning and later the driving force to sustain the long and often tedious learning process." As a matter of fact, researchers attest in numerous publications that CALL can accomplish this purpose of uniting studying with enthusiasm. As one pivotal reason, Barr (2008) mentions the generally highly positive connotations of computers. As his study revealed, students experience the use of computers even for educational purposes as exciting innovations and a welcome change to traditional teaching practice which is frequently perceived as teacher-dominated, monotonous and tiring. The internet, in contrast, allows for a greater variation both in terms of presentation and practicing tasks and can thereby make use of audio and visual effects. These in turn, lead to a more captivating and engaging learning experience. As a result, learning is supplemented by a factor of fun, which should not be underestimated as it fundamentally increases students' interest and motivation (Kilickaya 2015:336f). Gilmore (2007) notes another motivating force of online resources, namely authenticity. Despite the lack of a definite definition of the term authentic material, Gilmore (2011) includes a minimum criterion that the material should be produced by a native speaker for a fellow native speaker of the target language and should have a "real" purpose instead of being produced as teaching material. Following this standard, the great majority of texts in schoolbooks certainly cannot be qualified as authentic material, but rather, artificial material. Considering though the strong driving force of *real* material, the huge benefit of CALL becomes quite obvious. On the basis of the endlessness of online material, teachers and students can find authentic texts to match all interests and levels of proficiency. By consequently extending these texts with a learning purpose, multiple advantages are to be found: interaction becomes more meaningful and contextualized, the target culture is brought into the classroom and students experience a great sense of achievement. It should be noted, however, that authenticity is not restricted to reading or listening to texts but, in the case of CALL, it can even be expanded by performing real-life tasks. In that sense, students could for instance browse online menu cards in search of quantifiers or conduct an email interview and report back to their colleagues using reported speech. Even though such tasks still have the purpose of grammar acquisition, by adding a

creative and real-life component, students experience them completely differently to a grammar worksheet and are thus much more motivated.

Thirdly, the increase of collaboration and communication also significantly contributes to the success of CALL. In light of the communicative language classroom, a maximum of student speaking time is one of the major goals. However, especially in regard to grammar instruction, this demand is frequently neglected as teachers still tend to a teacher-centric style of presentation. This, though, can be easily changed through the implementation of technology and the new notion and conception of the role of teachers. As Bergman and Sams (2012 in Goodwin & Miller 2013) explain, in the flipped or blended classroom, teachers are no longer "standing in front of the classroom talking *at* students [… but they rather] talk *with* students." Thereby, the teacher-student interaction gains a completely new quality as teachers can better address the needs of their students and students in turn get more opportunities to speak and practice. This raises yet another benefit of CALL because in traditional classroom settings, only a restricted number of students get the chance to actually practice grammatical structures in spoken discourse. This problem, however, does not apply for computer-assisted grammar learning as all students can simultaneously practice grammar in oral form. Whether they lend their voices to a Voki avatar, practicing the 1st conditional, or they record a video to illustrate the difference between present perfect and past simple. Aside from that, great emphasis is put on student collaboration. While group activities certainly also occur in traditional teaching methods, CALL opens up far more possibilities and variations. As a matter of fact, even though online learning is commonly perceived as isolated, independent work, when used in the right way, the opposite is the case. As the chapter on VLEs has shown, CMC offers multiple synchronous and asynchronous forms of communication and thus opportunities for collaboration, ranging from chats and video conferences to forums, e-mails or blog entries. The collaborative creation of interactive mind maps (*Padlet)*, presentations (*Prezi*) or texts (*Ehterpad*) are likewise possible. In this manner, students can, for instance, practice linking devices and learn from each other by collaboratively writing a story, or they could benefit from peer editing in combination with the creation of quizzes or interactive exercises as to practice mistakes. Yet, collaboration is not confined to the classroom since any world-wide interaction is conceivable, ranging from e-mail pen pals with other schools to blogging and *Skype* conferences with native speakers. There are simply no limits to teacher's creativity.

What this all amounts to is that the benefits of CALL are highly diversified, ranging from an individualization of learning, immediate feedback and inclusive education to a rise of interest, motivation, authenticity, and collaboration and communication. The key takeaway from this discussion of advantages is that it confirms Son's (2002) model of CALL components: the potential of CALL can only possibly be fulfilled if learners, the computer and the teacher perform in unison.

5.2. Drawbacks of using technology in the EFL classroom

As usual, benefits always come with certain drawbacks, which certainly need to be carefully reviewed, too. In light of the statement about which three interacting factors promote successful CALL, it is hardly surprising that the malfunction of any of these can likewise lead to its failure. Nevertheless, given that it can be agreed that the teacher has the most important role to play, it is his or her responsibility to acquire the necessary expertise as to ensure the smoothest interplay.

Accordingly, with reference to Prensky's (2001) observations regarding "digital immigrants" and the fact that the majority of teachers lack fluency in the use of digital devices, the first drawback of CALL is not difficult to find. In fact, teachers need to gain a certain level of computer literacy, otherwise, using the computer in the classroom is at best useless, at worst harmful. Just as Cuban (2001) remarks, insufficient confidence and unfamiliarity with the subject matter only lead to careless and meaningless integration and consequently frustration on the teacher's and students' side. Thus it can be said that 21st century learning also demands 21st century teaching skills. In this sense, teachers are encouraged to develop a novel set of abilities in order to make effective use of technology. Considerations about which skills are in this respect required often refer back to Hampel and Stickler's (2005: 317) skills pyramid which lists, in ascending order, (a) basic ICT competence, (b) specific technical competence for the software, (c) dealing with constraints and possibilities of the medium, (d) online socialization, (e) facilitating communicative competence, (f) creativity and choice and (g) own style as the pillars of digitized teaching. In other words, a basic technical knowledge is an absolute pre-condition for a beneficial application of computers. Accordingly, teachers need to familiarize themselves with both the computer and the respective applications and thus should be capable of fixing minor issues such as when no sound is audible or *YouTube* cannot play a video due to an outdated version of the flash player as, even though these

difficulties can generally be easily resolved, a lack of the required understanding not only leads to awkwardness, but can even put a whole lesson at risk of failure. Likewise, teachers need to get a feeling for appropriate websites and material. According to this, they not only have to deal with the topic of internet security and copyright issues but in like manner, need to make sure to select resources that are suitable for the individual classroom. Thus, considering the infinite possibilities of the Web, the following warning, which is attributed to Mitchel Kapor even though its exact origin is unclear (Palmer 2014: 69), needs to be issued: "Getting information off the internet is like taking a drink from a fire hydrant." For that reason, caution should be exercised and teachers are advised to make informed choices. As a rule of thumb, Stockwell (2012: 13) suggests that the "starting point for CALL should always be the learner" and Garrett (1991 in McClanahan 2014: 24) adds that technology should only be assigned a supportive role in terms of the "methods, approaches, and philosophies that the educator would normally use. Learning outcomes should dictate what technology is appropriate, not the other way round." However, the idea of getting lost in cyberspace applies to the teacher just as to his/her students. In this respect, Barr (2008: 108) warns of the wrong assumption that only because one's students might be very computer literate, they might be equally skilled utilizing the computer for educational purposes. To address this, a gradual introduction to CALL is at first absolutely essential. In a second step, teachers then need to decide upon the degree of guidance they will offer students. Particularly younger students are in many cases overwhelmed by the flood of information and the myriad distractions on the internet and thus frequently lose sight of their task. As to avoid this danger, teachers are advised to carefully select suitable material with regard to aims and objectives and subsequently guide its usage. At the same time, moving away from traditional, strongly teacher-centered teaching can also mean a certain loss of control. In this respect, teachers again need to reflect upon the individual classroom situation and consequently decide which level of guidance or freedom respectively is convenient. Either way, a presentation of the end-products is of high importance as it places value on the student's work on the one hand and on the other hand, ensures that students effectively deal with the given task. Besides, follow-up questions can further give valuable insights about how the students experienced the task and which future modifications are worth considering.

Besides, a common prejudice against CALL is, as mentioned by Lai and Kritsonis (2006: 4), the risk of an imbalance of the four language skills at the expense of speaking practice.

Given the fact that the increase of student's speaking time has been mentioned as one of the major advantages of CALL, this apprehension appears, at first, peculiar. Nevertheless, Lai and Kritsonis indeed have a point as an improper use of CALL can in fact lead to its decrease. As a matter of fact, the majority of computer applications emphasizes non-oral activities such as reading, writing and listening exercises. Thus, if teachers are not familiar with how these tasks can be transformed into or complemented with speaking exercises, teaching of course drifts away from promoting students' communicative competence. Another problem that might arise with regard to nonverbal online activities such as gap-filling, mix-and-match or true/false exercises is their restricted form of feedback (Sharma and Barrett 2007:12). Following the behavioristic principle of the so called "drill and kill" grammar exercises, many of these online tasks are programmed to only allow one correct answer. The best solution in this case would be that teachers become creative themselves and design their own exercises. Accordingly, they need to be aware of alternative solutions as to prevent the computer system from accidentally marking correct answers as false. In addition, a variety of exercise types and the supplementation of cloze exercises with personal feedback that guides the learner towards the right answer and avoids demotivation, are all of great benefit in educational pursuits. Further, the combination of personal feedback with an odd number of distractors can also help to minimize the problem of guessing and clicking through without thinking and thus maximizes the positive effects of CALL. Besides, Warschauer (2004) warns that even though iCALL applications tend to be capable of evaluating a student's input in terms of correctness, it will still take some time until they can similarly assess more nuanced characteristics, including "pronunciation, syntax, or usage" (Warschauer 2004 in Lai and Kritsonis 2006: 4). Lai and Kritsonis (2006: 4) add that the limitations of computers' artificial intelligence also manifest in unexpected situations. They thus criticize that at the present stage, language learning tools cannot yet be labeled as truly interactive as computers fail adequately react to student's learning problems or questions in every instance. In this respect, one might, however, argue that CALL certainly does not have the intention to replace teachers, and those gaps are therefore acceptable. On that account, CALL, is to be understood only as a supplement which allows teachers to concentrate on other areas of teaching that require their personal effort.

Aside from that, CALL is also subject to several concerns both from the teachers' and the parents' perspective. To start with, teachers commonly state that CALL is unduly time-

consuming, which unfortunately is true, albeit only somewhat. In particular, at the outset of applying CALL, careful considerations of which tool to choose and how to create a meaningful activity might take more time than teacher-fronted instruction that only follows the path of a schoolbook. However, in light of the numerous benefits of CALL, teachers can be assured that time is certainly worth spent as it will lead to a greater pay-off in the end. Additionally, there is no need to always re-invent the wheel. As already mentioned, teachers can draw on existing materials, recycle their own creations or could even let students produce online exercises themselves. It should also be noted that skills come with practice and, once captivated by CALL, it becomes as natural as the usage of the blackboard. Parents, on the other hand, often raise concerns about the additional increase of time their children have to spend in front of a computer screen (Simon & Fell 2013). This argument certainly merits consideration. Accordingly, teachers should attempt to strike a balance or even better combination of offline and online work. In this sense, a meaningful task could take the form of asking students to take picture of street signs with their mobile phones which then provide the basis for an in-class discussion using must/must not.

Finally, the financial burden of CALL should also not be underestimated either (Lai & Kritsonis 2006). CALL, in fact, can only operate effectively if schools are willing to allocate a necessary amount of money. Therefore, consideration must not only be given to the initial acquisition costs of computer equipment and the technical realization of CALL, but also to the necessary ongoing expenses such as software licenses, computer programs or technical support. However, financial issues do not only concern schools but the individual as well (Fulton 2012). Accordingly, the requirement of being in possession of smartphones, tablets or laptops as to follow the lesson might be difficult or even impossible for some families. Here again, the teacher is required to realize any problem in good time and to adapt their teaching correspondingly. Hence, students might be asked to accomplish a task in small groups and thus share the required technical device or school might even consider the purchase of several devices which then can be borrowed when required.

In summary, it can therefore be stated that the application of CALL does not always mean peace, joy and happiness. Instead, problems may arise that can endanger its success. However, at the same time it becomes clear that this success stands and falls with the teacher's motivation, willingness and not least expertise to deal with these pitfalls. Then,

though, there is nothing to stop teacher and students from exploiting CALL's numerous benefits.

5.3. Literature review on the effectiveness of CALL

In view of the preceding analysis and the fact that the application of CALL brings numerous advantages, but also some disadvantages, it appears sensible to evaluate its effectiveness also with regard to empirical research. Thus, this subchapter sets out to review major case studies and their respective outcomes and thus sheds further light on the potential of CALL with special attention being paid to its efficacy regarding grammar instruction.

Despite the fact that CALL is generally perceived to be in an early stage of its development, its sub-discipline of computer-assisted EFL teaching and learning can already be based on a considerable body of research. The vast majority of case studies and field research are, however, concerned with the analysis of its effectiveness in terms of the four language skills. In this respect, CALL developers and researchers have already extensively studied the capabilities of media-supported instruction as related to the development of literacy and reading comprehension (Fard & Nabifar 2011; Bhatti 2013), the improvement of listening skills (Hassina 2012), its effect on oral communication competences such as fluency and pronunciation (Neri et al. 2008; Blake 2009) and its impact on writing skills (Zaini & Mazdayasna 2014). Accordingly, all of the mentioned studies pursued a similar approach and investigated the effectiveness of CALL by means of allocating students to two different groups (control and experimental group) and subsequently teaching the experimental group with- and the control group without technology. Additionally, in order to obtain evaluable results, students' performances were examined through the application of pre- and post-tests. Thus, all studies similarly arrived at the conclusion that the application of computer-aided teaching methods yields equivalent or superior results in comparison to traditional teaching methods. More specifically, only Neri et al.'s (2008) study revealed equal results for both groups, whereas in all other cases significant differences, up to 34% (Bhatti 2013), were observable. Hence, with regard to the four language skills, there is strong evidence to suggest that CALL has the ability to promote effectiveness and that it can be recommended as a worthwhile tool of instruction.

A thorough analysis of the available data concerning the effect of CALL on EFL grammar acquisition, however, reveals that definite statements are virtually impossible. One of the earliest studies was conducted by Nutta (1998) and aimed to compare computer-based (group 1) and teacher-directed (group 2) grammar instruction. For this purpose, 53 ESL university students were selected and randomly assigned to group 1 and group 2. Subsequently, both groups received a seven hour grammar course on verb tenses. Again, pre- and post-tests were utilized which facilitated a clear analysis of students' performances. Resultingly, it was found that computer-based students only slightly outperformed the teacher-directed students in open-ended tests while in multiple-choice and fill-in the blank tests, both groups achieved similar results. Nevertheless, an additional analysis of students' questionnaires showed that the majority of students who experienced the computer-assisted way of instruction were still highly satisfied and wished for continuation. However, similar to Jamieson and Chapelle's (2010) study, which will be reviewed at a later point, Nutta (1998) already detected cultural differences. In fact, his investigation revealed that whereas Asian students "appreciated not being 'singled out' to speak in class, […] some of the Latin students indicated that they would have preferred more human interaction" (57). However, returning to the initial question, which concerns the impact of computer-assisted grammar instruction on students' performances, a more recent study by Mohamad (2009) is also worth mentioning. Eleven years after Nutta (1998), Mohamad (2009) conducted a similar study that researched the different impacts of computer-assisted vs. traditional grammar instruction. For this purpose, 50 EFL university students with diverse levels of proficiency were selected to participate in a 20 hour grammar course which covered the topic of parts-of-speech, subject-verb agreement and verb tenses. Consequently, by means of the evaluation of the pre- and post-test, Mohamad came to the same conclusion as Nutta (1998), namely that in the area of tense formation, the groups performed equally. However, with regard to the other two grammatical concepts, significant benefits of online interactive grammar exercises over traditional teaching methods were reported. Thus, Mohamad (2009:44) concluded slightly more optimistically that computer-assisted grammar instruction is a "potentially effective teaching tool for the learning of grammar and its application". Naba'h et al.'s (2009) final verdict is even more positive. Accordingly, based on their study that investigated the effectiveness of instructional software for the acquisition of the passive voice, they deduced an unconditional recommendation for the application of computer-assisted instruction.

On a related note, the majority of researchers, however, hold the more moderate view that CALL indeed has the potential to facilitate grammar teaching, but its actual efficacy is bound to several conditions. Wang and Smith (2013: 117) examined the suitability of mobile phones for grammar acquisition and concluded that effective learning is possible, under the conditions "(a) engaging learning materials that are neither too long nor overly-demanding, (b) a proper degree of teacher monitoring, (c) student involvement, [and] (d) the provision of incentives." Kilickaya (2015) adds that the cultural context likewise plays an important role. The learners' degree of autonomy and their concept of schooling particularly determine the success or failure of CALL applications. More specifically, Kilickaya (2015: 325) elaborates that in certain teaching environments, technology-enhanced grammar instruction, which requires the students' ability of "rule-inferencing, individual grammar discovery, or automatic feedback interpretation," would be highly inapplicable as students expect a more teacher-centered approach. On that account, Jamieson and Chapelle (2010) completed a large-scale study that evaluated CALL in four different countries (USA, Japan, Thailand and Chile) with 221 participants and obtained similar results. According to their findings, for all but the Japanese students, teaching with the aid of technology proved highly beneficial whereas it was concluded that Japan's teaching tradition and their "established teacher-learner relationship" (Kilickaya 2015: 327) interfere with computer-assisted grammar instruction. In addition, Sumakul (2014) observed that in developing countries, limited access to the internet can be a further culturally dependent factor that hampers the full utilization of ICT. In concrete terms, Sumakul conducted a study on computer-mediated communication in Indonesia and noticed that several of his students indicated that they had to borrow money in order to complete the required tasks at the internet café. Thus, he concludes that these and similar challenges undoubtedly need to be considered, even regarding the application of technology in western countries as here, too, students may face financial burdens that limit their access to technology. Furthermore, Kilickaya (2015: 329) adds that ultimately, the effectiveness of CALL depends on "several issues such as contexts, learner's needs, and specific goals." That is why currently, the prevailing opinion is that a hybrid approach, such as the blended learning technique, which combines the numerous benefits of CALL with traditional methods of instruction, is ideal. This blended learning approach was, for example, demonstrably beneficial in Kilickaya's study (2015) that investigated how students can best learn adverbial clauses, comparing different types of instruction. On that account, he compared three types of instruction, namely computer-based

instruction, teacher-driven instruction and a hybrid strategy, which combined teacher-driven grammar and computer-based instruction. In his study, the latter group unequivocally produced the highest scores of achievement due to extra practice, immediate feedback and the variation of exercises. Several other studies also analyzed the effects of providing online tools such as interactive exercises, e-books or audiovisual aids in addition to traditional grammar instruction, and achieved similar results (Romeo 2008; Baturay, Daloglu & Yildirim 2010). AbuSeileek (2009 in Kilickaya 2015: 328) elaborates further on these results and posits that the effectiveness of computer-assisted grammar acquisition is determined by the complexity of the grammatical structure. According to AbuSeileek's findings, "the computer-based learning method is found to be functional for more complex and elaborate structures" (Kilickaya 2015: 328) whereas concerning simple structures both methods prove equally advantageous.

In addition to these studies which all evaluated the objective effectiveness of computer-assisted grammar instruction based on students' performances, it needs to be noted, however, that its subjective effectiveness which refers to a possible change of attitude towards grammar learning, is just as important. Nevertheless, a glance at the literature reveals that studies that research the latter effect of technology are scarce (Barr 2008: 112). Nevertheless, the most influential study in this respect was conducted by David Barr in 2008 who investigated whether "the use of technology make[s] any qualitative difference to students' attitudes towards grammar work" (102). For this purpose, the 1st semester grammar lecture at the University of Ulster was changed into a multimedia learning experience which took place in computer rooms and which was supplemented by online exercises to be completed outside class. Besides this, students were asked to complete a questionnaire at the beginning and end of their course. Thus, it was found that whereas at the outset of the study, most of the students rated grammar acquisition as "average" enjoyable (103), students' perceptions could be significantly improved over the course of the semester (112). Additionally, Barr ascertained that "technology can be used for intrinsically motivating students" (108) as the application of computer-assisted activities encouraged in-class participation and a deeper engagement with the content outside class. Similar results are also reported from Jalali and Dousti (2012) who analyzed the effect of online grammar games on 58 Iranian elementary learners. Thus, results showed that technology undoubtedly has the potential to increase students' level of involvement, enthusiasm and motivation just as it creates a more positive learning

environment (1086). In like manner, Terrel (2011) determined the positive force of online tools, such as games, wikis or avatars to motivate students to practice English outside the classroom.

Overall, it can thus be concluded that in general, all studies produced clearly positive results and certified the beneficial impact of CALL both on students' performance and motivation. Nevertheless, teachers who are about to implement technology into their teaching still need to carefully evaluate the teaching context, the appropriateness of material, their students' needs as well as possible advantages and disadvantages of CALL in order to indeed fully exploit its potential.

6. Computer-Assisted Grammar Instruction in the EFL classroom

Grammar instruction has always been an intensely debated and highly controversial subject with regard to language teaching. Just as several cases have been made against it, about as many arguments have been brought forward in favor of it. In recent years, applied linguists, teachers and material designers, though, have arrived at the conclusion that grammar instruction is essential and useful and so no longer in question, despite, or perhaps precisely because of the development of, the communicative language teaching approach (Hedge 2000: 145). Therefore, the aim of this paper is not to further pursue the debate, but it rather follows Weaver, McNally and Moerman (2001: 19): "The question is *not* a simple dichotomy, 'To grammar or not to grammar?' Rather, the question is, 'What aspects of grammar [shall] we teach […] and when and how can we best teach them?" For this reason, Section 6.1 shines a light on theoretical underpinnings of traditional grammar instruction only to then illustrate in 6.2 how these theories are adapted and extended as to guarantee meaningful computer-assisted grammar instruction.

6.1. Conceptualizing traditional grammar instruction

Correlating with the changing importance of grammar instruction, a series of methods have emerged - and disappeared - over the decades. However, these approaches and their respective insights have fundamentally impacted our present knowledge of how languages are learned. On that account, today's practice cannot be referred to as one single approach but rather combines various influences. Thornbury (1999: ix) even remarks that "there are as many different ways of teaching grammar as there are teachers teaching it." Accordingly, teachers are faced with a number of questions such as which

grammatical structures to teach, which approach to choose and what forms of presentation and practice to pick (Hedge 2000: 145; Ur 2012).

Above all, Bonset (2011) warns against an "automatism" which justifies the instruction of grammatical structures simply on account of their presence in the course book. Swan (2002: 148) further illustrates this danger as follows:

> Asked why he tried to climb Everest, George Mallory famously replied, 'because it is there'. Some teachers take this attitude to the mountain of grammar in their books: It's there, so it has to be climbed. But the grammar points in the course book may not all be equally important for a particular class. (Swan 2002: 148)

Ur (2012: 77) explains in further detail that the student's needs and aims should always remain the focus of attention. In practice, teachers therefore need to constantly decide whether accuracy or fluency is of higher importance for a particular class at a particular time. The choice of which grammatical feature to teach, also requires careful thought, a point that Ur (2012: 79) raises via Pienemann's (1984) "teachability hypothesis." That is to say that the acquisition of grammar is characterized by a natural developmental sequence that cannot be influenced by external factors. Thus, grammar instruction can only be effective if the student is developmentally ready. In this sense she issues the warning that even though a certain structure might be found in the schoolbook, it might not yet be appropriate for the learners.

Having decided on which grammatical features to teach, what is, however, even more important is the question of how to actually execute grammar instruction and practice. The most frequent approach in this respect is the Presentation-Practice-Production (PPP) model (Hedge 2000: 164). As its name suggests, the PPP method is divided into three successive stages that have in mind, on the one hand, the integration of grammar instruction into the communicative teaching approach and, on the other hand, a movement from controlled practice to free production (Hedge 2000: 166). In the first stage, new structures are presented, but the decision of how to implement this is the decision of the teacher. The choice is essentially between a deductive and inductive approach (Thornbury 1999: 29). The deductive approach is also commonly referred to as rule-driven learning, suggesting that the teacher gets straight to the point and directly presents the grammatical rule to the students. That way, more time can be spent on practice, although, this strategy also runs the risk of encouraging teacher-centeredness and being less memorable (30). The inductive approach, on the other hand, follows the principle of letting the students

discover the rules themselves from examples (49). The advantage of this approach is that more student activation, autonomy and cognitive depth is involved which commonly leads to greater retention (54). However, once again, what suits one learning style might not be appropriate for another, leading to the conclusion that general recommendations about which method to apply are impossible. Regardless of this, Hedge (2000: 159) highlights the importance of contextualizing grammar. “Contexts can be created through visuals, through the teacher miming or demonstrating in the classroom, through a dialogue, a text, a song or a video, or through a situation set up by the teacher.” Hereby, grammar becomes more graspable and can be more easily transferred into relevant situations.

The second stage of the PPP model then aims at controlled and guided practice to promote accuracy. On that point, students should get extensive opportunities to intensively practice and use the structures orally and/or in written form. This certainly requires the teacher to change its role and to become the manager, evaluator and corrector instead of the instructor of the learning process (Hedge 2000: 166). Typically, this stage includes a variety of activities such as class questionnaires, substitution drills, gap fill activities or the elicitation of dialogues. All of these exercises strongly focus on form and repetition and thereby not only provide extensive input, but also allow for intake due to the many chances to notice the structure (Thornbury 1999: 24). Consequently, this type of practice contributes both to implicit and explicit knowledge (Hedge 2000: 167).

In the third and final stage, production in the sense of unfocused communication and fluency is the focus of interest (Hedge 2000: 167). Teachers are now required to act as monitors, resources and “diagnosers.” Further, teacher correction also changes from immediate intervention to delayed intervention and can even take the form of self or peer correction (164). Students, however, should now experiment with language and use the newly acquired structures to speak or write freely, for instance by means of role plays, simulations, problem-solving activities or production of longer texts. This stage is, however, not only about the sole mastery of the structure, but should also make students aware of their progress and raise their self-confidence (166).

In conclusion, the PPP framework is not the most innovative, but is still the most used approach to grammar instruction. In fact, experts agree that if well thought-out and including sufficient realistic, motivational and meaningful activities, it can be highly

effective. In addition to this, over the past few years, several modifications of the PPP model such as the EEE (Exploration-Explanation-Expression) approach (Sysoyev 1999), the ESA (Engage-Study-Activate) approach (Harmer 1998) or the TTT (Test-Teach-Test) approach (Lindsay & Knight 2006) have emerged[8], providing the chance to remain flexible and to experiment with different approaches to find the optimum way of instruction depending on the grammatical structure, class, level and learning style.

6.2. Conceptualizing CALL-based grammar instruction

Considering the previous chapter, the question that inevitably arises is, in how far these aforementioned guidelines likewise apply to computer-assisted grammar instruction and which additional principles need to be considered. Accordingly, Blake (2008) and the discussion in Chapter 3 have already demonstrated that computer-assisted language learning is not a self-contained methodology but is rather comprised of different influences and approaches. The same naturally holds true for its sub-discipline of computer-assisted grammar teaching and learning. For this very reason, on a basic level, the same theoretical principles and frameworks as described above can be utilized. Hence, teachers can continue to pursue their preferred teaching model such as the PPP, choose between inductive or deductive presentation approaches and decide on fundamental guidelines such as to focus on student-centeredness. Contextualization and variation in order to suit the different learning styles remain vital as well. Therefore, it might appear at a first glance that no tremendous changes are to be implemented, apart from the digitalization of activities and the alteration of the learning environment. Having said this, Cuban (2001: 71) has however stated quite unequivocally that the maintenance of existing classroom practice is meaningless. Likewise, Svensson (2004 in Hampel 2006: 106) also fiercely criticizes this common attempt to simply "virtualize old structures", given that the key principles of digital task development are different. Accordingly, with reference to Chapter 5.2. and the lower levels of Hampel and Stickler's (2005) skills pyramid, it has already been demonstrated that general ICT competences lay the foundation to effective CALT. However, it is at least equally important to also consider principal features of task design, namely feedback and interaction (Hampel 2006; Bañados 2016). Thus, it is important to note that these elements certainly also play important roles in the traditional classroom yet not to the same extent given that in the traditional context, they frequently arise naturally. By contrast, in an online environment, teachers, however cannot intervene

[8] For more information on these approaches, please see the given references.

as simply and directly. Accordingly, to begin with, it is vital to find alternative ways to provide feedback. Thus, teachers can choose from three different modes: (a) feedback from instructor, (b) feedback from peers or (c) feedback from the computer (Bañados 2016: 161). However, given that all three types have, considering their different levels of individualization, empathy or immediateness, advantages and disadvantages, a variation seems most efficient. Secondly, online socialization is also of utmost importance since the reduction of face-to-face teaching often leads to a sense of isolation. For this reason, it is vital to foster interaction among the learners and to provide as often as possible collaborative learning opportunities (Hampel & Stickler 2005). Consequently, by means of asking students to jointly search for information and work towards a common outcome ((Bañados 2016: 163) such as the presentation of a certain grammar unit, students not only feel a sense of community and get the chance to learn from each other, but it can likewise be ensured that CALL activities do not fall short of tasks that promote students' communicative skills. On a related note, it is, however, also vital to engage students in individual speaking tasks in order to guarantee that students cannot only apply the respective grammatical structure in written but likewise spoken production[9]. At the same time, student-teacher interaction is, however, just as essential. On that account, teachers are advised to incorporate channels for online communication so that students can draw on chat or email facilities in order to seek assistance.

Parallel to these key features, Puentedura (2009), however, mentions another decisive element that needs to likewise lead the process of digital task development in order to indeed speak of a meaningful conjunction of grammar instruction and technology. In fact, he exhibits that the application of feedback and opportunities for collaboration are most important, but not enough as teachers also need to consider how to blend technology into task creation. For this reason, he developed the SAMR model which evaluates the effectiveness of task design on the basis of the degree of technological integration. As Figure 4 displays, this model consists of four possible stages, ranging from substitution to redefinition. Additionally, these stages can, as shown, either be ascribed to an enhancing or transformative use of technology in the classroom. Ideally, teachers should, though, strive for the latter as the higher the level of an activity is, the greater its complexity and educational benefit will be (Oxnevad 2013).

[9] For concrete examples, please see Chapter 6.3.

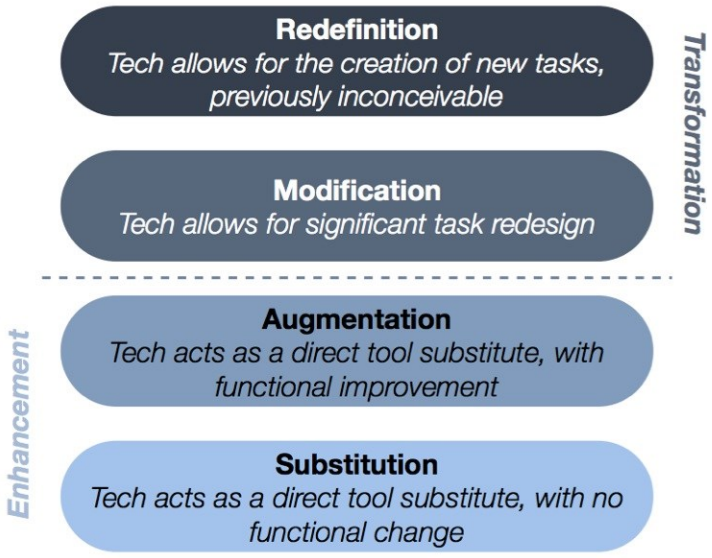

Figure 4 SAMR model (Puentedura 2009 in Puentedura 2014)

In practice, these various levels of integration can be understood as follows:

At the substitution level, the task remains the same, only the tools change. In terms of grammar instruction, this could mean that the teacher draws on online grammar exercises that they print and hand out to students, or that students read grammar instructions on the internet instead of looking them up in a book. That way, no functional change takes place and the effectiveness of the computer is minimal (State of Queensland 2013).

The second level is already more powerful and engaging; even though the task as such remains again basically the same, its functionality is increased. Students might, for instance, produce a text on the computer and receive, by means of word processing software, such as the inbuilt auto-correction by *Microsoft Word* or additional fine-tuning tools such as *Textalyser*, instant feedback on spelling mistakes and word repetitions as well as the texts' complexity and readability and can thus improve their writing. Similarly, they might take an online quiz which in turn gives the teacher feedback about the student's level of comprehension.

At the modification level, teaching is already very close to the targeted objective of full implementation of technology. In fact, in this phase, technology partly redesigns and thus already transforms the tasks. Students are now actively involved in a creative way as they can partake in collaborative writing tasks, in which they can use, for example, *Google docs* to mutually produce pieces of writing or make use of the peer editing tools. Other examples would be that these writings are audio recorded or that reading material is enriched with hyperlinks or additional videos.

The final stage of the SAMR model then describes the ultimate form of transformation, namely redefinition. Tasks that have reached this level could not be accomplished without technology, while student activation and effective learning reach a peak. Tasks are commonly concerned with world-wide collaboration and communication, asking students to participate in blog discussions or *Skype* conferences. Moreover, students are encouraged to research content on their own and to subsequently present and share their findings by creating *Prezi* presentations or instructional videos (State of Queensland 2013).

It can thus be concluded that only the combination of creative task design plus the awareness about the activities' level of technological implementation has the potential to fundamentally enhance the student's learning experience. Thomas Strasser, the Austrian specialist in terms of online learning technologies, however, cautions to still "[m]ind the App!" (2012). That way, he adds a third principle, namely that the selection of the actual tool similarly needs to be subject to careful examination. According to his taxonomy of educational applications (2016), any tool must therefore meet the following criteria as to being perceived as pedagogically valuable:

- Collaboration – Student isolation should be avoided as much as possible. Instead, students should work collaboratively towards a mutual learning outcome (e.g. a mind map on *Padlet*).
- Communication – With reference to the communicative classroom, speaking opportunities are the greatest good. Likewise, a good tool promotes speaking. Communication can however also take a written form, meaning that students use back channeling applications (e.g. chats) whenever assistance is needed.
- Reflection – The dimension of reflection in term of feedback relates to both teacher and learners. First, the tool should give teachers the chance to comment on the end product but likewise, students should also get the chance to discuss their impression of the application.
- Modification – The aforementioned teacher feedback should ideally help to further improve the learning product. Therefore, students should be allowed to return to their project to revise it.
- Multiplication – The tool should also include the possibility to disseminate the learning outcome, for instance by means of a download or print function so that teachers and students can access it at any time.

- Creation – Finally, as, with reference to contemporary SLA theory and the notion that students should not only act as recipients of knowledge, care must be taken that any application likewise encourages students to become actively involved in the learning process.

Being now aware of what to consider in task design and how to select the most appropriate tool out of the wealth of resources, one can thus turn towards a more practical side of CALL.

6.3. Implementing CALL-based grammar instruction

As previously outlined in Chapter 4, the implementation of technology into teaching can take several forms. Accordingly, teachers can choose between large-scale (see flipped, blended or gamified classrooms) or less extensive and more sporadic ways of teaching with technology. Considering that the former approach has already been described in detail, the focus of the following chapter now lies on possibilities to implement technology selectively in the classroom, thus technologizing parts of the English course such the presentation or practice of a grammar unit, instead of digitalizing the entire lesson. Hence, the paper presents, with Strasser's (2016) taxonomy in mind, a selection of topical and particularly useful websites and applications that can be utilized for grammar instruction. In addition, practical ideas for their successful implementation according to Puentedura's SAMR model are provided. In this context, due to the already discussed focus on CALL instead of TELL, the displayed repertoire, however, dispenses with iPad and Android apps and only features web applications. In addition, care was taken to only include free websites that are accessible without students' registration. Concerning the form of display, all sources are presented with regard to the PPP framework, but it strongly depends on the teacher to decide at which stage the various tools are then in fact utilized. Prior to the detailed explanation of the individual applications, Section 6.3.1 starts by illustrating how these self-sufficient applications can be connected and served to students.

6.3.1. Layout

Perhaps the simplest method of connecting students with technology is sending out a worksheet that presents the individual web links and respective task descriptions. However, even though this procedure could technically be described as digitized, it is far from being effective, given its unappealing manner. A much better option has already

been displayed with regard to VLEs, namely the creation of learning paths via Moodle. That way, students are guided from one website, online activity or production task to the other, while their unlocking can be bound to the accomplishment of the previous exercise. Alternatively, teachers without access to Moodle can, for instance, create digital lessons with the help of *Blendspace*. As the below example on a digitalized introduction of the differences between Past Simple and Present Perfect tense illustrates (Figure 5), *Blendspace* helps to easily unite any number of online resources such as pictures and graphics (Tile 1), videos (Tile 2), web links (Tile 3) or online exercises (Tile 4) with a teacher's own material, including PowerPoint presentations (Tile 5) or text documents (Tile 6), on one website.

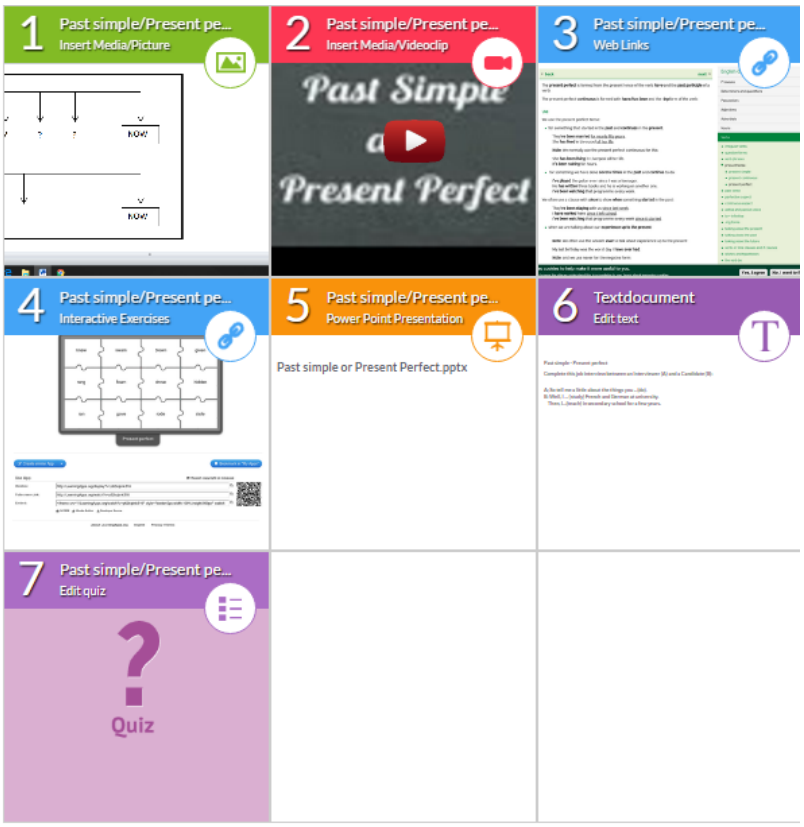

Figure 5 Blendspace (Screenshot)

By means of its interactive format, students then only need to gain access to the respective *Blendspace* lesson and can, as they click on the different tiles which automatically opens the requested material in a new tab, independently work through the provided resources. Additionally, this website can even keep track of the students' engagement and, if desired, performance by means of short MC quizzes (Tile 7).

However, the internet offers even more than that, for example the opportunity of interactive learning journeys, also referred to as web quests. Developed by Bernie Dodge (1997), web quests offer a constructivist approach to learning as students should independently, or in small groups, construct knowledge and accomplish a given task by working through the provided internet sources. In order to create a web quest, no special knowledge or programming skills is required. Instead, it can be easily designed with the help of websites such as *Zunal* or *Questgarden* as they offer free templates that only need to be filled with content. Consequently, web quests usually take the following form as illustrated in Figure 6.

Figure 6 Web quest (Questgarden)

First, students' attention is piqued by an introduction, which sets the stage and gives a taste of what to expect. This is followed by a description of the task and working process. At that point, students receive any information sources they need in order to accomplish the given task. Accordingly, for the purpose of acquiring and practicing a certain grammatical structure, all types of resources, including instructional videos, grammar reference websites, interactive exercises or quizzes, can be embedded. Hence, Dodge (1997) points out that the level of guidance needs to be adjusted to the learners' needs. Accordingly, depending on the class, it may be fruitful to allow students to select their own resources whereas other students might need more guidance in order to not drift away from the given task. Either way, Dodge emphasizes that during this phase of the learning process, teachers should intervene as little as possible. Only the final step of the web quest, in which students are asked to demonstrate what they have learned, should be subject to evaluation by the teacher. For this purpose, by the end of the process, the acquired knowledge should be transferred and used in order to independently produce coherent pieces of language which then can be evaluated with the help of an appropriate rubric.

Finally, in the course of Steinbach and Stöcklin's webinar (2016), it was announced that with *QuesTanja*, soon, another promising tool to meaningfully combine activities and to fully exploit the advantages of gamified learning will be available. Even though an exact date for the product launch has not yet been made public, it was proclaimed that *QuesTanja* will be a free online platform that enables teachers to embed their teaching content into a gaming environment. Thus, Figure 7 displays the general interface which indeed is highly reminiscent of computer games.

Figure 7 QuesTanja (Stöcklin, Steinbach & Spannagel 2015: 3)

It can be seen that a plurality of gaming elements has been integrated, including a narrative, progress mechanisms, quests or the creation of an avatar. Nevertheless, similar to the aforementioned processing methods, teachers again do not require special technological knowledge in order to work with *QuesTanja*. As a matter of fact, in its most rudimentary form, teachers only need to generate learning assignments, so-called quests, and insert them in the preprogrammed world. These quests can take various forms, including analog and digital tasks such as completing online exercises, writing texts, taking pictures or solving any other given task. In fact, there are no limits to the possibilities, only the creativity of the teacher is the determining factor of what is possible. Students then complete these quests- individually or collectively- and thereby earn points that help them to move up the leaderboard. More advanced teachers can, however, integrate quests into a storyline, create teams that duel or insert special quests that provide extra features (Stöcklin, Steinbach & Spannagel 2015: 3).

Irrespective of which form of layout teachers choose, the bottom line is that in digitalizing learning, teachers should not only be concerned about the individual activities but also about how to combine and present them to their students. Thus, any of the suggested methods give teachers maximum freedom to design their tasks and still achieve this final objective of a meaningful conjunction that lets students work more efficiently and stay motivated.

6.3.2. Presentation

After deciding upon the mode of the learning process, teachers can in a second step choose the most appropriate instruction tools. With reference to the PPP framework, the presentation of the respective grammar section should therefore be planned for the beginning. However, similar to traditional classrooms, CALL supports both a deductive and inductive approach. Concerning the former, the web offers a rich collection of grammar explanation websites and videos. Popular grammar-reference websites in this respect are for a start the *English Grammar guide* by *Edufind* or *LearnEnglish* by the *British Council*. The second website in particular was specifically developed for younger learners, but both offer a great overview of all grammatical areas. Through these resources, students are provided with easily understandable explanations, simple example sentences and hyperlinks to related topics and can thus independently acquire knowledge. Still, due to individual differences and preferences, students might find other websites more appealing and useful. Hence, Stanley suggests (2013: 70) collecting a selection of sites in class and letting the students review and rate them according to how useful they appear to them. In doing so, students potentially become acquainted with unknown websites and can prospectively consult those that suit them best. For students who, however, prefer a more audiovisual style of learning, video channel sites such as *TeacherTube*, *SchoolTube* or *ESL basics* might be the better choice (Strasser 2012: 25). Similar to *YouTube*, all of these websites offer a huge repertoire of videos, but with the difference being that they allow learning in a more student-friendly and secure environment as they do not host ads or trailers and videos only cover educational content. Nevertheless, simply watching a video typically does not foster deeper engagement with its content. However, to facilitate such engagement, *Edpuzzle* offers various tools to increase the interactive nature of the videos and to better adapt them to the students' needs. Accordingly, teachers can not only trim their videos, but can also record their voices or embed text questions. In doing so, students are invited to think critically and to actively deal with the content. In some cases, teachers still might feel that the already existing resources do not meet the class's needs. In this instance, the production of new, personally tailored material might be a good alternative. Thus, teachers have the choice between the creation of presentations or videos. Concerning presentations, *PowerPoint* was the first choice for a long time, however, in view of the numerous attempts to promote more interactive viewer participation, *Prezi* might be the better option. By virtue of its non-linear style, unique movement and the opportunity to dive in and zoom out, it

enchants students and captures their attention more easily. While with regard to the production of videos, *Screencast-o-matic* is particularly advisable due to its intuitive interface and its many possible applications. By means of screen and/or webcam recording, teachers can thereby either create videos that feature visual presentations or even themselves. That way, any content can be easily recorded and made available for students.

In like manner, modern technology can, however, also support an inductive presentation of grammar. As outlined in Chapter 6.1., under this approach students do not directly encounter grammatical rules but rather discover them themselves. A great resource in this respect is the *LearnEnglish Teens* website, hosted by the *British Council*. Through its grammar video section, students get access to short, contextualized videos, in which relevant grammatical structures are embedded into teenager's talk about everyday life situations. First, students can either watch these videos or read through the video transcripts. In a second step, they can then turn towards short online exercises to check their understanding, including true or false, ordering or gap fill activities. In case that any unclear aspects still remain, learners can also draw on the provided deductive grammar explanations or even raise their question in the discussion forum. Another idea to further promote the independent discovery of grammatical rules is corpus research as proposed by Stanley (2013: 79). By working with concordance software or free online corpora such as *Corpuseye* or the *British National corpus*, students gain access to authentic linguistic material and can thereby, based on the displayed sentences, independently deduce rules for the grammatical concept in question. In this respect, students can for instance detect a rule for the application of "some" and "any" or notice the usage of prepositional verbs. Alternatively, learners can browse search engines and use wildcards to find out about certain grammatical structures, or draw on cohesive pieces of written or spoken language. On that score, Stanley (74) suggests to ask learners to select any worthwhile news article and to analyze, by means of the "find" function, how the author has used the respective grammatical structure. Another variant would be to explore the usage of specific structures through authentic talks or interviews. In this context, *TED* offers the largest collection of spoken discourse to research grammatical rules in real-life speech, such as investigating the use of cohesive devices or the formulation of questions. Nevertheless, the encounter with the grammar item in question is only the beginning of the learning process. After coming across the grammatical rules and structures truly only in a

theoretical manner, students need to get the chance to extensively practice and in this way internalize this newly acquired knowledge. Accordingly, potential approaches to guided practice shall now be illustrated in the following section.

6.3.3. Practice

First of all, the internet provides a plethora of prefabricated online grammar tasks that usually take the form of mix and match or cloze exercises. Particularly useful websites in this respect are the aforementioned *LearningEnglish Teens* website by the *British Council*, as well as *ego4u* or *Grammar Bytes*. The big advantage of these websites is that students can improve their grammatical competence on their own as they receive immediate feedback and grammatical explanations. Additionally, for teachers, they provide the major benefit of time saving as they already exist, and do not have to be created from scratch, an undertaking which can be highly time-consuming. As a result, however, these exercises also frequently run the risk of not being customized to the students' needs and current level of knowledge. A possible remedy to this issue is to apply online material that accompanies the schoolbook. Helbling languages, for instance, provides this opportunity in connection with its *More!* and *Into English* series in terms of an *e-zone* that features different cyber homework exercises. Accordingly, every schoolbook unit is, among other resources, supplemented by online gap filling grammar tasks. These offer the convenience of being tailored to the learners' actual competences in terms of vocabulary and grammar, as well as the advantage that teachers can additionally trace their learners' progress. Alternatively, teachers can, however, in like manner design their own interactive exercises. *Learningapps* (Strasser 2012: 18) thus offers the widest range of possible multi-media exercises, ranging from traditional cloze, matching or ordering exercises to crossword or group puzzles, hangman or millionaire games to word grids and horse races. Teachers only need to fill the templates with content and consequently share the activities with their students. This offers multiple benefits, including that learning becomes more enjoyable, teachers can perfectly cater to their students' needs, and, through the application of personalized feedback or grammatical clues, online activities can even move away from their bad reputation with regard to the notion of "drill and kill" exercises. Additionally, Stanley (2013: 63) proposes letting students produce their own interactive exercises either by means of *Learningapps* or the voice recorder function on their mobile phones, creating "audio gap-fills." For that to happen, teachers first need to provide learners with short texts or corrected homework

assignments that contain numerous instances of a specific grammar item (e.g. prepositions, verb tenses, quantifiers etc.). Secondly, students should then record themselves reading those texts, thus saying "blank" instead of the word(s) in question. In a third step, they exchange their recordings and note down the missing word(s) while listening. In doing so, modern technology is not only utilized to foster all four language skills but once more, teachers easily save time and effort as they can re-use the resulting activities for other classes and purposes.

Sharma and Barrett (2007: 80) in like manner note that learners highly enjoy the application of computers "to test […] their knowledge of grammar" and consequently suggest the creation of interactive grammar mazes with the aid of *PowerPoint*. For this purpose, teachers only have to insert hyperlinks to their slides so that students can jump, depending on their responses, from one slide to another in a non-linear manner. For example, as a potential homework activity, students could review the use of the Present Perfect tense. Likewise, teachers can also draw on online applications that support the creation of learning quizzes. The choice of websites in this respect is in fact immense but generally, they do not differ substantially. The only difference truly is that some websites are only suitable for the live application in class, whereas others can also be utilized belatedly as homework or for supplemental activities. In tangible terms, *Kahoot* traditionally falls into the first category, while *Quizlet*, *GoConqr* or *Quizalize* can be ascribed to the latter. Still, they provide the same opportunity to create fun learning quizzes through a series of multiple choice questions that can be supplemented by videos or images. Students then access these quizzes on their own devices and earn points by quickly and correctly answering the questions, which consequently impacts their rank on the leaderboard. That way, grammar reviews, which otherwise may seem dry to the students, become entertaining and enjoyable. Additionally, reviewing also becomes more meaningful, as teachers can see at a quick glance which students might need their help and which aspects require more practice.

Modern technologies can also be applied to visualize grammar. Useful tools in this respect are mind maps to summarize the most important aspects of the grammar item or display links to related areas. With the aid of *Padlet* or *MindMeister* (Strasser 2012: 121), mind maps can even be created collaboratively and extended with multi-media content. Accordingly, students can, for example, take and post photos of street signs and subsequently write what is prohibited, using must/must not. Another possibility to

complement written exercises with visual input is provided by *Superlame*. As this website allows students to add speech bubbles to their pictures (Strasser 2016), students can practice such grammatical concepts as reported speech by posting their results onto the mind map, asking their colleagues to write the corresponding indirect speech sentence. Likewise, teachers can test their students' comprehension of instructional videos by asking them to post sample sentences or let students summarize what they have learned about a specific grammar unit. The biggest advantage here is that students are repetitively exposed to the grammatical form and that students, in contrast to a traditional homework setting where students only encounter their own work, get the chance to learn from each other while teachers can intervene at any time, ensuring that students get the most out of the activity.

Once students have consequently mastered the grammatical form and have shown that they can reproduce it in controlled exercises, they can then move on to the production stage. Accordingly, the subsequent section demonstrates possible applications that thus cater to a transfer of knowledge and the production of personalized language in different contexts.

6.3.4. Production

This final stage of the PPP model is probably also its most important stage, as students need to be able to apply their grammatical knowledge in free production. As mentioned several times already, one way of achieving this objective is to engage students in writing and speaking tasks. However, these tasks need to be, in contrast to the practice stage, which only features single sentence exercises, more extensive, allowing for more creative freedom and linguistic choices. In the course of this, students are quite naturally, encouraged to demonstrate their knowledge of multiple grammatical concepts, although teachers still have the possibility of emphasizing specific aspects. At the same time, teachers should, considering Puentedura's SAMR model, avoid any tasks that only employ technology at the substitution level. Accordingly, a task that requires students to write a report on the computer would not do justice to the full technological potential. Instead, Stanley (2013: 139) promotes the application of survey websites in order to practice reports, summaries or, more generally, any formal text. There are a number of recommended websites, including *Polleverywhere* or *SurveyMonkey,* which are available for free and easy to use. Once students have formulated their open or closed questions, they can leave their polls to their colleagues or other classes for responding. Following

this, students can then, based on authentic results, write their analysis independently or in groups. By the same token, practicing the composition of e-mails or letters can be transformed through technology. A worthwhile application in this regard is *FutureMe* (Stanley 2013:138). This website allows students to write, without registration, e-mails to their future selves, which are actually delivered to their given email-addresses at a selected date in the future (e.g. one month, a year etc.). That way, learners can for example, practice future perfect or future continuous. Similarly, online applications can also support more creative writing tasks for which, according to Strasser (2012), visual input can be a truly driving force. Along that line, students can, for instance, practice tenses, cohesive devices or the comparison of adjectives in diverse ways, whether in the course of writing short stories that they transform into picture stories by *Storybird*, by describing (fictional) timelines that they first create with *Capzles*, or by means of *Wordle*, whose visual word clouds can similarly stimulate creativity. Finally, in terms of individual writing activities, *Thinglink* or *Glogster* can be useful. Both websites facilitate the creation of digital posters that can, for instance, be used as grammar learning diaries. In this respect students can insert texts and images as well as audio and video elements and can thereby compile their own grammar reference sites. Alternatively, students could also collaboratively work on a grammar wiki (Stanley 2013: 35). For this purpose, teachers have to set up an account on *Wikispaces* and subsequently ask their learners to review, in pairs or small groups, different grammar items. In doing so, students are encouraged to review grammar, just as they create their very own grammar summary that they can easily consult for later reference. Yet, collaborative writing can take many other forms as well. Irrespectively of the actual task, recommendable websites include *PiratePad*, *Etherpad*, or *Google Docs* (Strasser 2012: 100). All of these websites can be accessed by any mobile device and allow collaborative text writing in real time. By this means, both beginners and students with advanced levels of proficiency can jointly produce texts and thereby learn from each other. In this way, students can for instance write chain stories to practice conditional sentences or exercise the use of linking devices. Additionally, students can peer review and edit each other's texts thus benefiting both sides. Finally, in terms of writing, modern technology also provides the novel opportunity to write or rather blog for an authentic audience. That way, learning can be expanded to outside the classroom just as reading and writing practice as well as students' motivation can be increased significantly. Initially, teachers need to select an appropriate blogging platform, with Stanley (2013: 217) recommending *Blogger* or *WordPress,* and decide

whether to work with one class or several learner blogs. Subsequently, students might have to write a blog entry after every grammar unit, reflecting and summarizing what they have learned or become creative and make use of the grammar in question in texts of their choices. Additionally, Stanley highlights the importance of interaction. Thus, the opportunity for students to leave, at regular intervals, comments on their colleagues' blogs as feedback is not only highly valuable and motivating, but likewise, these comments can stimulate worthwhile discussions and hence provide further reading and writing practice. In case the general concept of blogging is appealing but appears just too time-consuming, Stanley (2013: 123) proposes the alternative idea of a "social-networking writing group" which can be easily implemented into *Twitter*, *Facebook* or *Edmodo*. By means of setting up a private group or inventing a special hash tag, students can write short posts of the day, utilizing the newly acquired grammar item.

On a final note, modern technology can also be applied for spoken production; in fact, in lieu of producing written texts with the aid of the aforementioned applications, students can also record themselves. In order to do this, the recording function of mobile phones should be sufficient in most cases. Alternatively, students can draw on simple online audio-recording tools such as *Vocaroo* or *MailVu*, in case they want to create video messages (Stanley 2013: 232). Here, image descriptions in order to practice the difference between 'there is' and 'there are' or short personal presentations in which students employ adverbs of frequency can easily be turned into speaking activities. Similarly, these tools can also be used in order to conduct interviews (Stanley 2013: 161) to practice, for example, questions and negations in the past simple tense, although, for this purpose, *Skype*, a free internet telephone software, might also provide a convenient alternative to further increase students' speaking time. One possible application of *Skype* is, as proposed by Stanley (2013: 91), to invite a mystery guest, who is, in fact a friend or colleague but acts like a book character or historical figure, and to let students find out who he or she is by asking questions and listening for information. In this manner, students practice the construction of questions or, for example, reported speech in case they are later asked to review the interview. Another option that promotes speaking is the use of *Voki*, which is an educational tool that enables students to create animated avatars (Strasser 2012: 140). In doing so, students can choose from historical figures, cartoons, animals or even upload their own photos and can consequently give those characters a voice by recording themselves. As illustrated in more detail in the course of the

description of the lesson plan of the computer-assisted grammar course (Chapter 7.2.), students can for instance create election speeches, stating with the aid of the 1st Conditional what they would change if they were elected for president. At the same time, *Voki* is likewise suitable for listening exercises as rather than recording themselves, students can type in a text (e.g. about their family to practice adverbs of manner) and let it be read by different voices, including American, British or Australian English. Thus, students can even practice their comprehension of and feeling for different accents. Another tool that combines speaking and listening is *Voxopop* (Stanley 2013: 165). This website can basically be described as a discussion forum, though not in written but spoken form. Teachers can thus prepare a discussion thread such as "your future projects" in order to communicate meaning by using future tenses, and students can then record their opinions or respond to their colleagues' replies.

It can therefore be established that technological tools that fulfill Strasser's taxonomy (2016) and Puentedura's model (2009) are truly endless. Still, the websites presented here can, in fact, only be considered as a general point of departure and teachers are required to become creative, too. However, given the fact that any previous considerations only operate on a theoretical level, the 2nd part of the paper now puts CALL to the test in practice and illumines how effective modern technologies function in an Austrian EFL setting.

7. Research project

In view of the extensive body of research on the impact and advantages of CALL, one might be inclined to assume that these findings on increased students' performances can by default be applied one-to-one to the Austrian EFL context. Quite in contrast however, Jamieson and Chapelle (2010) as well as Kilickaya (2015) mention that the actual potential of CALL is strongly determined by country and culture specific factors and the prevailing view of teaching and learning in particular. On that account, the overall aim of this project was to discover the capabilities of CALL in connection with Austrian EFL students and their acquisition of grammar, since no comparable studies are yet available. Nevertheless, the focus was placed not only on its objective impact as related to grammatical achievement but also continued Barr's (2008) tradition and investigated the subjective effects of CALL on English learning attitudes. Therefore, the following two research questions were formulated:

- Does Computer-Assisted Language Learning have the potential for improving students' grammatical performance?
- Does Computer-Assisted Language Learning have the potential for improving students' attitudes towards English grammar acquisition?

7.1. Research design

In order to address the two aforementioned research questions, a small-scale empirical classroom study was conducted at a well-established secondary school in Linz, Austria. The sample consisted of two 8th grade classes that were taught by two different English teachers. Due to practical reasons, it was thus decided to not intermix students, but to rather maintain the present class structures. Subsequently, these two classes will be referred to as class A (= experimental group) and B (= control group). In total, 29 EFL students participated in the study with class A comprising 12 male and 3 female students and class B 10 male and 4 female students. For the subsequent evaluation of a possible added value of CALL, both classes received a three hour grammar course, though in different ways and forms of instruction. Accordingly, students in the control group experienced a traditional grammar teaching approach, whereas those in the experimental group encountered the grammatical structure through diverse online applications. Regarding the selection of the grammatical concept, the choice fell, in consultation with the class's teachers on Conditional sentences. The decisive factors here were that students were unfamiliar with this grammatical item and that it was in accordance with the curriculum and class syllabus. Thus, considering that both classes worked with the *Red Line* series, which provided for the introduction of the 3rd Conditional in the subsequent unit, and the fact that Conditional 1 and 2 have already been taught in the previous two years, it was agreed to first review the 1st and 2nd Conditional and to subsequently introduce the 3rd Conditional. With regard to the lesson structure and choice of activities, despite the innovative approach, care was taken to still following the fundamental rationale of grammar instruction. Thus, the aforementioned PPP model was applied meaning that both courses were divided into presentation, practice and production phases just as Hedge's (2005) and Thornbury's (1999) principles in terms of contextualization, communicative use or relatedness have been carefully observed. More detailed information on both lesson plans is though provided in Sections 7.2. and 7.3. In addition, this teaching project also comprised empirical investigations in order to being able to draw concrete conclusions about the effectiveness CALL. Thus, at the outset of the study,

both groups were asked to complete a diagnostic test[10]. This was necessary for comparison purposes, given that, as previously mentioned, both classes were taught by different teachers. Consequently, this pre-test provided a clear analysis of the students' current command of the already introduced Conditional 1 and 2. At the end of the 3rd grammar lesson, students were then asked to complete an achievement test, which had the purpose of displaying the individual increase of performance. Besides, by means of an additional pre- and post-questionnaire, it was possible to collect information about the students' initial attitudes towards English and potential changes. Consequently, both these and the results on students' performances are presented in Chapter 8.

7.2.Lesson design of experimental group

As previously mentioned, the aim of both grammar courses was to review and partly introduce Conditional sentences. On that point, both classes experienced the grammatical structure through the PPP model, though the form of instruction varied greatly. However, for comparison purposes it was vital to select - as far as possible - similar tasks. In terms of task design this was not always 100% possible, though it was ensured that at least the tasks' objectives were equivalent. In addition, any deliberations regarding the selection of applications or implementation of technology as presented in the previous analysis have been carefully taken into consideration. On that account, due to the fact that the school was not equipped with a Moodle platform, but a computer lab, students received their work assignments through the creation of a lesson on *Blendspace*. Consequently, Figure 8 provides a visual impression of how these working instructions were, albeit in electronic form, presented to the students. Hence, by means of the interactive nature of *Blendspace,* through a single click, students were enabled to access individual activities and to receive necessary instruction.

[10] All tests and questionnaires can be found in Appendix 3.

Figure 8 Lesson on Blendspace (Screenshot)

Parallel to this, a highly condensed overview of the working assignments is illustrated in Table 2[11].

Table 2 Overview of computer-assisted grammar course

Lesson 1	Activity 1	Revision of Conditional 1 and 2 by means of a Youtube clip	Youtube
	Activity 2	Creation of a Voki avatar in order to practice Conditional 1	Voki
Homework	Activity 3	Collection of students' thoughts on a fictional situation to practice Conditional 2	Padlet
Lesson 2	Activity 4	Inductive presentation of Conditional 3	British Council webpage
	Activity 5	3 interactive exercises (matching, word order and gap fill) to practice Conditional	British Council webpage

[11] The actual lesson plan can be found in Appendix 2.

		3	
	Activity 6	Collaborative story writing by means of a chain of Conditional 3 sentences	PiratePad
Homework	Activity 7	Collection of authentic instances (popsongs) of Conditional 1, 2, & 3	Padlet
Lesson 3	Activity 8	Interactive exercises to practice all 3 Conditional sentences	Learningapps
	Activity 9	Recording students' opinions on various "what if" scenarios	Vocaroo
	Activity 10	On-screen revision quiz	Kahoot

As illustrated, subsequent to the completion of the pre-test and questionnaire, the 1st lesson effectively started with a revision of Conditional 1 and 2. For this purpose, students were asked to watch a *YouTube* video and complete the missing information on the formation and application of both Conditionals on previously distributed grammar handouts (Activity 1). In Activity 2, students were given the chance to practice the 1st Conditional. Given the fact that both Conditionals were, however, not entirely unfamiliar to the students, this just as the subsequent task, did not take the form of controlled practice but can rather already be ascribed to the production stage. Accordingly, students should imagine running for the next class representative and should therefore prepare a short election speech, stating what would happen if their class mates voted for them. In addition, they were asked to create a respective *Voki* avatar as accomplished for instance in Figure 9.

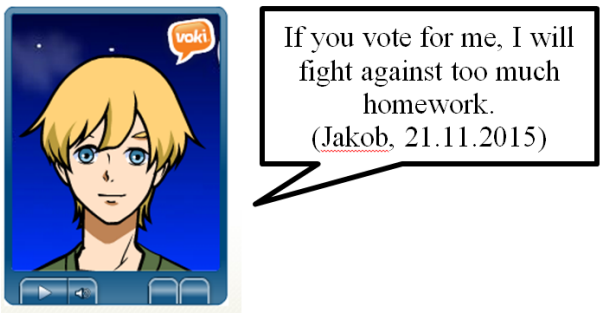

Figure 9 Outcome of *Voki* activity

In further consequence, the final outcomes were collected and a selection was presented to the students in the following lessons to indeed take a vote on the best contribution. That way, students practiced not only the 1st Conditional, but also their listening competences and the task itself was expanded by an effective goal. The subsequent homework assignment then targeted the free production of the 2nd Conditional (Activity 3). Inspired by Azevedo (2011) and the movie "The Box", students were at first asked to picture the following situation:

> You have just received the visit of a total stranger who gives you a mysterious box with a button and makes the following offer to you:
> If you push the button, two things will happen. First, someone, somewhere in the world, whom you don't know, will die. Second, you will receive a payment of one million dollars.
> You have 24 hours to make your decision. Otherwise, the box will be reprogrammed and the offer will be made to someone else. (Azevdo 2011)

Subsequently, students were faced with the task of reflecting how they would react in the situation presented and posting their thoughts on a collaborative mind map (see Figure 10). That way, the practice of the 2nd Conditional was not only contextualized, but, by virtue of the collaborative format, students who had not yet internalized its structure got the chance to learn from their colleagues.

Figure 10 Outcome of *Padlet* activity (screenshot)

Following this revision of Conditional 1 and 2, the 2nd lesson of the grammar course was dedicated to the 3rd Conditional form. Therefore, in order to get students acquainted with this yet unfamiliar grammar item, an inductive approach was chosen. Accordingly, students should discover its formation and application rule themselves by watching a video about a surprise party in which two friends were discussing what they would have changed if they had known better (Activity 4). Consequently, the missing information on the students' grammar handouts was to be completed, but it was left to the students whether the video was sufficient or whether they decided to resort to additional, deductive grammar explanations which likewise were to be found on the website. Subsequent to the presentation of Conditional 3, students were required to check their grammatical understanding and work through three interactive exercises, provided by the British Council, which included matching, word order and gap fill activities (Activity 5). Finally, a further collaborative activity followed, this time in the form of a chain story as can be seen in Figure 11 (Activity 6).

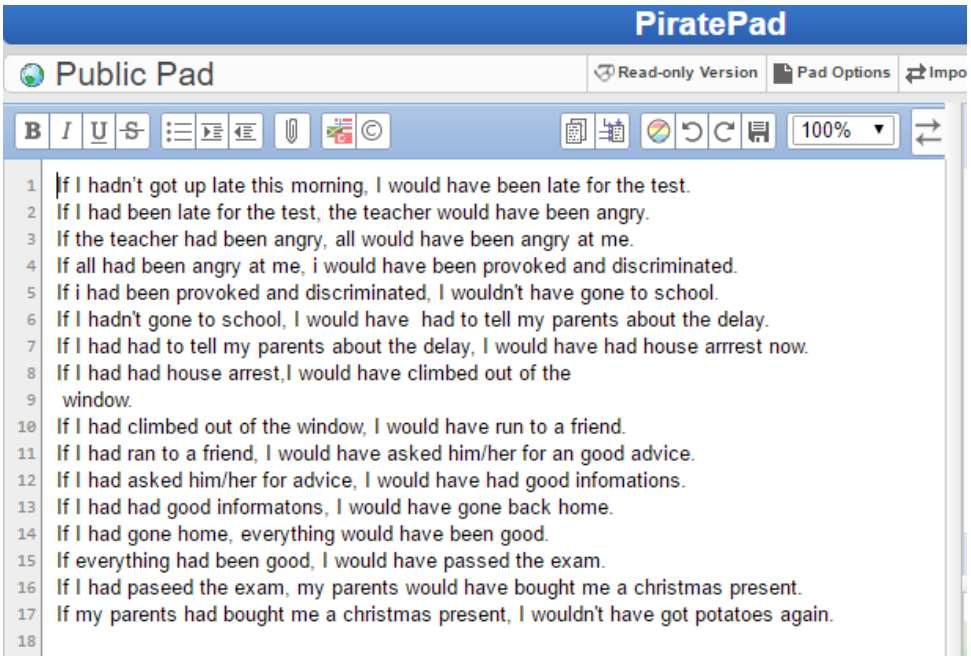

Figure 11 Outcome of *PiratePad* acticity (Screenshot)

Accordingly, students had to access the already prepared page on *PiratePad* and continue one of the stories by turning the previous main clause into a 3rd Conditional sentences and closing their sentence as they wished. Here, the big advantage was that students experienced the exercise not only as highly enjoyable but that they received multiple inputs and that the teacher could intervene through a chat function. In this way it was possible to point out common errors and to prevent their further repetition. In further consequence, it was important to take the next step and practice the Conditionals not only in isolation but rather in intermixture. An additional objective was the demonstration of the relevance and usefulness of Conditionals for everyday life, thus it was imperative to establish a link to the students' environments. For that end, as a homework assignment, Activity 7 asked students to search songs that include Conditional forms and to again collect them on a shared *Padlet* page. In this way, students became highly ambitious, trying to avoid any double entries and were consequently able to relate a good deal more to the grammar. In class, the next step then was to practice mixed Conditionals. For this purpose, an interactive exercise on *Learningapps* was consulted and the students' task was to match the presented sentences to their respective category (Cond. 1, 2, 3 or incorrect sentence) (Activity 8). In doing so, students received immediate feedback which on the one hand gave them a sense of achievement and on the other hand gave them the chance to directly take, if necessary, corrective actions which in turn promoted more effective learning. After this, it was necessary to move on from guided practice to free

production in order to encourage students to utilize these newly acquired forms in free speech. On that point, in theory, *Vocaroo* would have come into play as students would have been asked to choose one case from a series of more or less likely situations and record what they "will do, would do or would have done" accordingly (Carbajo 2012) (Activity 9). However, as mentioned earlier, technology might not always work as expected. In this case, due to the lack of external microphones, the recordings were of very poor quality and could not be understood. Consequently, a change of plan was necessary, thus resulting in an analogue speaking activity as students were to discuss the situations with their partners. Finally, in order to conclude and round off the three lessons, students were faced with a short grammar review by means of *Kahoot* quiz (Activity 10). Accordingly, the initial part of a sentence was projected onto a wall and students had to quickly select its appropriate 2nd part from three possible alternatives. That way, students got the chance to compete and honor the "King or Queen of Conditionals" and, at the same time, as a teacher I was able to diagnose and review any remaining difficulties.

To summarize, this outline of a media-enhanced grammar course has proposed a possible realization of the aforementioned theoretical concepts and guidelines for CALL. Thus it has been demonstrated that computer-mediated work can be highly contextualized and personalized as well as not contradicting collaborative or communicative activities. On the contrary, as the examples of the *Padlet, Voki, PiratePad or Vocaroo* have shown, computers offer a great chance to work collaboratively, make use of language in spoken discourse and learn from each other. Besides, it became clear that teachers still play a key role, it only shifts from the only source of knowledge to true learning guides. Thus the range of tasks changes and new competences need to be developed. However, via the discussed lesson sequence, it also became evident that this not necessarily means a dramatic increase of workload. Instead it could be demonstrated that teachers need to get a feeling for when to become creative themselves or in which cases an already existing task is absolutely fine[12]. Finally, it also became obvious that one needs to always be prepared for unforeseen events. As a matter of fact, teaching with technology carries a certain risk, thus teachers should always have a plan B in mind. Nevertheless, it remains to be seen whether this computer-assisted grammar course was in fact worth the effort and results in a better outcome than the traditional pen and paper grammar course.

[12] See Activities 5 and 8.

Chapter 8 will help clarify this question, though first, the traditional lesson plan will be presented.

7.3.Lesson design of control group

Table 3 reveals already at the first glance the great consistency between the computer-assisted and traditional lesson plan. Thus, both grammar courses identically followed the PPP framework and worked with almost the same assignments. However, based on the absence of technical assistance, slight modifications had to be made which are now elaborated on.

Table 3 Overview of traditional grammar course

Lesson 1	Activity 1	Collaborative revision of Conditional 1 and 2	Class
	Activity 2	"What if…" – questions to practice Conditional 1 & 2	Pair work
	Activity 3	Inductive presentation of Conditional 3	Individual + later collaboratively
Homework	Activity 4	Practice of Conditional 3 by means of a gap fill activity	Individual
Lesson 2	Activity 5	Practice of Conditional 3 by means of a matching activity	Class
	Activity 6	Practice of Conditional 3 by means of a word order activity	Groups of 4
	Activity 7	Collaborative story writing by means of a chain of Conditional 3 sentences	Groups of 4
	Activity 8	Tandem activity to practice all 3 Conditional sentences	Pair work
Homework	Activity 9	Collection of authentic instances of Conditional 1, 2 & 3	Individual

Lesson 3	Activity 10	Writing + Speaking task on students' opinions on various "what if" scenarios	Individual
	Activity 11	Revision of all 3 Conditionals by means of a Quiz	Class

Identically to the computer-assisted lesson, the traditional lesson likewise commenced with a revision of Conditional 1 and 2 (Activity 1). Thus, students received the same grammar handout (which can be found in Appendix 2) and had to fill in missing information regarding the construction and application of the Conditional forms, with the difference that the grammar was revised together, as a group, and without any digital assistance. In this manner, students' knowledge was elicited through guiding questions and the repetition was accomplished by a Teacher-Student interaction. Following this, students were required to practice Conditional 1 and 2. Similar to the experimental group, they were asked to imagine and discuss with their partners "what if..."-situations, including the aforementioned class representative election, Box-dilemma or what they would do if they were given one million dollars (Activity 2). In doing so, they had the opportunity to practice both Conditionals in context and to produce personalized language. The next step required them to report their results back to class, and I was able to detect any difficulties and react immediately. Thus, the main advantage of this approach was to make sure to only proceed once all students had fully understood the concepts. Subsequently, they too were confronted with the 3rd Conditional. Owing to the British Council website, it was possible to draw on identical materials as in the digitized lesson. Accordingly, students received a transcript of the video and were asked to identify the 3rd Conditional (Activity 3). In this way, students experienced the new form inductively through a text-based presentation and thus saw its use in natural discourse, again with the benefit to refer back to the teacher when necessary. Hence, the class collaboratively acquired the theoretical use of Conditional 3. The next step then was to practice its formation. For this purpose, students were offered the same grammar exercises as Group A, only in a different form. To start with, students received the analogue version of the gap fill activity and were asked to complete the sentences as a homework assignment (Activity 4). In the subsequent lesson, the previously on-screen sentence halves matching activity was then turned into a class activity, in which each student obtained one half and had to find the corresponding 2nd part of the sentence

(Activity 5). Finally, the originally private word order activity was likewise subject to a major modification as it was changed into a group activity in which students received the individual words on bits of paper and found themselves in a competition to see which group could manage to put the pieces back into their right word order first (Activity 6). In this way, controlled practice could be made less monotonous, students had the chance to communicate and, above all, could deepen their understanding of the grammatical structure by extensive repetition. After this, the chain story activity followed, though instead of *PiratePad*, posters were utilized (Activity 7). To this end, students formed groups of four and continued the stories before moving on to the next poster. This once more highlighted, how weaker students can benefit from their colleagues as, in numerous cases, groups discussed why the proposed sentence would be wrong and how to correct it. The 2nd lesson then concluded with Activity 8, a "learning-tandem" activity. For this purpose, sentences were taken from the *Learningapps* task and transferred into the following form (see Figure 12). Accordingly, in pairs, students were asked to fold the sheet in half and go through the sentences by alternately stating whether the sentence can be classified as Conditional 1, 2, 3 or incorrect.

Partner A	Partner B
If Sam had a job, he wouldn't sit around all day long.	*Conditional 2*
Incorrect sentence (I would have gone home if I had met you)	I would have gone home, if I met you.
If I have time, I'll help you.	*Conditional 1*

Figure 12 Extract of learning-tandem activity

At home, Group B then likewise had the chance to detect instances of Conditional forms in authentic, contextualized discourse (Activity 9). However, as the aim of this lesson design was to avoid the application of modern technology, the task was not confined to music instances, but rather involved any spoken or written language production. Admittedly, the majority of findings still resulted from songs, movies or even Facebook posts, though, some students also drew on sample sentences from novels. Nevertheless, this activity succeeded, similar to its digital version, in opening the students' eyes for the frequency and significance of Conditional sentences.

Eventually in the course of the 3rd lesson, students from the control group also moved on from controlled practice to free production. Similar to their colleagues, they received the same handout with numerous situations that required different Conditional sentences and were asked to write short statements (Activity 10). Consequently, these statements were collected, mixed and read out. Thus one student was chosen and had to guess the author and briefly explain the reasons for his or her decision. That way, multiple objectives were taken account of, including the opportunity for free production, personalized output as well as contextualized practice of all four language skills. Finally, by determining the "Queen or King of Conditionals", the lesson was concluded in a similar way as the digitized lesson. Students were asked to stand up and try to answer the heard questions (taken from the *Kahoot*-quiz) correctly, and to sit down in case they did not succeed (Activity 11). Accordingly, most students managed to remain standing till the end of the quiz, resulting in not one but many winners and a collaborative sense of achievement.

All in all, it can be said that content-wise, no true differences existed between the two lessons, but certainly with regard to activity design and implementation. Consequently, in the traditional lesson, the focus was more on collaboration and joint grammar acquisition with the teacher being more present and demanding. Thus, the teacher's task was not so much to accompany but rather to lead the learning process. Moreover, (immediate) feedback occurred in both cases, though it seemed as if Group B perceived a more individualized form of correction. Thus, it is now described in detail in the following chapter whether this proved beneficial or not.

7.4.Data collection

As foreshadowed in Section 7.1., subsequent to the two grammar courses described above, quantitative data on students' performance and attitude were collected in order to make informed statements about the actual potential of CALL. For this purpose, the process of data collection already commenced at the outset of the teaching project, as, prior to the grammar courses, students were asked to complete an unannounced diagnostic test[13]. Accordingly, students were faced with 17 direct test items that required the completion of sentences or the filling of blanks. This way, it was possible to gather information about how well students could retrieve and apply Conditional 1 and 2 at the beginning of the study. Following this, students received a self-report questionnaire

[13] All tests and questionnaires can be found in Appendix 3.

which inquired not only personal information including gender, their English grade in the previous year-report and their access to computers but also and in particular their attitudes and motivation towards EFL learning. This questionnaire adopted a direct approach with closed questions that followed the form of the Likert Scale (Wray & Bloomer 2006: 156f). That way, students could decide between seven gradings, stating how much they agreed or disagreed with the provided statements. As the participants were only in their 4th English learning year, the questionnaire was completed in German in order to avoid language difficulties and to guarantee a valid and reliable outcome. For the same purpose, students were assured that their responses were treated confidentially and that their teachers would not gain access to them. Besides this, all questionnaires were completed anonymously so that data could not be traced back to individual students. However, in order to be able to match the obtained data from the pre- with that of the post-tests, a "self-generated identification coding procedure" (Dörnyei 2010: 81) as proposed by Kearney et al. (1984) was applied. Accordingly, students generated unique personal codes by only providing information about their parents' initials and their dates of birth. By means of these personal identification codes, which were included on both questionnaires, both, data link ability and anonymity could be achieved. Subsequent to the already described grammar course (see Section 7.2. and 7.3), students were asked to complete again an unannounced achievement test which inquired their command of all three Conditional sentences. For that to happen, the test comprised 20 items which covered controlled production exercises (MC, completion, matching and gap fill) of Conditional 1, 2 and 3. There then followed a further questionnaire in order to detect any attitude changes. This contained, in contrast to the preceding questionnaire not only general statements about motivation and attitude, but also queried the individual activities in more detail. Thus, students were asked to state how enjoyable and useful the various tasks were perceived by rating them again according to the seven-digit dimensions on a Likert Scale. It must be noted however, that as opposed to the lesson plans, in both post-questionnaires the final free production exercises were omitted. This is due to the previously described technical issues which have made it necessary to accomplish the final computer-assisted activity without the computer and which in turn would have made a comparison with the non-digital activity in Group B pointless. Finally, in order to provide room for individual opinions, the questionnaire concluded with an open question in which students were given the opportunity to expound how they picture their ideal grammar lessons in the future. This combination of item types ensured maximum efficiency and indeed

contributed to remarkable results which can be found in Chapter 8. At the same time however, one needs to be aware that even though care has been taken to guarantee test practicality, reliability and validity (Brown & Abeywickrama 2010), classroom research is most complex and the findings are contingent on a number of factors. It is therefore essential to likewise mention certain limitations of the present study in order to properly interpret the obtained results. Above all, it needs to be considered that with only 29 students, the sample size was very small. Accordingly, neither was it possible to analyze possible gender differences, nor could any generalized conclusions be drawn on the effectiveness of CALL. Instead, the study should be understood as an addition to the current body of knowledge and might function as a starting point for future research. In addition, mastering Conditional sentences within a three hour course is in itself already an ambitious undertaking. However, the final achievements are also partly dependent on the students' previous grammatical knowledge. Consequently, neither of the two lessons designs was capable of eradicating pre-existing knowledge gaps in the construction of tenses which certainly materializes in the results. Ultimately, due to assessment reasons, the final achievement test only examined students' performances with regard to controlled production. Accordingly, it cannot be finally clarified whether the results can be applied one-to-one to the area of free production. Nevertheless, it was still possible to gain valuable insights as the study produced very interesting data which is now evaluated in detail in the following chapter.

8. Evaluation and analysis of research findings

Given the subjective and, based on the students' oral feedback, wholly positive impression I had on completion of both grammar courses, it would not have been possible to draw any conclusions about a greater effectiveness of one of the two approaches. Thus, this fact clearly indicates the importance of empirical research and respectively, a thorough analysis of its results. Consequently, the following two subchapters now set out to achieve this object.

8.1.Performance

Referring back to chapter 7, the aim of this subchapter is to offer an answer to the 1st research question. Accordingly, it will be examined whether CALL has the potential to for improving students' grammatical performance. For this purpose, initially, the results

of the diagnostic and proficiency test were used to calculate the differences and hence the average performance increase. The consequent results are shown in Figure 13.

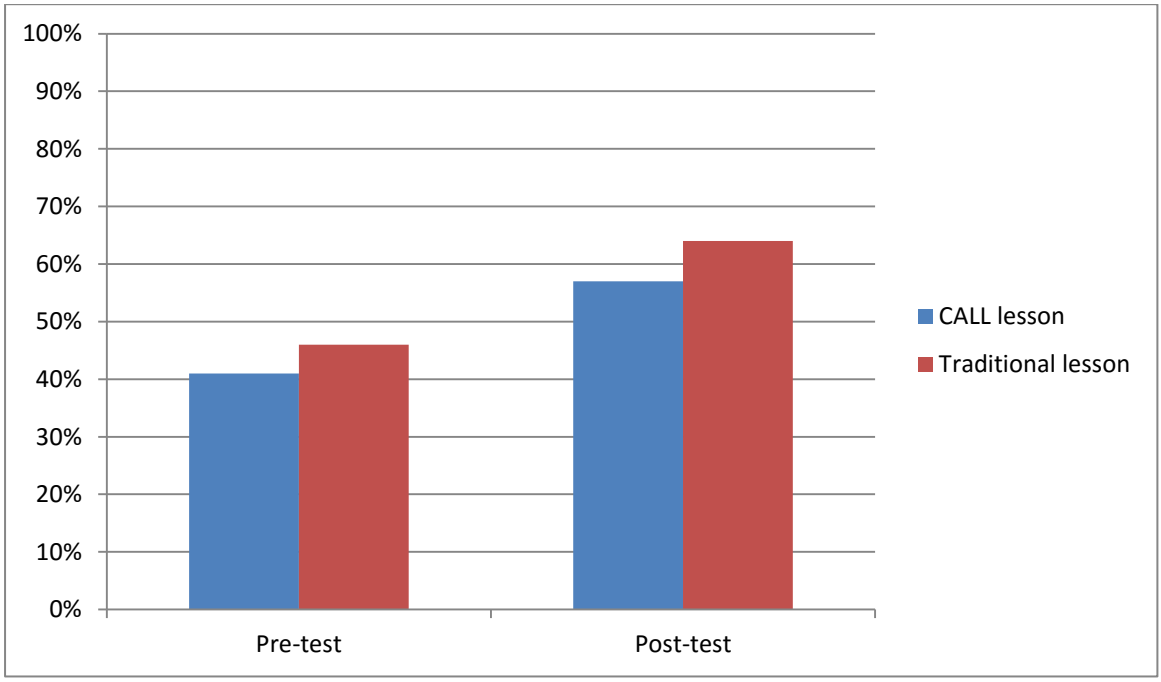

Figure 13 Average performance in pre- and post- test

As displayed, at the outset of the study, both classes held a comparable command of Conditional 1 and 2, even though the control group was slightly stronger. Thus both groups completed almost half of the pre-test correctly, or in concrete figures, Group A achieved a mean score of 41% and Group B of 46%. Decisive for the effectiveness of both approaches is, however, the 2nd set of columns which shows the results of the post-test. To begin with, it can be ascertained that both groups profited from the grammar course as clear performance increases are observable. As shown in the illustration, Group A achieved an increase of 16% and Group B even of 18%. According to this, the control group slightly outperformed the experimental group. However, in order to formulate a definite answer to the first research question, this result requires further examination. For this purpose, the items of the achievement test were divided into two categories: The first category covers those items that examine the command of Conditional 1 and 2 (indicated as revision), whereas items that are related to the 3rd Conditional fall into the second category (indicated as acquisition). In this way it is possible to make more specific statements about the effectiveness of both approaches as it breaks the study's results down to the revision of previously learned and the acquisition of completely unfamiliar

grammar items. Indeed, the effectiveness varies considerably as the varying proportion of correct test items in Figure 14 indicates.

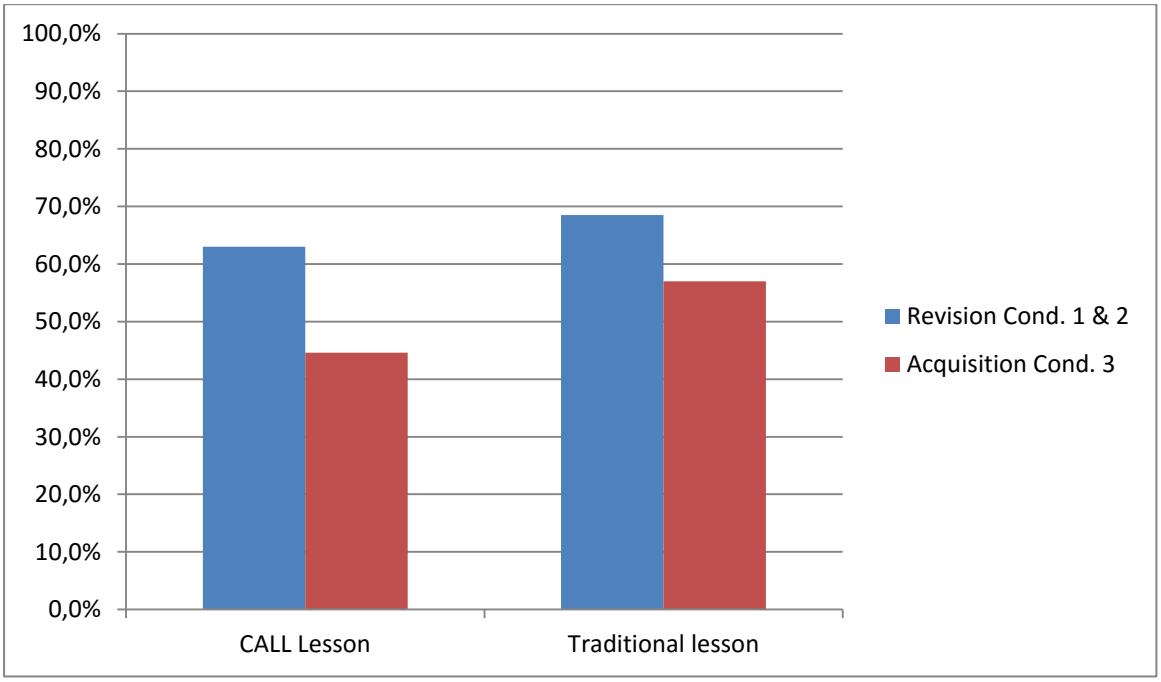

Figure 14 Disparity of effectiveness

Thus, it becomes apparent at first glance that the strength of CALL clearly lies in the revision of content. On average, students who experienced the computer-assisted grammar course, achieved 44.6% regarding Conditional 3 and 63% regarding Conditional 1 and 2. Consequently, they performed one fifth better on revision compared to acquisition. In addition, in terms of revision, Group A only lags 5.5% behind Group B, in contrast to 12.4% with reference to acquisition. However, considering the weaker starting position of Group A, the picture becomes different. Accordingly, in the light of the comparison of the pre-test results with the post-test findings on revision, it becomes clear that both groups improved their mastery of the 1st and 2nd Conditional by 22%. This result is also consistent with the students' subjective impression, since, as part of the post questionnaire, students were also asked to rate their personal feeling concerning their command of Conditional 1, 2 and 3 on a Likert scale, ranging from 0 (no command) to 6 (full command). Consequently, the best grades were in both groups awarded to Conditional 1 (3.9 in Group A vs. 4.4 in Group B), followed by Conditional 2 (3.8 in Group A vs. 4.25 in Group B) and Conditional 3 (3.7 in Group A vs. 4.0 in Group B).

Another striking fact is that not all students have benefited equally. In fact, the results of 4 out of 14 students of the traditional lesson display a drop of performance whereas the

same phenomenon only applies to one student of the media-enhanced group. This may be explained by the fact that learning styles have a strong influence on learning performance. Considering that the traditional method had a strong focus on auditory and kinesthetic (Reid 1995 in Lightbown & Spada 1999: 58) learning, visual learners might have been neglected. In contrast, with the application of the computer, this could not happen as CALL addresses, as indicated in the theoretical part, a much wider range of learning styles. This assumption is further underpinned by Figure 15 which displays the correlation between the test performance and the students' English grades.

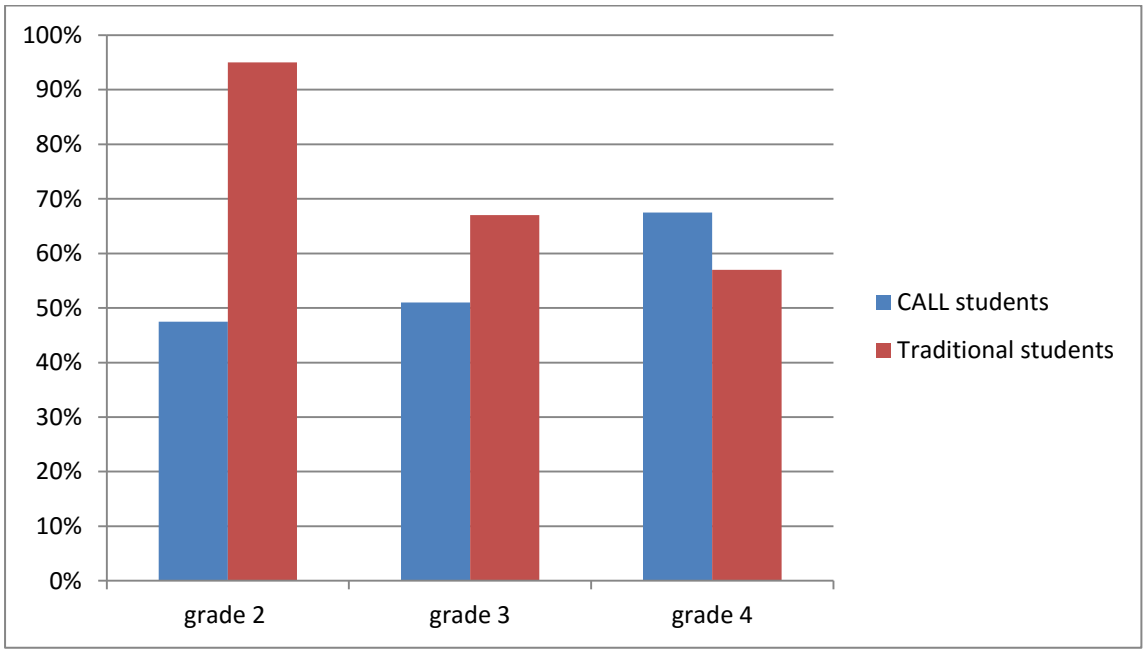

Figure 15 Correlation between effectiveness and grades

As previously mentioned, in the course of the pre-test, students were also asked to state their English grades of the previous year report which ranged from grade 2 to grade 4. Subsequently, these grades were compared with students' performances on the achievement test. Thus, the results of Group B were according to expectations, as students with better marks also performed better on the test. This finding, however, did not apply to the CALL results. On the contrary: In this case, students with the lowest grades were in fact the highest achievers. Expressed in figures, students, whose grades were just "sufficient" in the previous year, outperformed their grade 2 colleagues on average by 20% and achieved a mean score of 67.5% which is 10% above their group score. In other words, this group of students gained the second best results (just behind the grade 2 students from the control group) throughout the whole study.

In summary, in consideration of the 1st research question which aimed to explore whether CALL has the potential for improving students' grammatical performances, these observations give rise to the following conclusion: CALL holds considerable potential, though not without certain restrictions. Firstly, the application of computers has led to a performance increase, although not at the same rate as the traditional classroom. Even so, it has to be considered that students of the experimental group were not familiar with computer-assisted learning and, as became known later, used the school's computer lab for only the first time during this grammar course. The data of both groups also revealed some knowledge gaps in the formation of tenses, especially the Past Perfect tense. Considering, however, its direct connection with the formation of the 3rd Conditional, lower achievement scores are only a logical consequence, though not the fault of the applied methods. Additionally, it cannot be said how seriously students took the exercises and tests. Even though they were made aware of how important their cooperation and effort was for the study's success, the student's level of conscientiousness could still vary. Nevertheless, on the whole the results still provide a credible picture and it can thus be assumed that CALL's greatest potential lies in its application for grammar revision. The reasons for this may be that for the initial contact with a grammatical structure, students, in particular lower classes, require clear guidance and assistance by the teacher. As opposed to this, CALL is ideally suited to review these structures due to its wide range of practice possibilities which offer diversity and perhaps excitement (see subsequent chapter). This might also explain the 2nd major finding, namely that CALL is particularly beneficial for weaker students. Notwithstanding that English grades do not only comprise grammatical competence, this outcome still suggests that potentially, some students are simply not promoted according to their specific capabilities and learning styles. Consequently, CALL could be the key to ensuring equal chances for all students. However, before drawing hasty conclusions, it is to be noted that these findings only result from a very small sample and thus further studies would be needed to produce clear evidence.

8.2.Attitude

As indicated above, one advantage of CALL might be that working on computers implies a higher level of excitement and motivation and might thus even have the ability to improve students' general attitude towards English. Consequently, it should now be examined whether these assumptions hold in view of the evidence and thus likewise

apply to the present group of Austrian EFL students. Therefore, the previously described pre- and post-questionnaires compared the students' attitudes towards English and grammar acquisition before and after the grammar courses, as well as their impressions of the individual activities. In this way, it should be clarified if, with reference to the 2nd research question, CALL has the potential to generally enhance students' attitudes and if so, which activities and factors are most influential.

Accordingly, both questionnaires opened with the statement "Learning English is fun" and students had to evaluate it on a Likert scale which ranged from 0 (don't agree) to 6 (fully agree). Figure 16 shows the results, whereby it needs to be noted that in contrast to the performance results which were stated as percent, all charts relating to the findings on attitude display in accordance with the Likert scale absolute figures from 0 to 6 and thus signify the level of agreement.

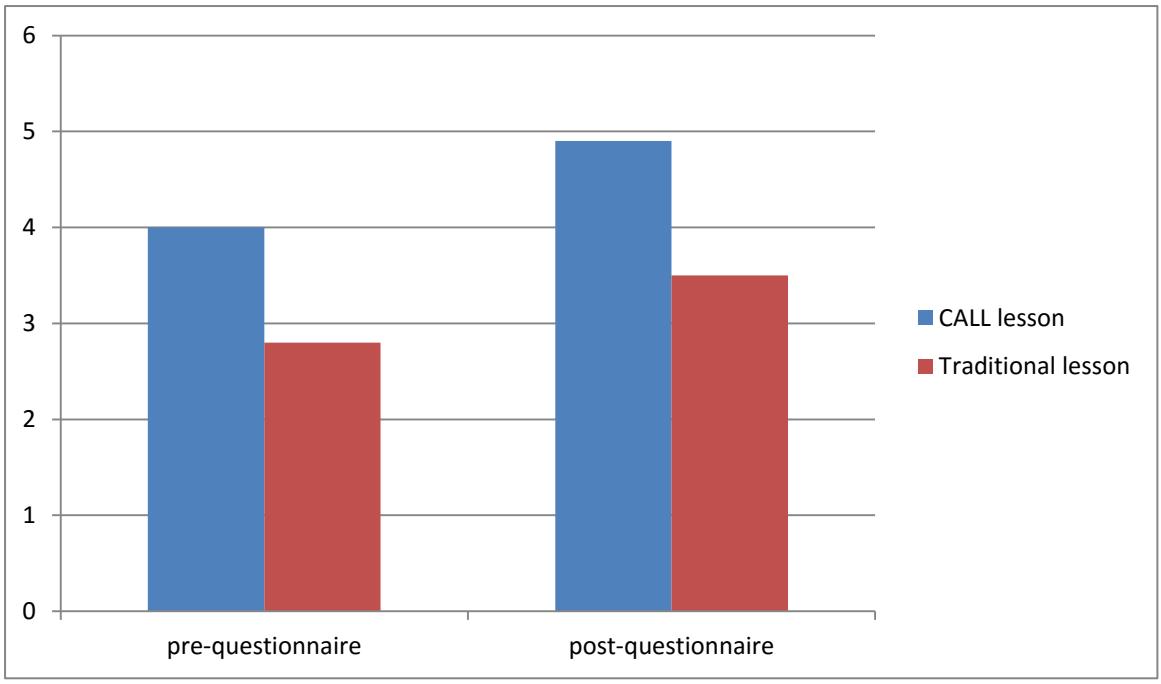

Figure 16 Perceived fun factor in learning English

Interestingly, Group A already embarked on a strikingly high level as, on average, students rated the enjoyment level already with 4.0. Nevertheless, in the course of the grammar lesson, this impression could be further enhanced by 0.9, thus resulting in 4.9 out of 6 points. By comparison, Group B also experienced an improvement, however, not to the same degree. In fact, starting with 2.8 and arriving with 3.5 points, this improvement only amounts to 0.7 points. A similar pattern was found when asking the students how much they looked forward to the next English lesson (see Figure 17). For

this purpose, students were first made to believe that the grammar course would continue in the subsequent lesson as only in this way could it be guaranteed to obtain reliable results.

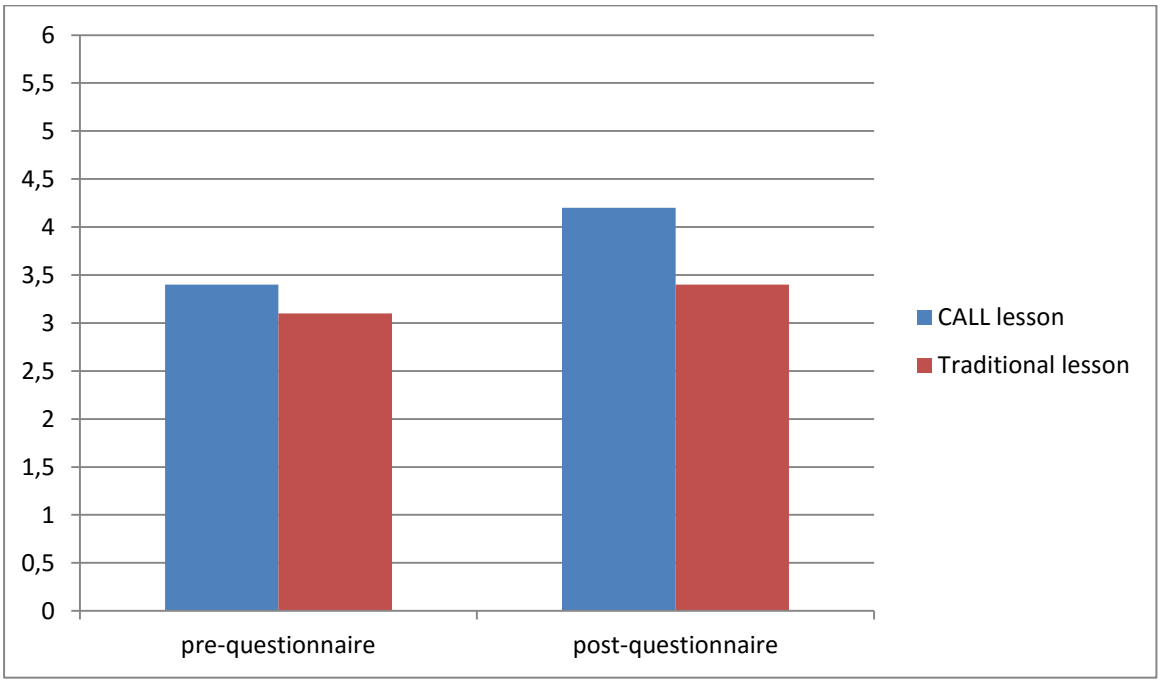

Figure 17 Anticipation of next English lesson

As this bar chart reveals, both groups were looking forward this continuation, though Group A's degree of anticipation was considerably higher than that of Group B. In tangible terms, a rise of 0.8 points or 13% (group A), compared to 0.3 points or 5% (group B), was observable. In terms of the more specific question on grammar acquisition, the situation was even more explicit. In fact, students were asked how far they agree with the statement that grammar acquisition is tedious. Again, students responded to this question before and after the study and the indeed striking results can be seen in Figure 18.

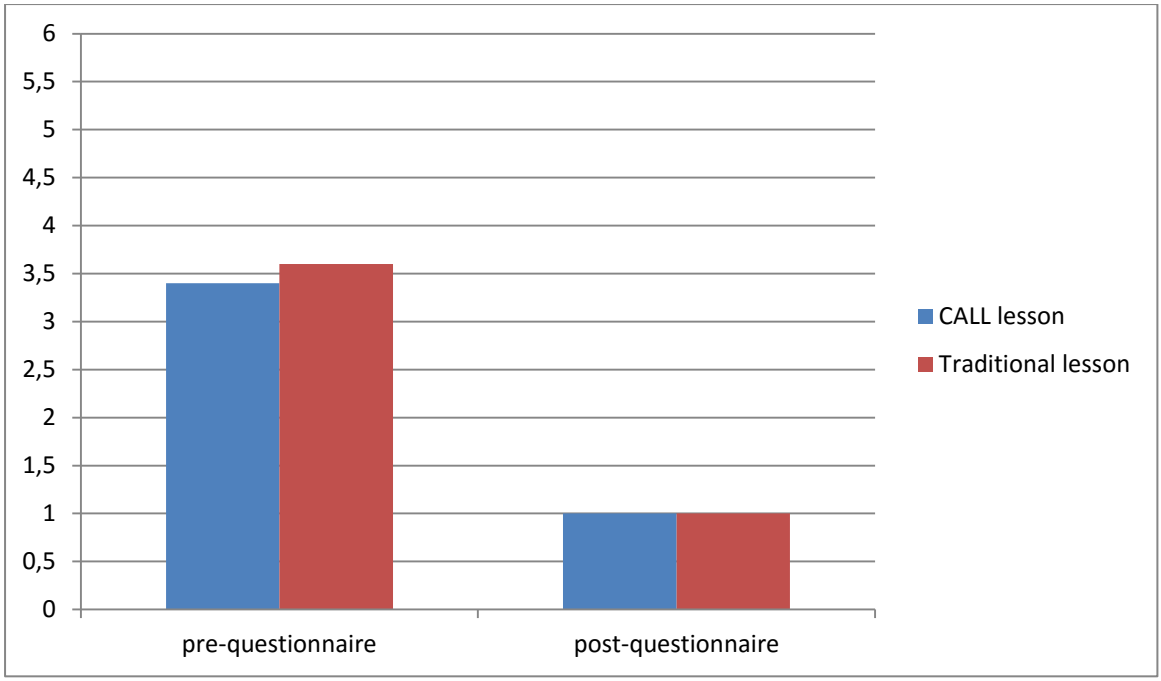

Figure 18 Level of agreement concerning tediousness of grammar acquisition

Initially, grammar acquisition had a rather poor reputation as students partly agreed to its tediousness with 3.3 and 3.6 points respectively. This situation changed drastically as a result of the grammar course when students of both groups disagreed with this statement. In fact, in Group A, the perception was improved by 38% and in Group B by as much as 43%. These figures emerged from the fact that in Group A 8 out of 15, thus more than half of the students and in Group B just under half of the students, rated this item with 0 points. Interestingly enough, one student of Group A, however, allocated 4 points which would indicate that he perceived grammar instruction after the course twice as tedious as before. However, the analysis of his impression on the individual activities displayed that he consistently rated the enjoyment factor with 6 points, which is the top grade. Accordingly, the reasons for this discrepancy are only subject to speculation. It might well be the case that in general he did not prefer this form of instruction, though it is equally possible that he accidentally ticked the wrong box. In that case, the final result of the CALL lesson would even fall below 1.0 points. Nevertheless, at first sight, it might appear that based on the results displayed in the 2nd set of columns, a clear advantage of CALL cannot be established as students of group B underwent, compared to students of group A, a greater change as their negative attitude towards grammar acquisition almost halved. However, in light of the fact that the "traditional" activities were strongly inspired by their digital counterparts, it is quite conceivable that through this connection, the traditional lesson could also improve its level of enjoyment, compared to the actual

customary approach to grammar instruction. Additionally, the analysis has also shown that in this group, the perceived level of meaningfulness in terms of learning English could also be raised. In fact, whereas students of the experimental group remained stable at 5.5 points, the sense of meaningfulness increased by 6% within the control group. This may again be related to the fact that a high degree of authenticity and real-life context with regard to the media-enhanced activities was also in some way transferred to the traditional grammar course. Thus, considering these influences in combination with the inherently positive results of the computer-assisted grammar course, it can be assumed that the application of computers indeed has a highly beneficial effect on students' attitudes towards English grammar instruction. The reasons for this tendency are diverse: First of all it can be stated that students simply enjoyed the digitized form of instruction and practice. Moreover, the analysis of the questionnaires has also shown that students that received the digitized grammar instruction experienced a higher degree of responsibility for their learning success. Accordingly, this trust in their abilities in combination with their consequent sense of accomplishment may also have had a positive impact on their attitude towards English classes. Finally, when students were asked how much their learning success was contingent on the opportunity to acquire the grammar items at their own pace, they drew a very clear picture. In fact, they rated this possibility with 4.0 points, which clearly indicates its significance. Given though, that individual pace commonly has no place in the traditional EFL classroom, it is only a logical consequence that students all the more enjoy lessons in which this is possible.

However, in order to identify even more significant trends, the 2nd part of the post-questionnaire examined the various tasks in more detail. For this purpose, students were requested to rate each activity separately in terms of three different categories: (a) level of enjoyment, (b) level of meaningfulness as well as (c) students' level of effort. Thus, interesting correlations could be found which are illustrated in Figure 20.

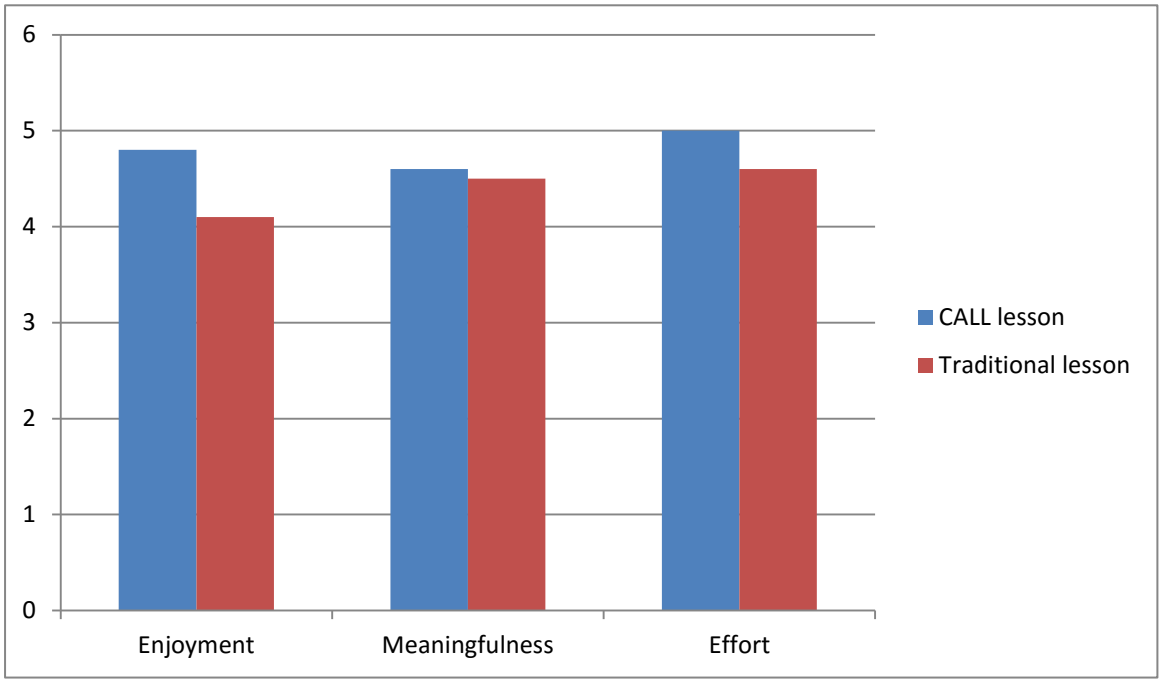

Figure 19 Comparison of enjoyment, meaningfulness and effort

It can be seen that, as implied by previous figures on level of fun and anticipation, the enjoyment level was, on average, for Group A considerably higher than for Group B. Through this split analysis it also became evident what types of activities are particularly enjoyed and which are not being well received. Cleary, so far, these results can only be related to the present group of EFL students, though they grant interesting insights and might be a starting point for further investigations. In this context, it is striking to see that the *Voki* activity clearly fell short of expectations. In fact, it scored the fewest points in all three categories. In terms of its enjoyment level, it only reached 4.3 points as compared to the traditional discussion questions which gained 4.6 points. Similarly, the analog chain story activity was with 5.5 points also slightly better received than its computer-assisted alternative with 5.1 points. In return, CALL activities outperformed their traditional counterparts in all other cases. The most marked difference could be found regarding the presentation of the 3rd Conditional as the video-based demonstration was perceived more positively by 25%. A similar picture emerged with the analysis of the final grammar revision game, which once was conducted through *Kahoot* and once by asking the students to sit down in case of an incorrect answer. Even though the questions asked were identical, the differences in activity design and presentation form thus led to varying levels of enjoyment. Whereas in the case of Group A, this activity was very well received and scored the highest rating of 5.5 points, it was less popular by 18% in Group B.

In addition, the analysis also underlines the assumption of a direct connection between the level of enjoyment and level of effort. In fact, in almost all cases, it could be demonstrated that the more an activity was perceived as enjoyable, the more students were motivated to make an effort to perform well. In the case of the CALL lesson, the *Kahoot* activity took in both categories the first place for example. Likewise, the chain story or the two *Padlet* activities received top marks on both the level of enjoyment and effort. By contrast, the *Voki* activity has gained, as mentioned before, both times the least points just as the revision of Conditional 1 and 2 through a deductive approach reached only the penultimate place in both categories. With regard to the traditional lesson, the same pattern becomes observable. Here, too, the top ranking relating to enjoyment and effort were allotted the same activity, namely the chain story whereas the rule discovery activity for the 3rd Conditional performed the worst both times. In contrast, a direct impact of the perceived level of meaningfulness on the students' motivation could not be detected. Instead, with regard to the CALL lessons, students ranked the category of meaningfulness consistently lower than the remaining two categories where in the case of the traditional lesson, it is mid-table. However, it is striking that on average, both groups perceived the activities' meaningfulness almost identically as the allocated points only vary by 1%. This finding confirms once more the above hypothesis of a strong connection between the activities of both courses and that the computer-assisted lesson design might have influenced its traditional counterpart.

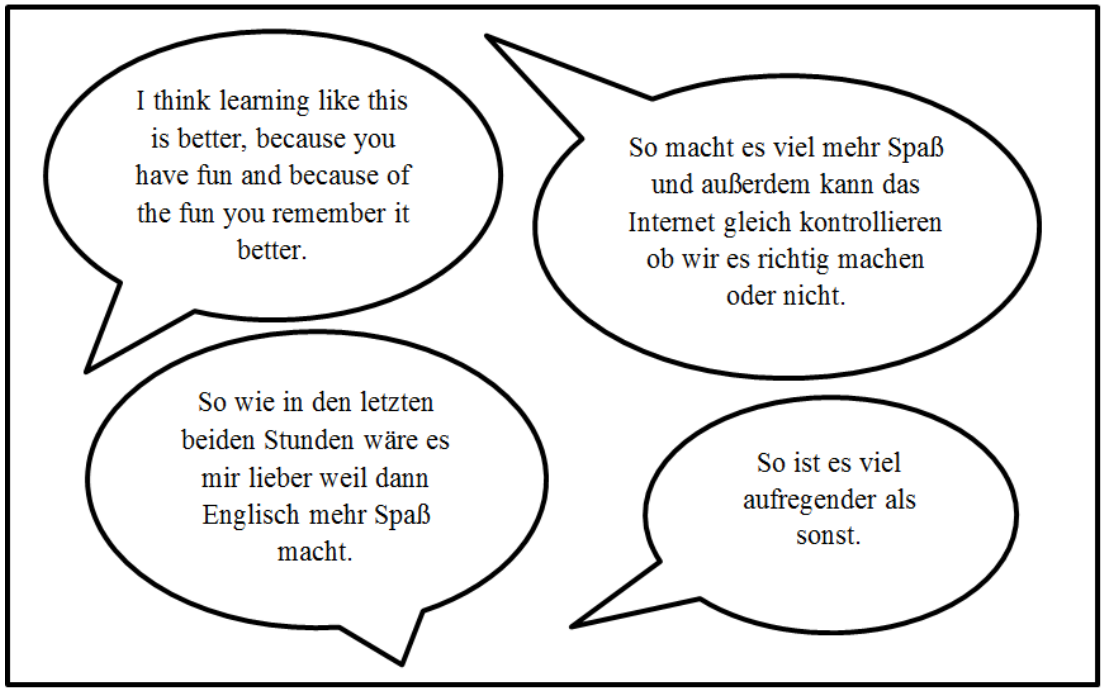

Figure 20 Student quotations

Finally, students that experienced the digitized lesson were asked through an open question what kind of grammar instruction they would prefer in the future and why. It was thus noted that there was a strong similarity between the responses as students uniformly expressed their preference towards a continuation of computer-assisted learning. Moreover, the collection of selected comments in Figure 21 clearly shows the main reason for this request as students were unanimous that, similar to the previous statistics, through the application of computers, learning can be combined with more fun and joy.

In summary, it became evident that with regard to the 2nd research question, a definite answer can be provided. As the analysis has shown, CALL by far outperformed the traditional lesson design in all categories. Accordingly, in the course of the post-questionnaire, students of the experimental group not only perceived English learning as more enjoyable and grammar acquisition as less tedious, but likewise displayed a higher level of anticipation and commitment. In other words, through the application of CALL, students' motivation could be increased which justifies the conclusion that in the long run CALL would certainly have the potential to likewise improve or even change students' attitudes towards English. What this finding, together with the results of the performance analysis, implies for future classroom practice is now specified in the following subchapter.

9. Implications for further teaching practice

If it were up to the researched students, the matter would be quite clear. Apparently, further English classes would preferentially only take place in the computer lab, just as the acquisition of English grammar would exclusively imply exciting collaborative writing assignments, joyful recording tasks and interactive exercises that involve class competitions. From a pedagogical perspective and, in consideration of the totality of the findings of the conducted research, the situation presents itself, however, less clear. In fact, practice has shown that CALL carries many advantages but at the same time also certain risks. However, as a similar statement could also be made in terms of traditional teaching practices, a clear-cut recommendation for future practice is not hard to see. Accordingly, ideally teaching should, as Pape et al. (2012: 18) put it, adapt an approach that combines "the best of both worlds." Thus, this paper comes to the clear conclusion that with regard to future teaching practice, students would gain the greatest benefit from a blended learning approach. As a result, face-to-face lessons would be supplemented with digitized learning periods, which would enable teachers to exploit the advantages of both methods at their best. At the same time, the study, however, also exhibited that a number of points are to be observed in order to facilitate smooth computer-assisted learning processes.

Firstly, research has shown that a blended lesson design requires careful consideration. Certainly, this holds true for the face-to-face as well as the online parts, though given the novelty of digital learning, more issues need to be considered concerning the latter. Consequently, particular attention must be paid to task design as outlined with regard to Puentedura's SAMR model and Strasser's taxonomy. In a similar manner, it became apparent that teachers are advised to carefully gauge what types of activities lend themselves better for computer-assisted learning tasks and which, instead, are better suited for face-to-face lessons as they may require more teacher guidance. Accordingly, it turned out that in view of the three phases of the PPP model, the greatest potential of CALL lies in the practice and production phases. Conversely, the application of computers appeared less recommendable for grammar presentation. The reason for this mainly lies in the teacher's reduced supervisory function. Whereas in traditional classroom settings teachers can sense whether a class needs more thorough explanation or is ready to move on to the next stage, teachers cannot exercise the same control function with regard to online grammar presentation. Consequently, there is a danger that some

students might not grasp the grammar through the provided material and are, as no teacher support is available, forced to proceed to the practice tasks without an understanding of the grammatical concept. Given that such situations are difficult to avoid even though, as in the case of the study, care is taken to supplement inductive grammar discovery with the opportunity to fall back on deductive grammar explanations, the decision about online or offline grammar presentation must be well considered. Here, clearly, the decision to revert to traditional forms to introduce new grammar is nothing negative, but quite the opposite reveals the huge benefit of blended learning: It connects traditional with digitized teaching but still allows teachers complete liberty in their decisions. Consequently, the considerations which teaching mode fits best what stage of grammar acquisition always remains with the teacher. Yet, regarding the positive results of CALL in connection with Conditional 1 and 2, a recommendation for the application of online grammar revision and/or practice parts can certainly be made. Considering the added fun factor, the immediate feedback or the huge flexibility, as students can work independently of time or location, CALL is ideally suited to facilitate additional exercises. In addition, the findings related to the 1st research questions have displayed that poor grades may partly also result from "wrong" modes of instruction, meaning that the traditional teaching method did not include all students' styles of learning. Therefore, again, there are calls for blended learning as through the application of online sequences that supplement the traditional classroom, not only weaker and absent students benefit as they can revise the subject matter, but so will students with all possible learning styles as otherwise these students would not receive adequate support. Finally, this method of blended teaching also has a positive effect on very talented students as through additional online tasks that are tailored to their aptitudes, they can likewise be promoted in the best possible way. Hence it can be noted that the application of computers in the course of a blended learning approach has a positive effect on the whole class.

Secondly, it also became evident that the effectiveness of computer-assisted and traditional learning is greatly dependent on the tasks as such. Accordingly, based on the three categories that examined the level of enjoyment, meaningfulness and effort, it could be seen that in traditional classroom settings, students clearly preferred discussions and collaborative activities with playful elements. Yet, the widespread method of practicing grammatical structures through paper-based gap fill activities was, on the other hand, very badly perceived. In comparison, with regard to the CALL students, online competitions

and collaborative writing assignments as well as interactive exercises scored best. This illustrates that the sole transformation of grammar sheets into interactive online exercises significantly boosts the task's popularity. The analysis of the open questions also revealed that beside the added fun factor, students highly appreciated the opportunity for instant feedback, computer-mediated communication and visualization of the subject matter. Considering these perceptions and preferences in the planning of the blended learning phases can make a big difference in their success. Accordingly, teachers can, with simple methods, displace unpopular grammar sheets or revisions with online tasks or in-class quiz competitions and thus not only arouse enthusiasm but also stimulate students' motivation and raise the activities' effectiveness. Similarly, knowledge about preferences with regard to traditional activities can likewise be used to make the most of face-to-face sequences. Hence, with the aid of CALL and blended learning, teachers can pursue the same learning objectives as in traditional classrooms, though by adjusting the task design and getting a feeling for when which approach is more suitable, students' learning experiences and consequently learning achievements can be improved substantially.

Thirdly, the study has clearly demonstrated the importance of teacher guidance. In fact, irrespective of how intuitive and easily comprehensible an online task might appear to the teacher, in order to guarantee a smooth realization, step-by step instructions are indispensible. In the context of the present study, this became evident in particular with regard to the *Voki* activity. From a teacher's perspective, the explanations provided by the website seemed more than sufficient, thus students received no further instructions. However, in the process of the creation of the *Voki*-avatar, a lack of clarity and numerously occurring difficulties gave rise to considerable problems. From the start, students constantly called for the teacher to seek help. Thus, in view of the number of students, it is not surprising that not all students received adequate support. Consequently, in many cases students surrendered and abandoned the activity which manifested in a fall of motivation, enjoyment and sensed meaningfulness. In view of this it becomes clear that detailed explanations and illustrations preliminary to the task contribute significantly to the activities' success. The investigation has however also indicated that ongoing guidance is at least equally important. Considering that as part of online learning sequences, teachers are deprived of a majority of usual intervention and supervision techniques, alternatives must be found to still warrant meaningful practice. Thus, computer-mediated communication needs to be one pillar of any blended learning

approach. Thereby, communication can take various forms and includes, as outlined in Chapter 4.2.1, synchronous and asynchronous modes of interaction. In case online learning parts are accomplished through a Moodle platform, a number of options, including the chat and forum function, are available that enable student-teacher contact. Nevertheless, in all other cases, teachers need to provide students with opportunities to seek their assistance if needed. By way of example, in the process of the study, applications that are equipped with a chat feature proved very helpful. By this means, it was possible to respond directly to questions and resolve difficulties, which had a positive impact on the outcome. In contrast it was found that with other activities, students would have wished a similar contact opportunity in order to solve for example technical issues. In this respect, it is advisable to open up other channels of communication, be it through e-mail programs or applications that enable a teacher-student exchange. Furthermore, as online work involves by default a greater level of freedom, clear guidance also comprises methods that assure that students attach the same importance to online parts as to in class sessions. In this sense, it is essential to clearly communicate what results are expected and consequently check whether the tasks were actually fulfilled. Here, blended learning subsists on the link between its online and offline parts. Thus, teachers can for example, assess students' online effort, deploy in-class quizzes that relate to online work or let students present their digital products. In this manner, students sense that after all, the teacher still has an eye on their work which reduces the danger of distractions and idleness. At the same time students should, however, not by default be blamed for not accomplishing their online tasks. Rather, it has been seen that even though digital tasks do not necessarily imply more work for teachers, they certainly do for students as for the most part they are more extensive than their traditional counterparts. Accordingly, teachers need to make sure not to overextend their students' abilities and to only deploy a targeted use of extensive or highly creative, online activities.

Fourthly and lastly, all of this, however, can only be attained through profound teacher training. Just as Warschauer and Meskill (2000: 316) put it, "the key to successful use of technology in language teaching lies not in hardware or software but in 'humanware'." According to this, it became evident that it is vital to better prepare teachers for the future demands of school and education. This, though, not only includes the development of necessary skills as proposed by Hampel and Stickler (2005), but also the common understanding that the uptake of technology must not just result in PowerPoint

presentations or film screenings during the last weeks of school. Rather, a fundamental rethink is required in order to enable education to evolve and move on. On that point, specialized training and further education needs to provide teachers with an altered understanding of their profession in combination with thorough methodological knowledge. In this respect, becoming acquainted with Puentedura's SAMR model can, however, only be the beginning. Instead, only if teachers are equipped with hands-on tools and application ideas, a true change will be possible. Similarly, though, teachers also have the duty to actively engage themselves with technology and to stay at the top of developments as "teachers will not be replaced by technology, but teachers who do not use technology will be replaced by those who do" (Arya 2015, n.p.).

All in all it can thus be concluded that, grounded on the theoretical findings which, despite the small sample size, could be confirmed in practice, clear conclusions and implications for future teaching practice can be drawn. Accordingly, put in a nutshell, it can be stated that "CALL cannot solve all the problems of language education, but without CALL we cannot begin to address them" (Garrett 2009: 724). Only if, on the contrary, technology constitutes a self-evident, well implemented component of second language grammar acquisition, school's educational challenges can eventually be addressed. However, considering that due to previously mentioned downsides of CALL, the sole application of computers also would not be the ideal solution, this paper reasons that a change of the current teaching practice towards a blended learning approach that takes the aforementioned considerations carefully into account would be most desirable. In this manner, education could fully exploit the numerous advantages of modern technologies and schools would finally take their responsibility to promote every single student at their best.

10. Conclusion

The aim of the diploma thesis at hand was to discover whether the combination of modern technology and the EFL classroom is a worthwhile ambition or if instead, teachers should rather refrain from an extended uptake of technology. Hence, the first part of the paper established the theoretical preliminaries in order to provide the reader with the necessary understanding of the subject matter. Firstly, light was shed on the theoretical definition of Computer-Assisted Language Learning and it was discussed how this concept has changed in the course of the last 40 years. Subsequently, it was deemed

necessary to elaborate on the wider issue of second language acquisition theory in order to demonstrate CALL's conceptual fundaments. Thus, it could be shown that digitalized learning proves to be the logical development of the prevalent language learning theory which has its origins in the input and output hypothesis as well as major learning theories and psychological assumptions in terms of learner differences. In addition, previous studies in the field of CALL as well as possible assets and drawbacks were examined, thus providing supplemental information on the potential of computers in the language classroom. Consequently, the application of computers appeared highly promising, although it also became evident that its ultimate success is highly dependent on the teacher's motivation, effort and expertise. Accordingly the focus shifted from theory to practice with a particular emphasis on computer-assisted grammar instruction. Thus, initially, a closer look was taken on its theoretical guidelines which yield a strong link to the underlying principles of the traditional pen-and-paper approach. At the same time, though, it could be shown that this alone is not sufficient and that instead, additional considerations need to be taken into account. Thus, interaction and feedback as well as Puentedura's SAMR model (2009) and Strasser's taxonomy of educational applications (2016) were presented as the major pillars that ensure an effective implementation of CALL. Subsequently, these practical considerations were extended with an outline of actual application possibilities. In this regard, the paper presented the difference between the flipped, blended and gamified classroom and likewise exhibited an extensive selection of websites and online tools that prove beneficial for the occasional use of technology. In this way it was possible to provide the reader with practical insights and to show, how technology is able to support all stages of the learning process. Subsequently, the 2nd part of the paper then intended to explore whether the described potential applies equally to the Austrian EFL context. For this purpose, an empirical study at a secondary school in Linz was conducted which aimed at a direct comparison of computer-assisted with traditional grammar instruction. Thus, a mixed-methods approach that included pre- and post-questionnaires and tests was selected in order to enable an evaluation of its potential not only with regard to students' performances but likewise their attitudes. In this way, it was possible to obtain a more holistic view and to draw more multi-faceted conclusions.

In fact, it was revealed that the application of computers is, though with certain reservations, indispensible in the language classroom. The paper shows that the strength of CALL lies more in the revision than the presentation of grammar due to the fact that at

the primary phase, students require more teacher guidance whereas in subsequent phases, serving a wider range of learning styles and enriching learning with a higher level of enjoyment is more important. Additionally, the study displayed that over the long term CALL clearly holds the potential to change and improve students' attitudes towards English and grammar acquisition which manifests in an increase of students' motivation, effort and commitment. Along these lines it was reasoned that a blended learning approach that combines face-to face with digitalized learning phases would prove most beneficial. At the same time, however, given that this was only a small-scale study, it must be noted that based on these findings, any generalized suggestions and implications for future teaching practice are only possible to a limited extent. It can therefore be concluded that the present paper revealed highly interesting and valuable insights into the large potential of CALL, yet future studies would need to further examine this fascinating issue and expand the investigations in order to produce irrefutable evidence and formulate general recommendations.

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Appendix 1

Appendix 1 displays the selected collection of worthwhile websites and their respective hyperlinks.

Blendspace - https://www.tes.com/lessons

Blogger - https://www.blogger.com/

British National Corpus - http://www.natcorp.ox.ac.uk/

Capzles - http://www.capzles.com/

Corpuseye - http://corp.hum.sdu.dk/cqp.en.html

Edmodo - https://www.edmodo.com/

EDpuzzle - https://edpuzzle.com/

Edufind - http://www.edufind.com/

Ego4u – https://www.ego4u.de/

ESL Basics - http://www.eslbasics.com/

Etherpad - http://etherpad.org/

Facebook - https://www.facebook.com/

FutureMe - https://www.futureme.org/

Glogster - https://www.glogster.com/

GoConqr - https://www.goconqr.com/de

Google Docs - https://www.google.at/intl/de/docs/about/

Grammar Bytes - http://chompchomp.com/

Helbling e-zone - https://www.helbling-ezone.com/

Kahoot - https://kahoot.it/#/

LearnEnglish - http://learnenglish.britishcouncil.org/en/

LearnEnglish Teens - http://learnenglishteens.britishcouncil.org/

Learningapps - http://learningapps.org/

MailVU - http://mailvu.com/

MindMeister - https://www.mindmeister.com/de

Padlet - https://de.padlet.com/

PiratePad - http://piratepad.net/front-page/

Poll Everywhere - https://www.polleverywhere.com/

Prezi - https://prezi.com/

QuesTanja - http://www.questanja.org/

Questgarden - http://questgarden.com/

Quizalize - https://www.quizalize.com/

Quizlet - https://quizlet.com/

SchoolTube - http://www.schooltube.com/

Screencast-O-Matic - https://screencast-o-matic.com/home

Skype – http://www.skype.com/

Storybird – https://storybird.com/

Superlame - http://www.superlame.com/

Survey Monkey - https://de.surveymonkey.com/

TeacherTube - http://www.teachertube.com/

Ted - http://www.ted.com/

Textalyser - http://textalyser.net/

ThingLink - https://www.thinglink.com/

Twitter - https://twitter.com/?lang=en

Vocaroo - http://vocaroo.com/

Voki - http://www.voki.com/

Voxopop - http://www.voxopop.com/

Wikispaces - https://www.wikispaces.com/

Wordle - http://www.wordle.net/

Wordpress - https://de.wordpress.org/

Zunal - http://zunal.com

Appendix 2

Lesson Plan – Group A (CALL Lesson)

Rough time frame	Procedure	Inter-action format	Media/Material
3’	Greeting/General instructions	T	-
Max. 20’	Diagnostic Test & Pre-Questionnaire	S	Test booklet 1
5’	**Presentation Phase:** Revision Cond 1+2 Students watch a video clip that revises Cond. 1&2 and complete missing information on formation and use on their grammar handouts		Video clip: https://www.youtube.com/watch?v=Hv0T9zaYutA Grammar handout
15’	**Practice/Production Phase:** Practicing Cond. 1-“Election game” Students imagine a short election speech for becoming the class’ representative Therefore, they create a “Voki” avatar and state in 2 sentences what will happen if the class votes for them Plus, they post their finished Voki on the provided Googledocs page (in the subsequent lesson, students vote for the best candidate)	S	Model idea: http://www.voki.com/pickup.php?scid=11973366&height=267&width=200 voki www.voki.com Googledocs https://docs.google.com/document/d/17sXKTmNmo_cqvDACIDmEk_qWy95f0ngv4lAR9uAk8A4/edit
HW	**Practice/Production Phase:** Practicing Cond. 2-“The box” Based on the fictional situation taken from the movie “The box”, students reflect about how they would react and post their thoughts on a collaborative wall + They are encouraged to react to their colleague’s thoughts	S	Padlet page http://de.padlet.com/ines_neubauer/8q24nyvxwsj8

2nd lesson			
15’	**Presentation Phase**: Conditional 3 – Video “The surprise Party” Students watch a short video and should try to detect a rule for Cond.3. Additionally, they can draw on the provided deductive grammar explanations if needed Subsequently, they again complete their grammar handouts	S	Video clip http://learnenglishteens.britishcouncil.org/grammar-vocabulary/grammar-videos/third-conditional?utm_source=facebook&utm_medium=social&utm_campaign=bc-learnenglishteens
15‘	**Practice Phase**: Cond. 3 After working out how the Cond. 3 works in theory, students proceed to practice it by completing 3 (matching, word order and gap fill) exercises Additionally, they are encouraged to repeat any activity if necessary	S	Exercises http://learnenglishteens.britishcouncil.org/grammar-vocabulary/grammar-videos/third-conditional?utm_source=facebook&utm_medium=social&utm_campaign=bc-learnenglishteens
10’	**Production Phase**: Cond. 3 – Chain of if-sentences Students collaboratively write a chain story by turning the previous main clause into an if-clause and finding a new ending for their sentences	S	PiratePad http://piratepad.net/SGEahrwYGp
HW	**Practice Phase**: Cond. 1, 2, 3 To link Conditional sentences with student’s environments, they are asked to detect instances of Conditional sentences in (pop) songs and to post them on a collaborative Padlet wall	S	Padlet http://de.padlet.com/ines_neubauer/p81m3q2crzm5
3rd Lesson			
10’	**Practice Phase:** Cond. 1, 2, 3 – Interactive exercise Students allocate sentences to four possible categories (Cond I, II or III or incorrect	S	Learningapps http://learningapps.org/183350

	sentence)		
10’	**Production Phase:** Cond. 1, 2, 3 – Vocaroo Students are confronted with different, imaginary situations and record what they will do/would do/would have done Subsequently, these short recordings are sent to the teacher who provides some feedback	S	Vocaroo http://vocaroo.com/
10’	**Closure:** Kahoot Activity Revision of mixed conditionals by means of a Kahoot-quiz	S	Kahoot https://kahoot.it/
Max. 20’	Achievement test & Post-Questionnaire	S	Test booklet 2

Lesson Plan – Group B (Traditional Lesson)

Rough time frame	**Procedure**	**Inter-action format**	**Materials**
5’	Greeting/General instructions	T	-
Max. 20’	Diagnostic Test & Pre-Questionnaire	S	Test booklet 1
10’	**Presentation Phase:** Revision of Cond. 1&2 Students collaboratively, with the help of the teacher, revise Cond. 1 & 2 and complete their grammar handouts	T-S	blackboard Grammar-handout (Handout I)
10’	**Practice Phase:** Cond. 1&2 In pairs, students discuss how they would react in the given situations and report their results back to class	Pairwork	Handout II: “What would you do if…?”

10’	**Presentation Phase:** Cond. 3 – Transcript “Surprise Party” Students read the dialogues and find instances of Cond. 3. Subsequently, they try to deduce its rule and complete their grammar sheets	class	Handout III: Dialogue “Surprise Party”
HW	**Practice Phase:** Cond. 3 Gap fill activity	Individual	Handout IV: “Gap fill exercise”
	2nd Lesson		
15’	Greeting/Comparison of homework **Practice Phase:** Cond. 3 Activity 1: Find your partner – Students receive sentence halves and need to find their partner Activity 2: Scrambled sentences – Students bring words back into the right order (e.g. If-Jack-had-studied-he would-have-passed-the-exam)	Class Groups of 4	Sentence halves Scrambled sentences
15’	**Production Phase**: Cond. 3- chain of if-sentences In groups, students write a chain story by turning the previous main clause into an if-clause and finding a new ending for their sentences. They then proceed to the next poster	groups of 4	4 Posters
10’	**Practice Phase:** Cond. 1, 2, 3 – Tandem exercise Students alternately decide whether the sentences can be classified as a Cond. 1, 2, 3 or incorrect sentence	Pairwork	Handout V: Tandem
HW	**Practice Phase:** Cond. 1, 2, 3 To link Conditional sentences with students’ environments, they are asked	Individual	-

	to detect instances of Conditional sentences in authentic/contextualized discourse		
3rd Lesson			
15’	Comparison of homework **Production Phase**: Cond. 1, 2, & 3 Students are confronted with different, imaginary situations and write short statements about what they will do/would do/would have done Subsequently, these statements are collected and read out and students have to guess who wrote it	S	Handout VI: “What if…?”
10’	**Closure:** King/Queen of Conditionals Revision of mixed conditionals by means of a Quiz	S	-
Max. 20’	Achievement test & Post-Questionnaire	S	Test booklet 2

Appendix 3

Lieber Schüler, liebe Schülerin!

Vielen Dank, dass du dich dazu bereit erklärt hast, an meiner Studie teilzunehmen. Selbstverständlich ist meine Erhebung vollkommen anonym. Dennoch würde ich dich bitten, den Test sowie den anschließenden Fragebogen gewissenhaft auszufüllen um die Ergebnisse nicht zu verfälschen.

1. Bitte kreuze den ersten Buchstaben des Vornamens deines Vaters an (z.B. **A**nton, **B**ernhard, **H**ans-Thomas,..)

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
P	Q	R	S	T	U	V	W	X	Y	Z	Ä	Ö	Ü	ß

2. Bitte kreuze den ersten Buchstaben des Vornamens deiner Mutter an (z.B. **A**nna, **B**eate, **J**utta,..)

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
P	Q	R	S	T	U	V	W	X	Y	Z	Ä	Ö	Ü	ß

3. Bitte kreuze den Tag deines Geburtsdatums an (z.B.: Geburtstag am 7. Jänner = **7**, Geburtstag am 12. Mai = **12**,…)

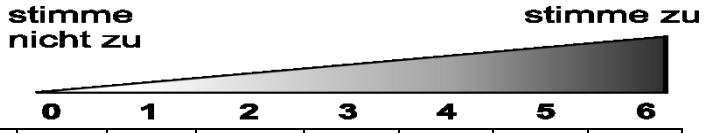
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

1. **Geschlecht:** männlich ☐ weiblich ☐

2. **Welche Note hattest du in Englisch im Jahreszeugnis der 3. Klasse**? _____

3. **Hast du zu Hause Zugang zu einem Computer/Laptop?**
   nein ☐
   ja, aber ich muss ihn mit anderen Familienmitgliedern teilen ☐
   ja, ich habe einen eigenen Computer/Laptop ☐

4. **Kreuze nun bitte ohne lange nachzudenken an, wie stark du den folgenden Aussagen zustimmst. Es gibt hierbei keine richtigen oder falschen Antworten!**



Englischlernen macht Spaß							
Im Englischunterricht bevorzuge ich Aufgaben, die ich alleine lösen kann							
Ich höre im Englischunterricht am Liebsten zu							
Grammatiklernen ist langweilig							
Ich möchte noch besser in Englisch werden							
Im Englischunterricht bevorzuge ich Sprechübungen							
Ich lasse mich im Englischunterricht leicht von anderen Dingen ablenken (z.B. Handy, SitznachbarIn, etc.)							
Ich fühle mich für meinen Lernerfolg selbst verantwortlich							
Ich nehme aktiv am Englischunterricht teil und zeige oft auf							
Ich freue mich auf die nächste Englischstunde							
Englisch zu lernen ist sinnvoll							

Nun bitte ich dich, zu zeigen, wie gut du den Conditional 1 & 2 beherrscht:

1. **Write one answer sentence per question**

If I win a lot of money, I_____

If I meet my favourite pop star, I_____

If I were an animal, I_____

If the weather is good tomorrow, I_____

If I lost my key yesterday, I_____

2. **When do you use the Conditional 1?**

_____

3. **Write the correct sentences**

I don't like Sally. I don't talk to her.

If I liked Sally, I'd talk to her._____

She is ill. She isn't at school.

If_____

They're on holiday. They aren't here today.

If_____

He doesn't have a computer. I don't send him emails.

If_____

4. **Complete the sentences**

If it _____ (to rain), I will stay at home.

Our teacher will be happy if we _____(to learn) the poem by heart.

If they had enough money, they _____ (to buy) a new car.

We _____ (to pass) the exam if we studied harder.

She would get 300 pounds if she _____(to sell) her old car.

If he _____(to carry) the rucksack, I'd pull the suitcase.

If you don't read these articles, you _____(not/to know) the facts about Africa.

You would get very wet if you _____(to walk) in this rain.

1. **Which words/phrases can be used in a Conditional 1?**

O had played	O sang
O play	O sing
O played	O will sing
O plays	

2. **When do you use Conditional 2?**

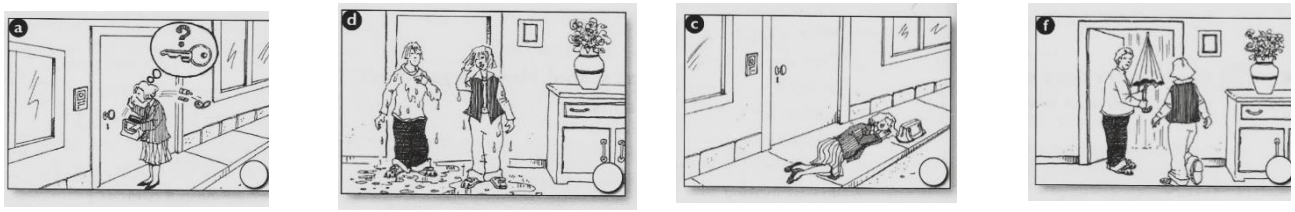
_____

3. **Write a sentence**

Chris went for a walk. He didn't take an umbrella. It started raining and he got wet.
If_____

Alex and Anna decided to go to a restaurant. They didn't book a table. When they arrived, the restaurant was full and they didn't get a table.
If_____

4. **Match the sentences and the pictures**



1. If Jane finds her key, she'll get into her house.
2. If Jane had found her key, she would have got into her house.
3. If it hadn't rained, they wouldn't have got wet.
4. If they didn't have an umbrella, they would get wet.

5. **Complete the sentences**

If breakfast isn't ready, I _____(go) without it.

He would never leave the house if he sun _____(not/shine) today.

She _____(not/stay) if he hadn't asked her.

It would be very nice of you if you _____ (go) to see him.

Would he marry her if she _____(not/be) so rich?

If I prepare some tea,_____ (you/have) a cup with me.

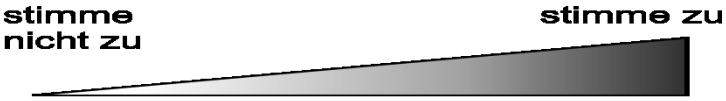
If I had known his name, I _____(not/ask).

1. **Write sentences of your own**

Conditional 1:_____

Conditional 3: _____

Kreuze nun bitte ohne lange Nachzudenken an, wie sehr du den folgenden Aussagen zustimmst:



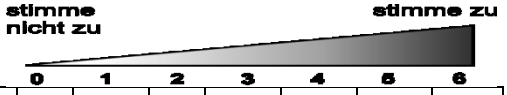
Englischlernen macht Spaß							
Grammatiklernen ist langweilig							
Englischlernen ist sinnvoll							
Ich möchte noch besser in Englisch werden							
Ich freue mich auf die nächste Englischstunde							
Ich habe mich in den letzten 3 Englischstunden von anderen Dingen ablenken lassen (z.B. Handy, surfen im Internet, etc.)							
Ich habe mich in den letzten 3 Englischstunden für meinen Lernerfolg selbst verantwortlich gefühlt							
Ich hätte in den letzten 3 Englischstunden gerne mehr gesprochen							
Ich hätte in den letzten 3 Englischstunden gerne mehr zugehört							
Ich hatte in den letzten 3 Englischstunden technische Schwierigkeiten							
Die Grammatik in meinem eigenen Tempo zu lernen war wichtig für meinen Erfolg							
Ich habe nun das Gefühl, den Conditional 1gut zu beherrschen							
Ich habe nun das Gefühl, den Conditional 2 gut zu beherrschen							
Ich habe nun das Gefühl, den Conditional 3 gut zu beherrschen							

Bitte bewerte nun die einzelnen Aufgaben separat. Wenn du dich an eine Aufgabe nicht mehr erinnern kannst, kreuze bitte nichts an.

Aufgabe 1 (youtube video zu Conditional 1 & 2)

Diese Aufgabe hat Spaß gemacht							
Ich habe mich bei dieser Aufgabe sehr bemüht.							
Ich war nervös während dieser Aufgabe.							
Diese Aufgabe war wichtig um die Grammatik besser zu beherrschen.							

Aufgabe 2 („election game"; voki)



Diese Aufgabe hat Spaß gemacht							
Ich habe mich bei dieser Aufgabe sehr bemüht.							
Ich war nervös während dieser Aufgabe.							
Diese Aufgabe war wichtig um die Grammatik besser zu beherrschen.							

Aufgabe 3 („The box" – posting your thoughts)

Diese Aufgabe hat Spaß gemacht							
Ich habe mich bei dieser Aufgabe sehr bemüht.							
Ich war nervös während dieser Aufgabe.							
Diese Aufgabe war wichtig um die Grammatik besser zu beherrschen.							

Aufgabe 4 (video zu Conditional 3)

Diese Aufgabe hat Spaß gemacht							
Ich habe mich bei dieser Aufgabe sehr bemüht.							
Ich war nervös während dieser Aufgabe.							
Diese Aufgabe war wichtig um die Grammatik besser zu beherrschen.							

Aufgabe 5 (3 Übungen zu Cond. 3)

Diese Aufgabe hat Spaß gemacht							
Ich habe mich bei dieser Aufgabe sehr bemüht.							
Ich war nervös während dieser Aufgabe.							
Diese Aufgabe war wichtig um die Grammatik besser zu beherrschen.							

Aufgabe 6 (chain story)

Diese Aufgabe hat Spaß gemacht							
Ich habe mich bei dieser Aufgabe sehr bemüht.							
Ich war nervös während dieser Aufgabe.							
Diese Aufgabe war wichtig um die Grammatik besser zu beherrschen.							

Aufgabe 7 (songs with if-sentences)

Diese Aufgabe hat Spaß gemacht							
Ich habe mich bei dieser Aufgabe sehr bemüht.							
Ich war nervös während dieser Aufgabe.							
Diese Aufgabe war wichtig um die Grammatik besser zu beherrschen.							

Aufgabe 8 (deciding between Cond 1, 2, 3 or wrong)

Diese Aufgabe hat Spaß gemacht							
Ich habe mich bei dieser Aufgabe sehr bemüht.							
Ich war nervös während dieser Aufgabe.							
Diese Aufgabe war wichtig um die Grammatik besser zu beherrschen.							

Aufgabe 9 (Kahoot-quiz)

Diese Aufgabe hat Spaß gemacht							
Ich habe mich bei dieser Aufgabe sehr bemüht.							
Ich war nervös während dieser Aufgabe.							
Diese Aufgabe war wichtig um die Grammatik besser zu beherrschen.							

Vergleiche nun wie du normalerweise Grammatik lernst mit den letzten beiden Stunden. Was macht dir mehr Spaß, mit welcher der beiden Methoden lernst du mehr/besser, wie würdest du dir den Grammatikunterricht in Zukunft wünschen?
+Begründungen

_____

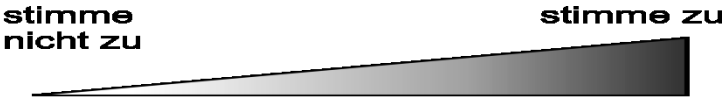
_____

_____

Möchtest du mir noch etwas mitteilen?_____

Vielen, vielen Dank für deine Hilfe!!

Kreuze nun bitte ohne lange Nachzudenken an, wie sehr du den folgenden Aussagen zustimmst:



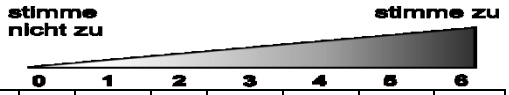
Englischlernen macht Spaß							
Grammatiklernen ist langweilig							
Englischlernen ist sinnvoll							
Ich möchte noch besser in Englisch werden							
Ich freue mich auf die nächste Englischstunde							
Ich habe mich in den letzten 3 Englischstunden von anderen Dingen ablenken lassen (z.B. Handy, SitznachbarIn, etc.)							
Ich habe mich in den letzten 3 Englischstunden für meinen Lernerfolg selbst verantwortlich gefühlt							
Ich hätte in den letzten 3 Englischstunden gerne mehr gesprochen							
Ich hätte in den letzten 3 Englischstunden gerne mehr zugehört							
Ich habe nun das Gefühl, den Conditional 1 gut zu beherrschen							
Ich habe nun das Gefühl, den Conditional 2 gut zu beherrschen							
Ich habe nun das Gefühl, den Conditional 3 gut zu beherrschen							
Ich hätte mehr Zeit gebraucht um die Grammatik besser zu beherrschen							

Bitte bewerte nun die einzelnen Aufgaben separat. Wenn du dich an eine Aufgabe nicht mehr erinnern kannst, kreuze bitte nichts an.

Aufgabe 1 (gemeinsames WH des Cond. 1 & 2)

Ich habe diese Aufgabe gerne gemacht							
Ich habe mich bei dieser Aufgabe bemüht							
Diese Aufgabe hat gezeigt, das Englischlernen Spaß macht							
Diese Aufgabe war wichtig um die Grammatik besser zu beherrschen							

Aufgabe 2 (Partnerarbeit: Diskussionsfragen)



Ich habe diese Aufgabe gerne gemacht							
Ich habe mich bei dieser Aufgabe bemüht							
Diese Aufgabe hat gezeigt, das Englischlernen Spaß macht							
Diese Aufgabe war wichtig um die Grammatik besser zu beherrschen							

Aufgabe 3 (Herausfinden der Regeln für Cond. 3)

Ich habe diese Aufgabe gerne gemacht							
Ich habe mich bei dieser Aufgabe bemüht							
Diese Aufgabe hat gezeigt, das Englischlernen Spaß macht							
Diese Aufgabe war wichtig um die Grammatik besser zu beherrschen							

Aufgabe 4 (HÜ - richtige Form einsetzen)

Ich habe diese Aufgabe gerne gemacht							
Ich habe mich bei dieser Aufgabe bemüht							
Diese Aufgabe hat gezeigt, das Englischlernen Spaß macht							
Diese Aufgabe war wichtig um die Grammatik besser zu beherrschen							

Aufgabe 4b (Satzteile – Partner finden)

Ich habe diese Aufgabe gerne gemacht							
Ich habe mich bei dieser Aufgabe bemüht							
Diese Aufgabe hat gezeigt, das Englischlernen Spaß macht							
Diese Aufgabe war wichtig um die Grammatik besser zu beherrschen							

Aufgabe 5 (Gruppenarbeit: Satzteile ordnen)

Ich habe diese Aufgabe gerne gemacht							
Ich habe mich bei dieser Aufgabe bemüht							
Diese Aufgabe hat gezeigt, das Englischlernen Spaß macht							
Diese Aufgabe war wichtig um die Grammatik besser zu beherrschen							

Aufgabe 5 ("chain story" Geschichte fortsetzen)

Ich habe diese Aufgabe gerne gemacht							
Ich habe mich bei dieser Aufgabe bemüht							
Diese Aufgabe hat gezeigt, das Englischlernen Spaß macht							
Diese Aufgabe war wichtig um die Grammatik besser zu beherrschen							

Aufgabe 7 (Tandem)

Ich habe diese Aufgabe gerne gemacht							
Ich habe mich bei dieser Aufgabe bemüht							
Diese Aufgabe hat gezeigt, das Englischlernen Spaß macht							
Diese Aufgabe war wichtig um die Grammatik besser zu beherrschen							

Aufgabe 6 (HÜ - Beispiele für Konditionalsätze finden)

Ich habe diese Aufgabe gerne gemacht							
Ich habe mich bei dieser Aufgabe bemüht							
Diese Aufgabe hat gezeigt, das Englischlernen Spaß macht							
Diese Aufgabe war wichtig um die Grammatik besser zu beherrschen							

Aufgabe 8 (Queen/King of Conditionals)

Ich habe diese Aufgabe gerne gemacht							
Ich habe mich bei dieser Aufgabe bemüht							
Diese Aufgabe hat gezeigt, das Englischlernen Spaß macht							
Diese Aufgabe war wichtig um die Grammatik besser zu beherrschen							

Wie lernst du eine neue Grammatik am besten/liebsten?

_____

Lernst du eine neue Grammatik manchmal mit Hilfe des Computers/Internets (Grammatikvideos, online-Grammatikaufgaben, Software mit Übungen etc)? Wenn ja, was genau verwendest du und wieso?

_____

_____

Möchtest du mir noch etwas mitteilen?_____

Vielen, vielen Dank für deine Hilfe!

Zusammenfassung

Kaum ein Bereich unseres täglichen Lebens verzichtet noch auf den Einsatz moderner Technologien. Lediglich in den Fremdsprachenunterricht konnten sie bislang, abseits von PowerPoint Präsentationen oder Filmvorführungen, kaum Einzug halten. Die vorliegende Diplomarbeit beschäftigt sich daher mit der Frage, ob sich die Verwendung des Computers positiv auf den Grammatikunterricht im Fach Englisch auswirken kann und welche Voraussetzungen dazu unerlässlich sind. Folglich beschäftigt sich der erste Teil der Arbeit mit den theoretischen Grundlagen und zeigt dabei auf, dass, basierend auf den Erkenntnisse der Fremdsprachenerwerbstheorien, der Einsatz des Computers die einzig logische Weiterentwicklung des Fremdsprachenunterrichts ist. Dementsprechend liegt der weitere Fokus der Arbeit auf der praktischen Umsetzung eines Computer-gestützten Unterrichts, wobei mögliche Anwendungsbeispiele und grundlegende theoretische Grundsätze erörtert werden. Um schließlich den Bogen von der Theorie in die Praxis zu spannen, widmet sich der zweite Teil der Arbeit der Frage, in wie weit dieses theoretische Potential eines digitalisierten Unterrichts in der Praxis tatsächlich nachweisbar ist. Zu diesem Zweck wurde eine Studie an einer österreichischen AHS durchgeführt, im Zuge derer untersucht wurde, ob, verglichen mit traditionalen Unterrichtsmethoden, der Einsatz des Computers tatsächlich zu einem Leistungsanstieg sowie einer Einstellungsverbesserung führen kann. In Folge dessen zeigte sich, dass der Computer zwar keineswegs als Allheilmittel verstanden werden soll, ein schüler-zentrierter Unterricht mit dem Ziel einer bestmöglichen Förderung jedes einzelnen Schülers aber auch nicht ohne ihn auskommen kann. Konkret lassen die Ergebnisse darauf schließen, dass langfristig gesehen, hybride Lernformen, welche online Lernphasen mit traditionellen Unterrichtsphasen verbinden, den Fremdsprachengrammatikunterricht am nachhaltigsten revolutionieren und verbessern können.