Teaching and Learning English at Grammar School supported by Mobile Touch Technologies

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ABSTRACT

The article deals with the implementation of iTunesU in English lessons at the secondary grammar school. The content is structured into three main parts. First, the theoretical background for the appropriate use of mobile devices is introduced reflecting the Comenius´principles and Koole´s FRAME model. Second, a strategy for practising English pronunciation is described. Third, a set of three lessons enhanced, or not, by mobile touch technology was described and learners´ feedback displayed. Finally, authors´ recommendations are provided.

KEYWORDS

iTunesU, mobile devices, mobile learning, m-learning, secondary grammar school, English

1   INTRODUCTION

Reflecting the latest trends in technical and technological development, mobile devices have become standard didactic means both in foreign language and other subjects' instruction on all levels of education. The use of wireless, mobile, portable and handheld devices is gradually increasing and diversifying across every sector of education in both the developed and developing worlds. Currently, mobile learning has been exploiting handheld computers, mobile/smart phones and other devices that work on the same set of functionalities. The use of handheld computers is obviously relatively immature in terms of both technologies and its pedagogies, but mobile-assisted learning is developing rapidly (Traxler, 2009, in Ally, 2009).

Until now traditional e-learning (using non-portable devices) has been widely implemented into education in the Czech Republic reflecting the fact mobile devices were not available to such an extent as in developed countries. Within the last two-three years the situation changed substantially and mobile learning can be applied on all levels of education, gradually moving from small-scale, short-term trials to larger, more sustained and blended deployment.

Current students, ´digital natives´, as defined by Prensky (2001), think and process information fundamentally differently from their predecessors. These differences go further and deeper than most educators are able to realize. "Different kinds of experiences lead to different brain structures and it is very likely that students' brains have physically changed and are different from their parents´ brains their

thinking patterns have changed" (Perry, Pollard, 1997). This state is rather clearly visible in daily contact with students, and, of course, it should be reflected in teaching and learning within all subjects. That is why this study focuses on the *use of mobile touch technologies in foreign language learning, particularly English at the secondary grammar school*.

2   THEORETICAL BACKGROUND

It should be admitted students´ learning behavior has changed, either we agree, or not with results by Prensky, and modern technologies, mainly mobile devices and relating learning strategies, particularly networking, have strong preference among learners, when applied in education.

In the Czech Republic, until recently the traditional e-learning using non-portable devices has been widely implemented into the education. This situation reflected the fact mobile devices, defined as very small items to accompany users anytime and anywhere, autonomous from the electrical supply (Rochelle, 2011; Liang et al., 2005), were not available to users to such extent as in developed countries. The situation changed substantially within last few years and now mobile learning can be applied on all levels of education, gradually moving from small-scale, short-term to larger more sustained and blended deployment.

Despite numerous current designs on how to teach efficiently reflecting learner´s preferences

in teaching methods, organizational forms, approaches to assessment and other closely relating matters, basic rules were defined centuries ago (in the 17th century) by a Czech scholar, philosopher and educational reformer Jan Ámos Komenský (Comenius). He was the first one who formed basic principles which have been valid for centuries. His approaches to the system of education and the entire process of instruction introduced revolutionary changes in education; his theorems even now sound (and really are) modern. Comenius formed fundamentals of didactics, disregarding which philosophical paradigm is currently trendy (cognitive science, behaviorism, and constructivism) (Comenius, 1964). His main methodological principle, the "schola ludus", which represented the edutainment approach, was the main motivator. His didactic principles cover (Comenius, 1930):

- *purposefulness*, i.e. why to reach learning objectives;

- *system approach*, i.e. structuring the learning content and process of instruction into logical system leading to methodological, systematic way of learning – ´Let everything what comes after be an objective, everything what comes before be means targeting to the objective´, Comenius stated (1967);

- learner´s activity, arising from cognitive, emotional and volitional processes and stimulating interests and motivation, leading to new knowledge application and creative approaches to all learning activities;

- *clearness*, i.e. activating as many senses as possible, i.e. using visual aids, explanatory examples, motoric training, symbols and schemas, and modern technologies these days;

- *awareness of intentional activities* within the educational process, which leads to understanding why and how to use knowledge creatively in practice;

- *retention of knowledge*, which is kept by practicing and training;

- *adequacy*, particularly in setting and pacing the learning content according to the student´s age and level, and the successiveness of all educational steps

- *emotionality*, covering warm teacher-learner communication and enthusiasm spread from the teacher to the learner and back, thus creating th positive education climate;

- *joint approval and the consensus* of the family, educational institutions and other organizations participating in the process of individual´s upbringing and instruction.

All the above mentioned principles should be kept both within the traditional and ICT-supported processes of instruction. Generally, Comenius´ ideas have been widely accepted and applied. But these days, some situations may appear, when didactic principles are not correctly applied in the process of instruction where didactic means running on the ICT or mobile technologies are applied. Important shifts have been detected in how and where the information and communication technologies were used in education within the last period. Ten years ago the computer was the only digital device in the family or on workplace, currently its role and services are taken over by other ones – smart TV, smartphones, tablets, e-readers, PDAs etc. The general education, professional and private lives are changing under the conditions of e-society and i-society. The institutional education has been the core of the education process but new current demands lead to developing new approaches despite it is often difficult to imagine future situations and requirements students should be prepared for.

For m-learning, the FRAME (Framework for the Rational Analysis of Mobile Education) model was designed by M. Koole (2009) (figure 1). Equipped with a mobile device, the learner can choose to consult a web page, access audio or video tutorials, send a query via text message to peers, or contact an expert/tutor for guidance. But, how can such a learner take full advantage of the mobile experience? How can practitioners design materials and activities appropriate for mobile access? How can mobile learning be effectively implemented in both formal and informal learning?, Koole asks. The FRAME model offers some insights into these issues as it describes a model of learning in which learners may move within different real *and* virtual locations and thereby participate and interact with other people, information, or systems – anywhere, anytime. The interaction with information is mediated through technology. Within this context, the FRAME model is represented by a Venn diagram (figure 2) in which three aspects (circles) intersect. The three circles represent the device (D), learner (L) and social aspects (S). The intersections where two circles overlap contain attributes that belong to both aspects. The attributes of the device usability (DL) and social technology (DS) intersections describe the affordances (i.e. availability, called the ownership in our research) of mobile technology (Norman 1999). The intersection labelled interaction learning (LS) contains instructional and learning theories with an emphasis on social constructivism. All three aspects overlap at the primary intersection (DLS) in the centre of the Venn diagram. Hypothetically, the primary intersection, a convergence of all three aspects, defines an ideal mobile learning situation. The model can/should be used to design a more effective mobile learning process (Koole, 2009). The FRAME model takes into consideration the technical characteristics of mobile devices as well as social and personal aspects of learning, thus referring to concepts similar to those found in psychological theories, e.g. in the Activity Theory by Kaptelinin and Nardy (2006) and especially pertaining to the work by Vygotsky (1978) on mediation and the zone of proximal development. In this model, the mobile device is an active component in equal footing to learning and social processes. This model also places more emphasis on constructivism: the word ´rational´ refers to the "belief that reason is the primary source of knowledge and that reality is constructed rather than discovered" (Smith and Ragan, 1999, 15).
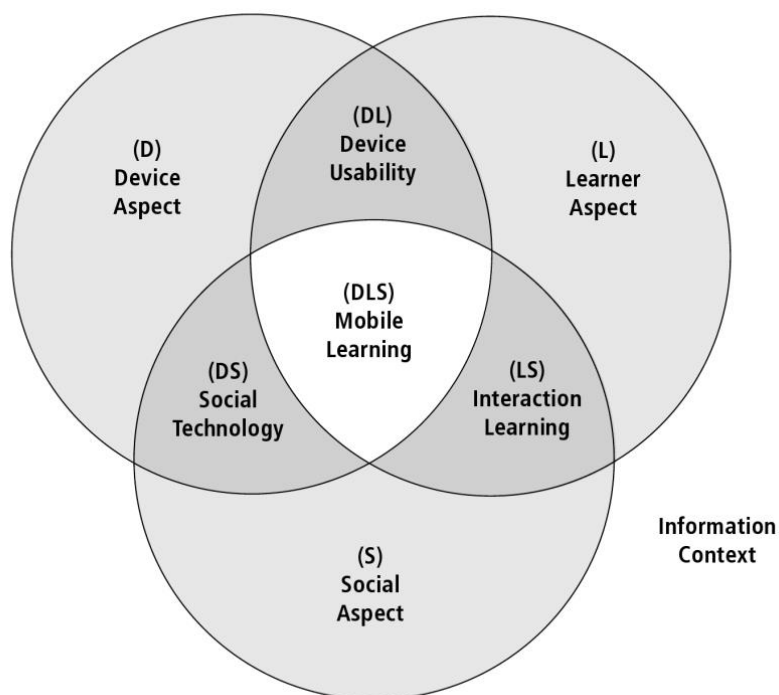
Figure 4 The FRAME Model (Koole, in Ally, 2009, 27)

Under the new conditions such competences should be developed which prepare graduates for succeeding on the labour market. The required competences are often reached with the support of latest mobile technologies which are of high interest of young people, working as a motivator towards learning. Mobile technologies supported learning (m-learning) is understood as "learning across multiple contexts, through social and content interactions, using personal electronic devices" (Crompton, 2013); it is concerned with a society on the move, particularly with the education of "… how the mobility of learners augmented by personal and public technology can contribute to the process of gaining new knowledge, skills and experience" (Sharples et al., 2014). Quinn (2014) has given a definition of M-Learning from a technical perspective stating m-Learning is a digital learning method realized through Intelligent Apparatus equipment. These Intelligent Apparatus equipment include Palms, Windows CE equipment and digital cellular phone etc. Chabra and Figueiredo (2014) have given a broader definition stating m-Learning means to be able to use the task equipment to acquire knowledge at any time and any place. Current m-learning, i.e. using mobile devices for educational purposes, is an approach how to reach the same objectives as Comenius did. Currently, the ICT-implementation in the process of instruction has become standard; online courses are currently being developed towards MOOC (Massive Open Online Course) and latest technologies, which are of high interest of young people, are being implemented in education so that m-learning was activated.

3   MOBILE TOUCH TECHNOLOGIES AT THE SECONDARY SCHOOLS

At the Wichterle Grammar School, Ostrava, tablets with iTunesU appliCation have been exploited for several years. Both the teachers and students use them within everyday instruction in various subjects, including English lessons.

From numerous services offered through this mobile device, practising English pronunciation is often supported.

As widely heard, English pronunciation skills of Czech English teachers are often of poor quality, as well as of low importance. This fact can even demotivate students (Toni Lai, 2015). The state was partly influenced by historical factors, as during the communist regime there were only limited opportunities to

have contact and learn from native speakers. Despite the generation of English teachers who studied in the last quarter of the 20 century is gradually leaving Czech schools, it will still take some time to improve the situation.

When taking a detailed insight in the Framework Educational Programme for Secondary Schools (Framework, 2007), only a little is written about expected outcomes in the field of pronunciation and the phonetic aspect of the language in the Productive Language Skills section of the Foreign Language chapter: ´learners should understood, using correct grammar, spontaneously and coherently; reproduce freely and coherently an authentic text with vocabulary and language structures characteristic of a rather demanding text which they have read or listened to´ (Framework, 2007, 16). Thus only the general terms ´coherently´ and ´in such a way that the learner is understood are used in the document ´compared to the definition of the correct use of grammar, which is mentioned explicitly: ´to receive information of a rather complex content with a good degree of comprehension and be able to convey it in such a way that he/she is understood while using grammar correctly´ (Framework, 2007, 17). This little emphasis on the development of correct pronunciation skills is reflected in the teaching process of in-service teachers and in curricula and practice of pre-service teachers. It can be stated that (1) numerous native Czech teachers of English either lack proper pronunciation and intonation skills, or they lack self-confidence in terms of this aspect of language, (2) majority of native Czech teachers of English omit teaching pronunciation skills as an integral part of language acquisition and often do not even correct pronunciation mistakes made by learners; probably from lacking the knowledge/skill with themselves. So, to minimize mistakes caused by teachers´ pronunciation imperfections mobile devices and their services can be exploited.

Choosing the proper tools

There definitely exist ICT tools suitable for teaching pronunciation. Their use, however, is mostly time consuming and it is very difficult to implement them in regular lessons. In language labs where students are equipped with headphones, they can practice speaking model sentences. However, the efficient pronunciation training requires an immediate analysis and response of any spoken text. If a student makes a mistake, the mistake should be corrected immediately and the student should try to pronounce the word correctly again.

Regarding what has been said about the pronunciation skills of many Czech English language teachers, this might not be the best solution. Above all, teachers are often aware of their own imperfections and, as a consequence, they neither practise pronunciation with their students, nor correct their mistakes. To develop students´ correct pronunciation, following conditions should be met:

- *students should be given an immediate feedback concerning his/her mistake, or improvement;*

- *student´s pronunciation should be analyzed in an objective way immediately and compared to the standard;*

- *single sounds should be analyzed and total improvement presented to the student.*

To meet the above mentioned requirements, the iTunesU application can be exploited. With the spread of mobile touch technologies, new applications appeared which can bring the desired effect. Special tools were for example created to test the potential impact of two distinct visualization styles for the learning of English pronunciation with the results recently published (Dibra et al., 2014). As there are quite few, below one of them was introduced as an example of the workflow. The iTunesU application for practising pronunciation allows the teacher to type any English word and then play and records the correct pronunciation. The application analyzes the recording, divides it into individual sounds and compares them as the whole to the original. If the mobile device you run the application on is connected to a proper visualisation and audio device, this process can be followed by the whole class. The whole process is structured into several steps.

First, a word is typed in the application. The play button plays the standardized pronunciation, the microphone button allows to record another trial. Student´s voice is analyzed and single sounds are graded from A to D (A – excellent, D – completely incorrect). Student´s voice can be heard again, and the recording is visualized, which helps the student understand the mistake. The student records the word several times, until the optimal sound is reached.

Exploiting th iTunesU application the whole process of pronunciation mistake correction takes about 2 minutes. It can be either included in the lesson (students work individually or in pairs, it does not break the lesson), or pronunciation can be practised individually at home. Moreover, there is another outcome – as mentioned above, the motivation to practice pronunciation is generally very low, both in case of teachers and students. The event happened during the first of a double lesson which was divided in two by a 15-minute break. As this class was taught in the one to one format (every student had one tablet to use), 12 out of 15 of them did not leave the classroom and spend the whole break practising the pronunciation of various words, including some swearwords, of course.

Assessment of students´ knowledge

Once the work with iPads with iTunesU application is included in any learning activity (either in face-to-face lesson or into autonomous work), the detection of increase in learners´ knowledge is required. Traditionally, multiple-choice or other types of tests are applied, which measure the entrance and final level of knowledge, calculate the difference between the experimental and control groups and consider the statistical significance of the received value. Our approach to monitoring learners´ knowledge was different, easy and no pre-prepared testing tools were required. The research sample included 30 5th-grade students (15-year old) of the 8-year course of Wichterle secondary grammar school in Ostrava on B1 level of English.

Students were to describe a set of three lessons which were taught in May 2015 and tablets were used in one of them.

- In lesson 1, which was rather theoretical, a ´story´ format was analyzed from the point of the structure, parts, vocabulary, grammar items, characteristics of figures etc. Tablets were not used in this lesson.

- In lesson 2 learners were equipped with tablets, worked in pairs and created a story reflecting their imagination. All stories (text and illustrations) were included in the e-book.

- In lesson 3 (without tablets) students learned to describe how the application works, thus practising the zero conditional sentences.

The students´ feedback included two parts: (1) to describe the lesson 2 where tablets were implemented in the process of learning; (2) to describe the lesson 1 or lesson 3 where tablets were not used. The feedback was collected four months later, in September 2015.

The results clearly demonstrate that the extent of lesson 2 description, where tablets were exploited, is significantly longer, providing more details, students expressed their thoughts in full sentences, using appropriate vocabulary and grammar items, including those they learned in these lessons. The descriptions of lessons 1 or 3 are shorter, mostly providing an incomplete list of vocabulary, fragmentary and vague flashbacks (see figures 2, 3, 4).

What can be concluded from the above described short feedback?

The results did not prove that the lesson with tablet was "better". Avoiding the unclear, non-specified expression "better", the more precise is to state the lesson 2 was *different*; and as such, it was more easily remembered. It is highly probable that if tablets are used more frequently, e.g. in each lesson, the one without them will be different, and thus a more easily remembered lesson. To sum up the above mentioned,

the main contribution of this technology is its *appropriate use*. And this is the "*art of teaching*" defined hundred years ago by Comenius (1930).

CONCLUSION

The above described iTunesU application is capable of analysing not only individual words but also phrases and whole sentences comparing even the rhythm of the whole clause. There are model sentences according to the topic or you can enter your own. However, its greatest advantage in the above described process of giving the students an immediate feedback of correct/incorrect performance. Also, there are other applications able to analyse your pronunciation and compare it with the original. This work is not meant to be a review of any application, its goal was to highlight the strength of a tablet/smartphone for pronunciation training. The advantages described in this article do not merely come from the application but rather from the device itself, as it can be used as a recording tool but also a tool for playing the correct pronunciation plus (using the right app) tool capable of analysing and comparing the pronounced text. The pronunciation, feedback and correction processes take only a couple of minutes, which allows the teacher to implement this activity in any lesson. Pronunciation mistakes can be corrected immediately, even in the case, when the teacher is not confident enough and does not have the required pronunciation skills. Finally, the motivation aspect of mobile touch devices should not be forgotten. Teaching and learning pronunciation has always been the boring part of language education and no tool capable of increasing the motivation of all participants should not be omitted. Mobile touch technologies may serve as such a tool, for some period, as proved in the feedback monitoring learners´ knowledge.
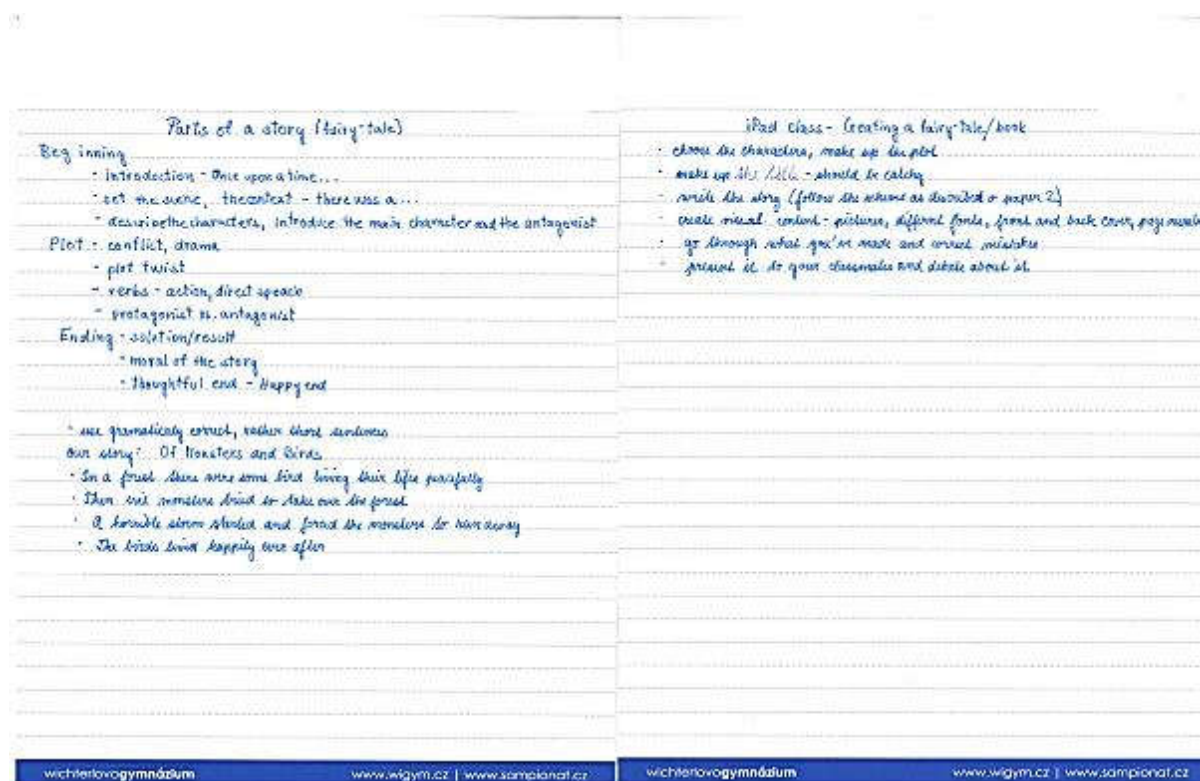

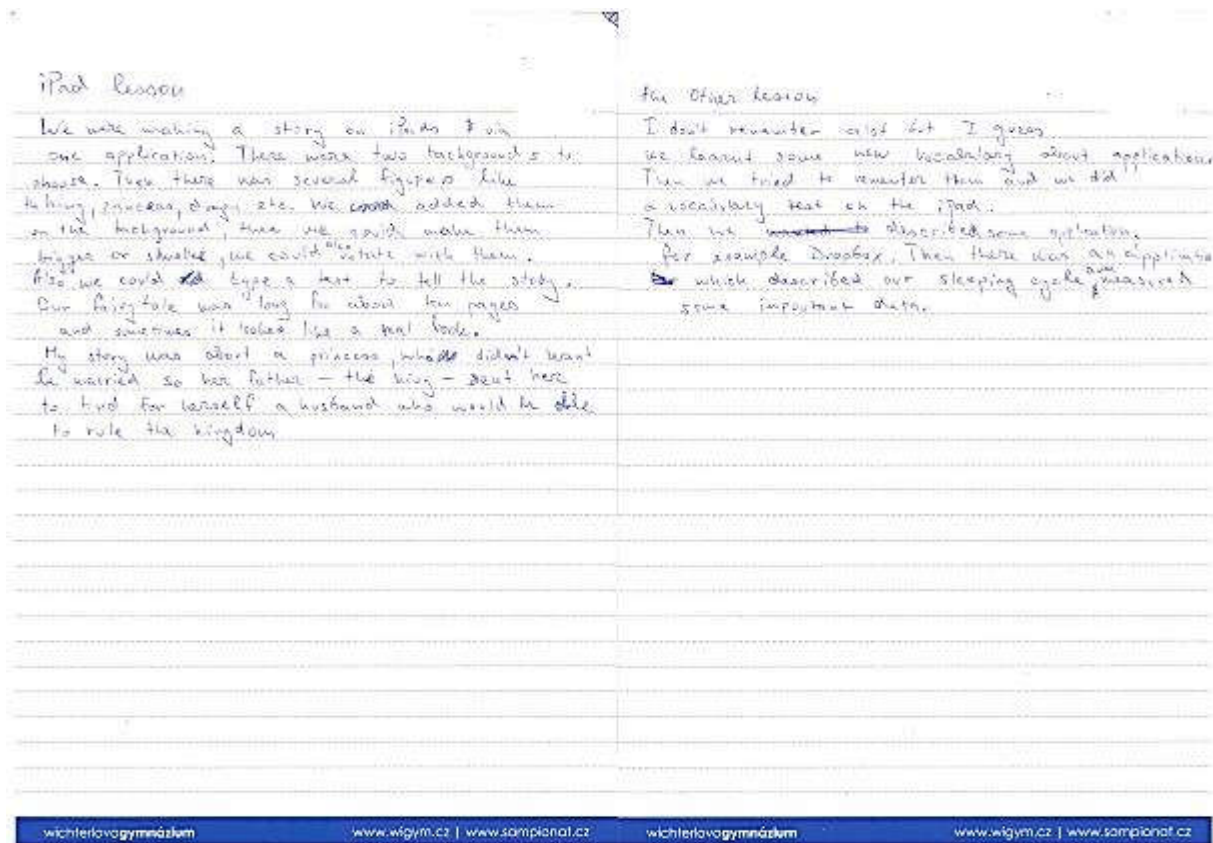**Figure 2** Student 1: comparison of knowledge feedback with/without tablets

Figure 3 Student 2: comparison of knowledge feedback with/without tablets
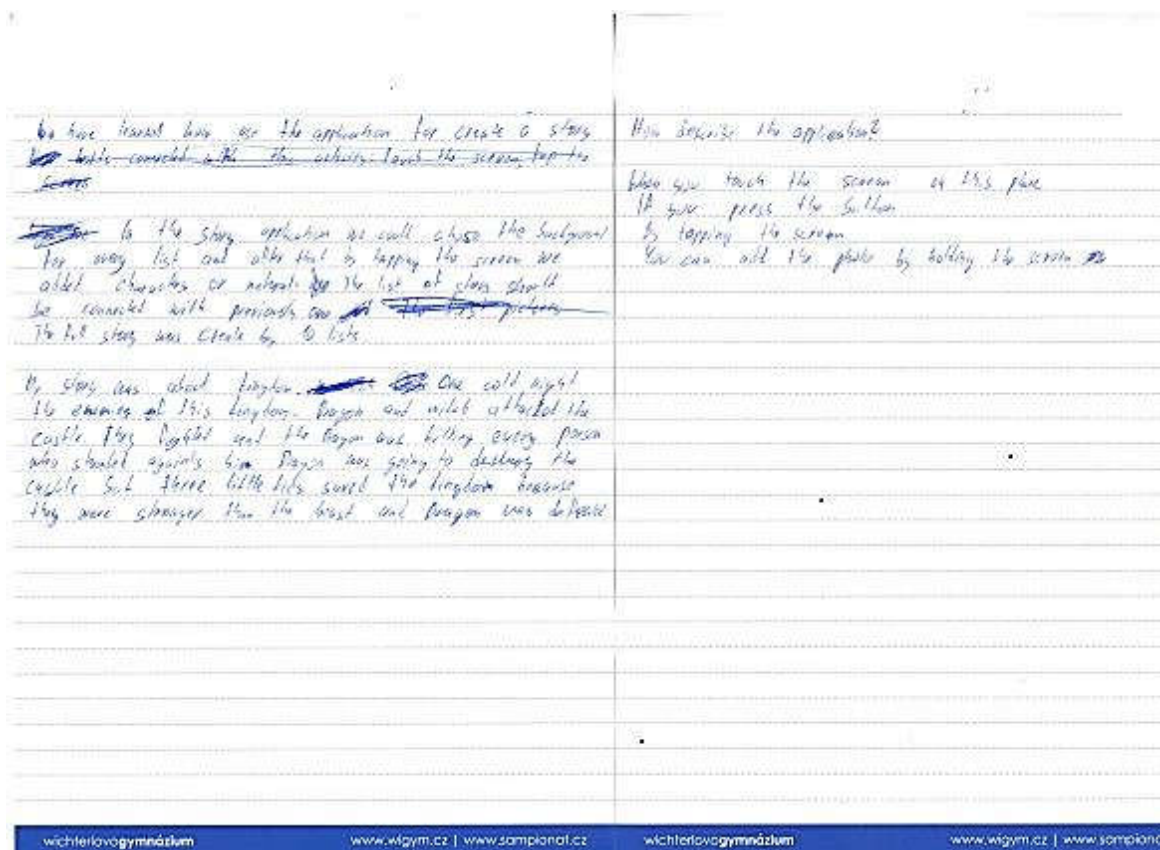

Figure 4 Student 3: comparison of knowledge feedback with/without tablets

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