| **RESEARCH ARTICLE**

Effectiveness of a Virtual Laboratory and E-Tandem Learning to Develop King Khalid University's Students' Grammaring Skills

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| **ABSTRACT**

This study investigates the impact of using virtual laboratory and e-tandem learning to promote grammar skills among King Khalid University students studying an intensive English course. The study is based on a quantitative approach and uses pre-test and post-test design in the form of oral tests to collect data. The study found that most KKU students use virtual laboratories, but few communicate with other people worldwide to practice English. It also shows reasonable progress in grammaring skills in form and meaning. However, the use is not performed appropriately due to various cultural and linguistic actors' studies recommending that grammar be taught as a tool rather than an object. Thus, it should be taught functionally with consideration of use. Moreover, students should be encouraged to use social media to communicate with people worldwide and practice English.

1. Introduction

Many universities worldwide have adopted new instruction paradigms to aid their students develop specific abilities and skills matching the worldwide vision aligned to the development of measurable descriptions of professional knowledge, skills, behaviors and values among tertiary students required in the future (Guskey, 2005). Thus, the English Language Center at King Khalid University adopts artificial intelligence, technology and virtuality to promote students' grammaring skills, competency, and communicative competencies. As a result, virtual laboratory, grammaring and e-tandem learning are focused on instructing KKU freshmen studying English as an intensive English course using virtual laboratory and tandem learning, enabling them to communicate with other students worldwide. In addition, simulations and avatars were used in teaching and learning to promote their communicative and grammaring skills.The study uses pre-test and post -test design in the forms of oral test to collect data .Pan and Pan (2011) proposed Holistic Scoring and Analytic Scoring procedures which were adopted in this study.Thus, a rubric is designed to evaluate participants' performance in the pre and post-tests according to the three dimensions of grammaring , form, meaning and use.

1.1 Problem Statement

Most of the freshmen at King Khalid University studying an English intensive course tend to communicate in Arabic extensively and generate an English model based on translation of the mother tongue in terms of interlanguage. In addition, they lack practicing the English language with native speakers in natural communicative context. They also focus on grammar and lexis, so

they concentrate on memorizing the grammatical rules and many vocabulary. Furthermore, they do not focus on the functional aspect of the English language when communicating because they ignore grammar and its dimensions.

1.2 Questions of the Study

1- How far do virtual laboratory and e-tandem learning in developing grammaring skills?

2- To what extent do students use grammar appropriately by processing grammatical rules to create messages through grammaticalizing?

3- Do students comprehend that grammar is not the transmission of knowledge but enabling students to use grammatical structures meaningfully?

1.3 Research Rationale

This study aims to illustrate the effects of virtual laboratory and e-tandem learning on developing grammaring skills, which is seen as a fifth skill entailing the ability to use grammar structures accurately, meaningfully, and appropriately by processing language learners use grammar to create messages through grammaticalizing or adding grammar to a sequence of words to create finer meaning distinctions , among KKU freshmen studying an intensive English language course. The study paradigm is based on the notion that the purpose behind teaching grammar is not the transmission of knowledge but enabling students to use grammatical structures accurately, meaningfully, and appropriately.

2. Review of Literature

[1]2.1 Virtual Reality(VR) and King Khalid University

Virtual Reality(VR) technology has been widely known for supporting lifelong education for individuals along with a flexible workforce. Virtual environment becomes apart from the technological aspects that Virtual Reality embraces and is used for the optimized realization of the learning process which involves a high degree of interactivity of the users both with other users and with the objects available in the virtual environment (Anderson, 2010). King Khalid University as one of the pioneers universities, adopted technology and artificial intelligence to promote teaching and learning process; in addition to the aspiration and goals of KKU to be on the track of top world ranked universities. Hence, most of King Khalid University's colleges are equipped with computer laboratories so that learners can become familiar with the information and the new technologies that arise. In addition, a network was established to connect the colleges to the Internet and provide educational network services.J, Buono (2004) proposed that a networked virtual environment functions as sub serve the learning process in two ways: creation of Virtual Courses: Each trainee is represented by a 3D entity with human-like characteristics and through this representation, s/he can collaborate with the other trainees as well as attend the tutor during the session of the Virtual Course, and simulation of laboratories: In many cases the creation of real laboratories for special kind of courses is limited due to practical or economical constraints.

2.1.1 Virtual Laboratory at KKU

The term virtual laboratory consists of two words -a laboratory is most understood as a place equipped for scientific research, experiments, and testing. In the past, a laboratory was associated with a work site containing a room for a complex of buildings at a single location. At universities, laboratory also can mean either a practical component accompanying a lecture, or a classroom where practical demonstrations and exercises occur. Scientific laboratories particularly in engineering, physics, chemistry, and medicine are characterized by a controlled uniformity of procedures and conditions such as cleanliness, temperature, humidity as well as by sophisticated instruments necessary for advanced studies(Nagargoje, and Prachi,2017) .The[1] Virtual Laboratories at KKU aims at promoting teaching process, learning process, simulating a set of physics and chemical experiments that could not be easily executed in real laboratories. Moreover, King Khalid University aims to maintain its adaptation of artificial intelligence as a

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[1] *1-Virtual Exchange (VE) is a practice, supported by research, that consists of sustained, technology-enabled, people-to-people education programmed or activities in which constructive communication and interaction takes place between individuals or groups who are geographically separated and/or from different cultural backgrounds, with the support of educators or facilitators. Virtual Exchange combines the deep impact of intercultural dialogue and exchange with the broad reach of digital technology. Virtual Exchanges are a bottom-up initiative, participating organizations are free to choose the topics on which they will focus, but proposals must demonstrate their expected impact in relation to one or more of the objectives mentioned above (see also 'Expected impact' section below). Gender aspects should be considered as needed, depending on the projects' scope and themes (e.g. by introducing gender sensitivity aspects in the trainings). Special attention needs to be given to the inclusion of socially and economically vulnerable people and persons unable to apply for physical mobility.*

project to be implemented in all university colleges. Virtual laboratories provide several advantages in the field of education such as: accessing to educational and research material which is facilitated for both students and professionals, reduction in travel time leads to productivity enhancements, using virtual reality technology to support e-learning, establishing scientific standard practical experimentation (Buckman, 2000). Virtual laboratories' structure in terms of its components, their interconnections, and the interfaces and operations offered by these components require a database, a platform that supports multi-user environments and simulations, a web server and KKU network which connects the system with the participants' clients.

The system's database stores the information about students such as their name and password, their profiles, their role in the system that could be either tutor or learner, and the avatar they have selected for their representation in the virtual environment. The server, which is the multi-user platform, provides and maintains a consistent view of the virtual laboratories and of the objects it shares. In addition, it provides communication and collaboration tools such as text and audio chat and application sharing to simulate the interactions of the participants more realistically.

The web server can host the 3D training areas where simulations take place, the virtual laboratories' client-side files and the users' avatars (Mohammadzadeh, AliReza, and Salim ,2022). Furthermore, the web server stores and executes the scripts to obtain and manipulate user data from the database. The connection between the client's browser and the platform is materialized over the KKU network, an advanced educational network that connects all school computer laboratories and creates an educational intranet (Lucas, 2022).
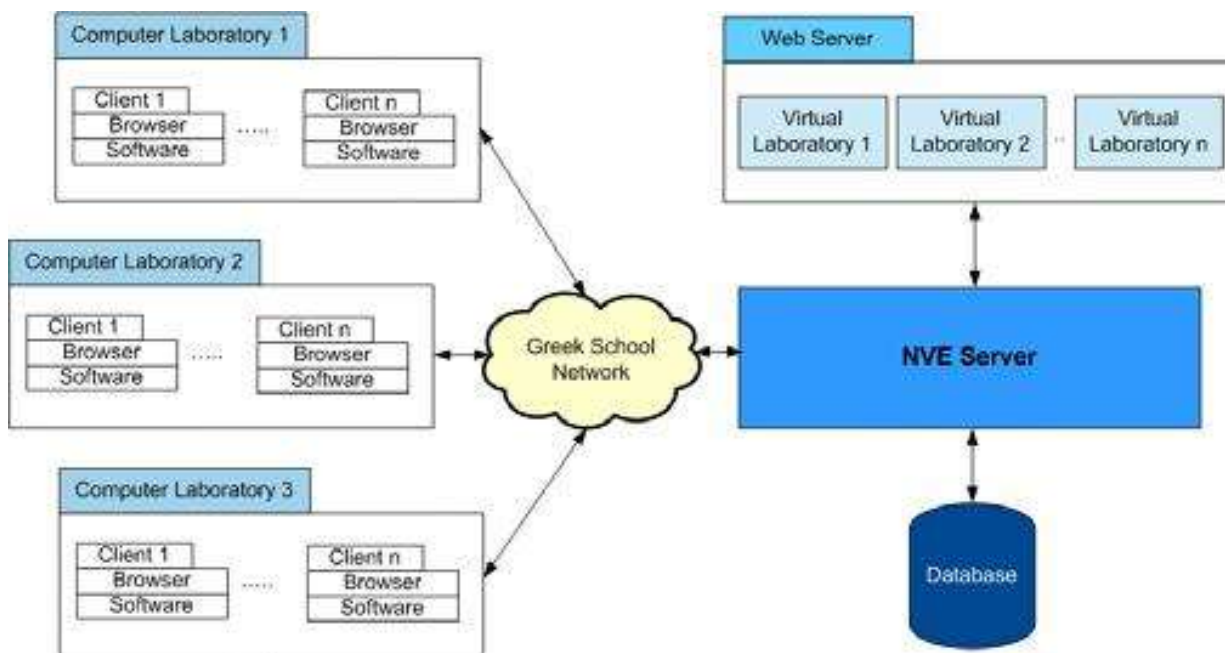

Figure 3.   Proposed Architecture

The main goal of an educational virtual laboratory is to provide all simulations, tools, applications, and conditions necessary to maintain efficient experimentations. Virtual laboratories involve users represented by three dimensions: humans. They can navigate and conduct experiments by interacting with the simulated equipment and collaborating with the other participants. The functionality of a platform should support : creation of virtual laboratories, where the placement and manipulation of objects that will be used to the experiments will be possible. Representation of the users, both tutors and learners through human like entities, called avatars, creation of dynamic characteristics and physical attributes to the objects as gravity and reflection and definition of the possible ways of communication. Buchanan(2022) stated that the functionality above can supply a wide range of the requirements of the learning process in a real laboratory. Such an environment could support learning by experience even in cases that either the lack of resources for creating real laboratories or the deficiency of available spaces constrain the learning process. The benefits of such an approach are the following: significantly reduced cost for the composition of a school laboratory, as mistakes of both tutors and learners cannot be proven catastrophic for both the lab and the participants' health, the interaction with the virtual environment motives the users, especially the learners more concerning the real process, this idea allows the simulation of Laboratories that could only exist in computers and could not be realized in real conditions (Shi, Cheng, Mehrdad Nourani, Gopal Gupta, and Lakshman Tamil(2011).
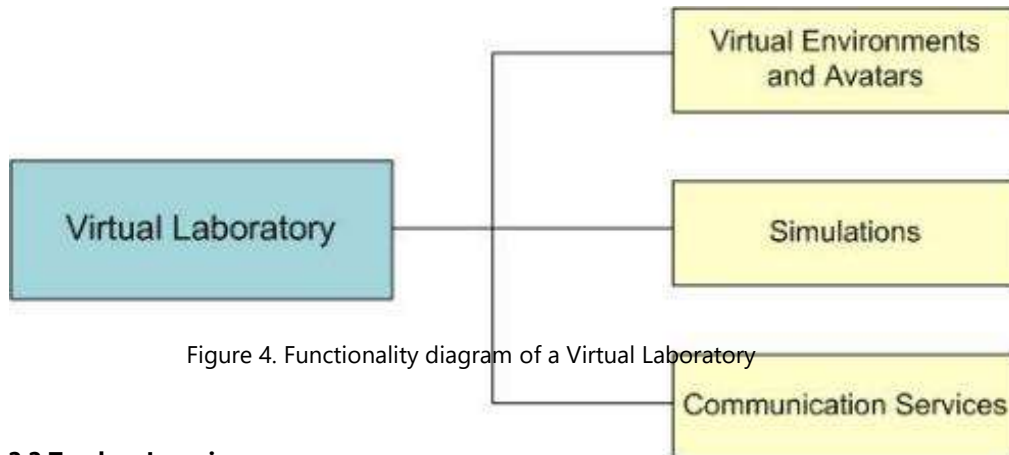
Figure 4. Functionality diagram of a Virtual Laboratory

2.2 Tandem Learning

Kötter, (2002defined tandem learning as when learning a language in tandem, two people with different mother tongues work together to learn from each other." There are two important principles in tandem learning, "reciprocity" and "learner autonomy". Reciprocity is a relationship in which two partners help each other to progress in his/her learning ability and skill, and to accomplish an individual goal. Learner autonomy is the ability to take control of one's own learning. Each of the tandem partners decides what he/she wants to learn, how and when, and what kind of help he/she would like from his/her partner. According to Belz (2003) tandem learning is effective in: improving second language proficiency, fostering learner autonomy, raising intercultural awareness and developing intercultural competence, increasing and maintaining language learning motivation, forming a sense of friendships, confidence in speaking a target language, and stimulating motivation to study abroad. Kötter (2002) identified ways in which learners improved their target language skills as a result of participation in MOO-based tandem exchanges: they learned lexical items used in the exchange, including some of their partner's typical expressions, and, importantly, raised their metacognitive awareness of the processes which language learning entails. In terms of acting as a resource for their partners, they provided lexical assistance and negotiated meaning at critical points. Importantly, Kötter's research revealed that the tandem learning partnership is an opportunity for learners to develop both their linguistic and metalinguistic skills. Subsequent research in other contexts, however, revealed that learners are not always equipped with a sufficiently strong understanding of the structure of their native languages to provide metalinguistic explanations, raising questions about how best to prepare such students for tandem exchanges (Little, D. (2001)..

[2]2.2.1 Historical Background of Tandem Learning

The historical development of [1]tandem learning dates back to the late 1960s in Germany and France after World War II. The Franco-German Youth Office was established so that two neighbors, Germany and France, where German youth and French youth exchanged each other's languages. After that, tandem learning was adopted for foreign workers in the early 1970s and for language schools in the late 1970s. In the mid-1980s, tandem learning was adopted in university helped by increasing mobility of students among institutions of higher education due to the intensifying movement toward European integration.

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[2] *While telecollaboration has long been heralded as having strong intercultural learning potential, and educators have assumed that engaging learners in exchanges with members of the target culture would produce a better understanding of both language and culture, research has tended to challenge these assumptions: breakdowns in communication are common and have been analyzed as relating to factors at the individual, classroom, and interaction level (O'Dowd and Ritter 2006). Importantly, Belz has argued that such tensions should not be seen as aspects that can or should be eliminated, but rather as "cultural rich–points that we want our students to explore" (2003, p. 87). Further research is needed into to what extent and in what ways online contact contributes to intercultural learning, and how that can be measured or assessed. Further research is also needed that explores the role of task type in promoting the learning of both language and culture online. The articulation between classroom activities and online participation throughout the online exchanges is another area worthy of further enquiry, as well as how this relates to other domains of language learning. Finally, the last two decades of research into tandem learning have revealed that while the ability to communicate and interact across linguistic and cultural boundaries is an important personal and professional asset, such interactions are also inherently complex, at times conflictual and potentially at variance with the expectations of participants. Understanding how individuals work with such complexity and with what may be at times problematic forms of engagement is a challenge of critical.*

When Germany was reunified in 1989 due to the political change of Eastern Europe, "International Tandem Day (Internationalen Tandem-Tagen)" was implemented in Switzerland for the first time (Kötter, 2002). Thus, the place to practice tandem learning at higher education institutions has been further developed. The earliest forms of tandem learning set up in the 1960s were conducted face-to-face, and the primary channel of communication was oral. At this stage, tandem learning did not receive much attention to organize language learning. However, the advent of the Internet meant that students could meet virtually to interact using different configurations of computer-mediated communication: synchronous forms include chat or videoconferencing and asynchronous modalities include email and discussion forums. Since the problem of limited access to authentic opportunities to use the target language has been an enduring challenge in language learning, this too stimulated research into the potential of email tandem language exchanges which allow learners to try out their developing second language with native speakers (O'Dowd, & Ritter,2006). The widespread practice, knowledge of tandem learning has accumulated, and its practical aspect was refined. The two principles, "reciprocity" and "learner autonomy" were established during practice. Furthermore,[1] "e-tandem," where partners communicate via the Internet, was implemented due to the rapid development, and spread of information technology since the 1990s. In particular, the International Email Tandem Network, which is the largest tandem learning network in Europe, was founded by Helmut Brammerts and others of the Ruhr University Bochum in 1994 (Brammerts, 2001/2005).

[3]2.2.1.1 E-Tandem Learning

E-Tandem using free instant messengers, MOO , and Internet phone services has been conducted since the 2000s because CMC (Computer-mediated communication) became part of everyday communication. Tandem learning, where learners see each other in real time using webcams via the internet, has been conducted on a large scale and has been led by Brazil since 2006. This is called "Tele-tandem". In recent years, the practice of Tele-
tandem has attracted much attention of those who are involved in language education due
to the remarkable advancement of information technology and the expansion of Internet use. It seems that it will keep growing in the future (Stickler& Lewis, 2008). E-Tandem includes asynchronous communication, Quasi-synchronous and synchronous communication. Synchronous communication via video conferencing offers advantages like those of face-to-face tandem. Since 2006, internet telephone with a webcam has been called "Tele-tandem".However, researchers use other terms, such as video conferencing and telecollaboration (Ware & O'Dowd, 008).   The notion of a mutually supportive partnership is central to tandem learning, where the focus is on learning through authentic communication with a native speaker. Tandem learning involves pairing individuals with different mother tongues and working together to learn each other's language. Learners can benefit from their partner's expert knowledge about language and cultural issues, and they are able to improve their communicative competence by conversing with native speakers as well as by receiving feedback. As such, tandem learning is a highly social form of learning used in institutional settings but has also been configured as a form of open learning available to individuals through language learning networks on the Web (O'Dowd & Ritter,2006).

Telecollaboration   is "online [1]communication used to bring together language learners in different countries to carry out collaborative projects or undertake intercultural exchanges" (O'Dowd and Ritter, 2006).Tandem learning requires partners to set personal agendas for learning and negotiate discussion topics. Telecollaboration focuses on discussion, debate, enquiry, and collaboration as part of intercultural project work in class-to-class partnerships. The interconnectedness of language learning and culture learning underpins telecollaboration and aims to promote students' linguistic development and intercultural awareness. Most telecollaborative projects involve students with higher proficiency levels. Little and Brammerts (1996) rgued that the pedagogical potential of tandem learning was based on two fundamental principles, reciprocity and learner autonomy. Reciprocity underpins the collaborative dimension of tandem learning in terms of mutual support, equal   contribution, equivalent benefit, and, critically, the degree to which individuals enact and alternate both roles of learner and expert. Moreover, reciprocity lies behind partners' acknowledgment of each other's learning needs and styles, while offering encouragement and correcting. The principle of autonomy underlies the host of decisions learners make throughout the tandem partnership, including the topic of the co-operative exchanges, and the nature, extent, and focus of feedback and correction. Importantly, as decided by the learners, the balance between conversational activity and peer feedback or correction is a further aspect of autonomy. The responsibility learners must assume for their own learning and the nature of the learning is seen as the product of an interdependent, collaborative process (Little, 2001).Sociocultural and interactionist frameworks have also been applied to tandem exchanges and telecollaborative language learning. Interactionist perspectives focus on how online interaction can contribute to learners'

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[3] *How to tandem*

   -Be on a similar language level: Make sure you choose a tandem partner who has the same language skills than you do, split the time equally, be patient and polite t as often as possible and channel your inner teacher

grammatical competence, using transcripts of interactions to identify gains in linguistic accuracy or fluency. Sociocultural interpretations have focused on intercultural exploration, the role of the teacher, as well as the influence of constitutional contexts on students' participation patterns and attitudes toward online correspondence. Sociocultural theory has also examined miscommunication and enquire into developing intercultural competence online(Belz, 2003).

[4]3.0 Grammaring
The teaching and [1]learning of grammar was viewed as the core of language. However, with the shift from philology to linguistics, the notion of grammar has changed accordingly. Linguistically, the shift from structuralism to transformational generative grammar has redefined the notion of grammar as the system of rules every native language speaker has acquired. In this sense, grammar has moved from being a set of mechanical structures to being psychological, or rather, cognitive, students to use grammatical structures accurately, meaningfully, and appropriately constructs (Hinkel, E. (2017). Hence, grammar has come to be described as a competence, but a more recent view considers grammar as a skill. According to Larsen-Freeman (2001), grammar should be a skill, not a competence.[1] Grammaring is the fifth skill in language teaching and learning. Larsen- Freeman (2014)states that grammaring can be seen as a fifth skill entailing the ability to use grammar structures accurately,
meaningfully, and appropriately. Whereas, Ur (2011) defined [2]grammaring as a process by which language learners use grammar to create messages through grammaticalizing or adding grammar to a sequence of words to create finer meaning distinctions. Bayu, (2015)contends that grammaring is a dynamic process rather than a system of rules. Thus, a paradigm shift arose in the teaching and learning of grammar, which tends to consider that teaching grammar is no longer the transmission of knowledge. Still, it refers to enabling the use of grammatical rules functionally.

Larsen freeman[5](2003) stated that there are three dimensions of grammaring: form which embraces sounds or phonemes, written symbols, inflectional morphemes, function words and syntactic structures or grammatical issues, meaning which has to do with

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[4] *Larsen-Freeman (2001) defines grammaring to describe grammar not as a body of established knowledge in the traditional sense but as a skill that to be trained similar to other language skills such as writing or speaking. Furthermore, Thornbury (2001) advocates the concept of grammaring as more like a process that it is like verb-like rather than noun like. For example, in the conversation the speaker is choosing consciously or unconsciously the most appropriate utterance to express his/her feeling, while listener is choosing the most appropriate way of understanding the language choices made by the speaker (Takashima and Sugiura: 2000). These online interactive choices are referred to as the grammaring process which every language user is simultaneously engaged during communication. In addition, Nan in 2015, grammaring was first put forward by Larsen-Freeman who regards English grammar not only as a set of structural patterns, but also as an important resource for making meaning and for adapting language appropriately to the communicative context. Meanwhile, according to Richard and Schmidt (2002), grammaring is sometimes used to refer the process by which language learners use grammar to create messages through grammaticalizing or adding grammar to a sequence of words to create finer meaning distinctions. The linguist Diane Larsen Freeman proposes grammaring as an important process in second/ foreign language learning. Grammaring emphasizes grammar as a dynamic process rather than a system of rules. Grammar is no longer conceived as a description of language or native speaker's competence. Thus, a paradigm shift arose about the teaching and learning of grammar. The purpose behind teaching grammar is no longer the transmission of knowledge. Rather, teaching grammar is now performed to enable students to use grammatical structures accurately, meaningfully, and appropriately. Richards and Reppen proposed that grammaring falls into three categories or dimensions as specified by Freeman's definition of the term: form, meaning, and use. A distinction is often made between language use and language form. In other words, there has been a continuous debate over whether to teach students the language or teach them about the language. For Larsen-Freeman, both language form and language use are equally important. In this vein, she states: "Teachers who focus students' attention on linguistic form during communicative interactions are more effective than those who never focus on form or who only do so in de contextualized grammar lessons" (Spada and Lightbown 1993; cited in Larsen-freeman 2002).*

[5] *1-Dianne Larsen-Freeman defined 'grammaring' as the fifth skill in her book, 'Teaching Language from Grammar to Grammaring'. She described it as "the ability to use grammar structures accurately, meaningfully and appropriately" and as something that grows organically rather than as a fixed body of knowledge.The idea of grammaring encourages us to look at grammar differently - to see it as a skill we use when we are using the target language. An example of this would be our choices when choosing which structure we want to use. The issue I have with grammaring as the fifth skill is that it is more of a viewpoint than a set of practical techniques. Making learners aware of grammatical choices is helpful, but only once they've reached a reasonably high level. Even then, teaching it seems optional, as learners would absorb the intricacies of language choice from the enormous amount of language exposure they'd need to get to that level. I dare say that many differences are also cultural, so there would be a lot of overlap with 'culture'.2- In addition to , productive skills, writing , speaking and communicating, and receptive skills, listening and reading, many skills are evolved in learning language such as:1- Culture as the fifth skill or 'intercultural competence', is the idea that even high-level language speakers can miscommunicate if they don't understand cultural norms. Knowing cultural norms allows students to be more successful at whatever they're trying to communicate. This is especially true for nuanced social situations where direct speech can be misunderstood.*

semantics including the prototypical units of lexemes, derivational morphemes, multiword lexical strings and notions and the use, which is related to pragmatics, deals with social functions as speech acts and discourse patterns. Thus, implementing grammaring skills in English class involves activities that individually or collectively activate the three dimensions of form, meaning and use. According to Freeman (2001), the practical activities that are used in [1]grammaring fall into three categories: using real-world objects or pictures, the relationship between word and referent can be made more explicit and mimicry of the appropriate action to make the meaning of linguistic more clear, focus on use involving the right form with the right meaning should be selected for the right context to ensure successful communication, role plays work well when dealing with use because the teacher can systematically manipulate social variables as increase or decrease the social distance between interlocutors to have students practice how changes in the social variables affect the choice of the form.

3.0 Methodological Framework

This study employed a quantitative approach to provide a broad view of how **virtual** Laboratory and e-Tandem learning develop grammaring skill. Hence, all these considerations directed us to follow a Postpositivist Paradigm (Creswell, 2009).

3.1 Participants

The participants were chosen randomly and the total number of students was 38. All students were divided into a control group of 19 and an experimental group of 19. Nevertheless, this was a convenient sample since participant selection depended upon the availability of an intensive English course , practicing English through communicating with people worldwide on social media and using virtual laboratory.

3.2 Instruments

Quantitative data was collected by administering pre- and post- oral tests, which were then reviewed using a specifically designed rubric. Brown (2004) used theoretical and practical concerns to check the validity and reliability of our assessment procedures.

3.2.1 Pre-Test and Post-Test Design and Application

An oral test was designed to investigate whether the students apply grammaring skills or not while communicating with people all over the world particularly native speakers and using of virtual laboratory at KKU. Thus, a pre-test will be used to identify whether the students implement grammaring skills in their communicative interactivity, particularly under specific content, Present Simple, to help determine what aspects of grammar should be taught first and subsequently in our context. Secondly, the test served as a post-test to register the performance of the control and experimental groups. Finally, the rubric was used in pre- and post-test procedures to collect data on participants' performances. Researchers devised the test and rubric.

The oral test and rubric were organized into six sections that are described subsequently. The pre- and post-tests were carried out in student-pairs. If a participant did not have a partner, the examiner played the role of the participant's partner from the second to the sixth sections. Participants were asked general questions in the Present Simple tense in the first section. There were three questions on familiar topics, ranging from basic personal information to everyday activities. The focus of this section was to test participants' question comprehension, appropriateness of their answers, lexical use and negotiation. In the second part of the test, each participant was given a card with some information about nature in Asser Region. The researchers then posed some questions to each participant to assess their comprehension and the appropriateness of their answers. In the third section, students were

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I. 2. GRAMMARING AS THE FIFTH SKILL

Dianne Larsen-Freeman defined 'grammaring' as the fifth skill in her book, ['Teaching Language from Grammar to Grammaring'](). She described it as "the ability to use grammar structures accurately, meaningfully and appropriately" and as something that grows organically rather than as a fixed body of knowledge.The idea of grammaring encourages us to look at grammar differently - to see it as a skill we use when we are using the target language.

II. 3. TRANSLATION AS THE FIFTH SKILL

Translation (and interpretation) is the art of converting meaning and nuance from one language to another.

III. 4. VIEWING AS THE FIFTH SKILL:

'Viewing' means understanding and being able to analyze visual media, like videos, diagrams, photos, and so on.

IV. 5. MEDIATION AS THE FIFTH SKILL

*Mediation refers to the skill of adjusting the message for the listener. Mediation involves not just language proficiency but also cultural sensitivity and the ability to adapt to different communication styles. Being able to mediate between speakers of different languages is increasingly important in our globalized wo*rld Guskey, T. R. (2005.

asked to role-play based on information on a card issued to them. This activity was likened to a jigsaw puzzle since both participants received prompts to pose questions and some specific answers they should use for those prompts, provided that the questions were properly performed. This activity assessed question function in terms of form, meaning and use. In addition, it verifies intonation, function, and negotiation. In the fourth part of the test, participants were asked to construct sentences by conjugating the lexical verbs in the third person singular after receiving information on three everyday actions. This section measured participants' ability to describe routines in the third person singular in its appropriate conjugation in the present simple tense. In the fifth section, each participant was asked to describe a daily routine by stating what they do not do after receiving a sheet with illustrations. This activity aimed to assess lexical use, syntax, and morphology. Finally, the sixth section set out to facilitate interaction between two participants by providing prompts to each participant to pose questions to the other participant, which would subsequently be answered. This task helped to assess form and meaning and to use them comprehensively.

3.2.2 Rubric

The researchers adopted analytic scoring procedures based on the research purpose, entailing rubric scales that provide specific details in each component of communicative competence. Therefore, the researchers designed a rubric to evaluate participants' performance in the pre and post-tests according to the three dimensions of grammaring -form, meaning and use. The three dimensions of grammaring, described as macro criteria concerning the production of Present Simple, were divided into micro criteria. For example, the first macro criterion Form was divided into three micro criteria: pronunciation (production of intelligible segmental and suprasegmental sounds), syntax (correct order of affirmations, negations and questions) and morphology (correct formation of words and conjugation in present simple). The second macro criterion was meaning, which was divided into aspect (adequate recognition of the verbal tense in which interaction occurs) and lexical use (varied and accurate vocabulary according to the audience and topic, plus the concept's meaning is appropriately connected to the sentence).

The third macro criterion, use, was comprised of *functions* (recognizing intention and context); negotiation (delivery of the oral message through conversational resources such as elicitation, reiteration); and discourse (cohesion of the oral text through the use of subject pronouns and the use of simple connectors).The score in each evaluation criterion ranged from 0 (total absence) to 4 (adequate performance).

3.2.3 Grammaring Activities

A set of activities was selected to develop learners' speaking skills through grammar while using the virtual laboratory and interacting with people worldwide. Students participated in these activities in class for three months (August -October).

-Miming sentences: this activity stimulated practicing form mainly syntax and morphology, and meaning mainly lexical use.

-Surveys: this activity aimed to improve pronunciation, especially intonation; syntax for question formation, aspect and negotiation.

-Information-gap activities

-Role-playing: This activity is aimed at developing the macro criterion of use, especially functions, negotiations, and discourse.\

4.0 Results and Discussion

The main aim of this study is to investigate how using virtual laboratories and tandem learning develops grammar skills among freshmen studying an intensive English course at KKU. The researchers used the mode, median, mean scores to summarize the data distribution. The model was used to show the most frequent score regarding the effect of using virtual laboratories and tandem learning to foster the use of grammar skills among students. The median was used to interpret the standard deviation better since the mean is susceptible to the influence of outliers. Finally, the researchers used the standard deviation to indicate how close or far virtual laboratories and tandem learning influence the students' use of grammaring skill from the mean. i.e., values below 0.99 showed no development in terms of sub-division of dimensions; whereas values above 0.99 would express development related to sub-division of dimensions. Additionally, a t-test was applied to assess the mean differences between the pre- and post-test scores.

4.1 *Statisti*cal Analysis

4.1.1. Descriptive Statistical Analysis on grammaring components

Table 1. Use analysis

Group	Experimental Group (n = 19)		Control Group (n = 19)	
Assessment Procedures Variable	Pre-test	Post-test	Pre-test	Post-test
Mode	1- 2	2	2	2
Median	2	2	2	2
Mean	2.0	2.2	2.3	2.1
Standard Deviation	0.95	0.88	0.84	0.85

The Control Group had minimal progress - .84 to .85 – in using grammar, i.e., in the way present simple is used to convey a message. After English, studying for a whole semester. Similar results were observed with the Experimental group whose standard deviation decreased - .95 to .88 -

Table 2. Form Analysis

Group	Experimental Group (n = 19)		Control Group (n = 19)	
Assessment Procedures Variable	Pre-test	Post-test	Pre-test	Post-test
Mode	1	1 - 2	2	2
Median	2	2	2	1.75
Mean	1.8	2.4	2.2	1.8
Standard Deviation	0.92	1.12	0.90	0.85

The Control group did not improve how they organized the elements or structures of the sentence, i.e., their word order. Additionally, the control group had lower median and mean in post-tests values portraying a negative progress in this sub-dimension (median: 2 to 1.75; mean: 2.2 to 1.8). For the experimental group, there were mean higher values (1.8 to 2.4), but unchanged median values (2 to 2).Thus, there is a slight improvement in the form under a Grammaring teaching context based on a change in standard deviation from .92 to 1.12

Table 3. Form Analysis

Group	Experimental Group (n = 19)		Control Group (n = 19)	
Assessment Procedures Variable	Pre-test	Post-test	Pre-test	Post-test
Mode	1	1	1 - 2	2
Median	2	2	1.75	1.75
Mean	1.8	2.1	2.0	1.8

Standard Deviation	0.96	1.01	0.83	0.82

As seen in the results on form, the Control group went from higher values to lower ones on assessments regarding the form, i.e., learners organizing the structures of words and parts of the words in context. Conversely, the experimental group showed minimal improvement in mean, which changed from .96 to 1.01.

Table 4. Meaning Analysis

Group	Experimental Group (n = 19)		Control Group (n = 19)	
Assessment Procedures Variable	Pre-test	Post-test	Pre-test	Post-test
Mode	1 - 2	1-- 2	2 - 3	2
Median	2	2	2	2
Mean	1.9	2.3	2.0	2.0
Standard Deviation	0.90	1.15	0.85	0.82

For aspect and lexical use analysis, there were no important changes in the control group's scores. For Aspect, or the identification of the appropriate tense and corresponding infection about the expressed oral message in context, there was no progress among learners in the control group .85 to .82. However, when assessing the appropriate use of vocabulary in context, there was evidence of some slight improvement, but not sufficient to advance to another level of performance (.92 to 1.17). In other words, with the experimental group, we saw higher values in mean for both Aspect (1.9 to 2.3) and Lexical Use (1.7 to 2.3) in the posttest than in the pretest. These increasing values were also reflected in the corresponding deviation standard values (.90 to 1.15 for aspect and .92 to 1.17 for lexical use), with more changes seen in lexical use compared to aspect.

4.1.2 Descriptive statistical analysis on virtual laboratories

Table 5 . Virtual laboratories

Group	Experimental Group (n = 19)		Control Group (n = 19)	
Assessment Procedures Variable	Pre-test	Post-test	Pre-test	Post-test
Mode	1	1	1	1
Median	1.75	1.75	2	1
Mean	1.8	1.8	1.9	1.5
Standard Deviation	1.13	1.27	0.92	1.11

For virtual laboratories, using virtual laboratories among the participants was almost an imperceptible progression. Although the standard deviation showed higher post-test results (.92 to 1.11), the mean values decreased from 1.9 to 1.5. Regarding the Experimental Group, although the mean remains unchanged, there were changes in the Standard Deviation (1.13 to 1.27) with only value of using virtual labs scores of 1. In other words, there was almost no significant progression when compared to the control group's results because the progress was within the level of using virtual labs.

Table 6. E-Tandem Learning

Group	Experimental Group (n = 19)		Control Group (n = 19)	
Assessment Procedures	Pre-test	Post-test	Pre-test	Post-test
Variable				
Mode	2	1	2	1 - 2
Median	2	2	2	2
Mean	2.0	2.3	2.1	1.9
Standard Deviation	1.01	1.22	1.04	0.93

The tendency of e-tandem learning   among participants showed a slight regression in mode, mean and standard deviation.The learners' results were lower in the post-tests than in the pre-tests for the control group. The Experimental group progressed but remained at the same level of performance (pre-test 2 to post-test 1), implying no improvement in e-Tandem learning   level's values in this sub-dimension.

Table 7. T-test applied to sub-dimensions

t- Test: Paired Two Samples for Means (p.V = two-tail)	
Use	$t(18)= -0.33, 0.74 > 0.05$
Form	$t(18)= -2.45, 0.02 < 0.05$
Mean	$t(18)= -1.34, 0.19 > 0.05$
Virtual labs	$t(18)= -1.34, 0.19 > 0.05$
Tandem learning	$t(18)= -1.99, 0.05 < 0.05$

The p-value had to be equal to or below .05 to reject the null hypothesis. If p-values were higher than .05, we would not reject our null hypothesis and consider that our approach did not develop grammaring skill among KKU first-year students. The results showed that virtual laboratory and e-Tandem learning to develop King Khalid University's Students' grammaring skills. Very effective progression was seen in form and meaning while the use showed little improvement.

5.0 Conclusion

In the previous sections, the researchers reviewed the theoretical and practical considerations about how virtual laboratories and tandem learning promote grammar among KKU students, studying an intensive English course. Moreover, in the analysis, the researchers noted that immersion in English is useful for acquiring communicative skills, and the interaction produced is more important than the amount of spoken English. Thus, tandem learning is crucial in learning the English language. Furthermore, virtual laboratories provide students with useful demonstrations of English language system. The study covered the term grammaring based on Larsen-Freeman's definition, which provides a dynamic insight into language by means of its three dimensions: form, meaning, and use, as well as their respective elements. From a descriptive statistical view, the pre-test generally showed low scores in all three dimensions of grammaring in both the control and experimental groups. Conversely, the inferential analysis, mainly the t-test, portrayed different results using virtual laboratories and tandem learning to foster grammaring skills among KKU students studying an intensive English course. The t-test showed improvements in form and meaning and insignificant advancements in the use.

5.1 Findings

The study reaches to the findings below:

1- Most KKU students, studying an intensive English course hardly ever communicate with people worldwide, particularly native English speakers. Thus, they do not practice speaking English in a natural context.

2- Most KKU students, studying an intensive English course, ignores grammaring skill in terms of using grammar to construct meaningful messages in communication. However, they tackle grammar as a rule and object. Hence, they memorize the grammatical rules without communicating them.

3- Most KKU students studying an intensive English course focus on the form and meaning and do not focus on the use; therefore, they face lots of communicative breakingdowns.

4- A vast number of KKU students studying an intensive English course, use KKU virtual laboratory providing lessons through avatars and cartoon. In addition, phonemics aspect of language is practiced in the virtual labs to promote pronunciation in terms of vocalization, accents and suprasegmental features.

5- A few numbers of KKU students, studying an intensive English course, use social media to communicate with people over the world particularly native speakers even though most of the students spent a big amount of time on social media.

6- Most of KKU students, studying an intensive English course, lack confidence to communicate with native speakers and foreigners due to various pedagogical, cultural, and psychological factors.

5.2 Recommendations

1- KKU students, studying an intensive English course should be encouraged to use social media to communicate with people over the world speaking English language to practice communicating in English language.

2- Grammaring skill is recommended to be taught to KKU students, studying an intensive English course, in order to impede tackling grammar as grammatical rules as a core of learning English language. Instead, grammar should be taught from functional perspective entailing form, meaning and use.

3-Learning English language communicatively requires viewing language as a too not an object. Thu, KKU students, studying an intensive English course, should be trained to view English language as a tool not as ano object.

4-English teachers at KKU who teaches an intensive English course should   encourage students to use virtual laboratories and the teachers should link their classes with virtual labs to promote grammaring skill.

5-KKU students, studying an intensive English course, should learn how to focuses on the use of grammatical rules in compunction , hence, grammar should be viewed as a tool rather than skill or competence.

6-KKU students, studying an intensive English course, should be encouraged to use different learning platforms and virtual laboratories provided by KKU to promote students' levels in terms of skills, competencies and entrepreneurship.

7. English teachers teaching an English intensive course should instill confidence among students studying an English intensive course particularly in communicating to native speakers and foreigners in English.

8. English language center at KKU should launch a global platform which assists students studying an English intensive course to give a chance to communicate with different people speaking English and implement grammaring skill in their communication.

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