

ASSESSING THE INFLUENCE OF USING A TIMEKEEPING DEVICE TO SELF-REGULATE THE TIME OF ORAL PRESENTATIONS

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Abstract

Oral presentations are commonly used in higher education to assess students' communication skills. These presentations usually have temporary restrictions, so that students have a maximum time for their talks. Timekeeping is important to ensure that all students have the same opportunities for the teaching activity. In general, in the context of a classroom, the teacher is the person who plays the role of moderator, alerting the students when time runs out. However, these time limits are frequently exceeded by students, who only deals with time when teacher intervenes. The use of timers can help adjust the time throughout the presentation. There are different timekeeping devices that can help control the time. The goal of this paper is to study the impact on students' timekeeping skills of the kind of device used and the possible differences between them. The hypothesis of this study is that the use of a timekeeping device influences students' time to conform to the expected duration of the oral presentation, and that not all device types influence the same way.

The experiment has been conducted in the Information Architecture on the Web course of the Information and Documentation Degree at the Universitat de València (Spain) during the last 3 years. This subject is taught during the second course of the degree and has an average enrollment of 30 students.

During the course, students are required to perform an oral presentation of a work group activity. Groups consists of three or four students (depending on the number of enrolled students) and they have 10 minutes to make the presentation. To perform the experiment, each group was randomly provided with a different timekeeping device just before beginning the oral presentation. Two different timekeeping devices and a control group were used:

- 1 "built-in timer": a built-in timer on a presentation remote control that vibrates when time is coming to end.
- 2 "timer app": a timer app on a screen that displays the spent time.
- 3 "control group": some of the groups did not receive any timekeeper device in order to serve as a control group.

In no case teachers warned students about time. At the end of the oral presentation, duration was registered. Response variable analyzed in the experiment was time spent during oral presentation. For comparison purposes, we studied three different parameters regarding three academic courses from 2016/2017 to 2018/2019.

Experimental results show that, although there was no significant impact on timing adjustment when timekeeping devices were used, the technique that produces the best time adjustment was technique (1) "built-in timer" with minor differences comparing with technique (2) "timer app". Moreover, results also show that groups without timekeeping devices presented higher variability in presentation duration.

Two drawbacks founded during experiments should be noted. First, when technique (1) "built-in timer" is used, only the person carrying the device is aware of the vibration, while the rest of the members are unaware of the alert. Second, technique (2) "timer app" caused some students nervousness, so that they decided to ignore it.

In conclusion, timekeeping devices can be useful for adjusting to time in oral presentations. Although there are no significant differences between each kind of device, each one could be more appropriate for a different subject profile.

Keywords: Oral presentation, timekeeping device, technology, higher education.

1 INTRODUCTION

The new formative model of higher education in Spain, which is driven by the development of the European Higher Education Area (EHEA) through the Bologna Process [1], encourages the training of students through competences. This way, university students must acquire not only theoretical content, but also skills that allow them to be optimally inserted into the job market [2]. This implies that university professors must be able to properly evaluate the acquisition and level of mastery of those competences. Among these competences, many of them called "soft skills" [3], are autonomous learning, teamwork, information search, problem solving ability, communication skills, etc.

A key skill is the ability to communicate, which is taught in a wide range of general education courses, not just those offered by the communication department [4]. Students need oral communication skills beyond university such as in job interviews, communication with colleagues and clients in the workplace, promotion in business, etc. The practice and assessment of these students' oral communication skills is commonly done in higher education by means of oral presentations [5]. Oral presentations are activities in which students must collect, inquire, organize, and construct information through a teamwork. In these activities, students use the four language skills in a naturally integrated way. Moreover, oral presentations usually have temporary restrictions, so that students have a maximum time for their talks [6]. In this context, different aspects of oral presentations can be evaluated, such as the content (adequacy of the content exposed to the subject, effort dedicated to the presentation, etc.), formal aspects (quality and correctness of the visual means used, eloquence, etc.), and proper time management. This latter aspect is important to develop students' timekeeping skills and to ensure that all students have the same opportunities for the teaching activity.

Adjusting to time constraints through the development of content selection skills and complementarity of the sources of information provided to the audience are therefore key skills to become a competent speaker. Timekeeping, therefore, is thought a fundamental element to be considered when assessing the competence, and there are several works in which this indicator is included among the general conditions of the task to be developed [7].

In general, in the context of a classroom, the teacher is the person who plays the role of moderator, alerting students when time is over. However, these time limits are frequently exceeded by students, who only deal with time when teacher intervenes. The use of timers can help adjust the time throughout the presentation. There are different timekeeping devices that can help control the time. Thus, the goal of this paper is to study the impact on students' timekeeping skills of the kind of device used and the possible differences between them. The hypothesis of this study is that the use of a timekeeping device influences students' time to conform to the expected duration of the oral presentation, and that not all device types influence in the same way.

The experiment has been conducted in the Information Architecture on the Web course of the Information and Documentation Degree at the Universitat de València (Spain) during last 3 years. This subject is taught during the second course of the degree and has an average of 30 students enrolled.

2 METHODOLOGY

In order to assess the hypothesis of this study, we have applied an evaluation with students as next subsections describe.

2.1 Context and participants description

The experiment was carried out in the Information Architecture on the Web course of the Information and Documentation Degree at the Universitat de València (Spain). This subject is taught during the second term of the second course of the degree. The topic is to teach about how to structure the information in a Web site, how to arrange the navigation among pages, identify the types of labels and how to work with a search engine. During the course, students are required to perform an oral presentation of a subject related with the main topic of the course but that is not dealt with explicitly in the program. The teacher provides a list with several potential topics, but this list is not closed, and any group can choose other topics beyond this list. Examples of topics are semantic web, usability, accessibility, search engine optimization, among others. Groups are composed of three or four students (depending on the number of enrolled students) and they have 10 minutes to make the presentation. All the members of the group must talk, and they have to manage the time on their own.

The experiment was replicated during three academic courses, from 2016/2017 to 2018/2019, involving 91 students (32 the first year, 31 the second year and 28 the third year).

2.2 Instruments

In order to perform the experiment and check the influence of using a timekeeping device to regulate the students' time, two different timekeeping devices and a control group were used:

- 1 **"built-in timer"**: a built-in timer on a presentation remote control that has a clock with a countdown timer that vibrates when time is coming to end. One vibration means 5 minutes for the deadline, two vibrations means 2 minutes for the deadline and 3 vibrations means that the time is over.
- 2 **"timer app"**: a timer app on a tablet with 10" screen that displays the spent time. Specifically, the timer app used was "Chronometer & Timer" from Jupiter Apps (downloadable in Google Play Store).
- 3 **"control group"**: some of the groups did not receive any timekeeper device in order to serve as a control group.

2.3 Procedure

In every replication of the experiment, the oral presentation of each group was scheduled during the last four classes of the course. The groups had 10 minutes to make the presentation with visual support (PowerPoint, Prezi, Keynote). To perform the experiment, each group was randomly provided with a different timekeeping device just before beginning the oral presentation, ensuring that the assignment of all the devices was balanced. One month before the presentation, the teacher had provided general indications about the structure of the presentation and the maximum time that students could talk (10 minutes). Only when the group was going to start the presentation, the teacher assigned a specific device to the group and described how the device works. Table 1 shows the distribution of the timekeeping device assigned to groups per academic course.

During the oral presentation, in no case teachers warned students about time. At the end of the oral presentation, duration was registered in a spreadsheet.

The experiment is a between-subjects design where the factor is the instrument used to measure the time. This factor has three treatments (built-in timer, timer app, and control group) and we have one response variable: time spent during oral presentation. The null hypothesis H_{01} to study is: *There are no differences in time spent in any technique used to help in time.*

Table 1. Number of groups assigned to each technique per academic course.

	<i>Build-in timer</i>	<i>Timer app</i>	<i>Control group</i>
2016/2017	3	3	3
2017/2018	3	3	3
2018/2019	3	3	3

3 RESULTS

To verify the hypothesis of study, we performed a quantitative analysis. The data have been analyzed through a General Linear Model (GLM), where we consider significant differences only if p-value is less than 0.05.

The results of analyzing time grouped by technique (timekeeping device used) are shown in the boxplot of Fig. 1. The horizontal axis shows the timekeeping device used and in the vertical axis the values for the first and third quartiles, minimum and maximum, median and outliers.

These results, according to GLM statistical test (p-value=0.321), show that, although there was no significant impact on timing adjustment when timekeeping devices were used, the technique that produces the best time adjustment was technique (1) "built-in timer", with minor differences compared with technique (2) "timer app". Moreover, results also show that groups without timekeeping devices presented higher variability in presentation duration and the maximum value of time duration. The

reason for this effect could be the students lack of control over time, increasing dispersion on time used to make the presentation.

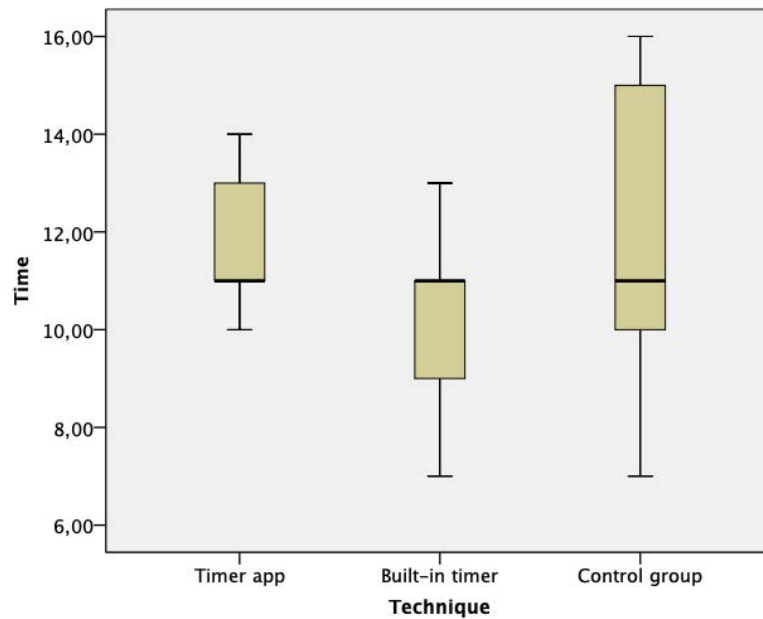


Figure 1. Boxplot of time grouped by technique.

To obtain statistically significant results, we replicated the experiment during three courses from 2016/2017 to 2018/2019. Fig. 2 shows the boxplot of time spent results grouped by technique and academic course. In this comparison, on 2016/2017 academic course we can observe low dispersion times and “timer app” as the best technique to control time, since it provides the best time adjustment. For course 2017/2018 and 2018/2019, the “built-in timer” provides the best results. Also, in these courses the “control group” has more dispersion, especially on the 2017/2018. This may be due to the fact that when no help on timing is provided, the spent time exclusively depends on the students’ skills, whose can be more or less wide depending on the course. For 2017/2018, the differences in skills are high according to the boxplot.

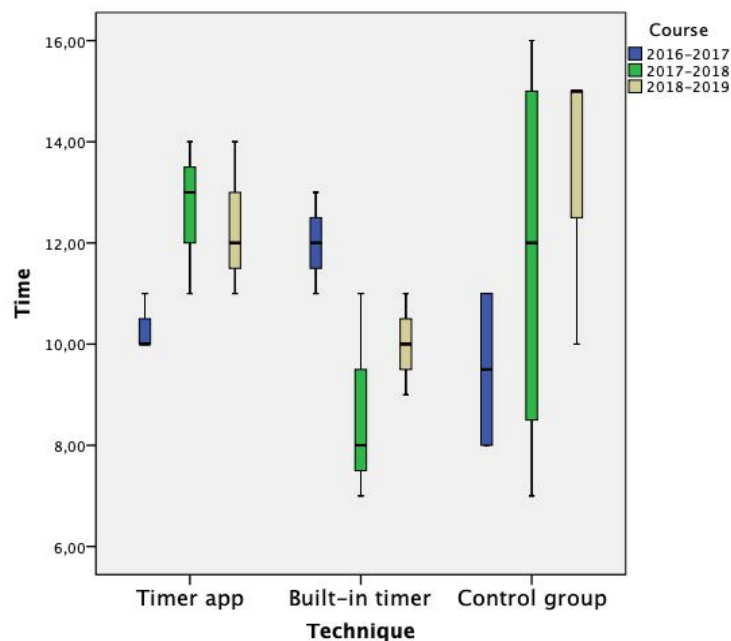


Figure 2. Boxplot of time grouped by technique and course academic.

It is important to highlight that two drawbacks were found during experiments. First, when technique (1) “built-in timer” was used, only the person carrying the device was aware of the vibration, while for the rest of the team members the alarm went unnoticed. Therefore, if there is a change of device after the vibration occurs, the member of the group receiving the command does not realize that the time is running out since the vibration has occurred before he obtained the device. Second, technique (2) “timer app” caused some students nervousness, so that they decided to ignore it. For this reason, this technique would have worst results than the “built-in timer”.

4 CONCLUSIONS

Students need to develop their oral communications skills for their future. Oral presentations have become a useful and effective way to increase students’ awareness of communication skills [5]. With oral presentations students also develop their timekeeping skills since they should gain the mastery of organizing and selecting their arguments and pieces of information to respect allotted time to the oral presentation. Also, they can use a timekeeping device to facilitate time adjustment.

In this work, we have assessed different timekeeping devices in order to check their influence on the students’ timekeeping skills and the possible differences between them. The hypothesis of this study was that the use of a timekeeping device influences students’ time to conform to the expected duration of the oral presentation, and that not all device types influence the same way. Results obtained show that even though there are not significant differences, the use of a timekeeping device can be useful for adjusting to time in oral presentations and the technique that produces the best time adjustment was technique (1) “built-in timer” with minor differences comparing with technique (2) “timer app”.

As future work, we plan to replicate the experiment in other courses to check whether the subject profile influences on the kind of device. Although in the present experiment there are no significant differences between each kind of device, each one could be more appropriate for a different subject profile.

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