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**On-task and off-task
behaviour
during small-group work:
A study with Compulsory Secondary
Education students**

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Abstract

This dissertation aims to find, on the one hand, those aspects that lead students to on-task behaviour and, on the other hand, what are the sources that cause learners to be off-task. This is a long-standing issue in educational research and this thesis presents both a review of the major works that have been carried out in the last decades as well as the results of a field study carried out during student placement. While previous studies including Godwin et al. (2016) have suggested some common aspects that make students go off-task, which correlates to the decrease in academic achievement, the present study not only evaluates which of these aspects are observable in the data but also what motivates students to keep on-task. In order to conduct research, qualitative data was collected in a public high school in the metropolitan area of Barcelona during the master's internship period with students from year three (3° ESO, in the Spanish Education system) by making video-recordings of learners during small-group work. This research shows that, consistent with previous studies, peer and self-distractions are the most common sources of distraction during lessons. Nevertheless, a new positive tool for on-task behaviour has been found: the use of technological devices such as laptops and mobile phones for academic purposes. The findings of this study indicate that students' engagement rate is quite high when working with digital devices, because the screen of the devices seems to hold their attention more than if they were using traditional materials.

Key words: on-task behaviour, off-task behaviour, academic learning time (ALT), Academic Engaged Time (AET), engagement rate, action research.

Resumen

Este trabajo tiene por objetivo encontrar, por una parte, aquellos aspectos que llevan a los estudiantes a permanecer concentrados en sus faenas y, por otra parte, cuáles son las causas que les llevan a distraerse de estas. Este tema ha estado siempre presente en las investigaciones educativas y en este trabajo se revisan algunos de los estudios más significativos además de presentarse los resultados de esta investigación. Mientras estudios anteriores como el de Godwin et al. (2016) sugieren algunos aspectos comunes que son motivo de distracción para los alumnos, este trabajo no solo evalúa cuáles de esos aspectos son observables en nuestros datos, sino que también estudia aquellos aspectos que mantienen a los estudiantes centrados en la tarea. Para llevar a cabo esta investigación, se han recogido datos cualitativos en un instituto público de la zona metropolitana de Barcelona durante las prácticas del máster con estudiantes de tercero de la ESO trabajando en pequeños grupos, mediante la grabación de vídeo. Este estudio demuestra que, de acuerdo con los resultados existentes, las ocasiones de mayor distracción en hora de clase son las originadas por compañeros/as de clase y también por motivos personales. No obstante, nuestros resultados muestran algo novedoso: el uso de dispositivos tecnológicos (ordenadores y teléfonos móvil) con una finalidad didáctica, potencia la concentración en las tareas. Estos datos apuntan que la proporción de tiempo dedicada a las tareas aumenta cuando se trabaja con estos dispositivos, pues la pantalla del ordenador parece captar mejor la atención de los estudiantes que los materiales tradicionales.

Palabras clave: concentración en la tarea, distracción de la tarea, tiempo de aprendizaje académico, tiempo de concentración en tarea, proporción de tiempo dedicada a tareas, investigación-acción.

1. Introduction

My interest in this topic arose after I had been in the high school where I did my internship for the first two weeks, when I was an observer of lessons that were being conducted by other teachers. One particular observation that surprised me was that the students were very engaged in their tasks, which caused some questions to arise in my mind: how do teachers manage to keep students motivated and make them work attentively? What types of distractions interrupt their on-task behaviour? For this reason, this master's dissertation will focus on evaluating what aspects keep students attentive and engaged in their tasks and, when this behaviour is altered, what causes it.

Therefore, this study will try to find answers to the following research questions. Firstly:

Do students keep on task during small-group work?

If so:

What aspects contribute to this?

and:

When they get off-task, what are the sources of distraction?

The research presented in the theoretical framework details the multiple factors that incite both on-task and off-task behaviours within the classroom context and how, on the one hand, teachers can influence these behaviours and be able to control them for the benefit of teaching and learning processes; and on the other hand, how students' attitudes regarding their education – i.e. personal motivation and engagement— can also affect their classroom performance.

In order to analyse these behaviours in a real context, qualitative data has been gathered in the form of video-recordings, which help answer my research questions, as well as responding to my initial curiosities from when I first went to this high school, both of which have been

presented in the preceding paragraphs. Additionally, the results will be discussed and compared with the findings from previous studies and a conclusion will be drawn to either corroborate or refute the pre-existing results and knowledge from educational research studies.

1.1 School context

The school where I completed my master's internship is a public high school in a town in the metropolitan area of Barcelona. This town, despite having only 16,000 inhabitants, offers a wide variety of educational facilities at many levels, from kindergarten to primary and secondary schools (what in Spain is known as ESO), and even some post-obligatory studies. The school offers compulsory secondary education, and two types of post-obligatory education: Baccalaureate (including the branches of humanities, social sciences, health sciences and technology) and vocational studies (in the fields of administration and woodwork).

The socioeconomic status of the majority of the students' families in this high school tends to be middle to upper-middle class, as the School Educational Project document (*Projecte Educatiu de Centre*, PEC, in Catalan) states, with the exception of a low percentage of newcomers and students of migrant background who generally come from less privileged backgrounds. Moroccan backgrounds are predominant amongst this latter group of students, and in some specific cases, such as one student encountered during the internship, students have not received any formal education before their arrival in Spain.

In this high school, groups are normally very homogeneous in terms of academic levels and gender. The groups taught during the internship and that are the object of this study are 3rd year ESO students. In general, groups in this high school are small (twenty to twenty-two students) compared to typical classes in other Catalan schools, which normally have around thirty students. This is due to the fact that each

year level in ESO (1st, 2nd, 3rd and 4th year) is divided into four classes (A, B, C and D).

English in this school is quite important as evidenced by their active participation in multiple school projects such as the GEP (*Grup Experimental Plurilingüe* or Group for Plurilingual Exploration), which was started in the 2016-2017 academic year. The GEP project introduces the English language into the daily life of the school by increasing the use of English in other non-linguistic subjects, such as science, arts, as well as in weekly cross-subject projects they carry out in English. Another important project in which this school is involved in is the language assistant project. An English native arrived in the school in October and he has been co-teaching alongside the three current English teachers. Additionally, the language assistant gives conversational classes to put into practice the students' most difficult skill in English: speaking.

Also noteworthy is the school's participation in the Erasmus+ project. This is a European educational project facilitating student exchanges which the school joined in 2017, and it is planned to continue until 2020. Only a limited number of students can enjoy this exchange because the funds received from Europe do not allow all students to participate. Notwithstanding, all students, regardless of their participation in the exchange, prepare themselves in their English classes for topics such as jobs and travelling or conducting a conversation with other non-native English speakers.

The students' timetable is distributed so that they study English three hours per week. They frequently use their digital student's book and their paperback workbook, but the traditional approach –teaching explicitly grammar, vocabulary– is mostly used in the school. Nevertheless, the internship mentor still used some innovative tools to learn apart from their books. In general, the students use ICT tools and very often they accomplish online tasks the teacher has prepared for them to complement what they have been learning.

2. Theoretical framework

Teachers often complain about students' lack of motivation, attention and engagement in the classroom and how these behaviours diminish instructional and learning time –what in the literature is known as *Academic Learning Time (ALT)*, which consists of “the amount of time a student spends engaged in an academic task that s/he can perform with high success” (Fisher et al., 2015, p. 7). Some other authors like Gettinger and Walter (2012) prefer to refer to this phenomenon as *Academic Engaged Time (AET)*. ALT (or AET) is correlated in the literature to a decrease in academic achievement, which can be explained by the low degree of motivation from students understanding motivation as the willingness of the student to learn (Gettinger & Walter, 2012)– as well as through the low *engagement rate* shown by students, that is the “proportion of instructional time during which students are engaged in learning as evidenced by paying attention, completing written work, or interacting with peers about assigned work” (Gettinger & Seibert, 2002, p. 3).

Nevertheless, extensive action research has been carried out on the topic of *on-task behaviour*, –which consists of being focused on the academic task in question (Godwin et al., 2016)–, and *off-task behaviour* –which implies the opposite, being unfocused on the academic task required (Godwin et al., 2016). The findings prove that the former behaviour may be used as a predictor of students' academic achievement. Due to this, several studies have been conducted by teachers collaborating with researchers to discover what aspects lead students to be concentrated and engaged, in other words, be on-task, and what strategies teachers could use in their teaching practices to keep students motivated and willing to learn, and thus keeping students focused on their tasks.

One of the latest studies showed that three of the most common aspects that drive students to off-task behaviour are peer-, environmental- and self-distractions (Godwin et al., 2016, p. 139). In this same article some other variables were analysed –for instance, gender, time of the year

(beginning, middle or end of the academic year), instructional format (i.e. small-group instruction or whole-group instruction), the socioeconomic status, and instructional design choices, (i.e. average duration of the instructional activity and instructional format).

The results of Godwin et al.'s study (2016) showed that the students' attention patterns varied throughout the academic year, especially at the end of the year when the attention span decreased the most. Another important factor that highlighted a difference in off-task behaviour was gender. Female students were on-task significantly more time than their male classmates. The socioeconomic status, contrary to what Godwin et al. (2016) had expected, turned out not to be a significant factor for attention allocation. Another of their findings was that on-task behaviour rates were higher in small-group instruction, compared to whole-class instruction. In regard to the duration of the instruction, Godwin et al. also found an important correlation: the longer the instructional activity was, the more probability that off-task behaviour would be observed.

In order to overcome the problem of classroom inattentiveness and recurrent off-task behaviour, some authors like Gettinger and Walter (2012) have proposed strategies that would enhance learners' attentiveness and engagement. However, it must be stated that the students' tendency to be distracted and off-task is not entirely caused by the students' attitude towards education, it is also the consequence of teachers' poor managerial skills, poor instructional design or even lack of praise to students' success. (Gettinger & Seibert, 2002, p. 9; Gettinger & Walter, 2012, p. 664). Therefore, Gettinger and Walter suggest a series of strategies, organised in different categories, for teachers to improve their skills and make their practices more fruitful. For example, there is a category which comprises teachers' managerial strategies in which they recommend monitoring students' behaviour closely (2012, p. 664) and to accomplish this, teachers should reflect upon the seating arrangement or the group size that best suits the session objectives. This strategy of self-monitoring students had already

demonstrated to be very effective in previous investigations (Amato et al., 2006) to Gettinger and Walter's research, since the focus of this type of strategy is to self-monitor "attention-to-task" (2006, p. 211) and the overall results portray how it effectively decreases disruptive behaviours and increases on-task behaviour. Another strategy included in this category (from Gettinger and Walter's study) is to reduce the time teachers spend sitting down at their desks and instead, walk around the classroom helping students on their places. These practices have proven to enhance AET.

Not every strategy in the aforementioned study is thought to be for teachers' use. Some of them (included in the category named "Student-mediated strategies") are also student-oriented, so that teachers can learn how to increase students' motivation. This is essential if we agree that "the amount of time students spend engaged in learning is, to some extent, self-determined and indicative of their level of motivation for learning" (Gettinger & Walter, 2012, p. 668). Some of the strategies included in this category provide students with studying tips and pieces of advice such as how to plan and organise their time to study at home, or how to tackle stressful situations like when undertaking an exam.

Another proposal that has emerged from the latest research is that the use of in-class laptops and other technological devices in high-school classrooms is positive for the attention and concentration abilities of learners, which would contribute to an improvement in their academic achievement (Bester & Brand, 2013). It is undeniable that technology plays an essential role in our daily life and even more in the life of 21st century students. Yet, some teachers are very reluctant to change their teaching methodologies and they are still using old-school methods, thinking they can meet all students' needs in today's inclusive classrooms. These teachers should be reminded that many students in today's classrooms "have become visual learners, having been brought up with technology, so without visuals in a presentation the learners may not learn effectively" (Smaldino, Lowther & Russell, 2008; as cited in Bester & Brand, 2013, p. 4). For this reason, with the

implementation of digital visual materials, teachers might observe an improvement in the students' learning, since they will be able to concentrate more and during longer periods of time. This is because technology, as Bester and Brand stated (2013), "has the potential not only to maintain attention, but also to motivate learners to pay attention" (p. 5). Notwithstanding, they also point out that willingness to concentrate on the student's behalf is essential too, to be successful in the completion of a task (2013, p. 13).

This claim has been proven to be correct by several studies that have been conducted in educational research (Sims, O'Leary, Cook & Butland, 2002; Ainsworth & Loizou, 2003; as cited in Bester & Brand, 2013) in lower educational settings (i.e. primary and secondary education levels, as compared to tertiary education). In spite of this, the use of technology in higher educational settings, such as universities, has shown to be detrimental to the students' attention span and engagement rate during lectures. An important study about the impact of technology within a classroom was carried out by Fried (2008). The results of this study showed that those students using laptops during lecture time spent long periods of time multitasking and technology posed a distraction in their learning process. Similar results were found in a later study carried out by Wood et al. (2012), in which they examined the impact of multi-tasking with technologies while trying to pay attention to the on-going lecture. Their study tested both participants who were using different technological devices and participants who were only taking notes with a pen and a paper. Their results showed that those students who did not use any form of technology performed much better than those using some sort of technology.

3. Methodology

My study follows the methodology of action research, which consists of reflecting “on teaching and learning in order to intervene in them [those teaching practices] and hence bring improvement” (Nussbaum, 2017, p. 48). This type of research is beneficial for both the teachers who are taking part in the study as well as for educational research. Therefore, teachers are able to stay up-to-date with the last research done and they can improve their teaching practices to make the teaching and learning processes much more effective.

3.1 Method

The data for this study was collected during the second part of the internship, when I had the intervention part and I was implementing the teaching unit that was created by my master’s colleague, Alba Villalmanzo, and I. In this teaching unit, which follows a Task-Based Learning (TBL) approach, the students’ final goal was to create a video using an innovative tool of their choice (Powtoon was the example suggested by the teachers). In this video they had to present an English-speaking country they had been researching about in groups, in order to discover its history, culture and gastronomy and that is the task that is portrayed in the videos I recorded.

To gather the data for the analysis I recorded several groups of students from 3rd year (groups A and B) from Compulsory Secondary Education (ESO) working in small groups during the sessions when they were researching information online and working on it. This data-gathering was complemented with some ethnographical field notes I took in a notebook while the camera was recording. The reason why I chose to record multiple groups without concentrating just on one group was to observe as many on-task and off-task instances, which would enable me to have a wide range of factors to study and deduce the most common factors affecting the students’ engagement rate.

Hence, these ten videos that were recorded have been analysed by taking screenshots of some situations where on-task and off-task behavioural sequences are observable and relevant to the subject of discussion to answer the research questions. More specifically, the stills that were chosen followed some of the findings from Godwin et. al's (2016) study. Some of the aspects that have been considered are peer and self-distractions (feelings of sadness, tiresome and boredom) and some new aspects that were depicted in the data of the current study, such as the use of technology as an effective method to keep students on task, in spite of a few cases where technology was not used for on-task purposes and distracted them. Lastly, the aspect of the recording camera is a new contribution to the previous studies in this field because, as it can deduced from the recordings, in some cases it served as a method to keep them concentrated on the tasks, and in some other cases as a source of distraction.

Regarding the permission to gather the data required for this study, I obtained an official form from my university that was signed by the head of the high school in which I did my internship. In this form, the head of the school accepted that I could record students during classes as long as it was only for academic purposes. Notwithstanding, I asked students if they wanted to be recorded during some sessions, informing them that it would not be used for any purpose other than for my Masters' dissertation data, and their recordings would all remain confidential. Moreover, I have their confirmation to appear in pictures that I have taken along the internship sessions, which were also used for academic sources and university assignments.

My research question had to be redefined because my video-recordings, which is the data I analysed for this thesis, did not answer the initial research questions I had proposed for this dissertation. In order to remind readers, my final research questions, already set out in the introduction to this dissertation, are the following:

Do students keep on task during small-group work?

If so:

What aspects contribute to this?

and:

When they get off-task, what are the sources of distraction?

4. Analysis and results

This qualitative analysis consists of examining different stills from the multiple recordings¹ made during the second part of the internship in order to visualise and analyse the aspects that keep students on task and those that distract students, leading them to be off-task. Firstly, the analysis will present those sources that keep students attentive and engaged on the task and later, the focus will be on the sources of distraction that lead students to off-task behaviours.

4.1 On-task behavioural aspects

The data reveal that one of the most repeated aspects that keep students on-task is the effect of technology, especially the screen of technological devices (laptops and mobile phones), which becomes the focus of their attention and thereby increases the students' engagement rate. In nine of the ten videos that were recorded, the screen of the device is what maintains students on task and attentive.



Figure 1: Recording A - Minute 00.13



Figure 2: Recording A – Minute 3.45

In Recording A (Figure 1), it can be seen how both students are looking at the screen of one laptop while a conversation is going on. Their eyes are focused on the screen most of the time except for some seconds when their sight moved from the screen to glance at each other's face (Figure 2). This is a recurring aspect that can be found in other

¹ See Appendix II to find the links to the videos that have been saved on Google Drive.

recordings. Technological devices captivate their eyesight at seemingly every moment, both when they are individually working on their computers while doing research on the Internet and when they are discussing their group task. This contradicts the traditional view of groupwork where much more face-to-face interaction would be expected. (See Appendix I to find the rest of stills that display this same aspect).

Another aspect of technology that helped students remain on-task most of the time was the presence of a video-camera recording them in class while they were working. Before analysing this aspect, it must be stated that the students in this school were not used to being video-recorded and thus this was an extraordinary situation for them. Therefore, using a video-camera to record students working in groups must be contemplated as an aspect that contributes to on-task behaviour in class. An example of this effect can be observed in the stills taken from Recording B.



Figure 3: Recording B – Minute 00.04



Figure 4: Recording B – Minute 00.06

In Figure 3, the girl on the right whispers to the boy, who shows signs of being shy with the camera is recording, while she smiles. The boy ignores her comment and smiles, though very sheepishly. Some seconds later she laughs (Figure 4), which can be analysed as a sign of insecurity in front of the camera, and the boy stays concentrated on the computer working on-task. Four seconds after this still, the girl briefly glances at the camera and then moves her eyes to look at the boy while she says in Catalan “*T’està enfocant sobre tot a tu la càmera*” (in English, “*The camera is focusing on you overall*”). It has been the third

time that the girl tries to get the boy's attention, but since the camera is recording them, he ignores these distractions and works on-task.

In this same recording, there is another instance (Figure 5) where the camera indirectly incites the student to keep on-task and avoid peer-distractions. In this still, the boy finally moves his head away from the computer, though only for two seconds, after having been called out by a classmate several times from the start of this recording. The fact that the camera was recording did not allow him to pay attention and reply to the classmate's calls, and instead he continued reading the information he had looked up online about their country.



Figure 5: Recording B – Minute 00.22

4.2 Sources that lead to off-task behaviour

As far as the stills have shown, students were mostly on-task and concentrated in their online work with only a few interactions amongst the members of each group, either facing each other and making eye contact directly to the other interlocutor or talking without having a face-to-face discussion. Nonetheless, in most of the recordings there were some instances of off-task behaviour, mostly caused by peer distractions as well as self-distractions and another source that was not expected to be a main distractor: the video-camera.

The analysis starts with those stills in which the distractions arise from peer interactions. The stills show how in most cases this aspect of off-task behaviour has some correlation with the role of the camera in class. First of all, in Recording B it can be seen how the pair of students who

are focused on their work suffer from multiple interruptions from their classmates.



Figure 6: Recording B – Minute 00.34



Figure 7: Recording B – Minute 00.36

In Figure 6, there is a clear example of how the girl from the pair, which were the subjects of Recording B, goes off-task after her classmate tries to appear in the recording. My field notes confirm that the two girls that are pictured at the back of the still (who are two members of the group to which the disruptive student belongs to) as well as the boy who is sitting on the right, with his hand covering his smile, also went off-task due to the actions of this disruptive student. This same situation is repeated again some seconds after (as seen in Figure 7) by another classmate that had also been watching this previous situation. This accumulation of peer-distractions has caused most students around this part of the class to go off-task for some minutes, making it difficult to get back on-task as they were before the incident.

Secondly, another situation like the one just analysed can be observed in Recording D. In this recording, a group of three students are working together and suddenly, the girl on the left is called by a classmate (who does not appear in the still) who is already off-task and using his phone, pretending he is working. The girl in the still (Figure 8) goes off-task and initiates a brief conversation with this classmate. As a consequence, the girl in the middle of the group which is being recorded also becomes off-task while the boy on the right of the still ignores the interruption and allocates his attention to the computer, remaining on-task. As a result of this distraction, the girl on the left finds it hard to get back on-task and decides to leave the group and go to the toilet (Figure 9).



Figure 8: Recording D – Minute 00.33 **Figure 9: Recording D – Minute 00.50**

Thirdly, one more situation within the category of peer-distractions is found in Recording F. The girl on the right of the still (Figure 10) makes eye contact with a classmate who is not being recorded and that makes her go off-task. In the recording it is impossible to hear what the classmate is telling her but some seconds after the first eye contact, she looks directly at the camera making an unusual facial expression, as can be seen in Figure 11. Immediately after this still, the girl looks back to the classmate and laughs because he has been watching her actions in front of the recording camera. Five seconds later, she looks at her classmate again and articulates the following words: “*Què trist quan vegin el video*” (in English “*It will be so sad when they watch the video*”) while they both laugh (Figure 12). It is interesting to see that the other two members of the group that are being recorded (the boy and the girl to the left of the still) did not go off-task. This off-task behaviour from the girl on the right continues for twenty-two seconds (from minute 01.08 until the minute 01.30), after which she goes back on-task, focussing all her attention on the screen of her computer.



Figure 10: Recording H – Minute 01.10



Figure 11: Recording H – Minute 01.11



Figure 12: Recording H – Minute 01.16

Finally, one last situation that could be classified into this category of peer-distraction, despite it being also affected by the presence of the camera, is found in Recording E. Both members of this pair were working on-task when the camera was being placed in front of them but

as soon as the researcher left, the boy distracts the girl who is typing in her computer (see Figure 13), telling her that on the count of three, they will both look at the camera and pose (Figure 14). Immediately



Figure 13: Recording E – Minute 00.04

after this, they both laugh, and he admits they are behaving in such a childish way². The girl quickly goes back to her computer and the boy asks her what he is meant to do next. After some minutes of on-task behaviour, the boy gets distracted again (Figure 15) and he looks at the camera and utters in English: “*Hello camera!*” while he waves to it with his left hand.



Figure 14: Recording E – Minute 00.09



Figure 15: Recording E – Minute 01.26

² The researcher has been forced to rephrase the words uttered by the boy because he swore in Catalan. However, the message they wanted to transmit was that they were acting in such a stupid childish way.

The next category of stills that are going to be analysed arise from self-distractions. These distractions, as the multiple recordings will evidence, are due to multiple reasons. The first self-distraction, shown in Recording A, is caused by the sorrow of this student on the right of these stills (as can be seen in Figure 16 and 17) after the whole group of students had been told before the start of this lesson that their tutor had been diagnosed with cancer and she would not be able to return to the school during the remaining months of the year.

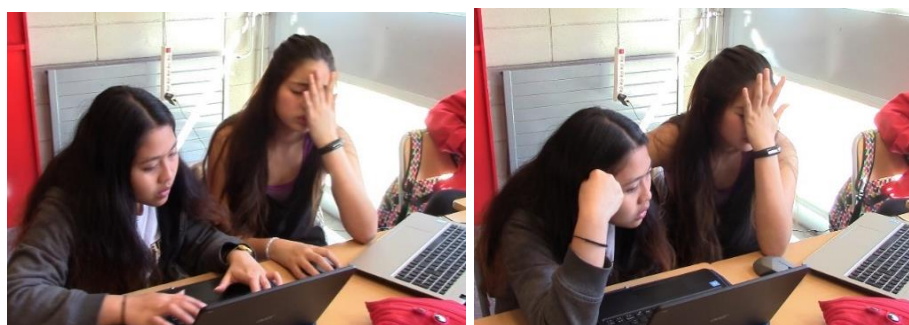


Figure 16: Recording A – Minute 00.37 *Figure 17: Recording A – Minute 01.00*

This feeling was generalised among the students in this class and that is why there is only one recording from this lesson, because many students were neither working nor wanting to be recorded.

Other self-distractions can be seen in the Recording C (Figure 18), where one of the two members of this group, the boy on the right of the shot who is not in charge of writing on the computer, goes off-task distracted by playing with the glasses case from his classmate. Nevertheless, the classmate who is in control of the computer perseveres with the work for some time until he reaches a point when he confesses to his colleague that he does not know how the zoom works in the Google Docs he is working on and he gets annoyed by it. Then, this student (the one on the left) goes off-task too tapping on the computer with his hand for the following eighteen seconds (Figure 19). The first distraction (playing with the glasses case) could be due to tiresome or boredom because this student does not show much engagement in the English class whereas the second distraction, caused

by technological issues, is more due to the feeling of frustration or personal disappointment.



Figure 18: Recording C – Minute 01.16



Figure 19: Recording C – Minute 01.52

This same feeling of disappointment with ignoring how some IT features work is a frequent source of off-task behaviour amongst students, as Recording I proves (Figure 20). To put this still in context, the girl in the middle of the still is trying to discover how to crop an image that has been inserted to a



Figure 20: Recording I – Minute 00.40

Google Docs and she does not succeed in her task. This feeling of personal frustration can be read in her facial expression. Meanwhile her classmate on the right is trying to take control of the computer to do it himself but she does not want him to take over. In the end, he convinces her to lend him the computer (Figure 21) to help her out with the cropping, but her reaction, judging by her lips move, proves her irritation. As a consequence, the third member of this group also disconnected from the work and developed an off-task behaviour.



Figure 21: Recording I (1)– Minute 00.11

Another aspect that incites the appearance of off-task behavioural sequences is the moment of the lesson in which the recording takes place. Attention patterns vary along the session, being towards the end of the lesson the moment when the attention allocation and engagement rate are lower. Some clear evidence of this aspect can be recognised in Recording B, which was made in the last five minutes of the English lesson. Both the boy and the girl in these stills (Figure 22 and 23) look at their watches to check the time, while the teacher is reviewing the work they had done, after they had requested the teacher to do so. This sign of off-task behaviour was repeated in other sessions, as it is documented in the field notes of the researcher, always towards the last minutes of the lessons.



Figure 22: Recording B – Minute 01.34



Figure 23: Recording B – Minute 01.53

Lastly, one more aspect of off-task behaviour that is relevant and very essential for teachers to be aware of, is the impact of technology when it is not used for academic purposes. In Recording D, one of the three members of this group has been off-task for most part of the recording, because if Figure 9 is recalled, this student leaves the group to go to the toilet. Since then, she has been off-task due to the fact that she has had her phone in her hands all this time and this provokes that she checks her instant messaging apps, as Figure 24 confirms. This off-task behaviour lasted for an entire minute, since minute 05.39 until minute 06.39.



Figure 24: Recording D – Minute 05.55

Technology can originate off-task behaviour when it is used for non-academic purposes, which results in the disengagement of the student from the task requested to do by the teacher. In fact, after she has stopped using the phone for personal purposes, she does not even try to get engaged in the task that her classmates are carrying out. She is absent-minded for the rest of the recording, rotating the phone (Figure 25) and not contributing to the groupwork.

5. Discussion

The results from this study show that the students are mostly engaged in their groupwork tasks except for those instances when there is a source of distraction that leads them off-task. Answering the first research questions (i.e. Do students keep on task during small-group work? If so, what aspects contribute to this?), the results of this study highlight that the use of technology, and more specifically, the use of digital devices such as laptops and mobile phones for academic purposes enhances students' attention span, and thereby increases their Academic Learning Time (ALT). This conclusion is in line with the findings from Bester and Brand's study (2013) which claimed that the use of technology in class generates an improvement of students' academic achievement because it promotes their motivation to learn and their concentration skills.

In the vast majority of the recordings (see Appendix 1 for more evidence) it can be seen how the screens of those technological devices used to work on their tasks become the focus of their attention during their on-task behaviour. However, if these same results are observed from the perspective of promoting students' interactional skills during groupwork, technological devices may be perceived as a detriment. The reason for this is that face-to-face interaction is limited to a few seconds when there is a direct dialogue between members of the group being recorded and, in most cases, the conversation continues while their eyes are kept focussed on the screen of the device.

Another aspect that has proven to maintain some students on-task is the presence of a video-camera during small-group work. There are several stills from the recordings that show how the camera minimises peer-distractions or prevents them from occurring entirely. For instance, if Figure 3, 4 and 5 are analysed, it can be seen how the boy in the group being recorded keeps on-task despite having two sources of distraction. The first source of distraction comes from the girl who is part of the same team, who reminds him that the camera is recording, which

increases his shyness in front of the camera and modifies his performance of the task. The second source of distraction comes from a different classmate outside of his group, who calls this same student several times during the recording, trying to draw his attention away from the task. Nevertheless, since the boy is aware of the camera, he avoids both distractions in order to stay engaged and concentrated on the task.

Notwithstanding, the camera did not always foster on-task behaviour, especially in those cases when the camera was recording one group and a student would suddenly interrupt, causing the group that is being recorded to go off-task. This first aspect already answers the second research question of this study (i.e. When they get off-task, what are the sources of distraction?). The presence of the camera proves to be, in some occasions, the origin of students' off-task behaviour. For example, Figures 6 and 7 show two different instances where the actions of two students who were not part of the recording led the girl to go off-task.

A further example of off-task behaviour that occurred due to the effect of the camera is depicted in Figures 10, 11 and 12. In these stills, the girl seated on the right of the stills, incited by a classmate that was not part of her team, gazed at the camera and made an unusual facial expression. This action and the following peer-interaction distracts her from the task she was involved in for nearly half a minute. The last piece of evidence of this source of distraction is presented in Figures 14 and 15, with the only difference that the distraction originates from one of the members of the group being recorded. In these two stills, the male member of the group suggested that his classmate and himself would both look at the camera and pose with their thumbs up. The result of this action is that both students went off-task for some seconds, before they engage in the task again.

All the evidence of off-task behaviour that has been discussed until now concerns distractions from peers. This is comparable to the results that

Godwin et al. (2016) obtained in which it is stated that one of the major sources of off-task behaviour was the outcome of peer interaction.

Despite the significance of peer distraction, there is evidence in the data of the current study that self-distractions also trigger off-task behaviour during groupwork. One of the self-distractions that can be observed in the data of this study is caused by personal feelings and the students' attitude towards learning. In Figures 16 and 17, one of the students being recorded is frequently off-task in several instances of the recording. The reason for this behaviour is that, a few minutes before the class started, the students had just been informed that their tutor had been diagnosed with cancer. This had a profound emotional impact on the students' motivation and willingness to be on-task during the entire lesson. Proof of this may be found in the facial expression and movements of the student on the right of both stills, who is unable to concentrate on the required task. Other frequent feelings that contribute to students' off-task behaviour is the feeling of boredom or disengagement with the tasks or the subject in question. An example of this is Figure 18, in which the student who is not in charge of the computer directly goes off-task distracted by playing with the glasses case from his classmate.

Another aspect that can lead students to off-task behaviour when working with technology is the lack of IT knowledge. There are two examples of this cause of distraction in the data gathered for this investigation. Firstly, in Figure 19, the student feels frustrated due to his unsuccessful command of Google Docs. This makes him feel disappointed and incites him to abandon the task, remaining off-task for some minutes. A similar instance is depicted in Figures 20 and 21, in which the student sitting in the middle of the other two members is trying to crop an image, but she is incapable of proceeding with this step. In Figure 20, her classmate on the right tries to help her but she refuses his offer. In the following still (Figure 21), her frustration and personal disappointment is visible due to her movement of lips and her overall position at the table.

The off-task sources discussed above are related to the use of technology for academic purposes, but it is not infrequent to find students who take advantage of the presence of digital devices in class and employ them for non-academic purposes. This should be taken into consideration by those teachers whose practices involve the use of ICT tools. Even still, the recordings made for this study do not show more than one instance (Figure 24) of this misuse of technological devices in class. This image portrays a student who cannot avoid checking her instant messages for a few seconds since she had the mobile phone in her hands in order to look for information related to the task. Consequently, this action implies that she goes off-task and becomes unengaged for the rest of the recording, even when she stopped using her mobile phone for personal purposes.

Finally, the remaining part of the second research question is answered by the time of the lesson in which the recording takes place. Figures 22 and 23 are two stills taken from a recording that was made in the last minutes of an English lesson. In both images, students are looking at their watches to check what time it is. This can be interpreted as a sign of distraction because at the end of the lesson, the attention patterns and the engagement rate are lowered. This is comparable to a certain extent (despite the narrower scope of this study) to the conclusions that Godwin et al. (2016) drew from their study which claim that “the levels of attention (...) oscillate over the course of the school day” (p. 129), being the last hours of the day those in which lower attention and engagement rates are found.

6. Conclusions

On-task and off-task behaviours have been subject of debate in many studies carried out in educational research in the last decades. Prior to the present study, several theories have been put forward about what aspects contribute students to be engaged in classwork and in the opposite case, what distracts them from the required tasks. This educational issue has motivated more action research (e.g. Gettinger and Walter's study from 2012) to be carried out to come up with strategies and suggestions on how to manage students' behaviours and attention allocation patterns in class, in order to increase their academic achievement.

The present study provides new qualitative evidence about the use of technology as a positive aspect that contributes to students' on-task behaviour since it appears to enhance their motivation and engagement rate, as it had already been pointed out in Bester and Brand's study in 2013. Yet, the current data seems to show a small nuance of this aspect: it is actually the screen of those digital devices what grabs their attention, more than the use of general technology in class.

While technology generally proved to be a positive aspect contributing to on-task behaviour, sometimes it triggered instances of off-task actions. This may especially be true in those school environments in which technology is not frequently used for academic purposes. In this case, the students in the school where the data was collected were very familiar with the presence of technology in their classes and its use for academic purposes. Even still, the presence of a camera recording their groupwork implied an alteration of their attention allocation patterns and on-task behaviour.

The data of this study corroborates those findings from previous investigations (Godwin et al., 2016) that claimed that the two major origins of off-task behaviour arise from peer and self-distractions, although more specific issues that modify students' behaviour in class have been found. For instance, when it comes to self-distractions, the

study shows how lack of IT skills can be a source of personal frustration and it can cause off-task behavioural patterns. In addition, the role of personal emotions (i.e. sorrow, low motivation, frustration) has shown to have an impact on the students' academic engaged time (AET) and their attitude towards learning.

6.1. Further research

Future research should be carried out to analyse the new findings of this study, that is, those which relate to the screen's power to attract students' attention to tasks. This would require designing a method that verifies whether the amount of time the students spend with their attention allocated in the screen, which apparently is time on-task, is actually quality academic time or if is merely an attention grabber.

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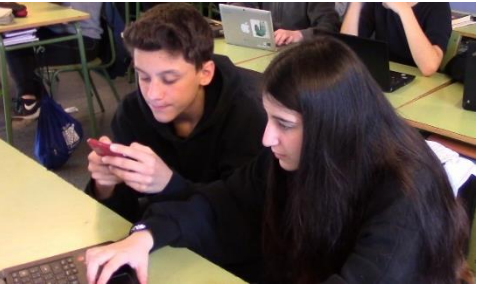


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Appendices

Appendix I: On-task stills

a. Stills that show technology attracting students' attention: On-task behaviour

<p>Recording A – Minute 6.12</p>  A photograph showing two female students sitting at a desk. They are both looking intently at a laptop screen. The student on the left is pointing at the screen, and the student on the right is looking on. There are other laptops and papers on the desk.	<p>The pair is looking at each other's computer, but their eyesight is concentrated on their screen.</p>
<p>Recording A – Minute 8.21</p>  A photograph showing the same two female students from the previous image. They are now looking at a mobile phone held by the student on the right. The student on the left is also looking at the phone. A laptop is still open in front of them.	<p>Now the girl on the right has had a problem with the WiFi connection (they work online on their Google Docs version of the Teaching Unit) and she has asked for permission to use her phone to work. Still, the screen of the mobile phone becomes the centre of the attention despite having an on-going conversation.</p>
<p>Recording C – Minute 00.24</p>  A photograph showing two male students sitting at a desk. They are both looking at a laptop screen. The student on the left is pointing at the screen, and the student on the right is looking on. There are other laptops and papers on the desk.	<p>The pair is working on the same computer and they focus the whole time in the screen.</p>

<p>Recording D – Minute 00.18</p> 	<p>The three members of this group are looking at the screen of the mobile phone, where some pictures of typical foods are being shown by the girl on the left to her classmates.</p>
<p>Recording D – Minute 05.24</p> 	<p>The three members of the group move to the computer to work together on their research after having decided what pictures they are going to use.</p>
<p>Recording E – Minute 00.30</p> 	<p>This pair is also working together on the same task, but they are doing it with their own devices. Both are looking at the screen of these devices and even in those instances they might consult with the other one, they still have their eyesight focused in the screen.</p>
<p>Recording F – Minute 00.11</p>  <p>Minute 00.19</p> 	<p>In this group of 3 students, the student on the left is always focusing on his computer. The other two girls are working together, and the focus of their attention is in the screen of the computer in the middle. The girl on the right is helping the girl in the middle to write a text in English.</p> <p>Later, the girl on the right moves to her computer to work. Her behaviour is still on-task and her</p>

	concentration is on the screen of the computer.
<p>Recording F – Minute 01.22</p> 	<p>The boy on the left finally interacts with a member of the group. Moreover, it must be noted that the boy directly addresses his attention to the computer screen from the classmate in the middle while asking a question about a doubt he's got. The other girl on the right has gone off-task.</p>
<p>Recording H – Minute 00.07</p>  <p>Minute 01.02</p> 	<p>The three members of this group are all focused on working with their attention drawn by the screen of their computers.</p> <p>In the minute 01.02 all the members are discussing together their findings online about their destination and they all direct their eyes to the screen of the girl whose computer is pink, because she is doubting whether she is proceeding well.</p>

Recording I – Minute 00.05



Minute 00.26



Here this group of three are all on-task focusing on the only computer they are using to work in group.

In minute 00.26, even when they talk to each other about the work they are doing, the only place where they look at is the screen and they do not look at each other while having the conversation.

Recording J – Minute 00.06



Minute 00.08



This group is working on-task. The two girls on the left are talking to each other about their work, which they had decided they were firstly doing it individually (that is what the girl in the middle saying it to the girl on the left of the still).

However, we can see that the girl on the left does not move her eyes from the screen of the computer while her classmate is talking to her.

Minute 00.08 – some seconds later, the girl in the middle gets down to work on her computer. Her attention is also put in the computer screen.

The girl on the left spent the whole time devoted to groupwork not working at all but her attention is still allocated in the screen of her laptop.

Recording K – Minute 00.02



This group of three is also working together and using their own laptops but in this still, we can see how they are all working while having their eyes set on the screen of the laptop from the student seating in between.

Appendix II: Links to the full videos (Google Drive)

Recording and group	Day and time of recording	Link
Recording A 3rd ESO D	March 14 th 1.20pm	https://drive.google.com/file/d/1kfRHtmzT37UqamTCH0tg9pMcoVKGmcAD/view?usp=sharing
Recording B 3rd ESO B	March 14 th 9.48am	https://drive.google.com/file/d/1E3qwJMcSMVc52sPopUxdgaDyoUJdvUHB/view?usp=sharing
Recording C 3rd ESO D	March 14 th 12.40- 1.35pm	https://drive.google.com/file/d/1-fCRGwG7fnlsh_A1RFEMoHJ1nKUBkJr5/view?usp=sharing
Recording D 3rd ESO D	March 14 th 1.27pm	https://drive.google.com/file/d/1C4lhEOobLwGZWHasTqL1LE2ufn9iRYnB/view?usp=sharing
Recording E 3rd ESO B	March 14 th 9.45am	https://drive.google.com/file/d/1w-dzQFzlShZ7gGGnarGfHK54sceIc2x_/view?usp=sharing
Recording F 3rd ESO B	March 14 th 8.55- 9.50am	https://drive.google.com/file/d/1_D2Ny8UALNN5l6jDRRSeqZffCrcjJMnJ/view?usp=sharing
Recording H 3rd ESO D	March 20 th 9.50- 10.45am	https://drive.google.com/file/d/1AeQ8wow7OFQabL6TjIUpnOAzSyKTzRkX/view?usp=sharing
Recording I 3rd ESO D	March 20 th	https://drive.google.com/file/d/1RG2yNH2ZOka-LecvNIDpUUKQ7RJR5hm8/view?usp=sharing
Recording I (1) 3rd ESO D	9.20am	https://drive.google.com/file/d/1dJ9JgLzqvF1fD0REnoUgZwWH378lOVHv/view?usp=sharing

Recording J 3rd ESO D	March 20 th 9.50- 10.45am	https://drive.google.com/file/d/1Os1hXNnxFEt-ZGvIjCOd8EnUdp03Wh-t/view?usp=sharing
Recording K 3rd ESO D	March 20 th 9.50- 10.45am	https://drive.google.com/file/d/1HK3-MlTHNplr4HmpEQHsrCHAAa0u_8f3S/view?usp=sharing