

2013

Using TPACK to promote effective language teaching in an ESL/ EFL classroom

Wilson M. R. Bugeño
University of Northern Iowa

Let us know how access to this document benefits you

Copyright ©2013 Wilson Michel Rojas Bugeño

Follow this and additional works at: <https://scholarworks.uni.edu/grp>



Part of the [Curriculum and Instruction Commons](#)

Recommended Citation

Bugeño, Wilson M. R., "Using TPACK to promote effective language teaching in an ESL/EFL classroom" (2013). *Graduate Research Papers*. 150.

<https://scholarworks.uni.edu/grp/150>

This Open Access Graduate Research Paper is brought to you for free and open access by the Student Work at UNI ScholarWorks. It has been accepted for inclusion in Graduate Research Papers by an authorized administrator of UNI ScholarWorks. For more information, please contact scholarworks@uni.edu.

Offensive Materials Statement: Materials located in UNI ScholarWorks come from a broad range of sources and time periods. Some of these materials may contain offensive stereotypes, ideas, visuals, or language.

Using TPACK to promote effective language teaching in an ESL/EFL classroom

Abstract

Technology integration in English as a Second Language (ESL) and English as a Foreign Language (EFL) using Technological Pedagogical And Content Knowledge (TPACK) (Mishra & Koehler, 2006) seems to be a new territory for teachers and researchers. For this reason, this literature review explores the use of TPACK in the EFL/ESL classroom. In this review, principles, methods and activities related to English teaching are reviewed and discussed. Also, the foundations of TPACK, activity types and their applications not only in other subject areas, but also in the EFL/ESL area are explored. For this purpose, articles, studies and books were consulted to find literature that explores the integration of technology using TPACK framework. After analyzing 38 sources including journal articles and books, it was concluded that the application of TPACK in English teaching has not been explored in extent. Therefore, more empirical studies need to be done to achieve technology integration in EFL/ESL using TPACK.

USING TPACK TO PROMOTE EFFECTIVE LANGUAGE TEACHING
IN AN ESL/EFL CLASSROOM

A Graduate Review

Submitted to the

Division of Instructional Technology

Department of Curriculum and Instruction

In Partial Fulfillment

Of the Requirements for the Degree

Master of Arts

UNIVERSITY OF NORTHERN IOWA

by

Wilson Michel Rojas Bugueño

August, 2013

This Review by: Wilson Michel Rojas Bugueño

Titled: Using TPACK to promote effective language teaching in an ESL/EFL classroom

has been approved as meeting the research requirement for the
Degree of Master of Arts.

8/23/13
Date Approved

8/23/13
Date Approved

8-23-13
Date Approved

Leigh E. Zeitz

Graduate Faculty Reader

Ping Gao

Graduate Faculty Reader

Jill Uhlenberg

Head, Department of Curriculum and Instruction

Abstract

Technology integration in English as a Second Language (ESL) and English as a Foreign Language (EFL) using Technological Pedagogical And Content Knowledge (TPACK) (Mishra & Koehler, 2006) seems to be a new territory for teachers and researchers. For this reason, this literature review explores the use of TPACK in the EFL/ESL classroom. In this review, principles, methods and activities related to English teaching are reviewed and discussed. Also, the foundations of TPACK, activity types and their applications not only in other subject areas, but also in the EFL/ESL area are explored. For this purpose, articles, studies and books were consulted to find literature that explores the integration of technology using TPACK framework. After analyzing 38 sources including journal articles and books, it was concluded that the application of TPACK in English teaching has not been explored in extent. Therefore, more empirical studies need to be done to achieve technology integration in EFL/ESL using TPACK.

Table of Contents

Abstract	iii
Introduction.....	1
Methodology	3
Analysis and Discussion	4
Language Teaching.....	4
Principles of Language Teaching.....	4
The Twelve Principles	4
Cognitive Principles.....	4
Affective Principles	5
Linguistic Principles	6
English as Second Language and English as Foreign Language	6
Methods in Language Teaching.....	7
Grammar Translation	8
Direct Method	10
Communicative Language Teaching	11
Task-Based Instruction	12
Content-Based Instruction	15
Skills and Activities.....	16
Speaking.....	17
Listening	20
Writing.....	23
Reading	27

Technological Pedagogical Content Knowledge	30
Pedagogical Content Knowledge: Shulman's Work.....	31
Technological Pedagogical Content Knowledge: The New Teacher's Knowledge	33
Activity Types.....	35
TPACK: Empirical Experiences	37
TPACK and Language Learning	40
Case Studies and Surveys	40
Conclusions and Recommendations	42
Promoting Effective Language Teaching in the Classroom	42
TPACK and Language Teaching	43
Using TPACK to Integrate Technology in ESL/EFL Classroom	46
Recommendations for Future Research	47
References.....	48
Appendix.....	53

Introduction

Technology is rapidly developing. Every day new applications and concepts are created in order to enhance our style of life. Technology and Web 2.0 have enabled educators to develop collaboration settings where Web-based tools are used for collaboration and communication among people. For this reason, it is important to update language teaching and find a way to integrate technology in the classroom.

Technological Pedagogical And Content Knowledge (TPACK) (Mishra & Koehler, 2006) is one of the current frameworks that is used to integrate technology in the classroom. In this framework, technology is seen as a tool that enhances the learning process; it is neither the final goal nor does it replace interaction for mastery of the target language. Jang and Chen (2010) express that TPACK represents a new direction in understanding the complex interactions among content, pedagogy and technology that can result in successful integration of technology in the classroom.

The purpose of this review is to examine the TPACK framework and how it can be used in combination with language teaching methods and activities to integrate technology in ESL/EFL classrooms. In addition, this paper will be focused on the 5-12 grades and higher education ESL/EFL classrooms and how teachers can integrate technology using TPACK.

This examination is important because expanding learning opportunities through technology is a necessary skill for English teachers today. English teachers who do not have the skills to integrate technology in their teaching practices will be out of date. In addition, TPACK has not been part of research in second language teaching. Literature reviews indicate that even though English teachers have been integrating technology in their classrooms, there is no formal framework to support it.

In order to examine this topic, this review will explore the following questions:

- What are the principles, methods, and activities that promote effective language teaching in an ESL/EFL classroom?
- What is the TPACK framework?
- How can the TPACK framework be used to structure ESL/EFL curriculum to support effective language teaching?

After answering these questions, future research will be proposed.

Methodology

The method used in order to identify the resources was to consult resource databases through the Rod Library at the University of Northern Iowa. The databases used were ERIC, Education Full text (EBSCO), ERIC (Department of Education), Web of Knowledge, and Google Scholar. Boolean operators OR and AND were used in combination with the terms “language teaching”, ESL, EFL, Method*, technique*, approach*, TPACK, TPCK, “Technological Pedagogical Content Knowledge”

In this first step, the search was narrowed using the following attributes:

- Articles written between 2008 and 2013,
- Peer-reviewed articles,

The search was targeted to journals such as *TESOL Quarterly*, *Language Learning*, and *Language Learning and Technology*.

After the first search, articles and books regarding the topics were selected if the topic and the abstract contained one of the key words. In total, thirty sources were used for this review including books and journal articles. To evaluate the quality of the articles and books, they had to be based on qualitative and quantitative studies.

Analysis and Discussion

Language Teaching

In this section, language teaching will be introduced and discussed. It is important to state that the aim of this section is to provide information about second language (SL) teaching principles, methods and activities. Moreover, this information will be based on theoretical foundations and current studies about each one. The definitions of English as a Foreign Language (EFL) and English as a Second Language (ESL) will be discussed. Finally, some of the well-known and current methods and activities will be discussed and analyzed to provide a solid foundation for language teaching.

Principles of Language Teaching

The Twelve Principles

Principles of language learning are general components that have to be included in order to promote language learning in the classroom. Brown (2002) proposed that there were at least twelve “general research-based principles on which [second language] classroom practice is grounded” (p.12). The author classified these principles in cognitive principles, affective principles, and linguistic principles.

Cognitive Principles

- **Automaticity:** The capacity of acquiring fluency in the target language (p. 12). This involves students’ capacity to learn, apply, and then control automatically certain language patterns in order to perform a communicative act.
- **Meaningful learning:** Language has to be more than a set of patterns that students repeat. Language has to be seen as a tool that students use to communicate their values, beliefs, thoughts, and ideas. Moreover, it is the

teachers' aim to create an ideal environment where students can use and connect the language with their background knowledge, and finally achieve meaningful learning.

- **Anticipation of rewards:** It is connected to human beings' desire of obtaining something in return when they behave in a certain way. In the case of language teaching, these rewards may be related to positive or negative feedback, and/or in the form of formative or summative assessment.
- **Intrinsic motivation:** Personal interest in learning a language. It may be triggered by several reasons (e.g. heritage, politics, interested in the target language's culture, etc.).
- **Strategic investment:** Time that students invest in order to learn the language. This investment of time has to be mixed with personal strategies that may permit the student to comprehend, and then produce the target language (p. 12).

Affective Principles

- **Language ego:** When a person learns a second language, one develops a "new model of thinking, feeling, and acting – a second identity" (p. 12). This can create a sense of fragility and defensiveness in the learner.
- **Self-confidence:** Learners feel capable to accomplish tasks regarding the target language. Students' self-esteem and teachers' ability to create good learning environment are key factors.
- **Risk taking:** Learners' capacity to face new challenges regarding the target language. Successful language learners take risks in terms of interpreting and using the language.

- **Language-culture connection:** The inseparable connection between language and culture. Teachers have to include the analysis of cultural customs, values, thoughts, feeling and acting in their lessons in order to show students that language is a real expression of the culture.

Linguistic Principles

- **Native language effect:** Learners' native language (L1) may affect them in the second language (L2). This can be seen in the tendency of learners' to translate literally from the L1 to L2 in early stages.
- **Interlanguage:** Type of language system that learners develop in the process of learning a second language. This system starts in the learners L1 and goes through a process of trial and error until learners achieve the L2 in a native speakers' level. In this process, correction and feedback are important in order to avoid fossilization, or the cease of language development.
- **Communicative competence:** It is the final goal of language teaching: to promote the use of authentic language in real contexts with authentic materials. Lessons have to try to be as real as possible to develop in students the necessary skill in order to be effective language users.

English as Second Language and English as Foreign Language

In the last section, principles, general rules or assumptions that govern language teaching in general were mentioned and discussed. It is important to mention also that students and teachers react and behave depending of different factors (L1 and L2, the context, the country, beliefs, etc.). For this review, English will be analyzed and discussed

from the perspective of a second language and as a foreign language. These two different contexts will be discussed in the following section.

The phrase, English as Second Language (ESL), “is used to refer to situations in English is being taught and learned in countries, contexts and cultures in which English is the predominant language of communication” (Carter & Numan, 2001, p. 2). This means that language learners who travel and study in countries such as United States, United Kingdom, and Australia, learn and use English as second language. Moreover, these types of learners tend to speak their L1 at home, but use their L2 in settings such as schools and work. In addition to this, most of the English teachers are native speakers.

The term, English as Foreign Language, is “used in contexts where English is widely used for communication, nor used as the medium of instruction” (Carter & Numan, 2001, p. 2). The main characteristic of this context is the fact that English is taught in the schools as part of the curriculum, but students have very limited possibilities to use the language outside the classroom. This is the reality of countries such as Brazil, Chile, Spain, and Austria. Another characteristic of this context is that teachers are not native speakers of English who “may [also] lack opportunities to use the language, or lack confidence in using it” (Carter & Numan, 2001, p. 2).

Methods in Language Teaching

In general terms, a method is defined as “a set of procedures, i.e., a system that spells out rather precisely how to teach a second or foreign language” (Celce-Murcia, 2001). In second language acquisition, Anthony defined a method as “an overall plan for the orderly presentation of language material, no part of which contradicts, and all of which is based upon, the selected approach. An approach is axiomatic, a method is procedural” (1963, cited

in Richards & Rogers, 2001, p. 19) Subsequently, a method in second language may be understood as the procedures, steps, or characteristics that teachers ought to follow or included when designing, developing, and delivering a lesson or unit.

Taking this definition into account, the following methods for language teaching will be discussed: grammar translation, audio-lingual, task-based, content-based, and communicative language teaching.

Grammar Translation

Grammar translation was the most popular method in the nineteenth century (Gonzalez, Yawkey, & Minaya-Rowe, 2006). This method is based on form rather than communication development. Students translate from the target language into their native language to study the grammatical form. In addition to translating sentences and texts from one language to another, students also develop grammatical activities such as filling the blanks, completing and writing sentences, and reading difficult text to obtain vocabulary. Another characteristic of this method is that the teacher does not speak the target language and provide the instruction in the students' native language (Celce-Murcia, 2001). As a result, students do not have the opportunity to use the language for communicative purposes. Even though this method may be considered old fashion, there are still some teachers and researchers who consider this method useful in developing accuracy in the early stages.

An experimental study performed by Kim (2011) developed two techniques to use a grammar-translation method in a communicative writing class in Korea. Twenty freshmen and sophomore students majoring in English, who were placed in a low-level class after a placement test, performed the following exercises: a) translating an English composition into Korean, and b) collaborative grammar-translation. In the first exercise, students were asked

to translate their own work. In their exercises, they were asked to act as they were reading and translating someone else's work. At the end of this exercise, student reflected upon the process. Students expressed that this exercise permitted them to be aware about their mistakes in English. In the second exercise, students reviewed and translated another classmate's work. After this exercise, they compared their translation with the ones provided by their classmates. Overall, students' responses pointed out these kinds of exercises helped them to understand where their errors were and how to overcome them. The researcher concluded that grammar-translation method permitted students to understand that accuracy was important to achieve communication effectively. This result may also be found in Shih-Chuan (2011). The aim of the study was to contrast grammar translation method and communicative approach in teaching grammar to college students. In this study, two classes from the applied foreign language department were randomly assigned as experimental and control class. The admission test that students took when as part of their admission requirements showed that both groups had similar level of English proficiency. The experiment was divided into stages. In this stage, the experimental class was taught using the grammar translation method, while the Control Class was taught using the Communicative Approach in grammar teaching. After 16 weeks, the students took a post-test to compare the results. The author found out that the experimental class made significant progress in grammar learning after the treatment time and the grammar translation method increased motivation and confidence. Finally, the author concluded that the grammar translation method permitted to improve students' language skills because the "Grammar Translation Method is concerned with accuracy, fluency and accuracy are the target for English learning" (Chang, 2011, p. 21).

Direct Method

The direct method was “a reaction to the grammar-translation method and its failure to promote learners who could communicate in the foreign language they had been studying” (Celce-Murcia, 2001, p. 6). “Its early version was called the natural method in the mid-nineteenth century” (Gonzalez, Yawkey, & Minaya-Rowe, 2006, p. 165). This method claimed that classes had to be conducted by native speakers, who started the classes with dialogues and anecdotes in conversational style. The teacher used his body language and pictures to make the meaning clear, and grammar and culture was taught inductively. Finally, “literacy texts [were] read for pleasure and [were] not analyzed grammatically” (Celce-Murcia, 2001, p. 6).

Related to direct method, Chen (2011) conducted a four-month quantitative research study trying to assess the relationship between three different learning periods of 85 college students’ learning proficiency in vocabulary, listening, speaking and consolidated average. The students participated in an intensive English language program at a university in Taipei County and voluntarily enrolled in a supplemental project considering their English grades of college entrance examinations. The aim of the study was to determine whether “the cognitive direct method fitted with the concept of knowledge management would be beneficial for the subject students” (Chen, 2011, p. 71). In speaking, students were evaluated in skills such as the ability to interact, taking around in groups, speaking in a range of contexts, and balancing accuracy and fluency. In listening, students interacted with authentic materials and some of the activities they performed were answering questions, following directions on a map, matching what is being said with a set of pictures, and doing something in response to what students hear.

Students' pretest results showed that there was no statistically significant difference for all participating college students in English proficiency at the beginning of the study. The post-test analysis of variance ANOVA results presented that the p-value for vocabulary was 0.212, more than 0.005. The p-value for listening, speaking and average scores were, 0000, less than 0.00. Moreover, the data results indicated that students did not have a statistically significant difference in vocabulary, but in listening, speaking and whole-language English performance. Chen concluded that direct method may be applied in social situations. In addition, the researcher suggested that direct method was "suited to tests which require problem-solving or free-form response." (p. 77). Moreover, it was concluded that direct method "help[ed] college students process new information by taking advantage of existing knowledge and aptitudes" (p. 78). Finally, Chen suggested that teachers needed to have a range of techniques to help themselves in language teaching.

Communicative Language Teaching

Communicative Language Teaching (CLT) is a method that tries to develop *communicative competence* in students. Communicative competence has to be understood as a way "to represent the use of language in social context, or the observance of sociolinguistic norms of appropriacy" (Hymes, 1971, cited in Savignon, 2001, p. 16). Consequently, the main goal of this method is to develop in the students' linguistic abilities through activities such as working in groups or pairs, and performing role-plays or dramatizations that reflect real-life situations and contexts. Moreover, the teacher has to be able to use the target language fluently and appropriately, and provide materials and activities that provide real contexts (Celce-Murcia, 2001, p. 8).

Feryok (2008) carried out an interpretive study based on a larger study of the practical theories of six EFL teachers in Armenia. Specifically, this study considered the practical theory of one teacher who claimed to be using communicative language teaching. This teacher had been teaching English for ten years. The aim of the study was to identify teacher's cognitions, how they were reflected in practice and how they affected teacher's practices. The data was collected by "e-mail interviews" and the participants asked question about the survey through e-mail. Also, on-site visits that included class observations and one semi-structure interview were performed. The data was analyzed based off what the participant said about the instructor's teaching strategies and techniques, and what the participant actually did in class. The researcher concluded that the teacher's practices "reflect[ed] many of her cognitions, although they show more sign of tension between different elements" (p. 235). For example, the teacher expressed that to encourage them to participate and help them to construct meaning was a good teacher's practice, but this kind of interaction may be understood as "limiting students' free expression of ideas and independent use of language" (p. 235). However, the teacher described interaction in terms of free expression and expected her students to become independence user of the language as CTB claimed.

Task-Based Instruction

Task-based instruction (TBI) is a method that "provides the opportunity for natural learning within the classroom context" (Ellis 2009, cited in Hismanoglu & Hismanoglu, 2011, p. 49) using tasks. In TBI, natural learning means that the students use their language skills from early stages to carry out communicative tasks according to their level. Also, a task may be defined as "a piece of classroom work which involves learners in comprehending,

producing or interacting in the target language while their attention is principally focused on meaning rather than form” (Numan, 1989, cited in Hismanoglu & Hismanoglu, 2011, p. 48).

In task-based instruction “meaning is primary; there is some sort of relationship to the real world; task completion has some priority; and the assessment of task performance is in the terms of task outcome” (Skehan, 1996, as cited in Ellis, 2003, p. 4). Consequently, task-based instruction is a learner-centered approach that views language as a communicative tool (Hismanoglu & Hismanoglu, 2011), for this reason, a task ought to have an achievable objective that considers interactions among participants; a sequence of interaction; a meaning-exchange focus; and a level of difficulty to permit the language learner to comprehend, manipulate and produce language utterances (Lee, 2000, as cited in Ellis, 2003, p. 4).

Ahlquist (2013) performed a study that tried to identify how storyline tasks impacted language learning in their language development. A Storyline task creates a fictive world inside the classroom where language learners use the language in order to develop the story for several weeks. The beginning and the end of the story are known and the time and place where the story takes place is also clear. In this kind of task, students perform group, pair and individual work. In this study, the participants were Swedish students of English from 11 to 13 years old who have been learning English since the age of seven. For two hours a day, four days a week during five weeks, they performed the role of families (eight families divided into two groups) who had moved to a new street in a fictive town. The topic for this storyline was *Our Sustainable Street*. The first activity or task they were given was to list words under the following concepts: appearance, personality, hobbies, and jobs. This activity was carried out as a class. Then, they gave a short oral presentation that was used as the first

step for *Spotlight on us*, a newsletter about the new residents. The last step in character creation was a self-portrait based on the personal description. After this, students faced problems and situations such as participating in a project to live in a more sustainable way, discovered that people was leaving garbage in a wasteland near the street, petitioned to the city hall to build a park in the wasteland, designed the park, interviewed the mother of the problem family, and celebrated a year in the street with a party (p. 44). The data for the study was collected from learners' questionnaires, learners journals, observations, notes, interview with teacher. Except from the researchers' observation notes, they rest of the data was collected in Swedish. The finding showed that students preferred artwork and group work the most, because they could obtain help, be with their friends, and complete tasks easier. In terms of speaking, the researcher found that students felt more comfortable to speak in English than before, because they noticed an improvement in their skills. Also, the researcher noticed that even though some of the learners were reluctant to speak, they wanted to show their work anyway.

Related to listening, students understood there was an improvement in their skills. This could be because they were exposed to two variants (American and British). In addition, students could not explain this improvement because they associated listening with the use of a CD and textbook, even though it was clear they improved because teachers talked more in the target language. The researcher concluded that storyline was an engagement task for students. Similarly, this task permitted student to get involved in real tasks that permitted them to use in meaningful way.

Content-Based Instruction

“Content-based instruction [CBI] for [English language learners] is the broad umbrella term to indicate the instruction draws on subject matter material” (Butler-Pascoe & Wiburg, 2003. p. 52). This means that English is taught through a subject area, e.g. math, history, science. CBI provides “a rich context for teaching the tradition four skills – listening, speaking, reading, and writing – in the ESL/EFL class” (Snow, 2001, p. 310), because the content and the instruction are combined to create a contextualized setting. Some strategies that teachers may use to apply this method are to modify the input, this means to speak slower but using natural speech, to use clear enunciation and control the vocabulary trying to use plain English; to use contextual cues such as gestures, facial expressions, visual, slides, maps, graphics, and diagram; to check for understanding asking students if the information given is true or false, asking students to provide examples, asking questions among each other, and ask students factual questions; to design appropriate lessons including an explanation about technical vocabulary; to prioritize objectives selecting what it is more important for the students; to provide schema-building activities carrying out brainstorming, using students’ background knowledge, and designing charts, outlines, and study guides; and to use group strategies such as pair and small groups and cooperating learning activities (Snow, 2001).

CBI is one of the most important methods in ESL/EFL settings today. Ngan (2011) carried out a quasi-experimental study where a content-based instruction replaced the current syllabus at a University in Vietnam. The participants were 100 students from two classes, who were in the same year and major, plus had equivalent English level according the placement test taken at the beginning of the school year. The control group class (CG)

was taught with the current English curriculum, while the treatment group (TG) was taught with CBI. To collect the data, the researcher used a questionnaire that had two parts which were given at the beginning and at the end of the study, and post-test designed by the EFL head program and given at the end of the course. The post-test was divided in three sections: reading comprehension, language focus, and listening skill. Most of the students had a background in English language before taking the course. The post-test results showed that in vocabulary 84% of students from the TG got good results on the specialist terminologies; meanwhile 24% of students from the CG obtained good results. In reading comprehension, the TG was exposed to authentic material written in simplified language during the intervention. In the post-test, 70% of the TG students achieved good marks, while in the CG group, 8% of the students obtained good marks. Related to translations, 48% of the students from TG performed with good marks, whilst from the CG group, only 4% of them attained good marks. In listening, 14% of the CG achieved good marks. For the contrary, 66% of the students of the TG obtained good marks. From this data results, researchers concluded that CBI intervention in the curriculum was a key factor in students' success in terms of performance and motivation.

Skills and Activities

Language teaching is based on the development of language skills. These skills are speaking, listening, reading, writing. Depending on the method, there are some skills that are trained more than others. In order to develop language skills, teachers use different learning activities with different purposes. In this section, language skills and activities are discussed.

Speaking

Speaking is a productive skill that involves the use of the language in order to express and/or communicate ideas, thoughts, beliefs and/or needs orally. One of the unique characteristics about speaking is that language users and learners have to develop a discourse going through a few processes in just a few seconds. To support this belief, Levelt (1989, cited in Bygate, 2001) claimed that speaking or speech production in L2 involves “four major processes: *conceptualization, formulation, articulation, and self-monitoring*” (p. 16). In conceptualization, language users take into account their background knowledge, knowledge about the topic, the speech situation and the patterns of the speech discourse in order to plan the message content. In formulation, learners find the right words and phrases “to express the meaning, sequencing them, and putting in appropriate grammar markers” (p. 16). Articulation involves using the articulatory organs and facial muscles in order to achieve a clear and understandable pronunciation, intonation and rhythm. Finally, self-monitoring is related to language user’s capacity of identify and self-correct mistakes in grammar or pronunciation.

One of the goals of speaking is that language users achieve fluency and accuracy. This may be accomplished in L2 using planning and repetition strategies before performing and interacting. For example, students may try out a conversation in their minds (Helgesen 2003, cited in Hammer 2007) using different vocabulary and contexts. Another technique may be that students record themselves giving a speech, then transcript what they have said, identify their own mistakes, and then correct their own speech or ask feedback from the teacher (Mennin 2003, cited in Hammer 2007).

In methods such as communicative language teaching or direct method, speaking is related to the ability to communicate effectively. This means that students have to develop skills to interact in real settings (e.g. to take a taxi in the U.K). For this reason, to develop communicative competence in students is crucial for their success. In this context, Canale and Swain (1980, cited in Lazaraton, 2001) proposed for dimensions for Hymes' theory of communicative competence: *grammatical competence*, or the students' capacity of forming words, phrases and sentences, applying phonology rules and orthography, and using vocabulary; *sociolinguistic competence*, or the students' awareness of social contexts and cultural rules that govern the interactions; *discourse competence*, or the students' ability to build up a coherence and cohesive discourse; and *strategic competence*, or the students' repertory to face and solve communication problems that may arise during interaction. When designing speaking activities, teachers ought to take into account the process that students go through when they perform speaking. This process is slow in basic or pre-intermediate levels. In addition to that, teachers may design or use speaking activities that promote fluency and accuracy and the development of communicative competence from early stages. For this purpose, teachers may use simulated or guided activities, or unguided activities. Simulated or guided speaking activities are the ones where students do not use the language freely. These activities are dialogues or role-plays that contain specific vocabulary, or grammar items that students may practice or learn. On the other hand, unguided speaking activities are the ones where students are able to use their language freely, e.g. discussions, formal debates, or reaching consensus. The following table (figure 1) contains the most common speaking activities and a short description of each one:

Figure 1

Most common speaking activities

Speaking Activities	
Activity	Description
Discussions	Students discuss about a given topic related to the class. The language is used in a natural way. Teacher facilitates the discussion giving turns. In this activity, it is expected that the whole class participates.
Speeches or presentations	Alone or in groups, students talk about a given topic. Here, the teacher tries to evaluate students' ability to provide a coherence and coherent discourse. This includes use of vocabulary, grammar accuracy, and pronunciation.
Role-playing	Students performed a learned dialogue. In this kind of activity, students are asked to use specific vocabulary or grammar items in order to apply knowledge.
Conversations	Conversations are activities performed in pairs or group or three or four. In this Activities, students are encourage to use the target language in order to express their thoughts are ideas about a given topic. The teachers monitor students in order to check if they are using the target language or need explanation about the topic
Debates	In these activities, students take a position in a topic and defend it. The teachers' role is a facilitator. In these activities, the use of language is natural.

Speaking activities have to provide the students with not only the possibility of using their skills, but also the occasion to use their skills in context. Aliakbari and Jamalvandi (2010) carried out a two-month experimental research that tried to differentiate the effect of role-plays and task-based language teaching in 60 English learners who were randomly

selected. All of them were sophomore students from different universities on Ilam, Iran. All the students took classes twice a week during the research. The experimental group practiced in class using cards containing roles, while the control group received traditional instruction only. The pre and post-test contained three sections: in section one students answered general questions about themselves, their families, their jobs and related topics; in section two, student were asked, first, to prepare in a minute a presentation about a given topic contained in a card, and second, to give a 2-minute presentation about the topic, finally, the student had to answer one or two follow-up questions; in section three, the student and the examiner discussed issues and concepts regarding the topic in section 2. The test lasted between 11 to 14 minutes and students were assessed on a 0-9 scale. In the pre-test, there was not significant different statistically between the control group (mean 3.23) and the experimental group (mean 3.30). After two months of treatment, both groups took the post-test. The results showed that the treatment group's mean was 3.53; while the control group's mean was 3.26. After running a t-test, the researcher concluded that there was a positive effect on learners using Task-Based Language Teaching oriented role-play technique. This means that role-play activity was highly effective in order to improve language performance in students.

Listening

It is taken for granted that listening is a language skill that is developed while students are exposed to the language, but “the term listening is used in language teaching to refer to a complex process that allows us to understand spoken language” (Rost, 2001, p. 7). Hegde (2000), Rost (2001), and Morley (2001) claimed that second language learners go through two processes while listening: bottom-up and top-down. In bottom-up process, learners use their knowledge about language and their ability to process different sounds to

interpret the acoustic signals, and then to comprehend and make sense of what they are listening to. On the other hand, top-down process is based on the learners' ability to use contextual clues to infer the meaning and making links with their previous knowledge to understand the text.

Consequently, Listening is complex in a second language, because students deal with grammatical patterns, pronunciation, and different accents. Students have to analyze all this factors when they receive input. This makes input the key factors in listening. Kashen (1982, cited in Rost, 2001) claimed that students had to be exposed to a "comprehensible input" that slightly above student's level. That is, input that provides new vocabulary, grammatical and phonological items to permit the students to move from one level to another.

Teachers have to keep in mind some principles when they carry out listening activities in the classroom such as to increase the amount of listening activities in the classroom making listening the primary source of input and making input interesting and comprehensible using supported materials, to use listening before other activities in beginning or intermediate levels, to include global (topic, main, idea, setting) or selected listening (details), to use students background knowledge (top-down process) before listening activities, to work towards automaticity in processing (bottom-up), and to develop conscious listening strategies (Peterson, 2001).

Listening activities can be seen in terms of outcomes. This means that students could listen to any oral texts, but the key factor is what they do in order to show understanding. Morley (2001) proposed six categories of outcome that people in general may perform when listening. In the following table (figure 2) activities from the six categories are summarized:

Figure 2

Listening activities

Listening Activities	
Activities	Description
Drawing a picture, figure, or design	Students follow instructions how to draw something, or express in visual what they understand.
Locating routes in a map	Students follow directions while listening to find a place in map.
Select a person, place of thing according to a description	Students listen to the audio and identify a specific object according to the activity's directions.
Performing body movements.	Students listen and follow the directions to move their bodies.
Operating a piece of equipment	Students follow oral direction in order to learn how to use certain equipment.
Carrying out steps	Students follow oral instruction to carry out a specific task.
Taking a message	Students take notes about the entire or important part of a message
Filling the gaps	Students listen to an oral text a complete the missing information.
Complete a chart or form	Students listen and organize information according to categories
Summarizing	Students listen and summarize the key points from a piece of news or lecture.
Making Predictions	Students listen and then make predictions based in the information given

Note. Taken and adapted from Morley, J. (2011).

According to Krashen's claims, input is the key factor for success in listening activities. A study carried out by Makki (2011) tried to identify if the type of input ("live" or "canned") had some effect on EFL students' listening comprehension. In the study, 92 two intermediate Iranian EFL learners who were between 13 and 16 years-old took part in the study. Forty eight students listened to a live passage read by the researcher and 44 students listened to the same passage from a computer. The instrument used to collect the data was a listening test formed by fill in the blank, true-false, and short answer items. The instructions were given in Persian. The group that listened to the passage from the researcher obtained a mean of 5.81, while the group that listened to the passage from a recording made by a native speaker was 5.75. Moreover, the significant value (.91) was larger than the critical value ($p < .05$) showing no significant difference between the groups. With this, the researcher concluded that the type of input is not significant for student's performance. The researchers performed a follow-up interview with the students to collect information about their listening techniques and habits outside the classroom. Most of them said they did not practice listening at home. Finally, the researcher concluded that the test results were because students' lack of exposure to the target language.

Writing

Writing is a skill that is taught in formal settings (schools). In these formal settings, "Students produce written texts that are expected to exhibit increasingly advanced levels of proficiency as the student progresses through the curriculum" (Kroll, 2001). Writing is related to literacy, and people are called literate "if they can read and write in certain situations and for certain purposes, some of which are more prestigious than others" (Hammer, 2007). In order to achieve literacy, learners have to learn the alphabet first, and then they are involved

in a process that reading (decoding the written signs) and writing (produce written signs) are involved. After learners are able to produce written code, as it was stated before, they increased the composition complexity.

Writing can be focused on the final product of the writing process itself (Hammer, 2007). Most of the educators (ESL/EFL teachers also) base the teaching of writing on the process. This means that students go through a process of planning, drafting, editing until they obtain a final product. Teachers take part actively in this process, providing feedback all the time.

In the case of ESL or EFL settings, this model does not change. Koll (2001) suggested that unexpired writers in L2 struggled when they had to start a new piece of writing. For this reason, the author suggested that in the planning or pre-writing stage, students and teachers may use brainstorming, listing, clustering and free writing as techniques to start developing a writing project.

Because writing is a production skill (students create something to demonstrate their knowledge), most of the activities are task-based. In this case, teachers have to provide specific directions to lead the students to achieve their goals. Today, technology has expanded the type of activities that students are able to carry out. Finally, teachers have to provide the context, and the communicative purpose of the writing task. In the following table (figure 3) there are some examples of writing activities:

Figure 3

Common writing activities

Writing Activities	
Activities	Description

Write a letter	Students explain situations and feelings
Write a postcard	Students greet someone shortly.
Write a to-do list	Students list some activities using imperatives
Write a journal or diary	Students reflects upon a topic or an activity
Write a description	Students describe a person, object or activity
Write a review	Students summarize an activity or class.
Complete a chart or form	Students organize information according to categories

Some writing activities require that students watch, listen to, or read something to complete the task. In these activities, students summarize, synthesize, compare, or contrast information from one or more sources. One of the most common type of based-reading writing is discourse synthesis, a task that “involves the integration of information from different sources” and students’ critical thinking abilities (Zhang, 2013). For this reason, Zhang (2013) investigated how classroom instruction and practice may improve writing skills in intermediate ESL students from an intensive English program at an American university. Specifically, if a specific instruction in this type of essay had an influence in students’ writing performance at the end of one semester. The researcher assigned 44 students to two groups with the same English level according to students’ placement test. After this, he also randomly assigned the Control Group (CG) and the Experimental Group

(EG). Due to students' rejection to participate, the final number was 15 students in the CG and 14 in the EG. The pre and post-test were included in the syllabus, but only essays written by participating students were included in the final analysis. The pretest was taken 2 weeks after classes started. Regarding instruction received by students, both groups were taught about essay structure, essay prompt analysis, summary writing, citation and paraphrasing, library research, and types of essays, but the EG received synthesis writing instruction at the end of each unit (five totals). Synthesis writing instruction was based on 2 reading related to the unit theme that students read at home and discuss in class. Then, they analyzed the texts trying to find complementary ideas (informative synthesis) and match problems and solution proposed in the texts (problem-solution synthesis). After presenting their first drafts, students developed a peer-reviewed analysis, received instructor's feedback, and then they sent their final draft. The post-test was administrated at week 15. The students worked on a topic they did not work on for the pre-test. The essays were scored by two raters than the researchers using a holistic rubric. In the pre-test both groups obtained similar results. For the EG the mean was 2.29 and for the CG was 2.57, but in the post-test the EG scored 3.89 and the CG 3.17. Even though both groups increased their performance statistically at the end of the semester, synthesis tasks permitted the EG to increase its performance. The researcher concluded that for this type of essay, scaffolding instruction was important because the type of task was difficult and students needed support and feedback during the process and to divide the task in different steps permitted the students to achieve the task's goals, especially in early stages.

Reading

Reading is understood as an interactive, complex, and sociocognitive process that involves a text, a reader and a social context (Bernhart, 1991, cited in Ediger, 2001). In this process, the readers interpret the written symbols using their language knowledge in combination with their background knowledge, past experiences, and cultural framework (Hudelson 1994, cited in Ediger, 2001). This means that the readers try to understand the information that was provided by the writer. As a result of this interaction, reading is seen as a “dialogue between the reader and text, or even between the reader and the author” (Widdwson, 1979a, cited in Hegde, 2000).

In this process, readers have to apply and/or use skills and knowledge in order to interact with the text. Grabe (1991, cited in Ediger, 2001) expressed that six components skills and knowledge areas related to reading had been identified:

- Automatic recognition: unconscious ability to recognize words within a text.
- Vocabulary and structural knowledge: the understanding of language structure and vocabulary.
- Formal discourse structure knowledge: the recognition and understanding of several types of texts and how the information is organized within each one.
- Content/world background knowledge: prior knowledge about the information contained in a text and its cultural meaning.
- Synthesis and evaluation skills/strategies: the ability of reading multiple sources and then what information is useful for one’s purpose.
- Metacognitive knowledge and skills monitoring: the capacity of identifying and using reading strategies while reading.

Teachers not only ought to be aware of what processes are involved in reading, but also they ought to know how to provide the environment to develop reading instruction. For this purpose, it is important to develop reading instruction based on pre-, during-, and post reading activities (Grabe & Stoller, 2001). Pre-reading activities provide a context for the text. This means to use students' background knowledge about the topic, to set up students' expectation, to present new vocabulary, and provide specific information about the text. During-reading activities involve the interaction between the student and the text. In this interaction, students go through the text trying to make relationships between the vocabulary presented in the previous stage and the text, understanding difficult concepts, and guessing authors' purpose. In post-reading activities, students highlight the major ideas from the texts and use them to perform other tasks. In the following chart (figure 4), common pre-, during-, and post-reading activities are included:

Figure 4

Common reading activities

Reading Activities	
Pre-Reading Activities	
Activities	Description
Previewing the text	Students read title, subheadings or observe illustrations related to the text to identify type of text, purpose, the general topic, vocabulary, and possible challenges.
Skimming the text	Read the text or portions of it to identify the mains ideas of the text.
Answering questions	Students answer questions to bring previous

	knowledge about the topic.
Exploring key vocabulary	Students look for key vocabulary in the dictionary, or select from the text the words they do not know.
During-Reading Activities	
Summarizing	Students summarize key ideas in a difficult section.
Answer questions	Students provide answers in the previous section and based on the text's information
Organizing events in the text	Students put events in order according to the text.
Post-Reading Activities	
Completing a graphic organizer	Students complete a graphic organizer using information from the text.
Writing a summary for the text	Students synthesize the text taking the majors ideas and connect them between them
Comparing two similar texts	Students read or listen to a second text regarding the topic and find connections between them.

All the activities described above may be improved by teaching reading strategies to the students. This means showing the students several tactics in order to understand the text. A study carried out by Aghaie and Zhang (2012) explored the impact of teaching cognitive and metacognitive reading strategies to intermediate Iranian EFL college students. For this purpose, the researchers randomly assigned 80 students into two groups. The experimental

and contrast group took the same pre and posttest based on *New Interchange 3* reading comprehension test part. In the pre-test, the treatment group had a mean of 44.56 and the contrast group had a mean of 44.56. As a treatment for the treatment group, the researchers used the Cognitive Academic Language Learning Approach (CALLA) model for introducing and working with reading strategies (Chamot 2005, cited in Aghaie & Zhang, 2012). This model is divided into 6 steps: preparation, presentation, practice, self-evaluation, expansion, and assessment. This model was developed in class for four months. The students worked in small groups performing some reading strategies such as to think about the topic before reading, to guess unfamiliar vocabulary item using the context, to look for logical relationships between paragraphs, to check predictions and so on. The contrast group worked reading activities according New Interchange 3 recommendations. The results showed that the experimental group performed better than the contrast group in learners' perceived use of reading strategies (a mean of 4.16 in metacognitive strategies and a mean of 4.02 in cognitive strategies) and reading performance ($m=56.25$), while the contrast group achieved 83.83% on strategy transfer. The researchers concluded that explicit reading strategy instruction improves student's reading performance. With this conclusion, they suggested that this type of instruction ought to be considering for instructional design purpose in EFL settings.

Technological Pedagogical Content Knowledge

Technological Pedagogical -And Content Knowledge (TPACK) is an approach that helps teachers integrate technology in the classroom. In order to apply this approach, teachers should know what to teach (content), how to teach (pedagogical strategies), and what technology is available (technological awareness). This approach takes its foundations from Shulman's (1986) work. He argued that pedagogy and subject content cannot be separated,

but rather combined in order to give teachers the necessary tools to design, deliver, and assess lessons in the classroom. The combination of these components permits teachers to design curriculum using technology as a tool and thus enhance the learning experience.

In the next sections, the following topics are discussed: First, Shulman's (1986) work is analyzed and discussed in order to provide the basic understanding of pedagogical content knowledge (PCK); second, Mishra and Koehler's (2006) work will be introduced, analyzed, and discussed to provide a clear explanation about TPACK and its contribution to technology integration in the classroom; third, other definitions about TPACK will be given.

Pedagogical Content Knowledge: Shulman's Work

Pedagogical content knowledge is an approach that was proposed by Shulman (1986) in his work "Those Who Understand: Knowledge Growth in Teaching." He stated that examination of teachers was focus on teaching procedures rather than teachers' subject knowledge. These decisions were made and promoted by policymakers who justified these policies based on research that considered content as a variable rather than a context. Shulman said that content and pedagogical procedures had to be taught and assessed equally among new teachers because without the proper preparation in the content area and the understanding of teaching and learning processes, teaching would be ineffective. He and his colleagues called this problem "the missing paradigm." In order to propose a solution to the missing paradigm, they conducted a two-year research study where they followed new teachers of English, biology, mathematics, and social studies from California who had completed a bachelor's degree in the content area or earned a waiver by examination. From that study, three categories of content knowledge were identified: subject matter (also known

as content knowledge), curricular or pedagogical knowledge, and pedagogical content knowledge (Shulman, 1986).

Shulman (1986) defined content knowledge as “the amount and organization of the knowledge per se in the mind of the teacher” (p. 9). This refers to the way a professional organizes content from a specific field is organized. In this category of knowledge, the teacher must know what a specific piece of information means, its foundations, and why it can or cannot be applied in certain circumstances. Finally, the teacher must understand why some topics are more important than others according to the subject area.

Curricular or pedagogical knowledge was defined as a range of ways that a subject can be represented, exemplified, and taught in certain areas or circumstances (Shulman, 1986). In addition, teachers must know and understand the available material and programs for teaching, as well as the curriculum in the other subject areas in order to apply vertical curriculum in their practices and enhance the learning experience.

Shulman’s pedagogical content knowledge was defined “as subject matter knowledge for teaching” (p. 9). This definition includes the topics that are regularly taught in a subject area, ways to represent it, analogies, illustrations, examples, and demonstrations that make the subject area comprehensive to a general population. Additionally, PCK included “an understanding of what makes the learning of specific topics easy or difficult” (p. 9).

Finally, he suggested that PCK could be taken into account for developing examinations for teachers, understanding that a combination of knowledge of a specific content area and pedagogical strategies are the key for teachers’ successful; teachers’ training programs had to be built on research-based approach to permit teachers candidates to acquire

PCK skills; and a new research agenda had to be suggested including researchers, teachers, and teachers educators to improve case studies' research model.

Technological Pedagogical Content Knowledge: The New Teacher's Knowledge

The development of technology in recent years has resulted in the integration of technology in classrooms. Teachers from all the content areas have looked for new ways to explain and represent content to students. Mishra and Koehler (2006) proposed a technology integration model based on Shulmans PCK framework. The reason for developing this new framework included the fact that “new technologies have changed the nature of the classroom or have the potential to do so” (p. 1023). From Mishra's and Koehler's point of view, technology is able to provide access to explanations, representations, analogies, and demonstrations that make the subject matter more accessible to the learner (p. 1023), but at the same time, they expressed that technology differed from the content and its representation (p. 1025). They identified and defined each of the components, and then analyzed content, pedagogy and technology in pairs to understand the articulation among them (p. 1026).

Mishra and Koehler's definitions of content knowledge (CK), pedagogical knowledge (PK), and pedagogical content knowledge (PCK) are similar to Shulmans': CK was seen as “knowledge about the actual subject matter that is to be learned or taught” (p. 1026). This definition includes teachers' deep understanding of subject contents and the nature of knowledge among the fields (p. 1026); pedagogical knowledge (PK) was defined as “deep knowledge about the processes and practices or methods of teaching and learning” (p. 1026). This knowledge involves students' learning, classroom management, lesson plan development and implementation, and student evaluation (p. 1026-1027); PCK was defined as “knowledge of pedagogy that is applicable to the teaching of specific content” (p. 1027).

The previous definition, even though it is very basic, refers to the knowledge of what should be taught, why it should be taught, and how it should be taught. In addition, authors pointed out that knowledge of learners' characteristics included learners' previous knowledge, learning styles, misconceptions, and misapplications (p. 1027).

What Mishra and Koehler added in this framework were the definitions of technology knowledge (TK), technological content knowledge (TCK), technological pedagogical knowledge (TPK), and technological pedagogical content knowledge (TPACK). These authors defined technology knowledge as “knowledge about the standard technologies, such as books, chalk, and blackboard, and more advance technologies, such as the Internet and digital video” (p. 1027).

Related to electronic technology, technology knowledge included how to use tools such as word processors, web browsers, e-mail clients, and standard set of software.. Technological content knowledge was seen by the authors as “knowledge about the manner in which technology and content are reciprocally related” (p. 1028). Because technology changes rapidly, teachers have to develop the skills to analyze and reflect on this, and then to adapt representations of the subject matter according to the technology used. In addition, technological pedagogical knowledge (TPK) was linked to knowledge of the available technology and how it works, and how teaching is affected by using it in educational settings (p. 1028). This refers to the utilization and understanding of the range of necessary tools to carry out particular tasks in combination with pedagogical strategies. The combination of technology, content and pedagogy results in TPACK. The authors visualize TPACK in this way:

TPACK is the basis of good teaching with technology and requires an understanding of the representation of concepts using technologies; pedagogical techniques that use technologies in constructive ways to teach content; knowledge of what makes concepts difficult or easy to learn and how technology can help redress some of the problems that students face; knowledge of students' prior knowledge and theories of epistemology; and knowledge of how technologies can be used to build on existing knowledge and to develop new epistemologies or strengthen old ones (Mishra & Koehler, 2006, p. 1029)

From this definition, certain points can be highlighted: First, technology is seen as a tool that helps in the learning process. This means that representations of the subject matter can be enhanced through using technology. Second, TPACK is a constructivist approach because the authors suggested that technology can be used to scaffold learning. This is proposed because technology may be a way to help students understand difficult concepts depending on how it is integrated and used in the classroom.

Finally, the natural order of technology integration into the classroom dictates that after goals have been identified, a representation of the concept is chosen, and then a piece of technology is matched to the concept or activity type. Although the authors agreed with this claim, they also expressed that technology should sometimes drive this decision because there were new technologies being introduced every day disrupting the status quo, leading teachers to restate their own concepts about pedagogy, content and technology.

Activity Types

Harris, Mishra, and Koehler (2009) claimed that researchers and teachers had two different points of view about technology integration. On one hand, the authors argued that technology may be used to support and promote collaboration and inquiry, and reform

teaching practices (Harris, Mishra, & Koehler, 2009). On the other hand, the same authors claimed that teachers tended to use technology such as presentation software, word processing, clouding computer, and etc. to enhance existing practices (p. 393). This approach (to identify the technology first, and then identify instructional goals and activities) is called *technocentric*. The authors argued that one of the greatest weaknesses of this approach was that “ignore[ed] the variation inherent in different forms of disciplinary knowledge and inquiry as well as the varied pedagogical strategies that are most appropriate for teaching this content”(p. 395). This means that this approach does not consider the unique processes and the activities involved when designing, planning, and delivering content and instructional materials. Even though each content area has its unique ways to design, deliver, and assess the content, according to Harris and Hofer (2009) there are five basic instructional decisions:

- Choosing *learning goals*;
- Making practical *pedagogical decisions* about the nature of the learning experience;
- Selecting and sequencing appropriate *activity types* to create the learning experience;
- Selecting *formative and summative assessment*;
- Selecting *tools and resources* that will help students to understand the content.

In the TPACK framework, selecting and sequencing appropriate learning activity types is highly important because it is in this step where technology is chosen. Learning activity types are “the individual parts of a lesson, each of which has a particular focus, format, setting participants, materials, duration, pacing cognitive level, goals, and level of student involvement” (Harris, Mishra & Koehler ,2009, p.404) and they function “as

conceptual planning tools for teachers” (Harris & Hofer, 2009, p. 101).. Developing TPACK using activity types would allow technology integration to evolve from a technocentric model to a new one where goals and instructional activities remain their emphasis and technology is integrated and used as a tool to enhance the learning process from the student’s perspective.

To establish this new mindset among teachers, Harris, Mishra, and Koehler (2009) proposed to create awareness of the activity types in specific content areas, and to match them to digital and nondigital technologies to support each type of learning activity. Regarding to world languages, van Olphen, Hofer, and Harris (2011) provided a list of learning activity types and the possible technologies linked to them. This list was exclusive designed for being used by world language teachers (e.g. ESL/EFL teachers, Spanish teachers, etc.). The authors expressed that this list provides “a systematic, pedagogically meaningful scaffold that guides teachers’ instructional thinking, decision-making, and technology integration while promoting the development of students’ communicative competence” (p. 1). This list of activity types (Appendix 1) was based on ACTFL (American Council on the Teaching of Foreign Languages) standards and addressed five abilities listening, speaking, reading, writing, and viewing.

TPACK: Empirical Experiences

It is important to understand that the TPACK framework is in development, even though it was based on Shulman’s work. In order to understand its implications in different educational contexts, three studies are discussed in the next section. The selection of these three papers is because they reflect what the TPACK’s possibilities are in terms of technology integration in the classroom, in professional development, and in pre-services teachers’ training. This analysis permits to review TPACK from different points of view. The

first case was a qualitative research study carried out by Wetzel and Marshall (2011) that documented a middle school teacher and her experience with technological integration in English language classroom where data was collected and compared to the TPACK framework. The second case, developed by Allan, Erickson, Brookhouse, and Johnson (2010), was a teacher professional development experience that permitted teachers to work collaboratively to include simulation in a science class. The third case was a qualitative study about TPACK and pre-services teachers that examined pre-services teachers' technological knowledge and established how and when it occurred.

The study carried out by Wetzel and Marshall (2011) described how a middle school sixth grade teacher included technology in her classroom during a six-week cross curricular project on the Renaissance where a newsletter, an interview and a poem were analyzed. The researchers suggested that the teacher's technological pedagogical knowledge was expressed through class management skills related to computer usage. Some examples were the fact that the teacher provided written instruction on the blackboard prior to class to save time, taught how to care for laptops, provided headphones to reduce noise in the classroom, and played music in the background. In terms on pedagogical technological content knowledge, the teacher used "project-based learning in ways that helped students meet the state middle school language art standards" (p. 79). This means that the teacher combined the language arts standards, (content knowledge) a writer's workshop approach (Pedagogical knowledge) and video cameras, keynote software, iMovie and garage band (technological knowledge) to create a final product (newspapers, interview, and poems). They concluded that the teacher "used technology as a tool to enhance the learning both of the content and also the technology skills the students needed to be effective learners" (p. 80)

Allan, Erickson, Brookhouse, and Johnson (2010) carried out a three-year collaboration project in Maine which had had a one-to-one program since 2003, but teachers were not involved in the development of curriculum for this one-to-one program. The aim of the project was to provide a virtual ecology simulator for middle school science classes. In this project partners participated who “supplied portions of technology, pedagogy and content knowledge” (p. 37). Also, to provide a professional development opportunity, 23 teachers from Maine middle school were invited to participate. At the end of the project, a curriculum that supported 5 targeted simulations in ecology based on Maine ecosystems and a programming module called Program a Bunny were created.. Finding suggested that teachers recognized that not only experiential learning could take place in a field experience, but also through computers simulation; integrating teachers into the curriculum and software development team was a way to integrate technology effectively in the curriculum (p. 41);” and teachers increased their pedagogical skills as facilitators in the learning-centered classroom” (p. 41). Finally, they concluded that the data suggested that “a collaborative curriculum development project may be an excellent model for TPACK teachers’ professional development project” (p.42).

Hofer and Grandgenett (2012) carried out a longitudinal study in which they tried to “understand how teacher candidates’ knowledge of technology integration develop[ed] through course experiences throughout teacher preparation programs” (p. 84). The subjects were 8 teachers who were enrolled in an 11-month M.A.Ed. initial certification program. These teachers came from four different discipline areas (English, mathematics, social studies, and science).The data was collected using different resources: four TPACK surveys across the pro gram, four reflection assignments, and two lessons plans. After analyzing the

surveys, results suggested that teachers candidates' TPACK grew. The researchers pointed out that this growth could be linked to the fact that the educational technology course and teaching methods classes were been taught at the same time. In addition, the educational technology course was taught like a methods class permitting students to explore and apply their knowledge. Overall, this combination permitted students to receive feedback about their technology integration as well as teaching in their discipline. Researchers concluded that it was critical to understand how technology integration developed within specific programs to prepare students for an increasingly technology-infused workplace (p. 102).

TPACK and Language Learning

In this section, the relationship between TPACK and language teaching is discussed. Because TPACK framework is relatively new, there are not too many study cases documenting the implications of the framework in language teaching. Instead, it seems that researchers are more interested in finding out what teachers know about TPACK and what technology they may apply in student's achievement when using TPACK.

Case Studies and Surveys

A case study that showed clear implementation of TPACK was carried out by Kulavuz (2011) to develop a video as a final project in an Intensive English Program at University of South Florida. The project was seven-weeks long and the participants were English learners from different countries who were learning English for academic or professional purposes. The video was about to describe a new place near the area using language structures studies through the course. For this purpose, they were asked to take pictures of the chosen place and to write a script with an instruction, body and conclusion. During the seven-week period, they were given feedback about the pictures and scripts; at the

same time they were taught how to use iMovie. Some lessons learned from this activity were that students needed more time it was expected to develop the project because some technological issues may arise; teachers ought to provide options for students in terms of the technological tools to overcome issues such as compatibility problems, or lack the right software on their own computers. The author concluded that this project provided “an opportunity to apply grammar structures in an authentic way by developing all four skills [...] and also can be implemented with learners at varying proficiency levels” (p. 22).

A survey performed by Muniandy and Veloo (2011) tried to measure not only TPACK knowledge of pre-service teacher from Malaysia, but also their attitude towards the technology and the level of engagement of YouTube videos may promote among students. The participants were 33 TESOL pre-service teachers from a public University from Malaysia. They were asked to analyze 50 English videos taken from different resources. Each video lasted between one and five minutes. Each pre-service teacher analyzed the videos taking into account the following categories: attitude and readiness, technical qualities, pedagogy, contents, and student engagement. Researchers found that pre-service teacher believed that videos met the curriculum requirements, were rich in content, presented attractively and effectively, engaged learners, and improved the pedagogical parameters in classrooms.

Conclusions and Recommendations

Promoting Effective Language Teaching in the Classroom

The conclusions regarding effective language teaching in the classroom is that in order to achieve it, communicative competence have to be developed within the EFL/ESL students. Communicative competence involves not only the use of the four basic skills (listening, speaking, reading, and writing) to interact in the target language, but also the understanding of the culture, and grammatical rules that are involved on it. Some of twelve principles that Brown proposed for language teaching supported this assumption. For example, automaticity deals with the students' capacity of manage the language to perform a communicative act, or language culture connection that involves the connection between culture and language. Also, Brown stated that communicative competence is the ultimate goal in language teaching.

Communicative competence was also found in Communicative Language Teaching (CLT), task-based instruction and content-based instruction. In CLT, activities may reflect real life situations and contexts where idioms and cultural components may be the central core. In task-based instruction, the meaning of the language is emphasized more than the form of the language. In this method, language is a communication tool that students use in order to interact with their environments. Again, communicative competence, or the capacity to use the language effectively, is the main purpose. In content-based instruction, language is taught through different subject. In this method, the language and content create a contextualized environment when communicative competence may be developed by the students.

As it was mentioned previously, communicative competence has its foundation in the students' capacity of using the language skills effectively. Even though content-based instruction uses the four skills in a contextualized environment, task-based instruction and communicative language teaching activities may be more skilled-oriented. Speaking and writing are productive skills that try to place the students in situations where the language may be used to communicate something. Listening and reading are receptive skills that permit the students to receive input to increase their language performance. The language activities have to have a high cultural, real-situated component to be meaningful to them.

TPACK and Language Teaching

Technological Pedagogical And Content Knowledge is a framework that identifies the necessary teachers' knowledge in order to integrate technology effectively in the classroom. This framework suggests that teachers' knowledge is divided into 3 categories: pedagogical knowledge, content knowledge, and technological knowledge. As a result of the combination of each component, it is also possible to identify Pedagogical Content Knowledge, Technological Content Knowledge, Technological Pedagogical Knowledge, and Technological Pedagogical Content Knowledge. One of the conclusions that can be suggested from this review is the absence of TPACK in language teaching. Even though there are some practical applications, this is not enough in comparison with other subject areas. It seems that teachers and/or researchers from second language acquisition area are not interested in exploring this new framework. Another reason it may be the lack of awareness from teachers and researchers. For this reason, it is necessary to provide specific definition that fits in language teaching area, to provide teachers and researchers a starting point in order to achieve technology integration in ESL/EFL settings.

First, Pedagogical knowledge in language teaching may be define as teachers' knowledge regarding pedagogical practices that promotes communicative competence among learners. These pedagogical practices have to be based on authentic activities or tasks that contain comprehensive input, use authentic material, and deal with some cultural aspects of the target language. All the aspects mentioned before may be included into a language teaching methodology.

Content knowledge ought to be defined as teacher's knowledge about grammar, vocabulary, and standards that are involved in language teaching. It is also possible to include in this category some language aspects that incorporate pronunciation features such as rhythm and intonation. The content has to be aligned with each level standard, providing the students the opportunity to develop communicative skills.

Technological knowledge may be defined as teachers' knowledge of current technologies that are available today and how that technology may be used to promote effective teaching and learning inside and outside the classroom. It is important to state that most of the technology available was not designed for teaching purposes, which is why teachers have to develop the necessary skills to identify, acquire, modify, and apply new technologies in educational settings.

Pedagogical content knowledge is the language teachers' knowledge that permits them to design and delivery language lessons, and assesses language students' performance. This knowledge includes teachers' capacity to understand learners' linguistic skills, to identify learners' weakness and strengths, to apply second language acquisition theories in the classroom, language methodological principles, and to provide students an environment where they are able to develop communicative competence using authentic tasks.

Technological content knowledge is the teachers' knowledge of how to provide learners the opportunity of learning vocabulary, practicing grammar and pronunciation features with the help of technology. This includes the teachers' ability to find, adapt or create materials that are based on technology.

Technological pedagogical knowledge is the teachers' knowledge of how to adapt technology in language activities that promotes communicative competence. In this knowledge, teachers understand that technology enhances the activity or task pushing students to exploit all their language skills. It is important to state that communicative competence is not only related to speaking, and teachers have to find a way to use the available technology and activities to practice the other language skills.

Technological pedagogical content knowledge is the teachers' knowledge that permits them to integrate technology in the language class to promote and achieve communicative competence among students. Moreover, teachers select the technology according to the task, language skill, and content. In addition, teachers understand that technology plays an important role in the language classroom, because it can be used to perform a task, to find information related to the class' topic, to interact with others, to obtain comprehensive input, to expose students to the target culture, and to assess students' performance.

When the TPACK framework is applied in a language classroom, teachers become in facilitators. One of the biggest problems for EFL/ESL teachers is multi-level groups (groups that contain learners with different language levels). With the application of TPACK framework, teachers can provide material according to the student level and special needs.

Using TPACK to Integrate Technology in ESL/EFL Classroom

The way to integrate TPACK in ESL/EFL classroom is to use activity types that promote communicative competence among language learners. These activities have to permit students to interact and use their skills in real context where students may explore the language possibilities. Van Olphen, Hofer and Harris (2011) activity type taxonomy is a starting point for teachers to apply TPACK in English classrooms. This integration can be also possible because EFL/ESL teachers go through the five basic instructional decisions that Harris, and Hofer (2009) described no matter what method they apply in the classroom.

For example, in the case study performed by Kulavuz (2011), students developed a video. This activity type included in Van Olphen, Hofer and Harris (2011) activity type taxonomy is an illustration how technology allows students to practice, perform, and use the language with a communicative purpose. In this case, the activity may be done without use of technology (e.g. bring the picture to the class and speak about it), but the teacher gives the students the opportunity to record their voices and create the video. This permitted the students to improve their script (writing skills), their speaking (pronunciation and intonation) in a real situation (describe pictures) using technology.

One of the points that needs to be improved in the taxonomy is to include specific technology that may be used to perform the learning activities to promote communicative competence because teachers may think that the phrases Web, CD, and Chat may be general terms. The technologies that may be used in order to achieve communicative competence have to promote collaboration and interaction among the students. In Addition to that, it may create a real environment where students that perform as in real life.

Recommendations for Future Research

One of the recommendations that may be made from this literature review is the lack of research regarding TPACK and language teaching and learning. It is imperative that researchers and teachers study TPACK and its implication in the language classroom. Even though definitions of TPACK related to language teaching were provided, it is important to understand that practical applications are the only way to understand the TPACK framework in the language teaching field, specifically in EFL/ESL environments.

It may be important to collect information regarding English teachers' knowledge about TPACK framework. This may be important because it could establish a starting point for future professional development courses based on this framework for in-service teachers around the world.

Finally, it is important to move from collecting information about technology knowledge in pre-services teachers to design concrete technology curriculum to train EFL/ESL teachers in TPACK framework. How to integrate technology effectively is an essential skill for teachers and it seems that English teachers are not developing this skill. This skill may be understood as the teacher capacity to adapt technology created for non-teaching purpose and use it as a tool to promote effective learning and teaching.

References

- Aghaie, R., & Zhang, J. L. (2012). Effects of explicit instruction in cognitive and metacognitive reading strategies on Iranian EFL students' reading performance and strategy transfer. *Springer, 40*, 1063-1081.
- Ahlquist, S. (2013). 'Storyline': A task-based approach for the young learner classroom. *ELT Journal, 67*(1), 41-51.
- Aliakbari, M., & Jamalvandi, B. (2010). The impact of 'role play' on fostering EFL learners' speaking ability: A task-based approach. *Pan-Pacific Association of Applied Linguistics, 14*(1), 15-29.
- Allan, W. C., Erickson, J. L., Brookhouse, P., & Johnson, J. L. (2010). EcoScienceWorks: Teacher professional development through a collaborative curriculum project – An example of TPACK in Maine. *TechTrends, 54*(6), 36-43.
- Brown, D. H. (2002). English language teaching in the "post-method" era: Toward better diagnosis, treatment, and assessment. In J. C. Richards, & W. A. Renandya, *Language teaching: An anthology of current practice*. New York: Cambridge University Press.
- Butler-Pascoe, M. E., & Wiburg, K. M. (2003). *Technology and teaching English language learners*. Boston: Allyn and Bacon.
- Bygate, M. (2001). Speaking. In R. Carter, & D. Nunan, *The Cambridge guide to teaching English to speakers of other languages*. New York: Cambridge University Press.
- Carter, R., & Nunan, D. (2001). Introduction. In R. Carter, & D. Nunan, *The Cambridge guide to teaching English to speakers of other languages*. New York: Cambridge University Press.

- Celce-Murcia, M. (2001). Language teaching approaches: An overview. In Celce-Murcia, M. *Teaching English as a second or foreign language* (Third ed.). Boston: Heinle Cengage Learning.
- Chen, H.-K. (2011). Analysis of English cognitive direct method from the perspective of knowledge management. *The Journal of Human Resource and Adult Learning*, 7(2), 71-78.
- Cox, S., & Graham, C. R. (2009). Using an elaborated model of the TPACK framework to analyze and depict teacher knowledge. *TechTrends*, 53(5), 60-69.
- Ediger, A. (2001). Teaching children literacy skills in a second language. In M. Celce-Murcia, *Teaching English as a second or foreign language* (Third ed.). Boston: Heinle Cengage Learning.
- Ellis, R. (2003). *Task-based language learning and technology*. Oxford: Oxford University Press .
- Feryok, A. (2008). An Armenian English language teacher's practical theory of communicative language teaching. *System*, 36, 227-240.
- Gonzalez, V., Yawkey, T., & Minaya, L. (2006). *English-as-a-second-language (ESL) teaching and learning: Pre -K-12 classroom applications for students' academic achievement and development*. Boston: Pearson/Allyn and Bacon.
- Grabe, W., & Stoller, F. L. (2001). Reading for academic purposes: Guidelines for the ESL/EFL teacher. In M. Celce-Murcia, *Teaching English as a second or foreign language* (Third ed.). Boston: Heinle Cengage Learning..
- Hammer, J. (2007). *The practice of English language teaching*. (Fourth ed.). Pearson Longman.

- Harris, J., & Hofer, M. (2009). Instructional planning activity types as vehicles for curriculum-based TPACK development. *Research highlights in technology and teacher education*, 99-108. Retrieved from College of William and Mary, school of education, Learning Activity Types Wiki:
<http://activitytypes.wmwikis.net/file/view/HarrisHofer-TPACKActivityTypes.pdf>
- Hegde, T. (2000). *Teaching and learning in the language classroom*. Oxford : Oxford University Press.
- Hismanoglu, M., & Hismanoglu, S. (2011). Task-based language teaching: What every EFL teacher should do. *Procedia Social and Behavioral Sciences*, 15, 46-52.
- Hofer, M., & Grandgenett, N. (2012). TPACK development in teacher education: A longitudinal study of preservice teachers in a secondary M.A.Ed. program. *Journal of Research on Technology in Education*, 45(1), 83-106.
- Kim, E.-Y. (2001). Using translation exercises in the communicative EFL classroom. *ELT Journal*, 65(2), 154-160.
- Kroll, B. (2001). Considerations for teaching an ESL/EFL writing course. In M. Celce-Murcia, *Teaching English as a second or foreign language* (Third ed.). Boston: Heinkle Cengage Learning.
- Lazaraton, A. (2011). Teaching oral skills. In M. Celce-Murcia, *teaching English as a second or foreign language* (Third ed.). Boston: Heinkle Cengage Learning.
- Makki, M. (2011). Does the vehicle of presentation affect the listning comprehension of EFL Leraners? A case of Iranian learners. *Modern Journal of Language Teaching Methods*, 1(2), 4-17.

- Mishra, P., & Koehler, M. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record*, 108(6), 1017-1054.
- Morley, J. (2001). Aural Comprehension instruction: Principles and practices. In M. Celce-Murcia, *Teaching English as a second of foreign language* (Third ed.). Boston: Heinle, Cengage Learning.
- Ngan, N. T. (2011). Content-based instruction in the teaching of English for accounting at vietnamese college of finance and customs. *English Language Teaching*, 4(3), 90-100.
- Peterson, P. W. (2001). Skills and strategies for proficient listening. In M. Celce-Murcia, *Teaching English as a second or foreign language* (Third ed.). Boston: Heinle Cengage Learning.
- Richards, J. C., & Rodgers, T. S. (2001). *Approaches and Methods in Language Teaching*. (Second ed.). New York: Cambridge University Press.
- Rost, M. (2001). Listening. In R. Carter, & D. Nunan, *The Cambridge guide to teaching English to speakers of other languages*. Cambridge: Cambridge University Press.
- Savignon, S. J. (2011). Communicative language teaching for the twenty-first century. In M. Celce-Murcia, *Teaching English as a second or foreign language* (Third ed.). Boston: Heinle Cengage Learning.
- Shih-Chuan, C. (2011). A Contrastive Study of Grammar Translation Method and Communicative Approach in Teaching English Grammar. *English Language Teaching*, 4(2), 13.
- Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, 15(2), 4-14.

- Snow, M. A. (2001). Content-based and immersion models for second and foreign language teaching. In M. Celce-Murcia, *Teaching English as a second or foreign language* (Third ed.). Boston: Heinle Cengage Learning..
- Van Olphen, M., Hofer, M., & Harris, J. (2011). *World languages learning activity types*. Retrieved from College of William and Mary, School of Education, Learning Activity Types Wiki:
<http://activitytypes.wmwikis.net/file/view/WorldLanguagesLearningATs-Feb2011.pdf>
- Wetzel, K., & Marshall, S. (2011). TPACK goes to sixth grade: Lessons from a middle school teacher in a high-technology-access classroom. *Journal of Digital Learning in Teacher Education*, 28(2), 73-81.
- Wolf, M. J., Mishra, P., Bouck, E. C., DeSchryver, M., Kereluik, K., Shin, T. S., & Graves, L. (2011). Deep-play: Developing TPACK for 21st century. *International Journal of Learning Technology*, 6(2), 146-163.
- Zhang, C. (2013). Effect of instruction on ESL students' synthesis writing. *Journal of Second Language Writing*, 22, 51-67.

Appendix

Table 1

Listening activity types

Activity type	Brief description	Possible Technology
Listen to a conversation	Students listen to a conversation in L2, either live or recorded (e.g., from a textbook supplement, radio broadcast, skit, guest speakers).	CD, Web audio site, audio conferencing
Listen to a teacher's prompt(s)	Students listen to teachers' prompts in L2 (e.g., assignment directions, game prompts, questions).	Podcasts, recorded audio
Listen to a broadcast	Students listen to a broadcast in L2 (e.g., radio, television, news, performance).	Web radio, podcasts
Listen to a poem/song	Students listen to a poem recited or song sung in L2, live or recorded.	CD, Web(e.g., TeacherTube), podcasts
Listen to an audio recording	Students listen to a recording in L2 (teacher or student-made, professionally produced).	Podcasts, Web audio site
Listen to a presentation	Students listen to a live or recorded presentation in L2 (e.g., guest presentation, student-created oral report, teacher-created lecture).	Presentation software, video/audio conference
Listen to a story	Students listen to a story written and read aloud in L2	CD, audiobook, Web (e.g., TeacherTube), podcasts

Note. Taken from Van Olphen, Hofer, and Harris (2011).

Table 2

Speaking activity types

Activity type	Brief description	Possible Technology
Have a conversation with a partner/small group	Students converse with a limited number of others in L2 (improvised or with prompts).	Audio/Video conference, telephone
Have a conversation with a large group	Students converse with a large group in L2 (e.g. question-and-answer with a guest speaker, improvisational performance, class discussion).	Audio/Video conference
Perform role plays	Students speak in L2 in character in a simulated situation (e.g., ordering dinner in a restaurant, checking in at the airport, skit, play, impersonation, puppet show).	Video camera, audio recorder
Engage in an oral question-and-answer activity	Students ask and/or answer questions from others in L2 (e.g., exchange personal information, request directions, interact with guest speaker).	Audio/Video conference
Repeat	Students repeat what someone else says in L2 (e.g., tongue-twister games, "Whisper Down the Lane"/"Telefono Descompuesto," oral exercises).	Podcast, audio recorder
Have an informal debate	Students debate an issue in L2.	Audio/Video conference, audio recorder
Deliver a presentation	Students deliver an (in)formal presentation (e.g.,	Presentation software, video recorder

	advertise a product, present a report, perform a commercial for a tourist destination).	
Create an audio/video recording	Students create a recording (e.g., a commercial for an invented or real product, “how to do it” demonstrations, a song or rap).	Audio recorder/ video recorder, podcast
Tell a story	Students tell a lengthy or short story in L2.	Audio recorder/ video recorder
Sing	Students sing a song in L2.	Audio recorder/ video recorder
Define terms orally	Students provide L2 definitions for L2 words.	Audio recorder
Describe something	Students describe an object, person, place, or idea in L2.	Audio recorder
Recite	Students recite a rehearsed piece in L2 (e.g., poem, quotation, common phrase).	Audio recorder

Note. Taken from Van Olphen, Hofer, and Harris (2011).

Table 3

Writing activity types

Activity type	Brief description	Possible Technology
Engage in a written question-and-answer activity	Students ask and answer questions about different topics (e.g., daily routines, personal traits, target culture, likes and dislikes).	Word processing software, chat, Email, online discussion
Write a paper	Students compose a written response (e.g., position paper, essay, report) to a prompt (e.g. art critique, passage from textbook,	Word processing software, blog, wiki

	newspaper article).	
Label objects	Students prepare labels to match to objects in the class, at their homes, and/or at school.	Word processing software, drawing software, concept mapping software
Define terms in written form	Students use new and old vocabulary to compose a glossary of terms (e.g., glossary of terms for textbook chapter, literary piece read in class or as a homework)	Word processing software, concept mapping software, wiki
Write a sentence/paragraph	Students write a sentence or paragraph to describe an object, situation, and/or place.	Word processing software, concept mapping software
Create a comic	Students create a comic strip to apply functions, culture, grammar, and/or vocabulary related to a given topic.	Comic creation software, word processing software,
Write a script	Students write a script for a soap opera episode, a comedy skit, or a play.	Word processing software, wiki
Write a poem	Students write a poem (e.g., haiku, cinquain, diamond, concrete poetry).	Word processing software, wiki
Write a letter	Students write a letter in response to a prompt (e.g., penpal/keypal communication, letter to a family member, letter to the Editor, a complaint).	Word processing software, Email
Create a game	Students create a game to practice vocabulary, grammar, language functions, culture (e.g., flash cards, Bingo, Jeopardy).	Word processing software, game creation software, presentation software

Write a story	Students write a story inspired by personal experience, a cultural topic, or a literary work read as part of course assignments.	Word processing software, blog, wiki
Write journal entries	Students write journal entries using targeted grammar structures and vocabulary (e.g., diary, blog, dialogue journal).	Blog, word processing software, wiki, Email list, online discussion forum
Create a book	Students create a book (e.g., biography, cookbook, poem collection, picture book).	Word processing software, drawing software, presentation software, Web authoring software
Participate in an online discussion	Students engage in online discussions and take a stand on assigned topics (e.g., global warming, bilingual education, international policy).	Online discussion forum, chat room, text messaging
Create a test	Students create a topic or chapter test alone or with a peer (e.g., multiple choice, cloze, true or false, matching pairs).	Word processing software, test creation software, Web authoring software
Create an illustration accompanied by text	Students create a map, a concept map, word pictures, a mural, or a storyboard to illustrate historical events or cultural topics related to a textbook unit.	Drawing software, concept mapping software, presentation software
Create a newspaper/newsletter/news magazine/brochure	Students synthesize information from textbooks, encyclopedias, and/or websites and develop a print-based or electronic periodical.	Word processing software, desktop publishing software, Web authoring software, wiki
Create a chart/table	Students compile and synthesize information from different sources and	Word processing software, spreadsheet

	organize it in charts and/or tables.	
List word families	Students develop word clusters (e.g. “Familias de Palabras”).	Concept mapping software, word processing software
Edit	Students assist each other with their writing projects (e.g., peer editing).	Word processing software, wiki
Take notes	Students record relevant information on course topics (e.g., presentations, field trips, videos).	Word processing software, concept mapping software, wiki (for collaborative note-taking)

Note. Taken from Van Olphen, Hofer, and Harris (2011).

Table 4

Reading activity types

Activity type	Brief description	Possible Technology
Read a story	Students read and analyze stories by relevant authors from their target language to get acquainted with different literary styles (e.g., J. Borges, A. Matute, H. Quiroga).	Web, ebook reader
Read a poem	Students read and analyze poems by authors from different nationalities and literary traditions (e.g., P. Neruda, J. Hernández, G. Mistral, Sor Juana Inés de la Cruz).	Web
Read a newspaper/magazine	Students read and extract information from newspapers and magazines from different countries where their target language is spoken.	Web

Read a book/novel	Students read and analyze books and novels from different literary traditions and authors (e.g., G. Garcia Marquez, J. Cortazar, E. Zola, L. Esquivel).	Web, ebook reader
Read a letter	Students read letters from newspapers or magazines, family archives, legal documents (e.g., from and to editors, from one family member to another one, legal notifications).	Email, Web
Read a textbook	Students read and extract information from textbooks (e.g., cultural notes, grammar, vocabulary lists).	Web, ebook reader, CD
Read a comic (e.g. for children, political cartoon)	Students read a comic and relate it to the cultural and/or political reality/realities represented (e.g., “Mafalda,” “Maitena,” “Asterix,” “Ramón”).	Web
Read a chart/table	Students read hart(s)/table(s) to extract information and to connect it to course topics (e.g., weather service, census data by languages, health issues by countries).	Web
Read an article (e.g. encyclopedia entry, Web page)	Students read article/s to further their knowledge about course topics (e.g. encyclopedia entry, Web page, electronic journals and magazines).	Web, CD
Read a diary/journal	Students read entries from peers’ diaries/journals posted online.	Web, blog

Note. Taken from Van Olphen, Hofer, and Harris (2011).

Table 4

Viewing activity types

Activity type	Brief description	Possible Technology
Watch a performance	Students attend a live performance or watch a recorded event (e.g., DVD of Ballet Folklórico de México, concert, play).	UStream, Web (e.g., TeacherTube), DVD
Watch a video	Students watch contemporary or classic movies, video clips, commercials, documentaries, to enhance comprehension of course topics.	Web (e.g., TeacherTube, Hulu), DVD
Observe a live interaction	Students attend or watch interactions in the target language to get acquainted with different communication styles (academic and non-academic) in different settings (e.g., sporting event, at the airport, a job interview, at the doctor's office).	Web, videoconferencing, UStream
View an exhibit	Students take physical or virtual field trips (e.g., to an art museum, cultural sites, other students' works, school exhibition).	Web, Web-based virtual fieldtrip, videoconference
View image(s)	Students use images to elicit information about course topics (e.g. pictogram, photographs, drawings).	Web, CD

Note. Taken from Van Olphen, Hofer, and Harris (2011).