The application of English Digraphs' learning through ICTs in a Catalan Context

Final Degree Project

Aina Bosch Codina

Tutor: Mireia Canals

Academic course: 2016-2017

Degree in Early Childhood Education and Primary School Teaching

Facultat d'Educació Traducció i Ciències Humanes

Universitat de Vic-Universitat Central de Catalunya

Vic, May 2017

Acknowledgements

I would like to express my gratitude to all the people that helped me to make this study possible; their guidance and participation have been essential to turn this challenge into a real research.

First of all, I want to thank my tutor Mireia Canals, who encouraged and guided me during the whole process, even from afar. This research would not have been possible without her support and dedication.

Secondly, I want to thank Marta Corominas, for her trust in me. The project would have been incomplete without her help.

Furthermore, I am very grateful to Carme Oller, the school Marta Mata of Torelló and all the students that participated in the research, for giving me the opportunity to be part of their school.

Finally, I want to express my gratitude to my family and friends, for encouraging me and always being by my side.

Abstract

The present study is based on how the learning of diphthongs and its pronunciation in English, through the ICTs, can be applied in a Catalan context, in Early Years.

In order to do so, an English school's methodology, specifically a classroom of Reception stage (5 years of age), has been observed and analysed, and considering language and age barriers, an adaptation has been applied in the 1st grade of Primary Education (6 years of age) in Catalonia. Thereby, digital resources applied in the mentioned school in England have been adapted to fit into the English level of Catalan students. Otherwise, an introduction to this phonetic aspect of the English language has been implemented, as it does not appear explicitly in the Curriculum, but is important to progress in foreign language learning.

Keywords: Early Years, foreign language learning, phonetics, ICT, diphthongs.

Aquest estudi es basa en com l'aprenentatge de diptongs i la seva pronúncia en Anglès, a traves de les TIC, es pot aplicar en un context català, a Educació Infantil.

Per a dur-ho a terme, s'ha observat i analitzat la metodologia d'una aula de *Reception* (5 anys), d'una escola anglesa i, considerant les barreres de l'edat i de la llengua, s'ha aplicat una adaptació al 1r curs d'Educació Primària (6 anys) a Catalunya. D'aquesta manera, els recursos digitals aplicats en una escola d'Anglaterra han sigut adaptats per a encaixar en el nivell d'anglès dels estudiants catalans. Per altra banda, s'ha introduït aquest aspecte de la llengua anglesa, ja que no apareix explícitament al Currículum, però és important per a progressar en l'aprenentatge d'una llengua estrangera.

Paraules clau: Educació Infantil, aprenentatge de llengua estrangera, fonètica, TIC, diptongs.

Table of contents

1. Introduction

The world has changed in the last 30 years, and this change has its own name; globalisation. Two main concepts can define world's globalisation, and those are English and Information and Communication Technology. ICTs and the English language has unified people more than anything before, different parts of the world can now be connected no matter the distance and the physical barriers. Consequently, learning English has become one of the most important focuses of education and, moreover, the use of technologies has offered a wide new variety of methodologies to teach it.

Nevertheless, although English learning has been a key element in Catalan schools, it is still an unexplored field where many possibilities remain to be researched. New points of view are opening new doors to the foreign language learning in Catalonia, and step by step they are being applied to enhance the learning process of the students. One of these new points of view is the one focused on the phonetic learning of the English language.

The main objective of this research is to apply, in a Catalan context, a concrete methodology that is being performed in schools of the United Kingdom. Therefore, this study will analyse how English native speakers learn the digraphs of their language through the ICTs, and then an intervention will be adapted and applied in a Catalan school, in order to see if these little first steps can offer some positive and meaningful difference to the learning process of these students.

I decided to focus on this topic because foreign language learning in Early Years is far from being totally explored, and there are still many options to make the most of this learning. Learning English with young learners is still quite a recent phenomenon in the Catalan Context. Moreover, the use of ICTs has been a controversial topic when it comes to Infant Education. Therefore, I wanted to go further combining these two concepts, because they will define me as a future teacher. I have been interested in both aspects for a long time, and this Final Degree Project has been a good opportunity for me to learn more about them and also to give me new points of view.

Therefore, this project has been focused on the learning of English language digraphs through the ICTs. For this reason, this project has been divided into two main parts; a theoretical and a practical part. In the first part of the project the theoretical framework is exposed, where the main aspects of second language learning, phonetics and the use of ICTs have been outlined. Afterwards, the main study is presented, where the questions, hypotheses, instruments and participants that took part on it will be described. Finally, the results will be analysed in order to give an answer to the proposed questions, and so those answers will be related with some mentioned ideas of the theoretical framework in the conclusions of this research.

2. Theoretical Framework

Foreign language learning has been one of the main points of educational researches during the last years, and it is mostly focused on one concrete language: English. The world's globalisation is today's reality, and English Language Learning is its consequence. Although language learning is considered as one of the most important educational issues, Information and Communication Technology is one of the most revolutionary tools that is being used to implement it. Therefore, in order to expose the principal branches of this research, I will first start mentioning some essential researches that have been done about this topic.

First of all, I will highlight the main points of the Second Language Learning and the theories that come with it. Then I will focus on the relationship between the language acquisition theories mentioned before with the ICTs; the implication of its presence in schools of the digital age and its consequences. For this reason, it will be necessary to take into account both linguistic and technological objectives of the curriculum; the ones applied in the UK and the ones applied in Catalonia. Finally, some researches about English phonics learning will be analysed and compared, in order to apply and adapt them to a Catalan context.

2.1. Second Language Learning and Trends

Second Language Learning in preschool is a process that has its own path depending on the context where it is being planned. As Espinosa (2014) states in her article, children will learn a language in accordance with their environment. That is to say, the more input a child receives from a language, the more he or she will acquire it. Therefore, we cannot compare, for example, the English learning of a Catalan boy in an English school with a Catalan boy learning English in a Catalan school. The first one, although he will probably not receive input in English at home, will be surrounded by the English language at least during the school time, but the second one will only receive English input during a few hours during the week. For this reason, it is important to remind that the authors that will be mentioned talk about English learning as a second language (L2) or as a foreign language, but not as a mother tongue because the learning processes cannot be compared.

Learning English as a second or third language is a challenge that is present at least, in almost all schools in Catalonia, where the official school language is Catalan, Spanish is taught as a second language and English as a foreign language. Then, the presence of English is not strong, apart from the school hours where it is taught. Espinosa (2014) states that "Young children who have regular and rich exposure to two languages during early childhood years can successfully become bilingual" (p. 5), but in Catalan schools contexts it is difficult to offer such an English environment. As Catalan schools cannot provide all the input that is necessary to deeply learn a foreign language, it makes it barely impossible to acquire English at the desired level. Although the Catalan context is not a catalyst for English learning, what can change the situation is the quality of the content; the approaches, the methods, the tools used to ensure that this learning is meaningful for the children. As Cook (1993) states in his book "L2 acquisition fails to occur when the learner is deprived of meaningful language" (p.51). With this statement, he meant that in most English lessons, the teacher puts the focus on the form of the language, not in the meaning and its use in real life. Therefore, if children cannot receive enough input in the foreign language and besides that, the hours where English is being taught, become into non-meaningful learning for them, the result will probably not be satisfactory; neither for the students nor for the teacher.

For the last ten years, some Catalan schools have been enhancing English lessons by going further; not just teaching the form of the language but contextualizing this learning, in order to let children create connections and make this process more meaningful. This approach is named Content and Language Integrated Learning (CLIL). Giving importance to the content learnt through the language and not only focusing on its form, can help children to learn both things (content and language) making sense to the learning. Otherwise, it does not mean that learning the language itself has to be avoided, it is important to focus on the morphology, syntax, and phonology to learn a language properly.

Therefore, as CLIL is applied little by little as a progression during the schooling of children, English teaching has been applied to earlier ages. Consequently, many Catalan schools start teaching English to children aged 3 years old. One of the reasons why it is thought that as the earlier children start learning a language, the better, is Krashen's hypothesis of the 'Affective filter', that is: "a mental block, caused by affective factors (...) that prevents input from reaching the language acquisition device" (Krashen, 1985, p.1). Cook (1993) affirms that "In particular, the reason why younger learners are better at L2 acquisition over the long term is that 'the affective filter' gains dramatically in strength at around puberty" (p. 54). That is to say, these authors affirm that the younger a child builds a link with a language, the easier and the better the learning will be. Nevertheless, there are other authors that do not agree with this reasoning, because even though it has been demonstrated that young children have a better ability to catch sounds and imitate them, they will not be able to master a language as much as an older child with more consciousness of what is he or she learning. Pinter (2015) state that: "older learners use more efficient strategies, have a more mature conceptual world to rely on, have a clearer sense of discourse and, more importantly, have a clearer sense of why they are learning a new language" (p. 29).

Learning a language takes a lot of time, and in Catalan schools contexts where three languages are being taught in different levels, mastering all of them without the necessary exposure to all three languages is barely possible. Bijeljac-Babic, Nassurally & Nazzi (2009) suggest that "not only that bilingual exposure impacts language acquisition, but also that language acquisition processes might rapidly become specialized in the processing of the native language and as a corollary, less efficient at processing foreign languages" (p. 476). Moreover, older researches like the one

executed by Snow & Hoefnagel-Höhle (1977) mention that although " youth confers no immediate advantage in learning to pronounce foreign sounds" (p. 363), younger learners are more able to acquire foreign language sounds at a native level. Otherwise, "The older subjects were much better at other aspects of second language skill-vocabulary, syntax, morphology-than the younger ones" (Snow & Hoefnagel-Höhle, 1977, p.364), so older learners are less proficient on pronunciation than the younger ones .

Other researchers like Akhtar [et al.] (2012), demonstrate that bilingual children are more aware of foreign languages, and they detect them more easily. This is the case of the majority of students in Catalan schools. As Akhtar [et al.] (2012) state: "there may be more metalinguistic awareness in the beginning stages of learning a second language (...) than when one has become fluent" (p. 1145). Children that are being exposed to more than one language or children that are bilingual have fewer barriers to learn new words to express the same in their own language, that is to say, they are already used to refer to a same idea or object with different words, contrary to monolingual children that are not used to create links between different words referring to the same thing.

Once some aspects of the second and foreign language learning researches have been analysed and discussed, Information and Communication Technology will be introduced in order to comprehend its role in the schools of the digital age.

2.2. Learning Theories and the ICTs

2.2.1. New Age, New Theories

ICTs have been increasing its presence in all aspects of our daily lives, and schools have not been an exception. There are many studies that prove that Computer Assisted Instruction (CAI) can be an excellent learning and teaching tool and, as Vernadakis [et al.] (2006) says: "one of the most significant advantages of CAI is the potential to individualise instruction so as to meet the particular needs of the student" (p. 99).   As this study says, students that had the opportunity to learn through

computer-based instruction, had better results, learned in a smaller amount of time and also, this promoted the development of positive attitudes.

On the other hand, other studies can be found that prove that learning with computers had no good influence in children at all. As Plowman and Stephen (2005) express in their study: "Although a relationship between play and learning is well established, this relationship is under-theorised with respect to uses of computers (...) if play provides valuable contexts for learning, it must also provide valuable opportunities for teaching" but we did not find evidence of this" (p. 154). This study also refers to the low-skilled practitioners in the use of technologies and their inability of controlling what their students are learning through the computer.

Furthermore, Brown (1996) relates the computer use in the classroom with constructivist teaching considering that there are three ways of using the computer; first, it can be used as a book, second, as a tool for learning words and the third, for graphics. This comparison between the computer teaching and the constructivist approach showed that using the computer as a book and as a mean for learning new words, are good options to enhance learning, because of the interactivity. Otherwise, in the third one, the only students that had developed post-cognitive skills were the ones that computerised teaching was useful for (Brown, 1996).

Bell (2011) offers us a concrete summary of the learning theories, from the view of a digitally mediated environment:

> Behaviorism offers laws to govern behavior that can inform a teacher's manipulation of the learning environment (including texts and activities) to promote learning (...). This is an objective approach, where knowledge is perceived as facts that can be transmitted from teacher to student. Cognitivism opens up the black box of the mind, regarding the learner as an information processor. Social constructivism is an interpretivist approach based on phenomenology (...). Hence social constructivism places a greater emphasis on the importance of social interactions in affecting the individual's generation of knowledge or facts about the world (Bell, 2011, p. 101).

There are several learning theories that talk about how children learn, but there are few that relate them to the actual days, to the new technologies. Therefore, as a result of all the changes that technologies have provided to the society, learning theories are

forced to evolve with them. Bell (2011) confirms this statement claiming that: "Since the scope of the change exceeds personal and interpersonal learning activities to include larger scale organizational and societal change, additional theories are needed to explain change, to plan interventions, and to develop policy" (p. 101). With new questions come new theories, and the ones that are considered the new theories for the digital age are: Connectivism, Self-regulated learning, Heutagogy and MOOCs, Paragogy, and probably there are even more that try to explain and define how children and adults learn in this new technological era (Wheeler, 2015).

Some authors, e.g. Siemens (2005) consider Connectivism as the successor of Cognitivism, Behaviourism, and Constructivism. Siemens (2005) questions some of the principles of older learning theories because, as he states: "Behaviorism and cognitivism view knowledge as external to the learner and the learning process as the act of internalizing knowledge. Constructivism assumes that learners are not empty vessels to be filled with knowledge" (p. 3). Siemens (2005) goes beyond these theories, because as new tools are being used, new ways of working and operate appear, so if the society is now growing as a network of information and communication, learning cannot be still considered as an individual, lineal and internal process that is isolated from the rest of the world. We can see the principles of this theory in the next figure:

Principles of connectivism:

- Learning and knowledge rests in diversity of opinions.
- Learning is a process of connecting specialized nodes or information sources.
- Learning may reside in non-human appliances.
- Capacity to know more is more critical than what is currently known.
- Nurturing and maintaining connections is needed to facilitate continual learning.
- Ability to see connections between fields, ideas, and concepts is a core skill.
- Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.
- Decision-making is itself a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision.
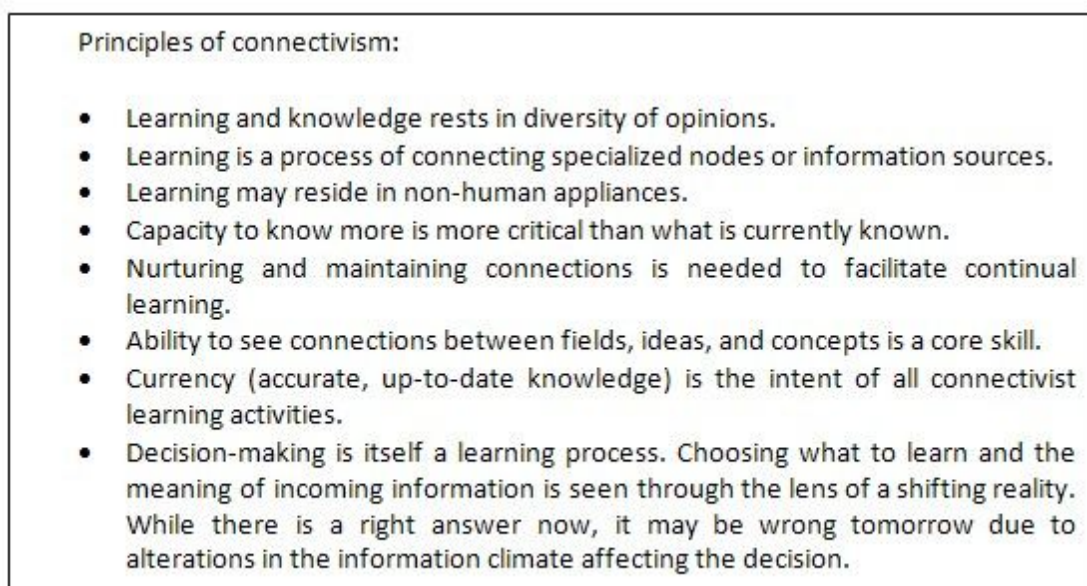
Figure 1. Source: Principles of Connectivism (Siemens, 2005)

Although Connectivism is being presented as a learning theory for the digital age where we are living, other authors like Bell (2011) detract this idea stating that Connectivism is insufficient by itself because it can not explain how the networked learning works; so they define it as a phenomenon. Bell (2011) states: "Connectivism has not established as a distinct learning theory, although its epistemology can make a contribution to new paradigms of learning" (p. 106). In consequence, this can affirm that the field that relates ICTs with learning is still rooting in the actual researches, and that needs to keep researching to solve basic issues of education in the digital era.

2.2.2. Consequences of the Digital Age

Analysing all these new ways of thinking that are related to the changes that technologies have provoked to society, some concepts appear to need some reconsiderations. First of all, concepts like formal, non-formal and informal learning are not as much separated as they were before. That is to say, those three types of learning are now linked through technologies. The traditional definitions of the three types are: formal learning is a governmental institution guided by a curriculum in an educational environment, non-formal learning refers to unplanned and unstructured learning gained from direct experience, especially in the workplace, whilst informal learning is best understood as planned, structured learning gained outside of the formal educational system (Bjornavold, 2000). However, with the presence of the Internet and the technological devices, the line between official and nonofficial is blurry.

Therefore, as it was mentioned before, technologies are an opportunity to change and innovate Education. One of the most researched topics related to Second Language Acquisition is the implication of technologies to complement this learning. For the last 30 years, computers and other devices have transformed the way we live, our day to day life is defined by different apparatus that help us accomplish daily issues. Education is not an isolated field but instead, is one of the main promoters of the use of technologies for helping both students and teachers to learn and progress.

Most educational institutions have given an opportunity to different technologies to enhance the learning processes on the different areas of the curriculum, but this does not mean that just for using them, the results will be notably better. Information and

Communication Technologies are not a book substitute, but a different resource that can provide different opportunities, if they are used the same way as a book or other traditional materials this will make no difference in the learning process and results of students. Chapelle (2009) points out two different aims of Computer-Assisted Language Learning (CALL) to involve students in their learning processes and make them meaningful:

"(a) Make key linguistic characteristics salient by highlighting and providing opportunities for repetitions and modifications for particular forms and (b) support modified interaction between the learner and the computer providing the learner with control over when to request help, modify responses, and get access to repetition and review" (Chapelle, 2009, p. 745).

To conclude this section, a summary can be extracted from it. Technologies have brought a whole revolution with them, ICTs have changed the structure of everything we could think about. Nevertheless, as technologies have demolished barriers that we thought were unbreakable, they have also implied some obstacles for others.

2.3. ICTs in the school

Technologies are carrying a lot of pressure from the expectations from both teachers and parents. As Garrett (1991) states, "the use of the computer does not constitute a method" (p. 698), the pedagogy cannot rely on the use of technologies, because not only for placing a computer or another device inside the classroom and use it, it will enhance the learning processes of children by itself. Is not about learning earlier or faster through technologies, but making it significant and meaningful.

The aim of using technologies at school has its own pros and cons. The main negative aspect of involving technologies with classrooms is the price of the devices; computers, smartboards, tablets and so on can be really expensive. In addition, these tools will not last forever, that is to say, that they need to be renewed because technologies do not stop evolving, and one device can be absolutely out of phase within 2 years. Moreover, these devices will probably need periodical updates and they may imply some charges. Another aspect that could be considered as negative, is the need of keeping teachers

also updated, ensuring that they take some courses to be aware of new knowledge related to technologies. Radetić-Paić & Ružić-Baf (2012) state that: "The ICT "revolution" is an enormous challenge to the professional development of teachers" (p.30). Although some teachers are still reluctant of using technologies at school, it is not usual to find them on the actual days, what is more usual to find are teachers using ICTs as they used the traditional blackboards.

Language learning Technologies software were usually centered on the learning grammar (Garret, 1991), but it is important to not create walls with the use of ICTs, because the options that they offer are wider than grammar. It is possible to find several terms that relate learning with technologies: "Computer Assisted Language Learning" (CALL), "Computer Assisted Instruction" and so on, but the difference comes with one of the main pros of using technologies at school; the interaction. For this reason, it is more usual to refer to this concept of learning with and through technologies as "Information and Communication Technologies", giving more importance to the interaction not only with the computer, but connecting with the whole world through different devices. In order to remark the fact that some assistance of the teacher is needed to guide correctly the use of ICTs, in the updated paper of Garrett (2009), she states that "because the use of the computer is not itself a language teaching method; its efficacy depends overwhelmingly on how it is used" (p. 721).

2.4. Early Years' Curriculum from Catalonia and the UK

At present, the value of having an education has increased and with this, learning with and about technologies since very early ages. Most of the new generations of parents had received an education, at least up to Secondary Education, as Siu and Lam (2005) refer to in their article: "This educational background has given the parents the fundamental knowledge and experience to allow them to understand and recognize the importance of education" (p. 354). The incongruence comes when this desire of including more and more technologies in the school finds the inaccuracy of it in the curriculum. Siu and Lam (2005) affirm that: "Only through careful and continuous reviews and investigations can we bring effective policies, plans, curricula, and the implementation of technology to our young children" (pg. 357).

Therefore, in order to analyse the learning of English phonics in next steps, first, it is essential to be aware of what does the Educational Curriculum say about this learning, related to the ICTs mentioned before. Moreover, to understand what is needed to learn English phonics, it is necessary to know first what the different governments require in both contexts; English and Catalan. That is, it is needed to compare objectives to relate purposes. Comparing the different educational curriculums, will demonstrate a reflection of the reality of schools.

First of all, if we analyse the Curriculum and orientations of Infant Education of Catalonia (2016), we can find in several parts that technologies have an important role in this stage. In this document, technologies are being mentioned in the 10 principal objectives of the educational stage, specifically in the ninth objective: Develop communicative, expressive, comprehensive and representative abilities through corporal, verbal, graphical, musical, audiovisual and plastical languages; (...) and the use of information and communication technologies (Currículum del segon cicle de l'educació infantil, 2016, p. 128). Moreover, the Catalan Curriculum of these early ages has a specific section addressed to the use of different technologies, and the opportunities that these devices can offer to children's education are mentioned, e.g. proposing motivational activities through videos, audio and so on, discovering the tools that programmes and apps can offer, accessing to information in different formats and so on. With what concerns to technologies, the need for digital resources is several times remarked. In the Catalan Curriculum (2016) for early ages, it is also mentioned that the use of technology has to ease the active exploration in the learning activities that are developed in Infant Education, with proposals that are at service of developing capacities of children (Currículum del segon cicle de l'educació infantil, 2016, p. 29).

On the other hand, in the Infant Education Curriculum of Catalonia we can find some points that make an allusion to the foreign language, but it explains that the English language will only be introduced to the children when the sociolinguistic context allows it, so in consequence there is no specification of the contents that should be taught in this language. Nevertheless, as we cannot compare directly the linguistic objectives of English Curriculum with the ones for the same age in the Catalan Curriculum, it is important to keep in mind that those linguistic objectives in the United Kingdom will be required in Catalonia in later stages. if we analyse the Primary Education Curriculum of Catalonia, one of its main objectives is to know and use appropriately a foreign

language (in this case, English). It is also mentioned in the learning objectives of the foreign language, that one requirement of the Primary Education is to be able to understand and answer day to day interactions in English. Moreover, the Curriculum, at this stage, has a section that refers to the phonetics, where it states that phonetic, rythm, accentuation and pitch of the foreign language are important aspects to take into account, in order to improve oral productions (Currículum del segon cicle de l'educació infantil, 2016).

If we analyse the Early Years Curriculum of the United Kingdom (2017), we could spot some differences, although the base is similar. First of all, we have to take into account that in this case, English will be referred as a first language, not as a foreign language as in the Catalan Curriculum. For this reason, only the parts that refer to the digraphs or phonetics have been extracted, as we cannot compare English native speakers with Catalan students.

Therefore, the National Curriculum of the United Kingdom (2017) says that in key stage 1 (5-6 years of age) children may already know the digraphs taught and the sound that they represent, that is to say that children have already worked phonetics in Reception stage (4-5 years of age). If we analyse the specific areas of the English educational curriculum, we can find references to the need of phonetic aspects to decode words and being able to read and write them (Statutory framework for the early years foundation stage, 2017).

Otherwise, if we analyse the English Curriculum focusing on technologies, few references appear. As a main point, it says that is one of the important aspects for children to understand the world. Moreover, technologies are mentioned as a way to make things differently, being imaginative and representing one's own ideas through media.

2.5. Phonics in English

The main challenge of learning English as a second or foreign language is the phonetic system. As Brice and Brice (2009) distinguish, there are two basic skills to learn to decode words; phonological awareness and phonemic awareness. The first one is a general recognition of the sounds of words but it is not related to its meaning, and the second one is the capacity to recognize and manipulate the phonemes. Cunningham, Cunningham, Hoffman and Yopp (1998) defined these two skills more concretely: "To be precise, phonemic awareness refers to an understanding about the smallest units of sound that make up the speech stream: phonemes. Phonological awareness encompasses larger units of sound, such as syllables, onsets and rimes" (p.3) These two skills have to be worked in order to ensure the language learning development, whatever language is being learnt. Although these skills are worked naturally in the mother tongue through interaction, if a second or third language is tried to be learnt, it is necessary to focus on them so that the interference between the both languages is minimised.

Nevertheless, native English speakers as they have learned this language naturally, phonological and phonemic awareness will be always promoted as they receive all the input in this language. As Wagner and Torgesen (1987) state: "Tasks commonly used to assess phonological recoding for lexical access involve deciding whether a string of letters represents a real word or a nonword" (p. 192). Catalan students that are learning English as a foreign language will not be able to do this task efficiently as the quantity and quality of input can not be compared with English native speakers.

Phonetic awareness is a promoter of the starting point of reading, and as Wagner and Torgesen (1987) state: "Efficient phonetic coding may play a vital role for beginning readers" (p. 193). Moreover, they also mention in their article (Wagner & Torgesen, 1987) that one of the tasks faced to the beginning reader is to "decode a series of visually presented letters" (p. 193), supporting the idea of making visual what is more abstract. Other studies as Stuart (1999) confirm that phonological interventions in early years can provide positive effects on the learning of reading and writing English as a second language. Stuart's (1999) study took different controlled measures to demonstrate if the affirmation could be confirmed, and some of them were: alphabet

knowledge, rhyme awareness, and auditory perception, in which children that used *JollyPhonics* showed certainly good results. Therefore, Interventions implemented through *JollyPhonics* had better results (Stuart, 1999), as it is explained in the study: "[the results] They provide very strong additional support for the view that early, structured, focused and rapid teaching of phoneme segmentation and blending skills (...) does accelerate development of these skills acquisition of this knowledge" (Stuart, 1999, p. 603).

Younger learners have the facility to imitate sounds even though those sounds do not belong to their mother tongue. Pinter (2015) confirms it with this statement: "children are sensitive to the sounds and the rhythm of new languages and they enjoy copying new sounds and patterns of intonation" (p. 29). Otherwise, as Jared & Szucs (2002) state, "if a bilingual's two languages share the same alphabet but have different pronunciations for the letters, and if phonological representations for both languages are activated simultaneously, then there will be two conflicting pronunciations at the same time" (p. 225). In the case of Catalan English learners, both languages share the same alphabet and its pronunciation is different but the representation of both languages is probably not activated at the same time, as English is learnt in the school as a foreign language. Therefore, Catalan students will be motivated learning new sounds of the target foreign language, although it can cause confusion when writing them.

Therefore, children that are educated in Catalan schools may share the same alphabet as English (or not), but for sure they do not share the relation of letter-sound. As in Catalan schools we can find several different cultures and languages in only one classroom, it is not possible to generalize the difficulties that children will or will not have while learning the English language, but what is important is to be aware of different issues that can make students struggle with it. Besides all the differences that can be found in only one class, the focus will be on Catalan speakers.

Although Catalan and English have different vowel systems, they are not as far from each other in what range of vowels refers (Coe, 2001), since English has 16 vowel phonemes while Catalan has 8. Then, the difficulty comes with one-to-one correspondence; where most of the times, two English vowels correspond to one only

vowel in Catalan. Next figure shows some of the most important difficulties that Catalan speakers may have with English pronunciation.

- /i:/ and /ɪ/ correspond to Catalan /i/
- /a:/, /æ/ and /ʌ/ correspond to Catalan /a/
- /ɔ:/ and /ɒ/ correspond to Catalan /o/
- /u:/ and /ʊ/ correspond to Catalan /u/
- /ɜ:/ and /ə/ is not such a problem for Catalan speakers, because /ə/ does exist in this language.

Figure 2. Source: adapted from Coe (2001, p. 91)

Regarding the diphthongs, Catalan has more diphthongs than English although they do not coincide on pronunciation (Coe, 2001). As Coe (2001) states: "In Catalan, the relationship between pronunciation and spelling is about as complicated as it is in English" (p. 94), although those relations are not the same. Therefore, although English and Catalan phonological system are not too far from each other, the differences are noticeable and these concrete aspects need to be worked in Catalan schools, in order to ensure that the more abstract issues of learning a language become more visual, meaningful and useful for children.

3. Study

3.1. Objectives and Hypotheses

The first part of my project was focused on the theoretical framework of two different branches; learning phonetics of English language, and learning through ICTs. To do so, some other aspects had to be mentioned, as the second language learning, new learning theories and the objectives of two different curriculums related with digital and phonetic learning. Once these aspects have been examined, the second part of the project can be displayed. This second part is built from my research. Therefore, to start with my study, its main objectives will be explained, as the hypotheses that come with them. After that, the methodology used to develop my research will be explained, and

so will be the participants that took part in my research, the instruments used and the data obtained.

The main goal of this study is to apply and analyse if the methodology and the tools I observed in an English school to learn English diphthongs give good results in a Catalan context. In order to accomplish that, some more specific objectives are required. First of all, one of the objectives of this study is to observe how diphthongs are taught in an English school through the ICTs. After that, analysing the learning of English children through those methodologies and relate it with the aims of foreign language Learning in a Catalan school. Thirdly, adapting the activities observed in the English school that were addressed to English speakers, into activities addressed to Catalan speakers. Finally, the last but not least objective was to apply it in a real classroom in order to prove directly if the learning of English diphthongs through ICTs in a Catalan context is worthy or not.

Therefore, the questions that this research tries to answer are:
- Are ICTs useful to teach phonetics?
- How should this learning be adapted to a Catalan school?

Once these two questions have been presented, some hypotheses outcrop as answers. The findings that will confirm my hypotheses or not will be discussed afterwards. Therefore, the hypotheses based on the research produced in the theoretical framework are:

- ICTs will be useful to teach phonetics as far as they are used differently to the traditional materials, because they offer new and adapted opportunities to learn.
- The learning of phonetics of the English language should be adapted to older children, as Catalan students are learning English as a foreign language. Moreover, the phonetic learning should have to be narrowed in order to not overload children's content learning.

Both hypotheses are based on my initial knowledge and experience with technologies and phonics. I have always seen technologies as the principal tool to change the education that I received, at least, to learn English. Receiving more input and more

quality input are the main achievements that I believe that learning phonics through ICTS can offer to children's learning.

3.2. Methodology

In this section, the paradigm to which my research belongs will be presented, as well as the participants in this research, the instruments used and its procedure.

3.2.1. Paradigm

The main objective of this case study is to analyse how an essential aspect of English language is taught in a school of the UK and analysing how this can be applied in a Catalan context, so this research belongs partly to the socio-critic paradigm, as it implies making a change to a concrete group. Nevertheless, this research has two different parts, and both of them belong to two different paradigms; the first one is theoretical and it is related to the interpretative paradigm, where a reality of a selected group is being analysed. Its procedure was based on direct observation of an English class. Therefore, the second part is practical, and as this research has involved a change to the Catalan school, it belongs to a socio-critic paradigm.

3.2.2. Data collection method

In order to analyse the experience of the two cases, both of the parts have been developed as a qualitative study. The instruments that have been used are unstructured participant observation, my experience adapting and implementing what I observed in the English school in a Catalan school and a kind of test based on drawings that showed the acquisition of selected vocabulary and its pronunciation.

Participant observation is useful to collect data in a usual environment, where subjects observed can behave naturally (Mack & Woodsong, 2005). This instrument was chosen because it is a good method to get immersed in the selected context, while

data is being collected and the subjects of the research are not forced to interrupt their day to day life. To document what was being learnt during the sessions, some notes were taken to transmit in written form what the teacher was teaching, what students were learning and what I was learning as a researcher, but also as a student.

Participant observation was accomplished in a period of one month in a classroom of Reception, where phonetics worked once or twice a week. In each session, I was present accomplishing two roles: as a researcher and as an internship student. During my role of researcher in those concrete sessions where phonetics worked, I took some notes where I noted down the different digital resources that they were using and the content that was being taught.

The adaptation of the sessions observed in an English school to a Catalan school was carried out through different web resources that allowed me to choose exactly what I wanted children to learn. I did not use the exactly same web resources because they did not permit me to adapt the games (see Appendix 1), and although Catalan students selected were older than the English students observed, those resources were too difficult, as they are thought for native English speakers.

Otherwise, my experience implementing the sessions in the Catalan school had been carried out through a programming guideline (see Appendix 2), analysed through photographic evidences taken during my sessions (see Appendix 3), and a kind of test (see Appendix 4) that helped children to express in their own way the words that were taught through the learning of different diphthongs. This test was not thought to evaluate children, as the objective was not to see how many words they could remember, but to acquire the pronunciation of selected diphthongs through movements, so the test based on drawings served as a summary of the sessions.

3.2.3. Participants

The participants of my study were the students of two different schools. On one hand, the English students of Reception stage of Saint Thomas More school in Middlesbrough. This first group was composed of approximately 30 children, all of them aged between 4 and 5 years. All of the students of this group were English native

speakers, and the majority of them started working phonetics in the year before (nursery stage), although digraphs were introduced in Reception. In reference to the use of ICTs, their first and only contact with technologies in the school is through the Digital Board, and they started using it in Reception stage.

On the other hand, the Catalan students that participated in my research were the two groups of 1st year of Primary Education of Marta Mata school in Torelló. Both groups were compound of approximately 23 students each, and all of them were between 6 and 7 years old. In both groups, none of the students were English native speakers, so they were learning English as a foreign language. In Marta Mata school, English is introduced since P3 (3 years of age) through CLIL, so since very early years, they are learning different subjects in English. Although students were still unable to produce much output in English by their own, they were really used to receive input in this language and they understood what the teacher and I were saying. Otherwise, students of this Catalan school had never been taught English phonics explicitly, so my intervention served to introduce them to this aspect of the English language. Finally, in reference to the use of ICTs, they were used to use different ICT tools, as computers and the Digital Board.

4. Results and discussion

In this section, the results of my study will be showed. To do so, the two different parts of the study (the observation and the implementation) will be mentioned separately, as they deserve to be analysed for their own nature; passive or active action.

According to the aforementioned, the first part of my research was based on observing the sessions where phonics were being taught in an English school. In this selected school, two basic tools were used through the Digital Board; *JollyPhonics* and *PhonicsPlay*. The first one is part of; a company that provides different materials to teach English, giving the opportunity to learn phonics in a sensitive and funny way. The second one is a website where there are games divided into different phases, so the games are adapted to the children. This source also provides materials for the teachers to programme the teaching-learning process. Both digital sites offer free resources but the majority of the content needs a subscription to use them.

In relation to *JollyPhonics*, the main source used while I was observing the sessions, was a kind of alphabet made of actions (see Appendix 5). In this alphabet, there are all the letters but also the diphthongs. Every sound has an action, so children could relate every alphabetical character and the sounds composed by two letters with a particular movement that made sense for them. Therefore, *JollyPhonics* was used as an introduction to help children start reading letter by letter, sound by sound. Every movement has a relation with the sound produced to ease its memorization, e.g. "ou" is represented as if one finger was a needle and pricks the thumb.

Regarding *PhonicsPlay*, it was used to play games through the Digital Board. There were different kinds of games; some of them made children classify different words, between real words or tricky words, some others had the objective to click or to put together different words with some sound in common. With every game they had to spell out every word, using the aforementioned actions while they were pronouncing every sound.

After having the opportunity to observe different phonetic sessions in the English school, I carried out two sessions with two different groups of the Catalan school Marta Mata, in order to demonstrate if the phonetic learning of English could be applied in a Catalan context, and if the adaptation that I planned was going to be successful or not.

In order to adapt the sessions that I observed, I had to limit and delimit rigorously what I was going to teach to the first graders of the Catalan school. I had to be aware of different aspects that could hinder the proper learning of the English phonetics.

First of all, I decided to only propose diphthongs of the English language as learning content, the actions to represent them and some vocabulary to relate those diphthongs. This decision was made because I did not find appropriate to teach the whole alphabet. Moreover, I decided to work on the diphthongs and not on other digraphs because I think that diphthongs' pronunciation is one of the most difficult aspects of the English language for Catalan speakers, as mentioned in the Theoretical Framework, and they are not usually taught explicitly throughout the English learning in Catalonia.

As I wanted to demonstrate if phonics learning through the Digital Board was applicable to a Catalan context, I also decided to not only try to teach phonics as I observed in the English school, but also maintain the way it was applied; through the Digital Board. Therefore, I wanted to prove if using ICTs could make a difference in the learning of diphthongs of the English language in a Catalan context, but I limited myself to implement in a Catalan school what I observed in an English school, or at least, as similar as possible.

Finally, the teacher of Marta Mata and I decided not to use written words as the focus of the activities, as the written English was introduced in 2nd year of Primary in that school.

In consequence, I implemented the essence of the two different digital resources but with my own resources and different websites. On the one hand, I decided to use the same action alphabet mentioned before to help children visualize the diphthong and make diphthongs less abstract, but slightly modified to adapt them a bit more to the Catalan context; e.g. "ie" was represented as if someone was pinching their arm instead of giving a salute. On the other hand, I did not use explicitly the source *PhonicsPlay* but I used another website to create my own game; a resource called *Linoit*. This website allowed me to create a relating game, where different images of things that contained concrete diphthongs appeared and through the Digital Board they had to relate them with the appropriate group of diphthongs worked before.

The two sessions that I performed had two different intentions. The first session (see Appendix 2.1) was focused on introducing to children the diphthongs and its actions, in order to make them aware of what I wanted to work more concretely in the second session (see Appendix 2.2), through ICTs. Therefore, in both sessions ICTs were used, but in the first one it was only used as a blackboard to show some images to support and complement what was being taught, while in the second session, ICTs were used as main source. Hence the Digital Board was not only a support to show images, but the instrument whereby the learning was occurring.

In regards to the first session, the 12 chosen digraphs were introduced through their corresponding actions, but after this introduction, the rest of the session was centered on 4 main diphthongs: "ie" (/aɪ/), "oa" (/oʊ/), "ee" (/i:/) and "ai" (/eɪ/). This learning

process was implemented through imitation and dramatizing the actions in order to make children understand what was being explained. After that, with the collaboration of the students, 4 lists of words were created according to the diphthongs mentioned before. Through these lists, we divided children into 4 groups and started to play a game that involved them by distinguishing the different diphthongs and being aware of the target sounds that were being highlighted.

In order to finish the first session, we proposed children to make a kind of test, that would help us to see if they really acquired the vocabulary and its target sounds (see Appendix 4). The test consisted of drawing on a piece of paper the word that the teacher and I were saying, and orally relate them with the group word (e.g. "train, like snail"). With these drawings, I could see three important aspects. First of all, all children understood the presented vocabulary even when no images were shown to support. Second, most of the children were relating the dictated words with the correspondent group sound. Finally, some of them related the English phonics with Catalan phonics (see Appendix 4.2.), that is to say, even though we did not use written words, some of them wrote the English word with the Catalan phonetic system (relation letter-sound).

Session 1			
"ie" (/aɪ/)	"oa" (/oʊ/)	"ee" (/iː/)	"ai" (/eɪ/)
<u>Eye</u> Tie Pie Nine Like Fries Ice-cream	<u>Boat</u> Coat Soap Toast Cockroach Blackboard Goal	<u>Tree</u> Bee Meat Sheep Three Green	<u>Snail</u> Train Brain Rain Pain

Figure 3: diphthongs learned in Session 1

With reference to the second session, altogether we reviewed what we had been learning in the first session, but also more digraphs were taught and relating them to the actions worked in the first session. Once the old diphthongs were reviewed and the new digraphs were introduced, we started doing the activity that I created through the website before mentioned, *Linoit* (see Appendix 1). This activity consisted in choosing

an image, pronounce the word that had the target diphthong (or digraph) and drag it to the image that represented the corresponding digraph.

Session 2							
"ie" (/aɪ/)	oa" (/oʊ/)	"ee" (/iː/)	"ai" (/eɪ/)	"er" (/ər/)	"ar" (/ɑːr/)	"OO" (/uː/)	"oo" (/ʊ/)
<u>Eye</u> Tie Pie Nine Like Fries Ice-cream	<u>Boat</u> Coat Soap Toast Cockroach Blackboard Goal	<u>Tree</u> Bee Meat Sheep Three Green	<u>Snail</u> Train Brain Rain Pain	<u>Tiger</u> Winter Spider Farmer	<u>Star</u> Farmer Scarf Arm Shark Card Car Market	<u>Boot</u> Food Spoon Moon	<u>Book</u> Good Look foot

Figure 4: Digraphs learned in Session 2

After performing successfully the activity, as an extra activity (it was not planned) we created poems and rhymes with the words of the same group, e.g. the bee flies to the green tree. This improvised activity helped us to conclude and summarize the activity sequence but also, to keep working the phonetic awareness.

5. Conclusions

Once the study and its results have been exposed, it is time to answer the questions that catalysed this research.

The first question was related with the ICTs, and after exposing the results, I believe that ICTs are a good tool to teach phonetics. Despite this affirmation, I also believe that ICTs are still a wasted instrument, because it is easier to do traditional activities in Digital Boards than taking the time to discover all the different possibilities that technologies can offer to the educational context. ICTs are a tool that motivates children by themselves, but, as teachers, we should be more aware of all the possibilities that ICTs offer us and are being missed for being afraid of not being competent enough. Therefore, as it was mentioned in the theoretical framework, all the changes that have arrived with technologies constitute more than a simple novelty for teachers, but a real challenge to adapt them in their professional career (Radetić-Paić & Ružić-Baf, 2012). Whereas ICTs have been an essential tool to execute this research as it was planned, the action alphabet of *JollyPhonics* has been crucial although at the beginning of the research was only seen as a simple crutch of support. Hence, I think that the use of ICTs is always a good option to teach differently, but it is important not to forget the traditional ones, those that have always been useful and that sometimes are used in a more meaningful way.

In order to give an answer to the second question, there are different factors that we have to take into account. First, to adapt the learning of English phonics into a Catalan context, it is essential to have in mind that Catalan students are learning English as a foreign language, so it is possible that applying explicitly the English resources, could imply many problematic issues because those resources are mostly thought for native speakers of English. For this reason, we could confirm what Pinter (2015) stated, as older learners are more aware of what they are learning, and therefore, more efficient in the learning of a foreign language than the younger ones. Consequently, we will have to adapt the activities to older children and take the essence or the aim of the activity or resource and simplify it. We always have to keep in mind which students we are focusing on, as we want them to learn in a meaningful way, and not overload and frustrate them. Moreover, to adapt the phonetic learning of the English language into a

Catalan context, it is not only important to choose or plan good activities but to be aware of what will make more sense for Catalan students.

By analysing the sessions that I carried out in Marta Mata school, I can say that although the phonetic learning of a foreign language can be really abstract for children, the strategies used helped them to learn the sounds and be aware of their pronunciation. Catalan schools rarely teach English phonics explicitly, and I still believe (and children helped me to demonstrate it) that it is a very interesting learning and that can help children to learn English. Therefore, I carried out a small contribution to what Stuart (1999) and Wagner and Torgesen (1987) demonstrated, as the phonological interventions in foreign language that I implemented had good results, and opened a window in the learning of the students that participated in the research. Although this research is only a small contribution to the English learning in Catalan schools, giving this research the opportunity to be applied in a longer period and in a wider way could be an interesting objective for future studies.

Nevertheless, even though the two sessions that were carried out were successful, it is obvious that this number of sessions are not enough to teach English digraphs, and phonics in general, but it was a good introduction to them that could be extended with other strategies and resources. Therefore, as Stuart (1999) mentioned in her study, early interventions of phoneme awareness and phonic knowledge are a good chance to improve reading and writing skills, so this research could be considered as a first of many steps that we as teachers have to make to find new ways of teaching and learning English.

Finally, some limitations have affected this research. On the one hand, it is important to say that ICTs have been a really useful tool, although it is not the only one that I would work with to learn phonics. While I was doing the sessions, hundreds of ideas came into my mind to do things differently, with and without ICTs, but I had to follow the steps of my research so I had to cling to the methodology observed in the English school.
On the other hand, this research has been carried out through the observation of only one English school, that is to say that the whole reality of English schools has not been analysed. The same affirmation has to be applied as a limitation in a Catalan context, as I did the intervention in only the year 1 of Catalan school, so it could be interesting to implement this study in other Catalan schools; further researches could apply this

little first step in a wider scenario. To summarize, I think that this research could be an interesting first step to other studies to go further on this topic, always trying to enhance the learning of our students, that is our principle purpose as teachers.

6. References

Akhtar, N., Menjivar, J., Hoicka, E., & Sabbagh, M. A. (2012). Learning foreign labels from a foreign speaker: The role of (limited) exposure to a second language. *Journal of Child Language, 39*(05), 1135-1149. doi:10.1017/s0305000911000481

Bell, F. (2011). Connectivism: Its place in theory-informed research and innovation in technology-enabled learning. *The International Review of Research in Open and Distributed Learning, 12*(3), 98. doi:10.19173/irrodl.v12i3.902

Bijeljac-Babic, R., Nassurally, K., Havy, M., & Nazzi, T. (2009). Infants can rapidly learn words in a foreign language. *Infant Behavior and Development, 32*(4), 476-480. doi:10.1016/j.infbeh.2009.06.003

Bjornavold, J. (2000). Making learning visible: identification, assessment and recognition of nonformal learning in Europe. Luxembourg: *Office for Official Publications of the European Communities*.

Bratitsis, T., Tatsis, K., & Amanatidou, A. (2012). Counting Sounds: An ICT Musical Approach for Teaching the Concept of the Angle in Kindergarten. *2012 IEEE 12th International Conference on Advanced Learning Technologies*. doi:10.1109/icalt.2012.150

Brice, R. G., & Brice, A. E. (2009). Investigation of Phonemic Awareness and Phonic Skills in Spanish-English Bilingual and English-Speaking Kindergarten Students. *Communication Disorders Quarterly, 30*(4), 208-225. doi:10.1177/1525740108327448

Brown, D. (1996). Kids, computers, and constructivism. *Journal of Instructional Psychology, 23,* 189-195.

Chapelle, C. A. (2009). The Relationship Between Second Language Acquisition Theory and Computer-Assisted Language Learning. *The Modern Language Journal, 93*, 741-753. doi:10.1111/j.1540-4781.2009.00970.x

Coe, N. (2001). Speakers of Spanish and Catalan. In M. Swan & B. Smith (Authors), *Learner English: A Teacher's Guide to Interference and Other Problems* (Cambridge Handbooks for Language Teachers, pp. 90-112). Cambridge: Cambridge University Press. doi:10.1017/CBO9780511667121.008

Cook, V. J. (1993). *Linguistics and second language acquisition*. London: Macmillan.

Cunningham, P., Cunningham, J., Hoffman, J., and Yopp, H., (1998). Phonemic

awareness and the teaching of reading. *Newark,* DE: International Reading Association.

Department for Education. (2017). Statutory framework for the early years foundation stage. From:
https://www.gov.uk/government/publications/early-years-foundation-stage-framework--2

Espinosa, L. (2014). Second language acquisition in Early Childhood. In R. New & M. Cochran (Eds.), Early childhood education. (pp. 591-602), Westport, CT: Greenwood Publishing Group.

Galanouli, D., Murphy, C., & Gardner, J. (2004). Teachers' perceptions of the effectiveness of ICT-competence training. *Computers & Education, 43*(1-2), 63-79. doi:10.1016/j.compedu.2003.12.005

Garrett, N. (1991). Technology in the Service of Language Learning: Trends and Issues. *The Modern Language Journal, 75*(1), 74. doi:10.2307/329836

Garrett, N. (2009). Technology in the Service of Language Learning: Trends and Issues. *The Modern Language Journal, 93*, 697-718. doi:10.1111/j.1540-4781.2009.00968.x

Generalitat de Catalunya (2016). *Currículum del segon cicle de l'educació infantil*. Decret 181/2008, DOGC núm. 5317

Hernwall, P. (2016). 'We have to be professional' – Swedish preschool teachers' conceptualisation of digital media. *Nordic Journal of Digital Literacy, 10*(01), 5-23. doi:10.18261/issn.1891-943x-2016-01-01

Ingleby, E. (2014). The impact of changing policies about technology on the professional development needs of early years educators in England. *Professional Development in Education, 41*(1), 144-157. doi:10.1080/19415257.2014.894482

Jared, D., & Szucs, C. (2002). Phonological activation in bilinguals: Evidence from interlingual homograph naming. *Bilingualism: Language and Cognition, 5*(03). doi:10.1017/s1366728902003024

Johnson, J. S., & Newport, E. L. (1989). Critical period effects in second language learning: The influence of maturational state on the acquisition of English as a second language. *Cognitive Psychology, 21*(1), 60-99. doi:10.1016/0010-0285(89)90003-0

Jolly Learning. (n.d.). Retrieved April 12, 2017, from http://jollylearning.co.uk/

Kerckaert, S., Vanderlinde, R., & Braak, J. V. (2015). The role of ICT in early childhood

education: Scale development and research on ICT use and influencing factors. *European Early Childhood Education Research Journal, 23*(2), 183-199. doi:10.1080/1350293x.2015.1016804

Krashen, S. D. (1985). *The Input Hypothesis: Issues and implications: Issues and implications*. London: Longman.

Larsen-Freeman, D. (1991). *An introduction to second language acquisition research*. London: Longman.

Larson-Hall, J. (2008). Weighing the benefits of studying a foreign language at a younger starting age in a minimal input situation. *Second Language Research, 24*(1), 35-63. doi:10.1177/0267658307082981

Lloret, R. (2011). La fonologia del Català. may 2017, de Santillana, Grup Promotor Sitio web:

http://diposit.ub.edu/dspace/bitstream/2445/67057/1/Fonologia_catalana.pdf

Mack, N., & Woodsong, C. (2005). *Qualitative research methods: A data collector's field guide*. Research Triangle Park, NC: Family Health International.

Masoumi, D. (2015). Preschool teachers' use of ICTs: Towards a typology of practice. *Contemporary Issues in Early Childhood, 16*(1), 5-17. doi:10.1177/1463949114566753

Mckenney, S., & Voogt, J. (2010). Technology and young children: How 4–7 year olds perceive their own use of computers. *Computers in Human Behavior, 26*(4), 656-664. doi:10.1016/j.chb.2010.01.002

Mechlova, E., & Malcik, M. (2012). ICT in changes of learning theories. *2012 IEEE 10th International Conference on Emerging ELearning Technologies and Applications (ICETA)*. doi:10.1109/iceta.2012.6418326

Meisel, J. M. (2009). Second Language Acquisition in Early Childhood. *Zeitschrift Für Sprachwissenschaft, 28*(1). doi:10.1515/zfsw.2009.002

Murray, D. E. (2005). Technologies For Second Language Literacy. *Annual Review of Applied Linguistics, 25*. doi:10.1017/s0267190505000103

PhonicsPlay (n.d.). Retrieved May 12, 2017, from http://www.phonicsplay.co.uk/

Pinter, A. (2015). *Teaching young language learners*. Oxford: Oxford University Press.

Plowman, L., & Stephen, C. (2005). Children, play, and computers in pre-school education. *British Journal of Educational Technology, 36*(2), 145-157. doi:10.1111/j.1467-8535.2005.00449.x

Radetić-Paić, M., & Ružić-Baf, M. (2012). Use of ICT and Inappropriate Effects of Computer Use - Future Perspectives of Preschool and Primary School Teachers.
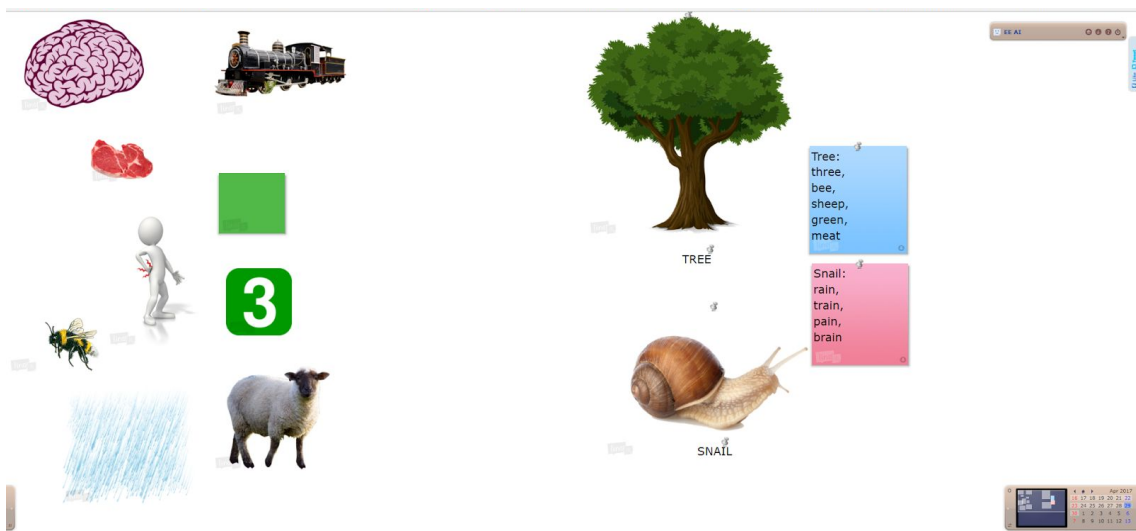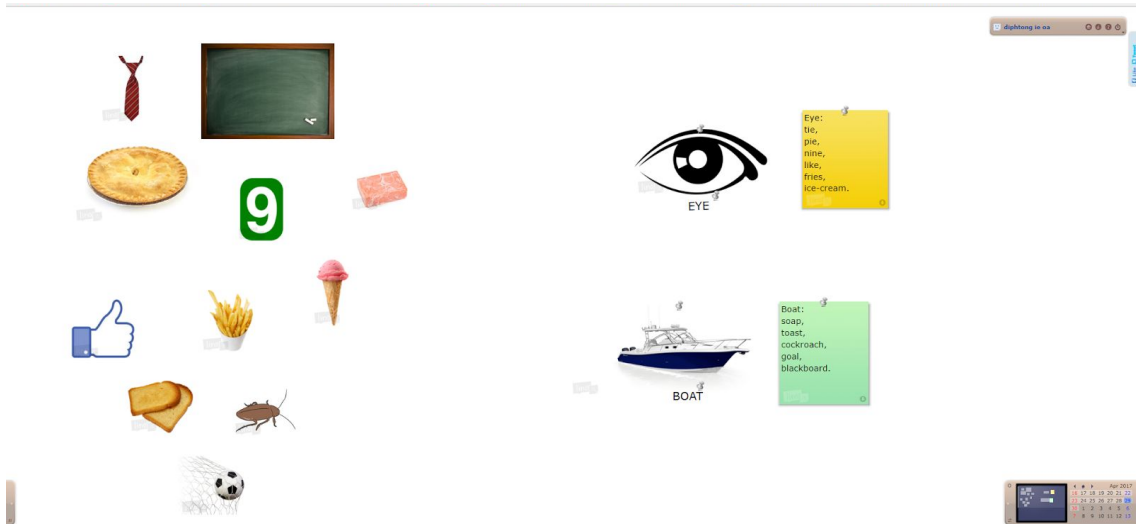
Psychology of Language and Communication, 16(1). doi:10.2478/v10057-012-0003-y
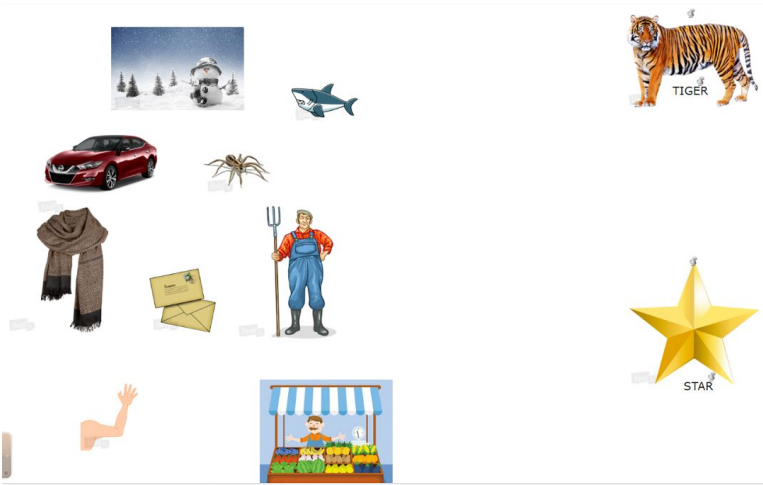
Reis, P., Gil, H., & Morgado, M. (2016). Educational software in english to the awareness in a preschool education supervised context. *2016 International Symposium on Computers in Education (SIIE)*. doi:10.1109/siie.2016.7751832

Siemens, G. (2005). Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology and Distance Learning*, 2(1), 3-10.

Siu, K. W., & Lam, M. S. (2005). Early Childhood Technology Education: A Sociocultural Perspective. *Early Childhood Education Journal, 32*(6), 353-358. doi:10.1007/s10643-005-0003-9

Snow, C., Hoefnagel-Höhle, M. (1977). Age differences in the pronunciation of foreign sounds. *Language and Speech,* 20, 357–365.

Sticky and Photo Sharing for you. (n.d.). Retrieved April 11, 2017, from http://linoit.com/

Stuart, M. (1999). Getting ready for reading: Early phoneme awareness and phonics teaching improves reading and spelling in inner-city second language learners. *British Journal of Educational Psychology, 69*(4), 587-605. doi:10.1348/000709999157914

Vernadakis, N., Avgerinos, A., Tsitskari, E., & Zachopoulou, E. (2006). The Use of Computer Assisted Instruction in Preschool Education: Making Teaching Meaningful. *Early Childhood Education Journal, 33*(2), 99-104. doi:10.1007/s10643-005-0026-2

Wagner, R. K., & Torgesen, J. K. (1987). The nature of phonological processing and its causal role in the acquisition of reading skills. *Psychological Bulletin, 101*(2), 192-212. doi:10.1037/0033-2909.101.2.192

Wheeler, S. (2015). *Learning with 'e's: Educational theory and practice in the digital age*. Bancyfelin: Crown House Publishing.

7. Appendices

Appendix 1

Eye:
tie,
pie,
nine,
like,
fries,
ice-cream.

EYE

Boat:
soap,
toast,
cockroach,
goal,
blackboard.

BOAT

Tree:
three,
bee,
sheep,
green,
meat

TREE

Snail:
rain,
train,
pain,
brain

SNAIL

TIGER

STAR

LOOK!

FOOD

BOOK

Book (short oo):
good,
look,
foot.

BOOT

Boot (long OO):
food,
spoon,
moon.

Appendix 2

2.1. Session 1, Marta Mata School

Programming unit: Diphthongs **Session 1**→ introduction	Level: 1st of Primary Education
Methodology:	
Space: classroom Materials: Digital Board, paper, pencils Duration: 1h	
Stage capacities/objectives of the stage:	
1st grade of Primary Education	
Didactic Objectives:	
Distinguish different phonetic aspects of the English language Identify concrete digraphs in different words Classify words according to the common digraph Compare different digraphs Pronounce the digraphs Represent the target words to summarize the activity	
Activities of teaching-learning:	
Play with the movements while pronouncing the diphthongs Create groups of words according to the common diphthong Create teams where each group represented a concrete digraph Summarize the session by representing some of the worked words in a paper (write, draw…)	
Evaluation indicators:	
Accomplishment of the movements while pronouncing the diphthong or a word with the diphthong Proposing words to fill the diphthong groups	

Being able to represent the words worked
Contents:
Main aspects to be potentiated during the sessions: Phonetic awareness Vocabulary learning *digital skills (Session 2)

Source: Currículum i orientacions d'Educació Infantil (2016)

2.2. Session 2, Marta Mata School

Programming unit: Diphthongs **Session 2**	Level: 1st of Primary Education
Methodology:	
Space: classroom Materials: Digital Board→ *Linoit* Duration: 1h	
Stage capacities/objectives of the stage:	
1st grade of Primary Education	
Didactic Objectives:	
Distinguish different phonetic aspects of the English language Identify concrete digraphs in different words Classify words according to the common digraph Compare different digraphs Pronounce the digraphs Represent the target words to summarize the activity Use autonomously the mouse and the Digital Board	
Activities of teaching-learning:	
Play with the movements while pronouncing the diphthongs	

Evaluation indicators:
Accomplishment of the movements while pronouncing the diphthong or a word with the diphthong
Proposing words to fill the diphthong groups
Being able to connect every word with the corresponding diphthong group

Contents:
Main aspects to be potentiated during the sessions:
Phonetic awareness
Vocabulary learning
Digital skills
Remember the vocabulary worked on session 1 and learn some new words
Identify new diphthongs

Appendix 3

- Representing the Digraph "ar".

- Representing the Diphthong "ee".

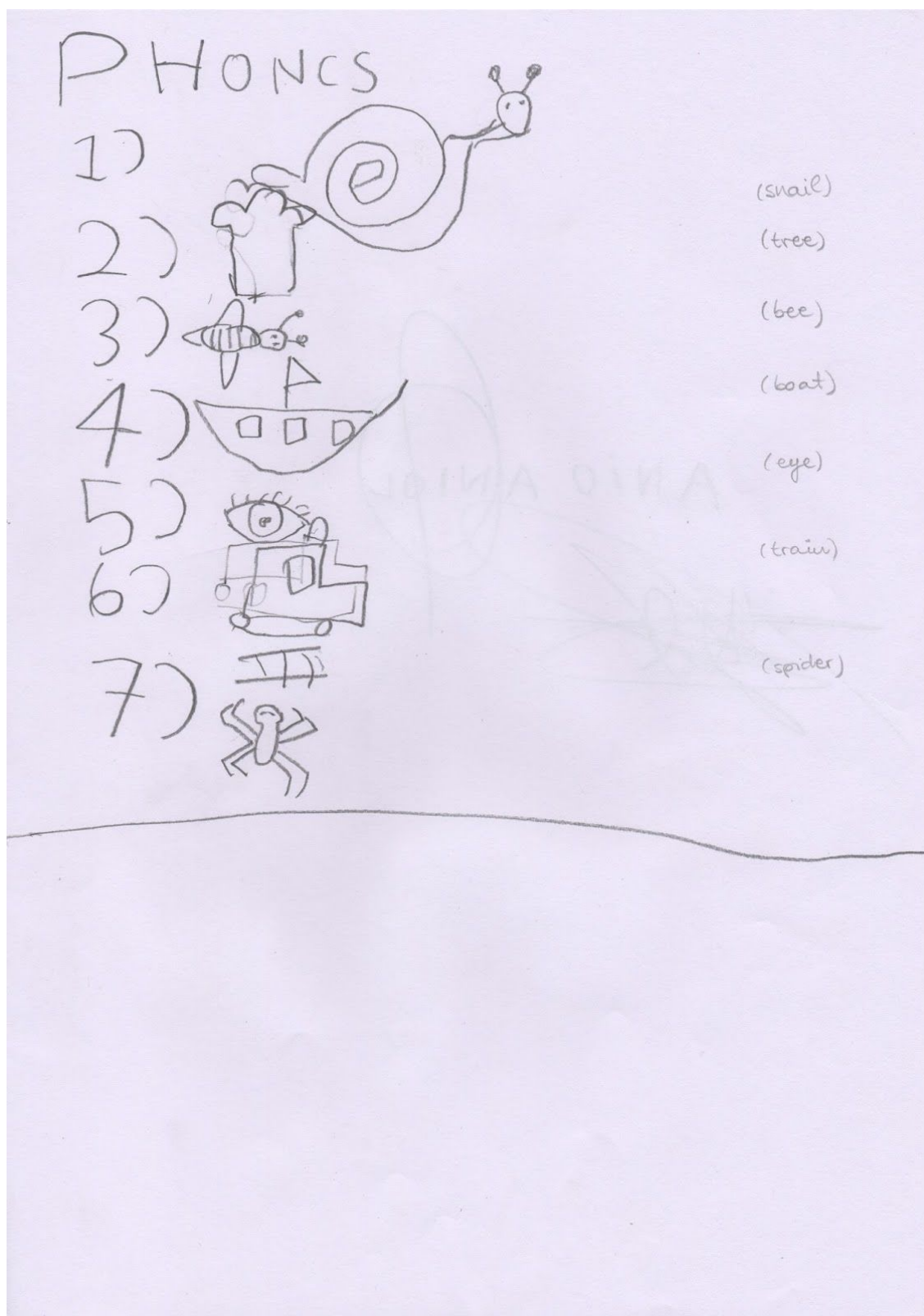● Representing the Diphthong "ei".

● Matching the image with the target diphthong through the Digital Board.

Appendix 4

4.1. Drawing 1

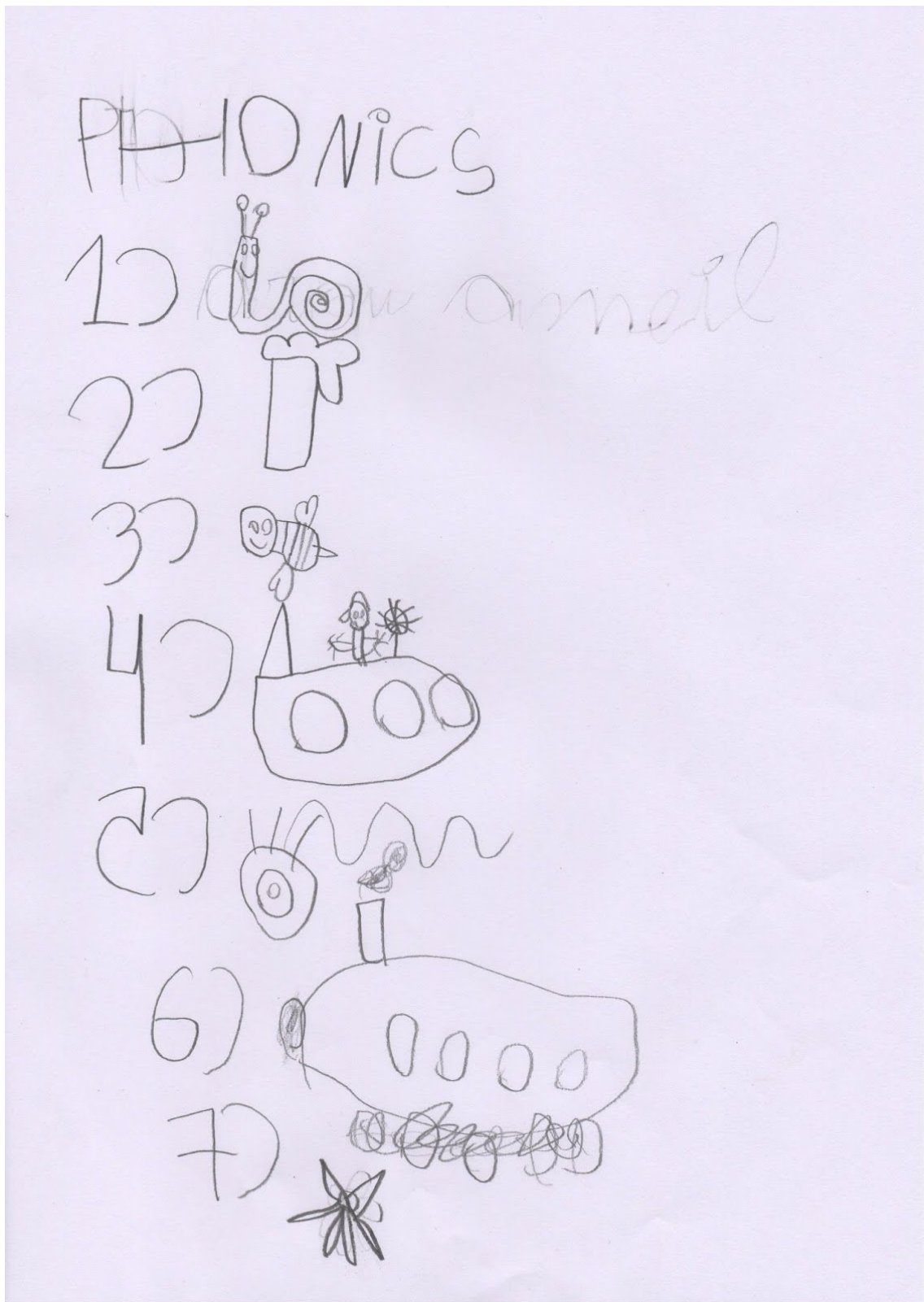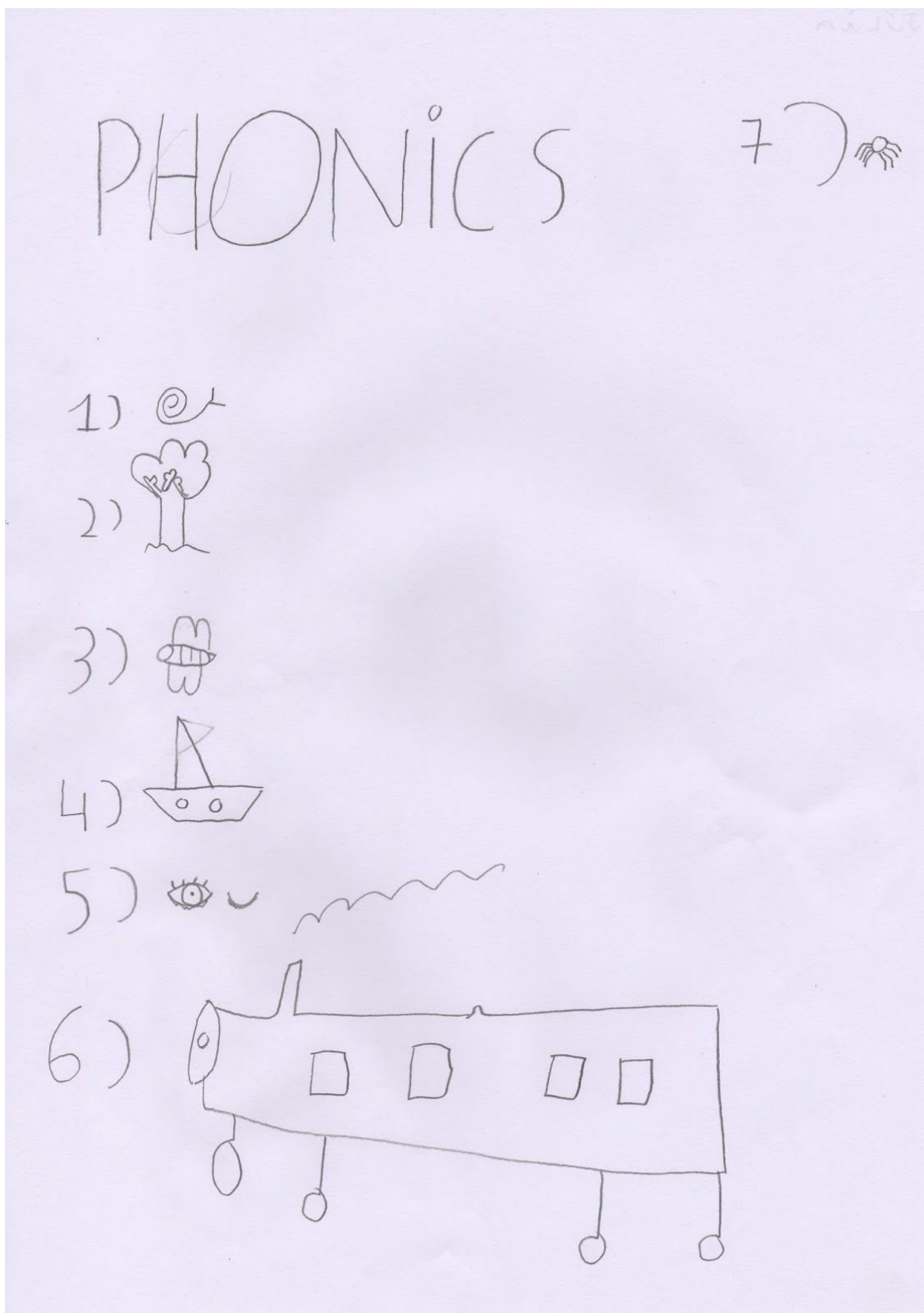## 4.2. Drawing 2: "asneil"

4.3. Drawing 3

Appendix 5