

Master's Dissertation/
Trabajo Fin de Máster

ICTs AND CLIL IN PHYSICAL EDUCATION. DIFFERENT, REAL AND USEFUL ALTERNATIVES.

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1. INTRODUCTION

Content and Language Integrated Learning (CLIL) has come to stay in our lives. This “recent” approach is going to be the future of bilingual education and we, like bilingual teachers, must be ready for teaching by using it as well as we can.

This MA Thesis hopes to explain the possible relation between CLIL approach, Physical Education (PE) subject and Information and Communication Technologies (ICTs) and their advantages when they are together in classes.

My specialty is PE, but ICTs traditional view is in front of a computer and searching information, two incompatible ideas. This is because of ICTs aren’t used to be related to PE. The main idea for this MA Thesis is to explain how have been typically used ICTs on PE, how they have changed recently and how, through CLIL approach, they could be used on the future of PE, giving a new approach relating ICTs and Physical Education.

It would be a good idea if a new vision about different applications and possibilities of ICTs could be given to students on Physical Education sessions, moreover than typical computers works, and some examples could be: to use mobile phones and applications (APPs), to use diary webs with a new focus applied to PE, to give students opportunities and useful tools for their real lives or to teach them how can to use efficiently new technologies through PE.

It will be a Didactic MA Thesis where the theoretical approach is the past of ICTs on PE and the change suffered, and the Integrated Didactic Unit (IDU) will develop the real possibilities for the present and the future applied on a specific PE topic. This proposal can be new, interesting and, in addition, it could help me in my future like professor where these concrete purposes could be applied.

2. WHAT IS CLIL?

2.1. Concept

CLIL corresponds with the acronym of Content and Language Integrated Learning in English and it is the same to AICLE in Spanish, which is the acronym of Aprendizaje Integrado de Contenido y Lengua Extranjera. It is defined by Marsh (2000: 6) like “a *dual-focussed education*” where two main aims like language and subject coexist with the same grade of importance during the teaching-learning process. As I have been able to know thanks to Máster Interuniversitaio en Enseñanza Bilingüe (MIEB) subject ‘What is CLIL?’: “what separates it from other bilingual education initiatives is its “planned pedagogic integration of contextualized content, cognition, communication and culture into teaching and learning practice” (Coyle et al. 2010: 6). This is what Coyle (2007) refers to as the 4 C’s framework (cf. Figure 1): *content* (subject matter), *communication* (language learning and using), *cognition* (learning and thinking processes), and *culture* (intercultural understanding and global citizenship).” (MIEB, 2019b: 5)

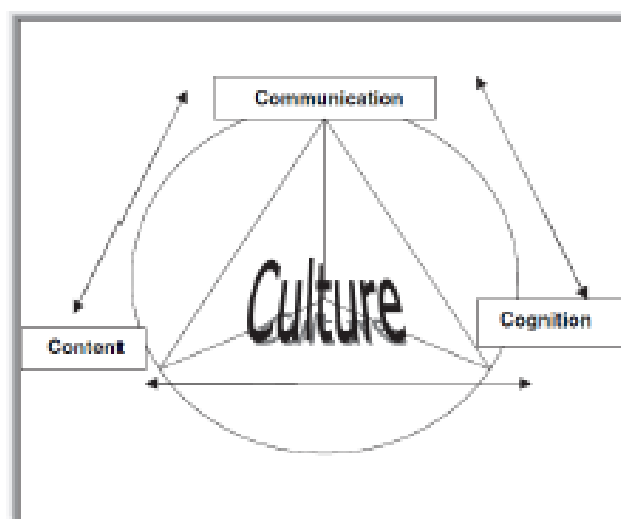


Figure. 1. The 4Cs Framework for CLIL (Coyle 2007: 551)

There are many factors that can affect the development of CLIL approach like can be teacher availability, student language fluency or out-of-school opportunities, called operating factors by Coyle et al. (2010); environmental parameters like time of exposure, degree of Foreign Language (FL) and content teaching or choice of subjects according to Wolff (2005);

Smit (2007) purposed criteria populations segments like age groups, types of teachers involved or type and amount of target language usage; at last, Rimmer (2009: 4) called variables to the factors which intervene in what he called “the CLIL mix” and some of them were L1/L2 balance, involvement of subject specialists or degree and depth of content.

Taking into account all the previous factors and parameters that different authors have identified, we can coincide with Ball (2009) and Bentley (2009) and we can confirm that there is a possible distinction between “hard/strong” CLIL, that is in which focus is on content but taught by native teachers (Ikeda, 2013: 31) and “soft/weak” CLIL, that is in which focus is on language learning and which can be taught by native or non-native teachers (Ikeda, 2013: 31).

From this “hard/strong versus soft/weak”, it appeared different models depending on level of immersion, where the focus is on (content or language) or if there are support teachers, for instance. These models, according to Met (1999), are: immersion programs, submersion programs, sheltered subject-matter teaching, adjunct language instruction or theme-based courses. Furthermore, from these models, they appeared two paradigms:

“- **Content-enriched FL instruction** (Roldán Tapia, 2005) entails the teaching of a number of elementary school subjects in the target language by stepping up coordination between the subject and the language objectives.

- The **interdisciplinary module approach** (Wolff, 2005; Coyle et al., 2010) teaches content in the FL in non-language subjects over shorter periods of time, involving teachers from different disciplines.” (MIEB, 2019b: 7)

Obviously and depending on features of each one, not all models are appropriated or can be carried out in all contexts. For instance, Coyle et al. (2010) say that the interdisciplinary module approach is appropriate to Compulsory Secondary Education, but Dueñas (2004) doesn't agree with him and point to sheltered subject-matter teaching as the best model to being carried out in Secondary level. However, both agree that the adjunct model is the most correct for Tertiary level. It is only a little sample of the huge amount of possibilities that different models and paradigms related to CLIL offers to teachers at the time to prepare an Integrated Didactic Unit for their students and it shows us how many aspects must be taken into account previously.

2.2. Features

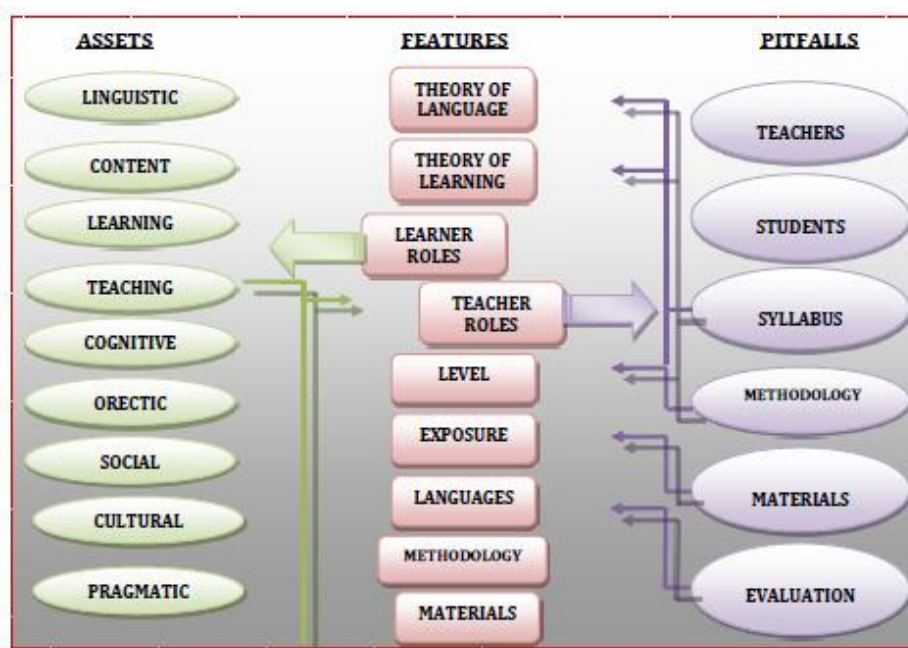


Figure 2. Interaction of dimensions for the characterization of CLIL (MIEB, 2019b: 15)

According to MIEB (2019b: 15) and as we can see in Figure 2, CLIL has nine main features: theory of language, theory of learning, learner and teacher roles, language level targeted, amount of exposure to the FL or L2, the languages taught through CLIL, methodology and materials.

Into the theory of language, there are two very important concepts such as Basic Interpersonal Communication Skills (BICS) and Cognitive Academic Language Proficiency (CALP) (Cummins, 1999). First concept is about common language used to maintain a basic conversation while the second is about a more specific language and more focused on academic topics. Theory of learning has also some important concepts, like scaffolding (Mehisto et al., 2008) or education through construction (Wolff, 2002; Marsh, 2006). CLIL gives importance to learning by doing, but it needs an active role of the learner to achieve that aim and teacher role turn in facilitator, not so driver of classes. (S)he has to be also an expert in language, not exclusively in content. Referent to the language of level achieved, is tried to reach a functional vs. native-like competence. The amount of exposure to L2 will depend on age, because the beginnings of L2 learning tends to be late in CLIL contexts. English is usually the principal language taught through CLIL. Task-based learning, collaborative work, or meaning- and form-

focused processing are the methodological resources of CLIL in the innovation battle against the methodological past. Finally, materials in CLIL are adapted or specifically designed and ICTs are taken into account as powerful allies (MIEB, 2019b).

2.2.1. Advantages

When we are going to carry out a CLIL approach, we should know its advantages and disadvantages, and according to Pérez Cañado (2013) these would be that FL is more present in the curriculum, CLIL approach doesn't play down content, it only gives it a new perspective, it favours a context for a meaningful language learning, it develops different skills of students and enhances cognitive engagement, CLIL can be carried out in all levels of education and provides all their actors a role to play, motivation in CLIL students is up due to the link between content and language and used methodologies, is inclusive and for all students without distinction, it provides powerful opportunities for intercultural learning and its dual-focus trains students for real life and gives them more tools for being a good worker.

2.2.2. Disadvantages

But CLIL approach doesn't have only good features or good aspects, it has many advantages for students, of course, but also has disadvantages and not so good features, and frequently these are for teachers. According to Pérez Cañado (2013) again, we can highlight some of them like it is a recent project, still starting, with unadapted teachers and, sometimes, less trained. For students, to study a complex subject and, in addition, in a foreign language can result also a big challenge and can frustrate them. Related to curriculum, it can be counterproductive because may also focus much attention and foster a L1 attrition or it can result an obstacle for the correct development of the syllabus. Materials are also an obstacle at the time of carrying out CLIL approach because they usually aren't adapted or updated for CLIL approach correct development and teachers have to create new materials or adapt existents. The approach results new for teachers because they haven't been taught by using it and they don't have references like students about it and, furthermore, it can result artificial and no natural for nowadays students due to the fact of teach, for instance, Spanish History in English. Finally, evaluation is a difficult concept in CLIL because there are two main aspects to evaluate and do it at the same time may be complicated for teachers that don't use to do it.

3. CLIL APPROACH IN PHYSICAL EDUCATION CLASSES

According to Ramos (2010; 157), PE offers to teachers a huge range of possibilities about contextualization of content and understanding by using demonstrations of concepts or concrete actions that we explain to students and is one of the major advantages of PE over the others subject in which is related to CLIL.

Personal experience says to me that features of PE like the place, the distribution or the tasks allows different kinds of interactions between teacher and students and also between students that in the rest of subjects are difficult to find. It can allow us like teachers to prepare sessions to enhance this aspect of the communication and so can influence in determined aspects of CLIL approach like relation between students or oral skills, so as to encourage students to be shameless when they have to express something in public or to do an exposition and for this, PE is a great resource for teachers.

Coming back to the demonstrations topic, PE uses gesture and visual instructions in addition of audible instructions and they can help students to understand concepts easier than without demonstrations because they can relate gesture or demonstrations with the concrete concept, and it is easier to remember something that you have seen or experimented than something that you have only heard from teacher.

Obviously, apart from demonstrations and gesture, mother tongue would be used in class because students aren't complete bilingual, but that is the objective, not the beginning. Due to this, sandwich technique (Butzkamm and Caldwell, 2009) would be a good option to clarify some parts of the session or to explain more concretely some of the most difficult concepts. This technique consists of alternate L2 with L1 to translate the initial L2 explanation into L1 and then continue with the class in L2 until will be necessary to use L1 again.

Motivate students is, possibly, the bigger challenge for today teachers and do it through CLIL approach can be a hard task if it is not well focused. The Integrated Didactic Unit of this MA Thesis wants to achieve the motivation of students to facilitate their learning through real tasks and situations that can be attractive for them and it is a possibility that PE completely offers to us like teachers.

To emphasize in the use of English in the communication of the students in class is, for me, the most important thing because they used to be shame and avoid talking in English to express in class or in front of their classmates. Because of this, our role is key in the development of students' skills, because we must give them "safe" opportunities to express. When I say "safe" opportunities, I am referring to opportunities where possible bullying from classmates or frustration caused by a failure were 100% eliminated and it was a motivation for successive class, the beginning of a future learning and, who knows, even a possible love for English.

As it is said in Martínez & García (2017: 180), Engagement Motor Time (EMT) is lower in bilingual public schools respect to EMT in monolingual public schools. From here, we should take it into account and prepare previously CLIL sessions depending on L2 level of our students or depending on content to try to guarantee a CLIL session with affordable objectives for students but, specially, a PE session where content is not forgotten in favour of language. If we can maintain and promote a real language learning context for our students, the language learning will be also real because if they understand the language, they will learn it (Krashen, 1985).

According to Meyer (2010) and their quality criteria, a CLIL PE task must have:

- A significant, challenging and real input
- Learning help
- An interactive environment with an exigent output
- Intercultural dimension
- Activities which need superior cognitive skills
- Facilitate content learning and language learning creating links between knowledge, experience and attitudes

Coyle (2006: 19) said that depending on the level of linguistic and cognitive requirement of tasks, they could be classified in the following 4 groups:

- Group 1: high linguistic requirement and low cognitive requirement.
- Group 2: low linguistic requirement and low cognitive requirement.

- Group 3: low linguistic requirement and high cognitive requirement.
- Group 4: high linguistic requirement and high cognitive requirement.

Following Coral (2012) and adapting it, the balance between Coyle's 4Cs in PE requires of integrated tasks that must be motivating, with movement, with reasoning, socializing and interactives. Here, the role of the teacher becomes fundamental in which scaffolding and preparation of sessions and tasks refers to. It used to be complicated for teachers to create or adapt tasks which has all components in a correct and appropriate balance for being carried out in a PE CLIL class and to achieve the objectives of the Integrated Didactic Unit.

Of course, and how couldn't it be otherwise, students are the central characters of this show that is the teaching-learning process and it should be our main objective: to guarantee for them a high quality learning. For this, we must motivate them to participate, to create relations between them, to help each other and to work hard because the prize will come and it will make them better people.

4. WHAT ARE ICTs?

4.1. Definition

According to MIEB (2019c: 5): “ICTs: Information and Communication Technologies; i.e. all the tools that are actually available - TIC (Tecnologías de la Información y Comunicación).” and “LTK: Learning Technologies Knowledge; i.e. knowing about those particular tools, apps, etc. that may be useful specifically for teaching/learning purposes - TAC (Tecnologías para el Aprendizaje y el Conocimiento).”

The main difference between them is the objective that we want to achieve when we use them and the environment in which we use them (MIEB, 2019c: 5). It could be said that ICTs turn in LTK when they are used with pedagogical and learning purposes like can be the following (literally extracted from MIEB, 2019c: 5):

- Fostering learner autonomy
- Sharing information, ideas, experiences, etc.
- Presentation of contents
- Collaborative work online
- Dissemination/showcasing of good practices and learning products
- Enhancement of LCC (Linguistic Communication Competence)
- Fostering self/peer evaluation
- Safely storing information, materials, etc.

4.2. Advantages

ICTs have two huge advantages where they are used in CLIL approach. The first is related to materials, because ICTs allows teachers to get access to personalized materials or creating them by themselves as customized as they need for their groups or students. The second one is related to the first one, and it is the possibility of catering for diversity and special needs more easily, an objective that can be achieved through customizing materials for these special students to make them easier their road to learning.

4.3. Disadvantages

ICTs are, with no doubts, a huge ally for current teachers but they must be well used because, if not, it can be counterproductive and harmful for the environment and the learning process of the students. There can be circumstances that can affect the correct development of the activities or the tasks when ICTs are involved which we, like teachers, have to fight against. These circumstances are (MIEB, 2019c: 11):

- Technical difficulties and obsolete equipment in schools.
- Institutional restrictions on OS and lack of compatibility.
- Difficult access in ICTs in deprived areas.
- Regulation of the use of mobile devices in class.
- Lack of teacher digital competence and training.

4.4. Tips and examples of ICTs

Related to direct use of ICTs in class, MIEB (2019c: 12) gives us some tips for the correct use of them in the daily sessions. These tips are the key to be motivated with ICTs because, following them, problems will be less, and ICTs are going to be a real ally in class for us. Now, they are going to be described:

- Use of ICTs always for a pedagogical purpose directly associated with final objective.
- Must explanation to the learners about the objective of using ICTs.
- Previous revision of the tool that students are going to use for being familiar with possible problems that can occur during the class.
- Give clear instructions to students.
- Give work guides to students that can be used later like evaluation.
- Put a time limit for tasks to students.
- Provide specific links which will drive students to a specific information that we want they find.
- Guarantee students' online safety, especially in photos.
- Be careful with the copyright of used materials.

There are many different resources where we can go to obtain a huge number of variants for our students. Now, and from MIEB (2019c: 5), we are going to expose some of them:

- App, which is the short expression for application. It is a small program which needs to be downloaded and creating an account. It has a specific use. An example could be Wikiloc, a maps app which allows you to record your track if you walk through forest and share it later with the rest of users.
- Tool. It is a program that can be used through Internet without must be downloaded for creating materials or contents. Symbaloo is an example of tool and it allows to create a common place for many resources or useful files for students.
- Program. It is used for processing files or creating new files that can be text files, video files, sound files, etc. Sony Vegas could be a good example of video editing program.
- Wiki. It is a web site where students can modify in real time a file in which they are working and updating it without being necessary to wait that other mate finish their work to include yours. WikiEdu is an example of Wiki.
- Blog. A web site which you updated regularly in which your language can be informal. It can be used like a diary or to record the process of something. Blogger is a great blog example.
- Vlog. It has the same format than blog, with the only difference that the contents are, mostly, videos instead of texts. YouTube can be used like a vlog, for instance.
- Forum. It is a common place where all students can put their ideas or opinions about some topic in common and debate about them. Teachers talk could be an example of forum.
- Social Networks. They are nets designed to promote interaction between people but they can turn in the most dangerous ICTs if they are not sufficiently watched by us and if we don't put a limit about their use, trying to give them a pedagogical aim. Instagram, Twitter or Facebook are Social Networks.

5. ICTs IN PHYSICAL EDUCATION CLASSES

5.1. Traditional use versus current opportunities

ICTs are a new resource in classes, also like CLIL is. PE is an eminent practical subject, and it facilitates communication and could be a great scenario for CLIL approach because it offers many opportunities for the development of L2 skills into students. It is clear that PE and CLIL may be a perfect marriage because there are many opportunities for students to get good level in L2 through PE classes and their distribution and relations. The question, now, is: how could ICTs benefit to this progress between CLIL and PE?

First of all, it is necessary to explain how ICTs are currently implemented in PE. Taking into account my personal experience, it could be said that possibilities that ICTs offer to teachers in PE subject are not completely optimized. In my teacher training period, just 1 year ago, I only could use ICTs with students to do a little test about the sport that we were practicing in class. After this, reflections about the possibilities that PE have lost from ICTs came to me.

Not in all Integrated Didactic Units or in all disciplines there are the same number of possibilities nor is possible to use all available ICTs, but I'm sure that if teachers would think about it, they would find chances to use ICTs in their classes.

Traditionally, ICTs have been used in classroom subjects by using a computer to search information, to do a work, to create a presentation or to watch a video. But PE is compatible with ICTs (probably the most compatible and with more possibilities of use over the others subjects because PE is developed in different places and in different situations which allows to apply different ICTs, not like subjects which are always developed in the classroom).

In my experience like a student, I didn't experience the use of ICTs beyond any presentation in class, a video watched in class or some recommended websites that I couldn't visit because at that time I didn't have the Internet connection at home. Nowadays, almost all students could visit a website in their homes if teachers recommend it to them.

It must be taken into account that almost all students of Compulsory Secondary Education have a mobile phone and we should learn them that a mobile phone is much more than Instagram and WhatsApp. PE and apps allow us to do it. It is in front of us. We only have to learn to see the possibilities, think about them, investigate about them, surf looking for new applications and give it to students. Our duty is open their eyes through ICTs and turn the misuse that students of Compulsory Secondary Education give to their mobile phones into good.

It is also our duty as teachers to teach students how to give to Internet a well utility at home. We have to teach them through homework that Internet can give them tools and programs which can be useful to carry out a project or a task and that it is a site where information, if you know where to look for and filter the good one of which is not, is waiting for you.

Students could use their mobile phones like cameras to record a choreography and check if it is exactly like the model, like a map with Google Maps app, in class to measure angles of their classmates through specific apps from images taken with their mobile phone, to measure their physical activity features with apps as Runtastic, which indicates time, distance, burned calories and average speed between other features and that can help students to know their own features like their maximum race rhythm, for instance. Their mobile phones can be used like sport schedules to be notified about sport events in which they are interested or that are going to happen near their houses. They can also be a resource to collect information about their favourite team or sport and, with a good use and training, ICTs can turn in a source of information about physical activity and sports for students. If they like a sport like padel or tennis, in which are needed 4 people to play in pairs, there are specific apps used to meet people and know their previous level before playing and that allow players talking and meeting for playing throughout a chat. Many possibilities are opened, so students only have to know that they exist (our duty) and use them (their decision).

ICTs are not today like they were 15 years ago. World is not like it was 15 years ago. Learning is not like it was 15 years ago. Teachers are not like we were 15 years ago. Centres are not like they were 15 years ago. Syllabus and curriculum are not like they were 15 years ago. All these factors have changed during this period and we must adapt to the current situation to guarantee the most qualified learning for the students.

5.2. SWOT analysis of ICTs in class

Before starting to implant ICTs in PE class, an analysis about their strengths, their weakness, their opportunities and their threats will be done.

In the positive side, we have the strengths of ICTs in class. The following can be some of them (Chowdhury, 2017):

- Students are normally familiarized with ICTs and it can be a strength at the time of implant this kind of resources in class.
- ICTs give students a wide range of sources.
- To develop students' skills to use ICTs in their lifelong learning activities.
- They can reduce workload.
- They are a powerful teaching-learning resource.

Possible additions could be that students are more motivated when ICTs appear in classes, that ICTs are more attractive for student than typical and traditional methods and that they offer to the students more flexibility if they have to work at home.

In the negative side, we can find the weakness of the implantation of ICTs in class. The following are some of them (Chowdhury, 2017):

- Technical problems.
- Old-fashioned teachers or lack of training.
- Insufficient resources or computers in centres.
- Usually not all subjects have access to ICTs resources in the centre.

Possible additions could be that content should be checked by the teacher previously to be offered to students because it can be dangerous and devices can result a distraction for students if they are not focused on task and that insufficient equipment or lack of skills for the use of ICTs can happen (although these last two aspects difficultly can appear, teachers must be careful).

Coming back to the positive side and imagining the possibilities of ICTs in class, we are going to describe some opportunities that ICTs can offer to us in class (Chowdhury, 2017):

- ICTs help us to make learning environment attractive, contemporary and interactive.
- By using them, we can transform traditional education in a 21st century learning environment.
- Many organisms are realizing the importance of ICTs and are betting for implant them in education world.

Possible additions could be the possibility of show to the students the real importance of ICTs in current world and the possibilities that they give us beyond social networks is a great opportunity and it must be one of our main objectives in class. It also exists the possibility of using ICTs with special students and solve their learning special needs.

Finally, the use of ICTs has also threats and we have to try to minimise them. The following are some of them (Chowdhury, 2017):

- Over use can be harmful.
- Prices can be high for some centres for adapting infrastructures to current education.
- Safety is a key concept that teachers have to take into account related to ICTs.

Possible additions could be that ICTs must not eclipse traditional way of carry out PE classes, only have to be a huge help, but not the full protagonist of lessons. Motor competence needs to keep being the main character of PE classes.

6. DIDACTIC PROPOSAL

6.1. Justification

Firstly, a brief explanation about PE in Compulsory Secondary Education is necessary to understand the subject whose Integrated Didactic Unit is going to be carried out. For this introduction, they have been read some extracts of the 14 July 2016 Order of Andalucía. About PE, this Order says the following:

“Physical Education is a subject of the block of specific subjects in all courses of Compulsory Secondary Education stage.” (BOJA, 14 July 2016 Order: 265)

“Physical Education is fundamentally oriented to Delve into the knowledge of the own body and their motor and expressive possibilities like a means of improving health and quality of life in relation with the consolidation of regular habits of healthy physical activity practice in daily life and also active occupation of leisure time. All this will provide students with the necessary opportunities to acquire characteristics aptitudes of citizens with self-confidence and socially responsible, promoting an active life along the years and a better quality of life in all aspects.” (BOJA, 14 July 2016 Order: 265)

“The Physical Education subject has like main purpose to develop in people their motor competence, understood like the integration of knowledge, procedures, attitudes and feelings linked especially to motor behaviour; to achieve it, mere practice is not enough, but critical analysis that strengthens attitudes, values referenced to the body, movement and relationship with the environment is necessary: in this way, students will be able to control and give meaning to their own motor actions, understand the perceptive, emotional and cognitive aspects related to these actions and manage the feelings linked to them, as well as integrate knowledge and cross-cutting skills such as team work, fair play, respect for standards, and safety among other. Likewise, Physical Education is linked to the acquisition of skills related to health, through actions that help the acquisition and consolidation of responsible habits of regular physical activity and the adoption of critical attitudes towards unhealthy individual, group and social practices, mainly in relation to diseases of cardiovascular origin.” (BOE, Royal Decree 1105/2014: 480)

Like it is said in BOJA (14 July 2016 Order), motor competence is an essential element of syllabus and PE like a subject has a key role in its development, because it will be focused on deepening knowledge, procedures, attitudes and emotions linked to the body and its motor and expressive possibilities like an aim and like a means to improve health and quality of life.

BOJA (14 July 2016 Order) also says that the 2013 Berlin Declaration, product of the International Conference of Sport Responsible Ministers of Unesco, states that "Physical Education in schools and in all other educational institutions is the most effective means of providing all children and young people with competencies, aptitudes, attitudes, values, knowledge and understanding for their participation in society throughout their lives".

This MA Thesis contains an Integrated Didactic Unit about orienteering, a sport that is included in the last of the 5 PE blocks: Physical activities in the natural environment, although other two blocks like Health and quality of life and Physical and motor condition are also involved. The other 2 are the following: Games and sports and Corporal expression (BOJA, 14 July 2016 Order: 266).

Integrating role of syllabus demands an effective cooperation of PE with other subjects, highlighting its relation with Biology and Geology, Geography and History, Music, Technology or Mathematics. We can use some contents and create relations between them and some of these subjects (BOJA, 14 July 2016 Order: 266). For instance, we can create an orienteering race where students have to know how to read a map (Geography), recognise different types of plants (Biology) or find the correct answer for an equation (Mathematics) to obtains points in the race.

In this way, is a must use the privileged natural environment of Andalucía for this activities and even, to incentive students to participate in Orienteering races organized by FADO (Federación Andaluza del Deporte de Orientación). For instance, in Cazalla de la Sierra, a little town in the north of the province of Sevilla, FADO organizes a race through mountains, where people of all levels and all ages can participate. People who participate in these kind of races love them. It could be a great complementary activity in natural environment to discover beautiful landscapes near their houses and to appreciate them.

The fundamental global objective of this Integrated Didactic Unit is to offer students resources so that they can improve their health while we teach them contents of this and others subjects for thinking and getting on in their natural environment. Orienteering helps students to read and understand maps and to solve the problems presented in clues games. This unit will have a motto: **first think and then run**, so that they learn firstly to analyse the context and the different possibilities and then choose the best option for them, after have taken into account all the features of the environment.

Different advanced features are going to be included, like a significant number of beacons, realization of races outside the known environment with maps and greater distances, use of compass and beacons distanced from each other. Based on these features, this Integrated Didactic Unit could be applied in the last years of ESO and first course of Baccalaureate. In this case, it will be applied in 3º ESO.

6.2. Contextualization

The chosen content for this thesis is an Integrated Didactic Unit about orienteering and it is included in the block called Physical activities in the natural environment, for 3rd ESO. Students have to know this sport and practice it but, furthermore, they will have to create a daily blog with their opinions and experiences in class.

The group chosen is 3ºA, and it belongs to the high school *Mariana de Pineda*, located in Montequinto, a big neighbourhood of Dos Hermanas, Sevilla. This high school is in a part of Montequinto that without being the worst, has economic deficiencies and social features of a medium or low socio-economic level. This high school is a public high school and has Compulsory Secondary Education and Baccalaureate.

Not all students in this centre have the same level of English. Some of them don't have a high level of English, but they have the level enough to understand the lessons. Other students don't have any English knowledge. Because of this, this high school has some bilingual classes but is not totally a bilingual center. There are some problematic groups with students that do not have the minimum level of English to receive lessons of other subjects in this language.

This group, 3ºA, is a collaborative and hard-working group, that usually is committed to all purposed activities. It has 32 students (too much) but it is a bilingual group and, in spite of this feature, this project can be carried out in this group with guarantees of success because students are involved in learning process.

6.3. Objectives

Physical Education, like all subjects, has different types of objectives in BOJA, 14 July Order: area objectives and stage objectives. Being a bilingual Integrated Didactic Unit, language objectives should be also included in this section.

The block of Physical activities in the natural environment is oriented towards the interaction of students with the natural and urban environment, valuing their positive benefits, the integration of these in their daily lives and the raising awareness of the need for their conservation (BOJA, 14 July 2016 Order: 266).

6.3.1 Area objectives

Physical Education teaching in Compulsory Secondary Education will have like purpose the development of the following objectives: (BOJA, 14 July 2016 Order: 267)

1. To value and integrate the positive effects of regular and systematic practice of healthy physical activity and a healthy and balanced diet in personal and social development, acquiring habits that influence the improvement of health and quality of life.

2. To improve the physical and motor condition, and know and assess the effects on them of different activities and work methods, from a healthy point of view and within an active lifestyle.

4. To participate in the planning and organization of physical activities, coordinating their work with other people work to achieve the common objectives established.

9. To value the richness of the natural and urban environments of Andalucía as well as the need for their care and conservation through their use and enjoyment by practicing in them different physical activities.

11. To show social skills and attitudes of respect, team work and sportsmanship in participation in physical activities, games, sports and artistic-expressive activities, regardless of cultural, social and motor competence differences.

12. To achieve a responsible use of information and communication technologies to collect, present and share information on different aspects related to physical activity and sport, including their own activity, contrasting and citing the sources consulted.

6.3.2 Stage objectives

Compulsory Secondary Education will contribute to develop in students' capacities that allow them: (BOE, Royal Decree 1105/2014: 176)

a) To assume responsibly their duties, know and practice their rights respecting the others, practice tolerance, cooperation and solidarity among people and groups, exercise in the dialogue strengthening human rights and equal treatment and opportunities between women and men, like common values of a plural society and prepare for the exercise of democratic citizenship.

b) To develop and consolidate habits of discipline, study and individual and team work like a necessary condition for an effective realization of learning tasks and like a means of personal development.

e) To develop basic skills in the use of information sources to critically acquire new knowledge. Acquire a basic preparation in the field of technologies, especially in information and communication technologies.

g) To develop an entrepreneurial spirit and self-confidence, participation, critical thinking, personal initiative and the ability to learn-to-learn, plan, make decisions and assume responsibilities.

k) ... to assess critically social habits related to health, consumption, care of living beings and the environment, contributing to their conservation and improvement.

6.3.3 Stage objectives in Andalucía

In addition to the described objectives in the previous section, Compulsory Secondary Education in Andalucía will contribute to develop in students' capacities that allow them: (BOJA, Decree 111/2016: 30)

b) To know and appreciate the specific elements of Andalusian history and culture, as well as its physical and natural environment and other differentiating facts of our Community, so that it is valued and respected like own heritage and within the framework of Spanish and universal culture.

6.3.4 Language objectives

In spite of language objectives should be evaluated by language teachers, in this section two languages objectives that are originally included in stage objectives (BOE, Royal Decree 1105/2014: 176) are going to be included because if they are included in a different section, they receive more importance and visibility. They are the following:

h) To understand and express correctly, orally and in writing, in the Spanish language and, if there is one, in the co-official language of the Autonomous Community, complex texts and messages, and begin to know, read and study the literature.

i) To understand and express themselves in one or more foreign languages in an appropriate manner.

6.4. Key competences

Like it is said in BOJA (14 July Order: 266), "Physical Education subject contribute to the development of all key competences."

Key competences are 7:

- Linguistic communication competence. (LCC)
- Competence in mathematics, science and technology. (CMST)
- Digital competence. (DC)
- Learning to learn. (LLC)

- Social and civic competences. (SCC)
- Sense of initiative and entrepreneurship. (SIE)
- Cultural awareness and expression. (CAE)

PE helps to the development of CMST offering situations where students have to apply mathematical reasoning to solve situations associated to amount, space or form, for instance, scales and directions in orienteering sport and offering also key competences in science and technology facilitating students the comprehension of physical, biological and technologic systems, like aspects related to nature conservation.

PE also contributes in an essential way to the development of SCC to encourage respect, equality, cooperation and team work. In orienteering sport, respect rules and final scores depending on established rules, could be a good example.

LLC is a competence that orienteering can improve hugely because it needs of an action plan when students want to find the next beacon. Like the motto says: “first think and then run”. To take into account all factors for the success of the plan is a consequence of LLC competence. PE favors motivation and confidence, that are crucial factors to achieve this competence acquisition.

SIES will be encouraged from subject by giving the students responsibilities in the planification and development of activities, promoting to practice leadership roles and team work as well as personal improvement.

LCC will be an important competence to be worked at this Integrated Didactic Unit, because it is a bilingual unit and to achieve linguistic progress, LCC has to be acquired. All situations that physical activity and sports offers us and to the students and all interactions that occur in a PE class will contribute to promote the use of L2. Also, homework or extra tasks can use L2 to keep improving the language skills acquisition.

CAE is a competence that is acquired through different ways. The knowledge of the natural environment that is so much close than we think, the importance of orientation and to

be conscious about where we are or where we go to have two different concepts that can be included in the acquisition of this competence.

Finally, DC has also a big importance in this Integrated Didactic Unit because it links ICTs and PE, furthermore of CLIL approach. Students will know how to manage ICTs applied to PE through different uses like, for instance, take a photo and use an application to know if the corporal position is healthy or not by measuring articulations angles and it will help them to use this knowledge in their daily lives to give to their computers or their mobile phones a good use because, unfortunately, nowadays ICTs are misused by the most of teenagers.

6.5. Contents

BOJA (14 July Order: 272) brings up the contents that have to be carried out in the 5th block of contents, Physical activities in natural environment, for 3^oESO course. They are the following:

- Realization of physical activities in the natural environment like a means to improve health and quality of life and active occupation of leisure and free time.
- Progression techniques in non-stable environments.
- Basic orientation techniques.
- Route election, continuous reading, relocation.
- Activities offer study and use of the possibilities offered by the close environment for the realization of physical activities.
- Activities and games in nature such like climbing, ropes games, etc.
- Promotion of preventive and security measures specific for the activities carried out, taking special care with those carried out in a non-stable environment.
- Respect for the environment like a common place for carrying out physical activities, and the need to conserve it.

6.5.1 Specific contents

In this IDU, contents about orienteering are going to be the following:

- Reminder of 2nd course contents
- Map orienteering
- Headings establishment
- Routes tracking
- Introduction to QR codes
- Creation of maps and QR codes
- Creation of real races
- Participation in real races

6.6. Timing

This Integrated Didactic Unit will be carried out in the 3rd course of ESO in a high school of Andalucía. To choose the better period to carry out the sessions, it is necessary to take into account weather conditions because orienteering is a sport which is developed in natural environment if possible and rain or extreme heat can prejudice the correct practice of it because it wouldn't be safe to run under the rain or supporting extreme temperatures, that are possible in some specific periods in Andalucía. After that, and also taking into account that it is preferable to teach this unit after have carried out previously other blocks like Health and quality of life or Physical and motor condition, because they are related to it, the best moment could be just before Holy Week holiday season, in March.

6.7. Methodology

Methodologies that are going to be used in this Integrated Didactic Unit are Student-Centered Methodologies (SCM). In this kind of methodologies, “focus is on what the student is able to do” (MIEB, 2019a: 5). So the teacher role changes and it turns into a facilitator who provides students guidance, support and situations where they can improve their cognitive skills to the top of their potential, not just a transmitter of knowledge or a person who impart a master class. This kind of methodologies are used to promote students' autonomy, extrinsic motivation

and better learning outcomes and to involve students actively in their own learning processes because, in my opinion and to be honest, “to do is to learn” and Bloom’s Taxonomy confirms it like we can see in figure 3 when says us that create something requires most amount of cognitive skills in a student than other action like evaluate or analyse.

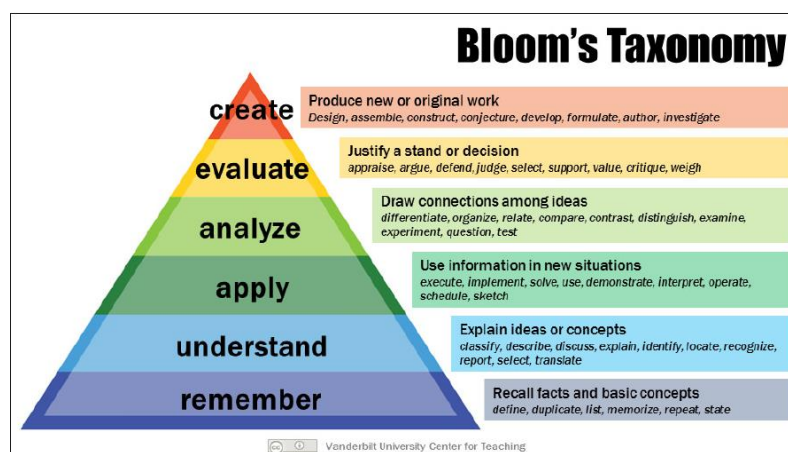


Figure 3. Bloom’s Taxonomy (MIEB, 2019a: 11)

Into SCM, there are two kinds of work that students will experiment in this IDU: cooperative and collaborative work. Difference between them is that in cooperative work there are different roles or functions that they must do separately and then put them in common to achieve a final product while in collaborative work all of them work together with a common objective and each one add what (s)he can to help group to achieve the common objective. (MIEB, 2019a: 13)

Collaborative work is a learning technique and cooperative work is a teaching technique and both of them will be used in this IDU. For instance, collaborative work will be used when they have to search beacons in groups with the same map and cooperative work will be used when they have to create an orienteering race with all its elements and they have to divide responsibilities and functions.

BOJA (14 July Order: 268) give us some tips about methodological strategies to follow in the learning process. The following some of them, the most important:

- Encourage real equality in class taking into account traditional stereotypes existent in society nowadays that prejudice women, especially in physical activities.

- Cater to diversity in class taking into account all students for the activities and their personal features and possibilities.
- Promote inclusive PE from our teacher role and make students see that all of them are able to do each purposed activity, independently of its features.
- Try to motivate students creating positives environments of learning by giving space, time, materials and all elements of classes new perspectives to make them attractive to students.
- Try to involve students in a high grade of motor engagement to develop their motor competence.
- Design activities that implies students in autonomy, initiative and decision making.
- Encourage shared evaluation and inside it, the self-evaluation of the students to involve them in their learning process.
- Give customized and adapted feedbacks for each student and its progress and development.
- Necessary safety conditions and reduce risks.
- Promote responsible and appropriate use of ICTs (Internet, social networks and devices).
- Do activities in close environment if possible to raise awareness students about it and the need of their conservation and care.

Paying attention to CLIL approach, Coyle's 4Cs must be present in this IDU to guarantee a qualified learning for the student which feed all their virtues. Content, cognition, communication and culture are going to be present in this IDU. A good example can be a task where students have to find by using the map of the gym (content) some clues that contain letters without order about elements of orienteering that they must order after find all of them (cognition) and later they have to write and translate the elements into English to know how it is said each element in English to be able to understand teacher when he refers to these elements in English later (communication) and know the real importance of orientation in life taking into account the difficulties that they have found when they have moved searching clues in the gym only guided by the map (culture).

6.8. Materials

During this IDU, students are going to manage different materials, some of them own materials, some of them created by the teacher and some of them created by them or by their classmates. Materials are the following:

- Mobile phones with Wikiloc, QR Code Reader and Brújula Digital
- Beacons → QR codes
- Gym maps
- Playground maps
- Center maps
- Neighbourhood maps
- Town maps
- Pencils
- Rubbers
- Control cards

6.9. Resources

Many resources ICT have been used by the teacher and by the students for create materials and to carry out and participate in the sessions. The resources that have been used in this IDU have been the following:

- Google Maps (satellite version) and screenshot to create maps
- Wikiloc to record route
- Blogger to the daily diary of the students
- Webpage to create QR codes (link them to words, images, guess games, etc.):
www.qrcode-monkey.com/es/
- Paint to draw in maps start point, beacons and end
- Word to include in the map the text about the legend
- App to read QR codes: QR Code Reader
- Compass app: Brújula Digital

6.10. Step by step planning

6.10.1 Session 1

Presentation of the IDU and reminder of orienteering. Orienteering maps.

SESSION 1	ACTIVITY	DESCRIPTION	TIME
INITIAL PART	Presentation of the IDU	Teacher will present IDU to the students and contents that will be carried out in the unit so as the way of evaluation, the final task and the daily blog.	10'
	Reminder of orienteering elements	Teacher will question all group together about elements of orienteering that they remember and their utilities.	5'
	Reminder of assimilated content last year	Teacher will give students maps in groups of 4 men and women (groups made by teacher) to recognise the gym by using them and so can remember last course assimilated knowledge.	5'
PRINCIPAL PART	Orienteering maps	Teacher will provide to the same groups of 4 men and women 5 different maps successively. First, a map of the gym. Second, a map of the playground. Third, a map of the full center. Fourth, a map of the neighbourhood. Fifth and finally, a map of the full town. In different maps, they will have to orient the map correctly and then locate different points like the gym's door, a goal, a wastepaper basket, a specific building near the center or their houses, respectively. With maps 2, 3, 4 and 5 we can ask them to start walking in the direction of the object which they need to recognise the place of without going out of the gym.	15'
	To draw and create a map	Teacher gives groups A4 papers, pencils and rubbers. Students, in groups must draw the specific	15'

		distribution of the gym and its elements, previously organised by the teacher. We ask students to draw all elements like if the gym were seen from above and without roof. Scale is very important and must be respected with the most possible precision and, for this, they can walk and try to measure distances from an object to another or to the wall, make proportions of distances (for instance, if between a bench and a wall there are 8 steps and between the same bench and the opposite wall there are 15 steps, they know that they have to draw the bench nearest the first wall than the opposite and with almost the double of distance from the bench to a wall than to the opposite). Teacher will change elements positions and will ask students to draw the changes and compare both maps.	
FINAL PART	Final reflexion about assimilated content	Time for questions and doubts from students and from teacher about opinions or difficulties of the students to carry out the activities.	5'

Table 1. Session number 1

Final task: 4 orienteering score races. Each group will carry out a race for the others 24 classmates, divided in 3 groups of 8, the same groups than groups that organise races. They have to create and place 8 QR codes for each group and create 3 different maps for the race, one for each group which participates. After each QR code reading, map bearer will change. If there is confusion or coincidence of QR codes in some beacon, map bearer will have the last word and (s)he will decide which QR code has to be read. Each one of the 4 races have to be a different topic but related to Andalucía culture. It can be a puzzle with monuments, there can be common QR codes for all groups in one race...Freedom for students in their designs. The 8 members of the group that organises the race will have different functions: a time controller who note start and end time of each group, 3 beacons guard that place, guard QR codes and

collect them when the race has finished, 2 referees that check if answers are corrects and 1 MC who will present the race, that will give instructions to their classmates and that will announce final results. During the races, each rubbish element that a group collect and throw into the rubbish basket, it will count like an extra point.

Daily blog: they will have to log in blogger.com and write a daily blog about their experiences and opinions about the session by using L2. Each post will have to contain at least 250 words and will be taken into account in the evaluation of language.

6.10.2 Session 2

The same groups that in Session 1 and each 2 groups will join to create a big group of 8 people and start meeting for final task.

SESSION 2	ACTIVITY	DESCRIPTION	TIME
INITIAL PART	Introduction and suitable apps	Brief explanation about content of the session and recommendation for downloading a compass app, a QR code reader app and Wikiloc app.	5'
PRINCIPAL PART	Change of clothes	In the same groups of 4 people of the first session, students have to memorise clothes of their mates. By turns, one of them will close their eyes during 30'' and their mates will exchange their clothes, maximum 6 changes. After the time, the student has the same time to guess all possible changes that have occurred. When the 4 students have tried to guess, groups will join to create 8 people groups. The same process but increasing exchange time to 1' and maximum of changes to 8. When all students have tried to guess, each group will elect a captain in 30'' that will represent the group in the final guess. All groups will join in an only group and each captain will play representing their team.	30'

		Exchange time will increase to 2' and number of maximum changes will be 10.	
	Change of mates	In the same final group than the previous activity, now the change is going to be of mates places. 3 students are going to memorise the position of all their mates, then they close their eyes 30'' and 10 mates will exchange their positions. After it, the 3 students will try to guess during 45'' the changed that have occurred. Next, other 3 student will repeat the task and so until all student have experienced the guess role.	15'
FINAL PART	Final reflexion about assimilated content	Time for questions and doubts from students and from teacher about opinions or difficulties of the students to carry out the activities.	5'

Table 2. Session number 2

6.10.3 Session 3

Starting with QR codes and mobile devices to introduce ICTs. New groups and at the beginning, each student alone with their mobile if possible and all of them have one.

SESSION 3	<u>ACTIVITY</u>	<u>DESCRIPTION</u>	<u>TIME</u>
INITIAL PART	QR codes introduction	Teacher explains to the students how QR codes work and the utility that they are going to give us in PE classes.	5'
PRINCIPAL PART	First experience with QR codes	Gym will be full of QR codes with 5 images related to each one of the 8 different topics. The teacher will give each student a secret card with the topic that (s)he has to find and screenshot with their own	12'

		mobile phone. When the student finds the 5 images related to its topic, has to show them to the teacher. There will be 8 groups at the end of the activity, one by each topic.	
	Ordered route looking for QR codes	Like students had in 2 nd course content about basic orienteering, now they are going to combine maps, QR codes and mobile phones. Each one of the 8 groups will have a different map of the gym and the playground where they have to follow an ordered route, not in score. Groups will be always together and after each correct QR code found, a different member of the group will carry the map. In the same point there may be more than one QR code, so students must look carefully at the map and pay attention to the exact place where the QR code is situated in the map. Each correct QR code will have a number that they have to put in a mathematical operation that they will have to do without calculator. If they have found all the corrects QR codes, the result will be completely correct.	12'
	Pick up of QR codes	Students will pick up all QR codes in groups by using the master map that teacher will give them. Each group has to collect QR codes that weren't in their previous map.	5'
	Use of compass and real experiences with it	Explanation about how to use a compass from app, previously download by them, the process to orient the compass and how to establish a heading before starting to run (mobile phone always horizontal, firstly guide the map, then put the mobile phone on the map with the lower part over the current place and with the upper part pointing to the new beacon, note grades that compass shows (it will be necessary to have points in the race) and start	6'

		running always following this heading and being careful not to lose it) and real experience with easy routes. They must follow some different instructions to go to different places by using their mobile phones like a compass.	
	Stablishing headings and following them	Student must follow some instructions to find a heading and to follow it by using their mobile phones like a compass and including a tracking app, Wikiloc. This app allows them to save their route without using internet and share it later. We ask students to upload their routes to the class blog.	6'
FINAL PART	Final reflexion about assimilated content	Time for questions and doubts from students and from teacher about opinions or difficulties of the students to carry out the activities.	5'

Table 3. Session number 3

6.10.4 Session 4

Creation of ideas for final task beacons and linking them with QR codes.

SESSION 4	<u>ACTIVITY</u>	<u>DESCRIPTION</u>	<u>TIME</u>
INITIAL PART	Election of topic related to Andalucía culture	Teacher will give to the 4 groups 10 different topics and each group will choose one.	5'
PRINCIPAL PART	Placing beacons and drawing master map	Each group will place 5 QR codes given by the teacher in the playground. QR codes will have a number from 1 to 8. The group that places codes have to draw in a map the exact location in a master map and note the headings between beacons.	10'

	Locating beacons and comparing perception with the master map	Each group has to explore the playground looking for QR codes of the following number with an empty map (if a group placed number 2 QR codes, it will look for number 3 QR codes). They have to draw with the most possible precision the location of all the QR codes that find. After all groups end the search, each group will give the map that they drew initially to the group that has looked for these QR codes to compare.	12'
	Noting headings and comparing with the master map	Now using their compasses in their mobile phones, each group has to do the same route to each one of the 5 beacons but before going each one, they have to note the heading that compass shows where they orient the compass on the map between current place and the next beacon. Later, they will be able to compare their noted headings with the original headings noted by the group that placed the beacons.	8'
	Test	Students will do a writing exam about the basic contents that they have learnt until the current point of the ID (how to guide a map, how to know the correct heading between two beacons, the meaning of the legend and how QR codes work)	15'
FINAL PART	Final reflexion about assimilated content	Time for questions and doubts from students and from teacher about opinions or difficulties of the students to carry out the activities.	5'

Table 4. Session number 4

6.10.5 Session 5

Little real orienteering race to live the experience and to put the final touches to their task, roles distribution and start preparing beacons and maps for the final races.

SESSION 5	ACTIVITY	DESCRIPTION	TIME
INITIAL PART	Doubts about final tasks	Solution of doubts about final task and its preparation and presentation of the real race.	10'
PRINCIPAL PART	Real orienteering race	In groups of 4 people they have to participate in a real orienteering race with QR codes, maps and compass (mobile phones). Each group will count on a specific map without order. Two beacons can be near, it is important that they look carefully the exactly place of the beacon in the map or key symbology to know which beacon is the correct.	20'
	Taking notes	Noticing positive and negative aspects of the race by the students to use them in the preparation of their races.	5'
	Finishing details of the races	Last details of their races and check by the teacher that all is correct and ready to be carried out.	15'
FINAL PART	Final reflexion about assimilated content	Time for questions and doubts from students and from teacher about opinions or difficulties of the students to carry out the activities.	5'

Table 5. Session number 5

6.10.6 Session 6

Realization of races from classmates to classmates (part 1).

SESSION 6	ACTIVITY	DESCRIPTION	TIME
INITIAL PART	Introduction to final tasks	Brief explanation about how to develop the races and turns to follow.	5'
	Placing of QR codes and organization of races.	Students of the groups that will carry out their races today prepare all necessary to guarantee the correct development of the races.	5'
PRINCIPAL PART	Orienteering races	Each group will carry out its race for the other groups.	16' each race (32')
FINAL PART	Final results of races	MC of each group will make public final results of each race and their details.	8'
	Final reflexion about assimilated content	Time for questions and doubts from students and from teacher about opinions or difficulties of the students to carry out the activities.	5'

Table 6. Session number 6

6.10.7 Session 7

Realization of races from classmates to classmates (part 2).

SESSION 7	<u>ACTIVITY</u>	<u>DESCRIPTION</u>	<u>TIME</u>
INITIAL PART	Placing of QR codes and organization of races.	Students of the groups that will carry out their races today prepare all necessary to guarantee the correct development of the races.	5'
PRINCIPAL PART	Orienteering races	Each group will carry out its race for the other groups.	16' each race (32')
FINAL PART	Final results of races	MC of each group will make public final results of each race and their details.	8'
	Self-evaluation	Self-evaluation of the students through a target of evaluation about their orienteering skills and feedback from students	5'
	Final reflexion about assimilated content	Time for questions and doubts from students and from teacher about opinions or difficulties of the students to carry out the activities.	5'

Table 7. Session number 7

6.11. Evaluation

6.11.1 Evaluation criteria

To evaluate content, teachers have to follow an evaluation criteria and take into account their related key competences. Here are from BOE (Royal Decree:1105/2014: 483):

1. Solve individual motor situations applying technical and tactical fundamentals and specific skills of purposed activities, in real or adapted conditions. CMST, LLC, SCC, SIES.

3. Solve successfully motor situations of opposition, collaboration or opposition-collaboration using the most appropriate strategies depending on relevant incentives. CMST, LLC, SCC, SIES.

7. Recognise possibilities of physical-sports and artistic-expressive activities like ways of social inclusion, facilitating the elimination of obstacles for the participation of other people without matter their features, collaborating with the other people and accepting their differences and contributions. LLC, SCC, SIES.

8. Recognise possibilities that physical-sports activities offer like ways of active leisure and responsible use of the environment. CMST, LLC, SCC.

10. Use ICTs in the learning process to search, analyse and select relevant information, creating own documents and exposing them. LCC, DC, LLC.

6.11.2 Learning standards

Evaluation criteria are also related to learning standards, that are items suitable of being checked to see if a student achieve them or not in its learning process to evaluate them. Previous evaluation criteria are related to some learning standards. Here are from BOE (Royal Decree 1105/2014: 483):

1.1. Applies the basic aspects of specific techniques and skills, of the proposed activities, respecting the established rules and regulations.

3.3. Discriminates the incentive that must be taken into account in decision-making in situations of collaboration, opposition and collaboration-opposition, in order to obtain an advantage or achieve the objective of the action.

7.1. Shows tolerance and sportsmanship both in the role of participant and spectator.

- 7.2. Collaborates in group activities, respecting the contributions of others and established rules, and assuming their responsibilities to achieve the objectives.
- 7.3. Respects classmates in team work, without considering the level of skill.
- 8.2. Respects the environment and values it like a common place for the realization of physical-sports activities.
- 10.1. Uses Information and Communication Technologies to prepare its own digital documents (text, presentation, image, video, sound, ...), like a result of the process of searching, analysing and selecting relevant information.

6.11.3 Achievement signs

Now, from each learning standard, teacher extracts specific items related to the Didactic Unit called achievement signs. Following, there are the achievement signs of this Didactic Unit related to their learning standards:

- 1.1. Applies the basic aspects of specific techniques and skills, of the proposed activities, respecting the established rules and regulations.
 - Is able to orient the map
 - Is able to follow a heading previously established by him/her
 - Is able to understand the legend
- 3.3. Discriminates the incentive that must be taken into account in decision-making in situations of collaboration, opposition and collaboration-opposition, in order to obtain an advantage or achieve the objective of the action.
 - Is able to know what beacon is the correct in a place where there are various beacons
- 7.1. Shows tolerance and sportsmanship both in the role of participant and spectator.
 - Is able to support classmates if (s)he is not participating in the race

7.2. Collaborates in group activities, respecting the contributions of others and established rules, and assuming their responsibilities to achieve the objectives.

- Is able to collaborate with their classmates for a common objective
- Is able to accept and respect rules

7.3. Respects classmates in team work, without considering the level of skill.

- Is able to respect their classmates in all situations

8.2. Respects the environment and values it like a common place for the realization of physical-sports activities.

- Is able to warn about a harmful behaviour that can damage the environment

10.1. Uses Information and Communication Technologies to prepare its own digital documents (text, presentation, image, video, sound, ...), like a result of the process of searching, analysing and selecting relevant information.

- Is able to create a map with beacons and legend
- Is able to create QR codes like beacons
- Is able to write a daily blog
- Is able to manage its mobile phone like a different instrument (QR reader, compass and recorder of routes)

6.11.4 Evaluation tools

To evaluate students, teacher will use 4 different tools: daily observation, test, rubric in final task and target of evaluation. Three of them, excepting target of evaluation, will have the same load in the final mark of students: 33%.

The daily observation is a way to remove pressure from students when they are trying to learn or apply assimilated contents. They have to feel that they have freedom during the

activity, not pressure and so, they will work better and will learn more. Daily observation paper will be based on learning standards.

A test will be carried out in the 4th session to know if they have assimilated the knowledge until this day.

A rubric will be completed by the teacher in the 6th and 7th session, during the final tasks carried out by the 4 different groups and it will be useful for the teacher to note the grade of accomplishment of achievement signs by the students.

Finally, in the last session, students will complete a self-evaluation consistent in a target of evaluation. There, they will have 5 sentences about their learning and they will have to mark how many they agree with them.

Now, evaluation tools are going to be detailed.

Daily observation paper example:

NAME	MAP AND COMPASS	CORRECT INCENTIVES	VALUES	ENVIRONMENT	ICTs
Fernández Pérez, Juan	XX	X	X	X	XX
Martín Rodríguez, Jesús	X	XX	XX		X
López Hermoso, María	XX	X	X	XX	XXX

Table 8. Daily observation paper example

Test questions (correct answer in **bold**):

1. If you want to orient a map, you have to place it:
 - a) **In the same direction that reality**
 - b) Backwards to reality
 - c) No matter, a map is always oriented
2. A compass is well oriented when:
 - a) Is in the same direction than map
 - b) **The north coincides with the north of the map**
 - c) Is perpendicular to the map
3. If the north is behind you, where are the other cardinal points?
 - a) S at right, W at left and E in front
 - b) S in front, W at left and E at right
 - c) **S in front, W at right and E at left**
4. What is the first step to find the correct heading between two beacons?
 - a) Orient the compass
 - b) **Orient the map**
 - c) Know which is the next beacon
5. Can you run without looking the map?
 - a) Yes, when you don't have a map
 - b) **Yes, when you have previously established the correct heading in the compass**
 - c) No, never
6. When a QR code is decoded, it appears...
 - a) A text (words, numbers, etc.)
 - b) An image
 - c) **Anyone of above**
7. Real beacons are...
 - a) Green and blue
 - b) Red and black
 - c) **White and orange**

This is the rubric model:

<u>BLOCK</u>	<u>Achievement signs</u>	Level of achievement			
		VERY BAD	BAD	GOOD	VERY GOOD
CONTENT	Student knows basic elements of orienteering (map, compass and beacons)				
	Student is able to orient the map				
	Student is able to follow a previously established heading				
	Student is able to understand the legend of the map				
	Student is able to distinguish between correct and incorrect beacons				
VALUES	Student supports their classmates				
	Student collaborates with their classmates				
	Student accepts and respects rules and classmates				
ICTs	Student is able to create maps and QR codes				
	Student is able to manage its mobile phone as an orienteering tool (compass, QR code reader and track recorder)				
LANGUAGE	Student knows the basic words and expressions about orienteering in English				
	Student is able to read a map which is written in English				
	Student is able to express basic information about orienteering in English				
ENVIRONMENT	Student respects its close environment and takes care of it				

Table 9. Rubric

The target of evaluation is the following:

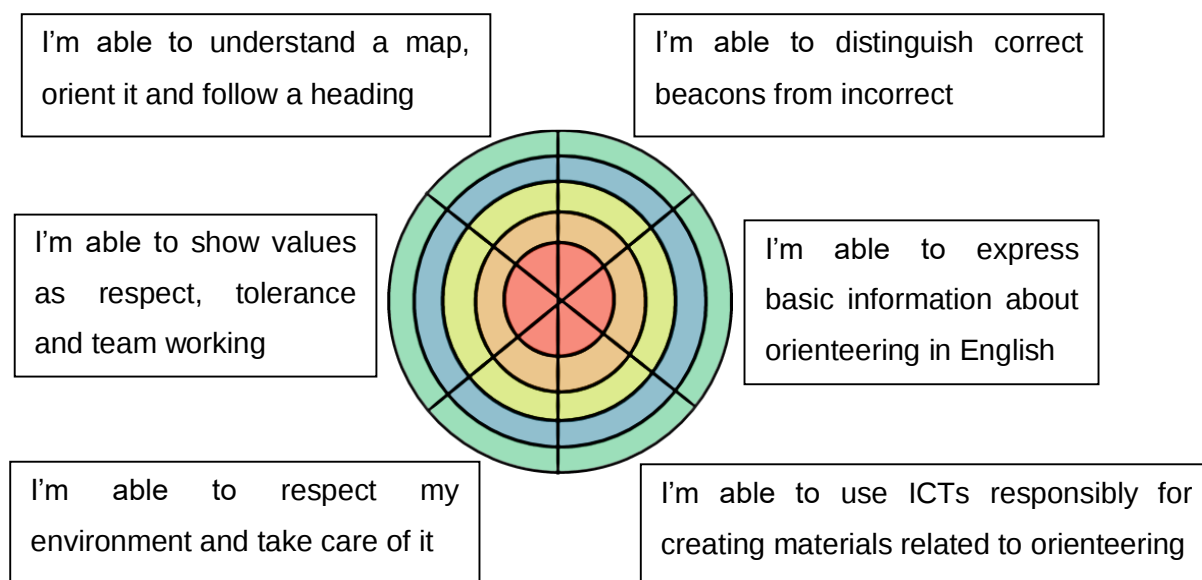


Figure 4. Target of self-evaluation

7. REFERENCES

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7.2. Webgraphy

- <https://www.google.es/maps/preview>
- www.qrcode-monkey.com/es/