



Ministry of Education - Guyana



In collaboration with the **OAS** and **ProFuturo FOUNDATION**

2020. CARICOM. INNOVATION ROUTE: MEDIUM LEVEL

MODULE 2 – EDUCATIONAL EXPERIENCES IN MOBILE LEARNING

Training Manual for Teachers of Riverine and Hinterland Region



MINISTRY OF EDUCATION
ELIMINATING LITERACY, MODERNIZING EDUCATION, STRENGTHENING TOLERANCE

ProFuturo

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Message form the Minister of Education



Dear Teachers

Across the world, the COVID 19 pandemic (Corona Virus) continues to cause undesirable disruption to the global education systems. Guyana, as you know, was not spared. As such, we implore you to keep engaging our nation's learners and we applaud those of you who have tried and continue to try. We heard your concerns when you told us you were uncertain about how to teach using different means, that you lacked confidence, and that you felt you were not equipped. This is our first response in partnership with the **OAS** and **ProFuturo Foundation**. This training will give you the much-needed knowledge and expose you to the tools you need to deliver education differently by being innovative and by using easily available technology.

We are aware that the cost of data is of great concern to you and we have remedied that by partnering with

GTT and Digicel to zero rate the ProFuturo platform domain. This means that when anyone accesses the training platform, data will not be consumed. If teachers have neither devices nor connectivity, we will arrange a suitable location and if teachers, as those in the hinterland and riverine areas, cannot access either, even with our help, we have arranged for part of the program to be done through these printed modules because we know that it is only a matter of time before you are able to access connectivity and devices. We will never leave you behind.

I encourage you to take this training offer with vigour so that you can be better prepared to do what you love: influence by teaching the next generations.

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KEY TERMS

Please familiarize with the following terms and meaning.

1. Cloud

Cloud computing, also known as the cloud or computing on the cloud, is a paradigm that allows for providing computing services using the Internet. In this kind of computing, everything a computing system can offer is offered as a service, so users can access the available services "on the Internet cloud" without any previous knowledge (or at least with no need of being an expert), to manage the resources they are using. According to the IEEE Computer Society, it is a paradigm in which client caches, including desktop equipment, leisure centres, information is permanently stored in Internet servers and it is sent using temporary client caches, including desktop equipment, entertainment centres, laptops, etc.

2. Hypermedia

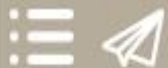
The term hypermedia comes from the addition of the hypertext and multimedia, a hypertextual network where text, images, audio and video are included.

3. Hypertext

Hypertext is a software tool that has a non-sequential structure that allows for creating, adding, linking and sharing information from different sources using associative links. The most common form of hypertext are hyperlinks or cross references linked to other documents. If the user selects a hyperlink, the program will show the linked document.

Unit 1

Educational experiences in Mobile Learning

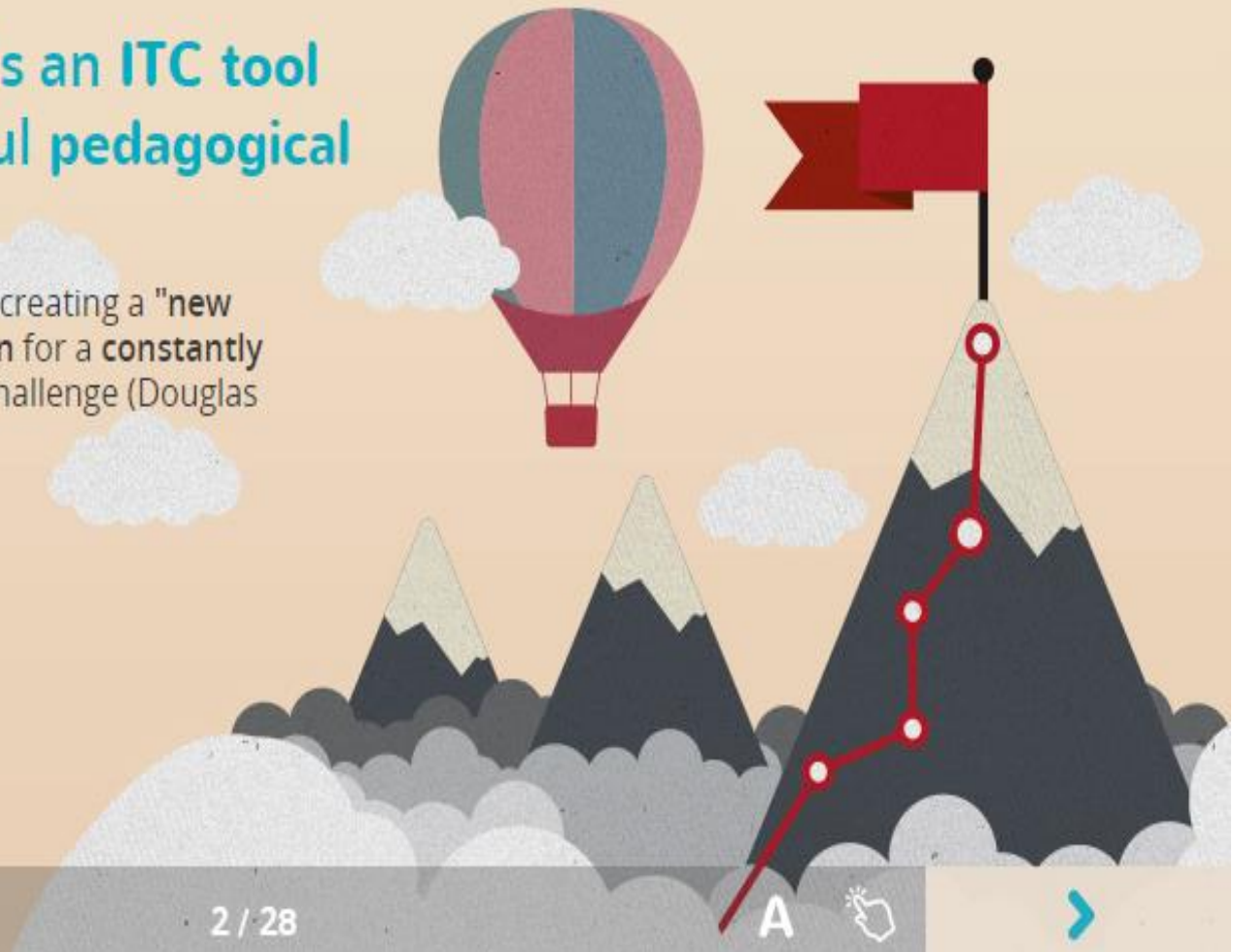


Starting point

It has only been a few years since schools have been provided with **minimal ITC tools**, essential for teachers to experiment, and by doing so, develop their ideas about how students could use those tools in their learning process.

Today, the mobile device is an ITC tool that can provide wonderful pedagogical results

Emerging technologies and pedagogies are creating a "**new learning culture** that **cultivates imagination** for a **constantly changing world**". Being part of it will be a challenge (Douglas Thomas and John Seely Brown, 2011).



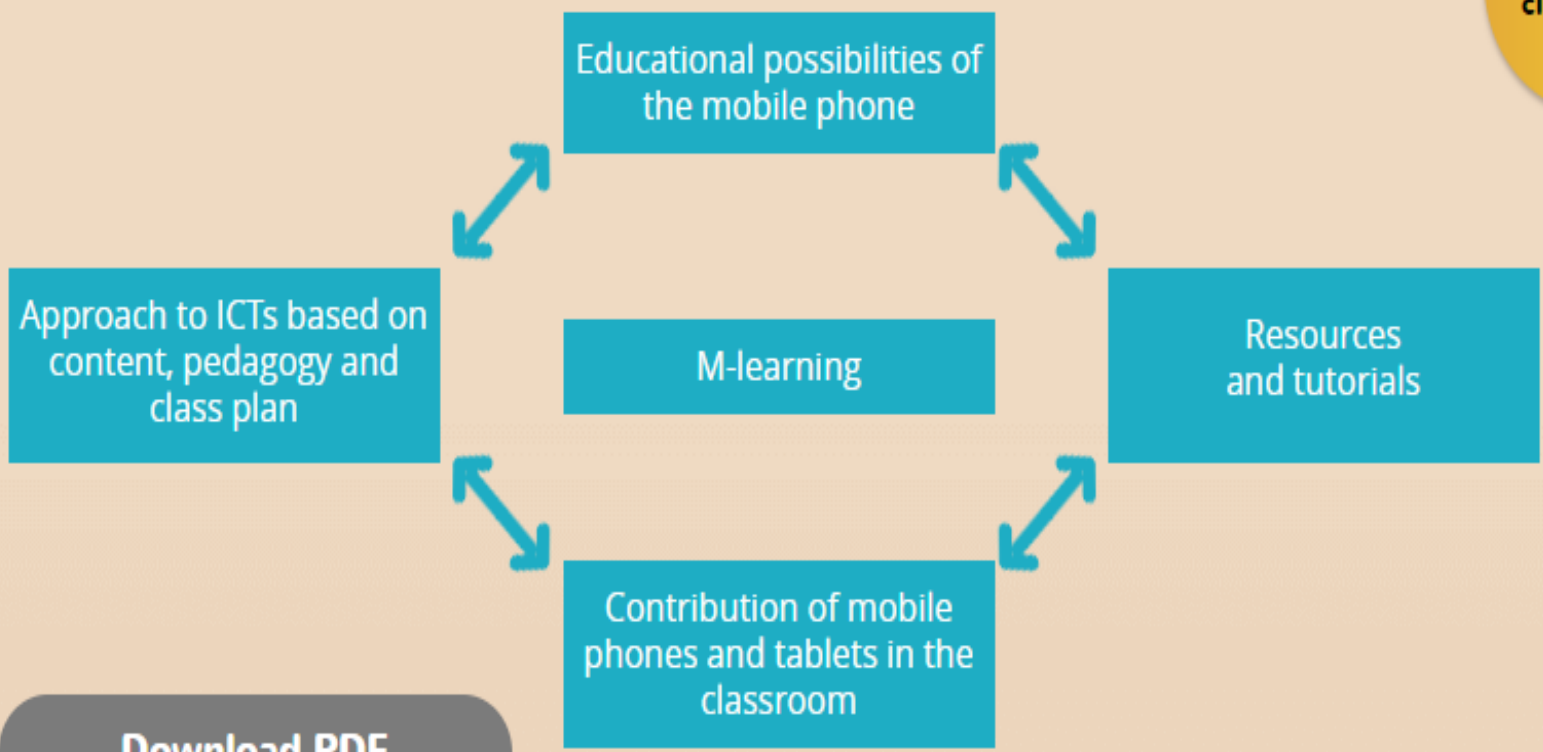
Objectives

- ✓ To understand the **benefits of mobile learning (m-learning)** for the implementation of **educational experiences** and **network learning**.
- ✓ To know how to search for, download and use different **network applications** in order to work in the classroom in accordance with the **curricular objectives**.
- ✓ To implement pedagogical strategies which encourage **collaborative learning**.

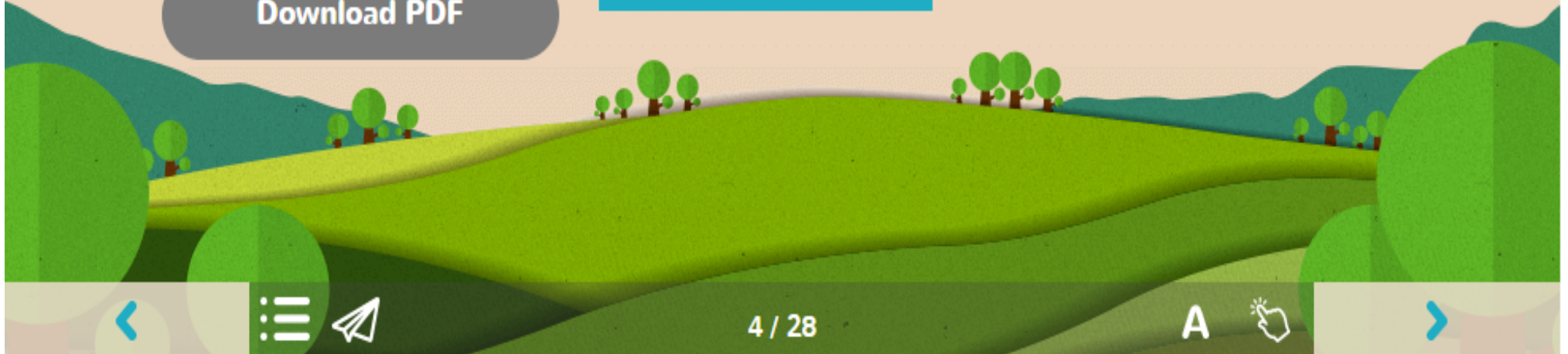


Contents outline

For more information, click on the button.



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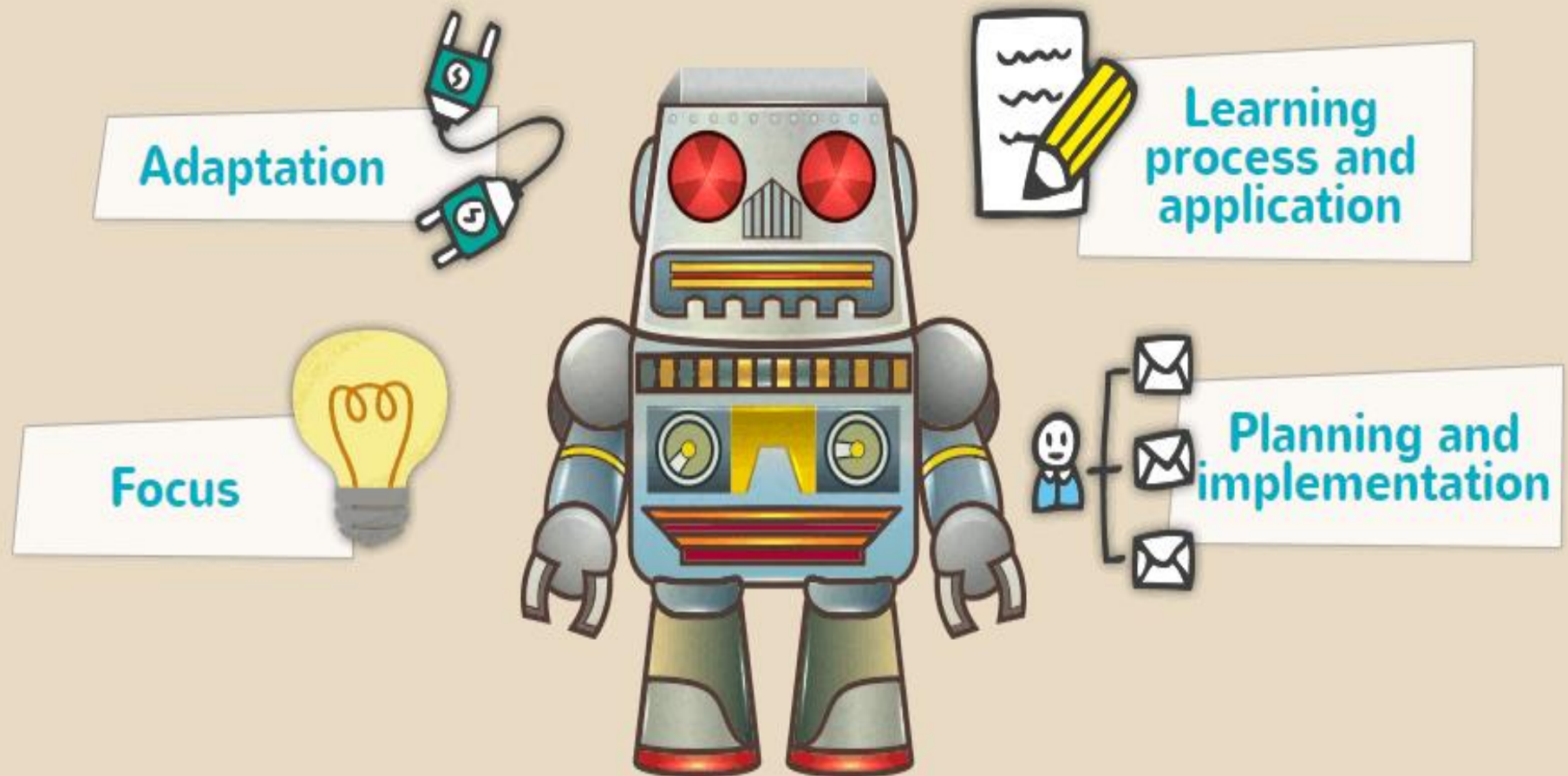
Unit 2

Use of ICTs



Approaching ICTs

In order to **efficiently integrate pedagogy** and technology into pedagogical instruction (focus on one specific learning goal based content), **one must be very familiar, feel comfortable and competent** with the use of technology. A comprehensive approach of technology is needed:



How to fulfil the approach?

Educational technologies must be selected as the **last step** in the **pedagogical instruction** plan. The use of mobile/digital technologies **must be limited** to the pertinent **learning activities** included in the curriculum.



It is set by the teacher

Content

Teaching

Curriculum



Technology



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Integrated digital technology

For more information, click on the vertical arrows.

Teachers plan the **teaching-learning process** according to the **curriculum standards**, and based on **learning needs**. To put it in a simple way, there are **five basic steps** when it comes to planning an educational event:

1

Choosing learning goals

2

Taking pedagogical decisions

3

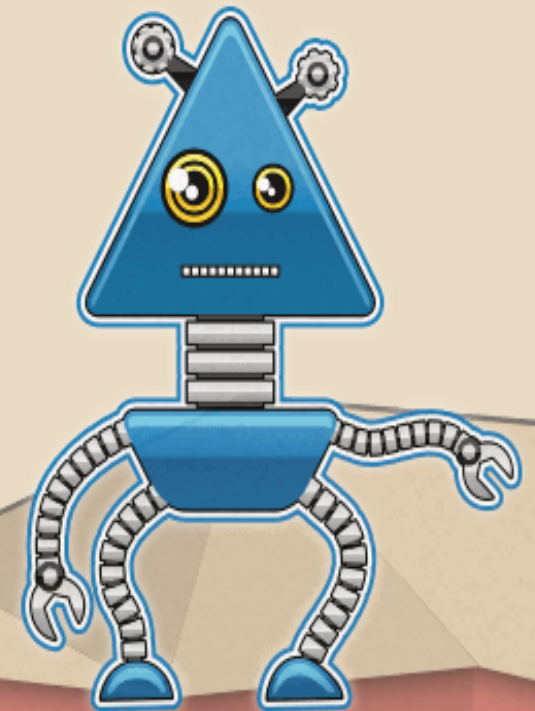
Choosing the type of activities

4

Selecting the evaluation strategies

5

Choosing tools/ resources



Integrated digital technology

For more information, click on the vertical arrows.

Learning goals

Planning must start by **matching academic goals** with the students. In most schools, these goals are suggested by the **district**, the **state** and/ or **national curricular standards**.



Academic objectives



Adjustment process



Students

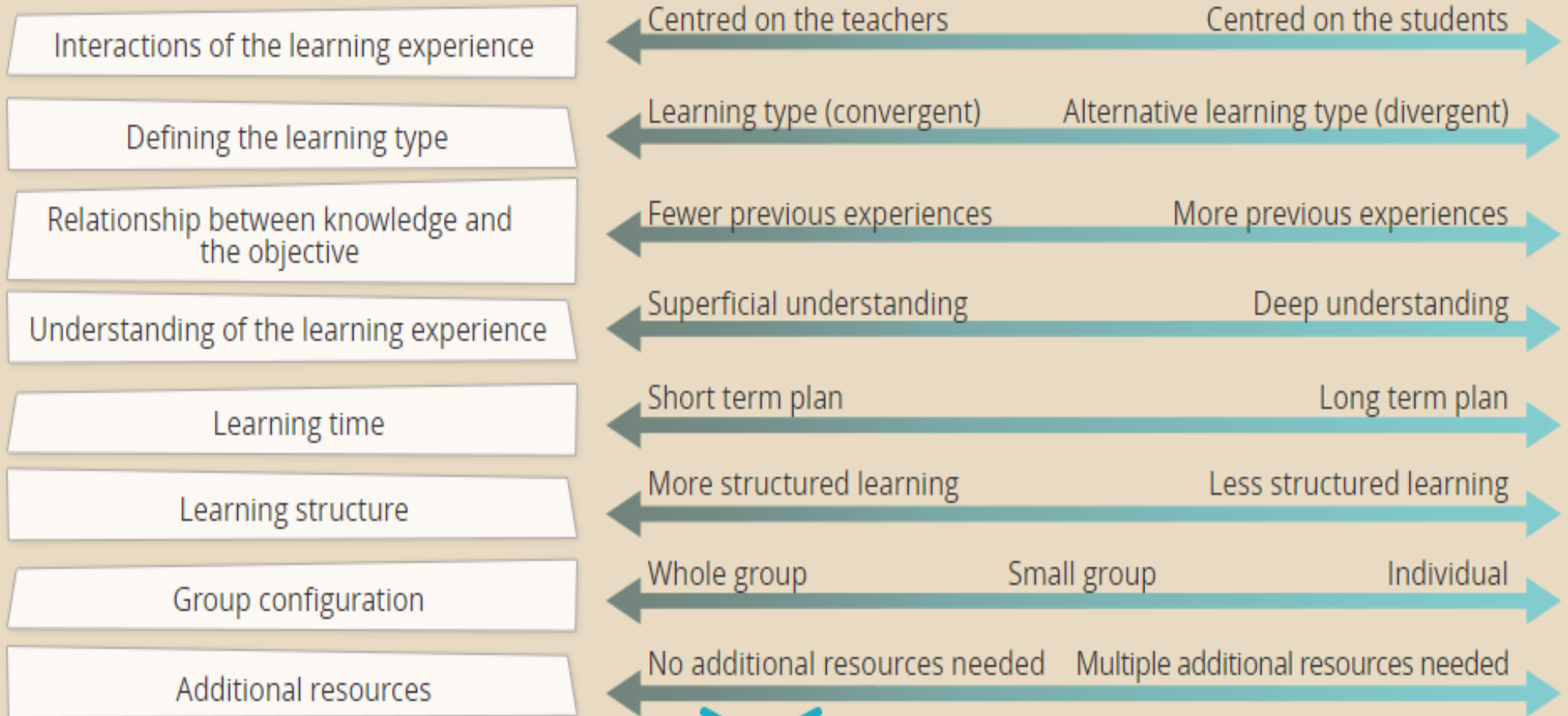


Integrated digital technology

For more information, click on the vertical arrows.

Pedagogical decisions

Once the learning goals have been set, decisions will be taken about pedagogical practice. These decisions will define the **specific parameters of the educational experience** being planned.



Integrated digital technology

For more information, click on the vertical arrows.

Type of activities

Once the **standards** have been selected based on the **learning goals**, **eight pedagogical parameters** are **outlined** for the class, project or unit. The **nature of specific activities** that will conform the learning experience **will be determined**.

Varies according to

Therefore

Nature of research and instruction



Content area



It is easier to select the most appropriate type of educational activities if teachers take all the activity type range into account.

In general, **the higher number of activities** included in the instruction plan, **the deeper the learning will be**.



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Integrated digital technology

For more information, click on the vertical arrows.

Assessment strategies

Once the activities that will be combined have been determined, appropriately selecting the strategies to assess students' achievements and goals is recommended.

Assessment

Educational

To create a progress registration.

- ✓ Answering to questions.
- ✓ Participating in a group discussion.
- ✓ Creating time lines.

Summative

To create a final registration.

- ✓ Holding an exam.
- ✓ Writing an essay.
- ✓ Creating a presentation.



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Integrated digital technology



For more information, click on the vertical arrows.

Tools and resources

The **educational plan** will be well crafted if the teachers chooses **pedagogical strategies** that are **aligned** with the students' needs, and is supported by an **activity that uses** mobile/ digital **technological tools** to **achieve the goals set** for the student



Remember!

Digital tools and technological resources must not be selected before thinking in what is really key, pedagogy.



Unit 3

Mobile phones and tablets



What is their contribution?

Among the more interesting features of mobile phones, the following can be highlighted:

For more information, click on the buttons.

Technical characteristics

- ✓ Interactivity
- ✓ Autonomy
- ✓ Portability
- ✓ Connectivity

These features justify its integration in the educational context.



Functional characteristics

- ✓ Personal use
- ✓ Productivity
- ✓ Multimedia digital support
- ✓ Hand writing
- ✓ Digital books
- ✓ Microphone and web cam

TECHNICAL CHARACTERISTICS

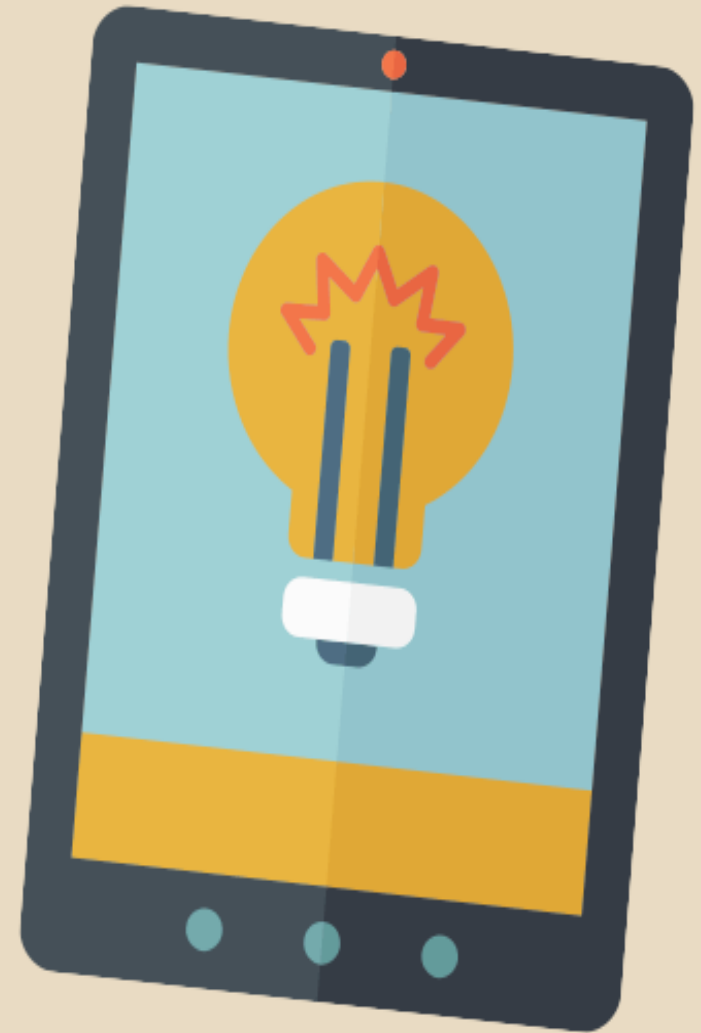
- **Interactivity.** Their multi-tactile screen provides a natural and intuitive interface that is rich in interactive possibilities.
- **Autonomy.** The battery usually has between 4 and 10 hours of autonomy, depending on the device. So, they can be used almost with no interruptions during a school day, without having to connect it to the electrical grid.
- **Portability.** It is a light and portable device that can be easily carried in a backpack.
- **Connectivity.** It provides Internet connection using WiFi/ 3G. This helps checking information as back up for teaching and learning at the different stages.

FUNCTIONAL CHARACTERISTICS

- **Personal use.** It allows for learning anywhere by assigning one device per student, a 1 to 1 assignment.
- **Multimedia digital support.** Enables access, management and edition of multimedia digital information: texts, images, audio files, videos, etc.
- **Digital books.** Digital documents and books can be accessed as a source of information.
- **Microphone and web cam.** The device includes a microphone for audio recordings and a web cam for image and video capture.
- **Productivity.** It has different edition programs for a learning style based on constructivist strategies.
- **Handwriting.** The use of the pointer on the tactile screen allows for the integration of freehand handwriting in the resulting files.

Unit 4

Educational possibilities



Educational possibilities

To embody the educational possibilities of mobile devices in classrooms, the classification of said educational possibilities considering the basic competencies is used as criteria:



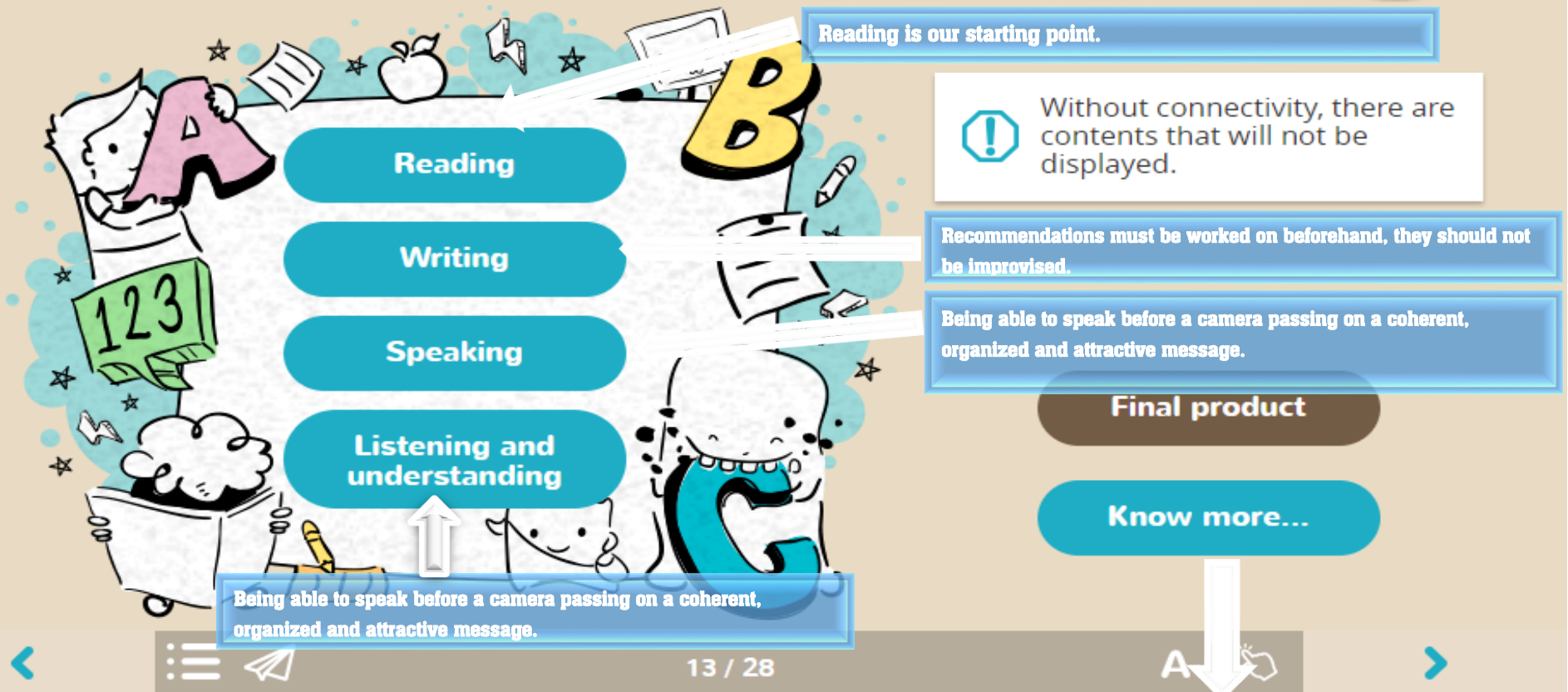
- ✓ Linguistic communication.
- ✓ Mathematical competence.
- ✓ Knowledge and interaction with the physical world.
- ✓ Processing of information.
- ✓ Digital competence.
- ✓ Cultural and artistic competence.
- ✓ Competence for learning to learn.
- ✓ Autonomy and personal initiative.



Linguistic Skills

Kuentalibros is a space for reading recommendations on the Internet (narrative, poetry, theatre, comics, magazines, news, recipes...). Word of mouth will be essential. It benefits the four dimensions of linguistic communication:

For more information, click on the buttons.



IMPORTANT CONSIDERATIONS

When recommending a reading, do not forget to explain why it is done, the reasons you liked it and why you think others might enjoy it.

In order to participate a video or audio file must be recorded following the directions given in the section. If students are under age do not forget the corresponding authorizations. How does one participate?

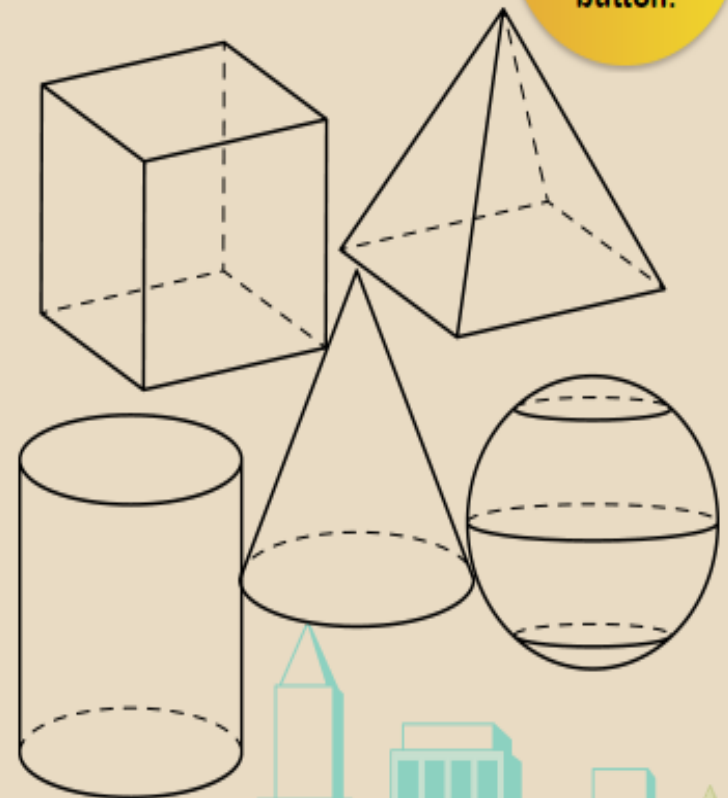
Kuentalibros has different categories. Participation is open to students at different levels, kindergarten, primary school, secondary school, university preparation courses, languages, and even teachers who want to recommend a book to other teachers, or to students. Videos can be recorded using a mobile phone or a tablet, uploaded to YouTube and then shared with the community.

Mathematical competence

Among the educational experience of this competence the following activity is set:

Subject	Analytic Geometry
Resource	Android mobile phone.
Activity	Build a pyramid, a cylinder and a cone at home using recyclable materials. The process must be documented with pictures that will be used to create a multimedia animation using PowerPoint.

For more information, click on the button.



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Calculating volume



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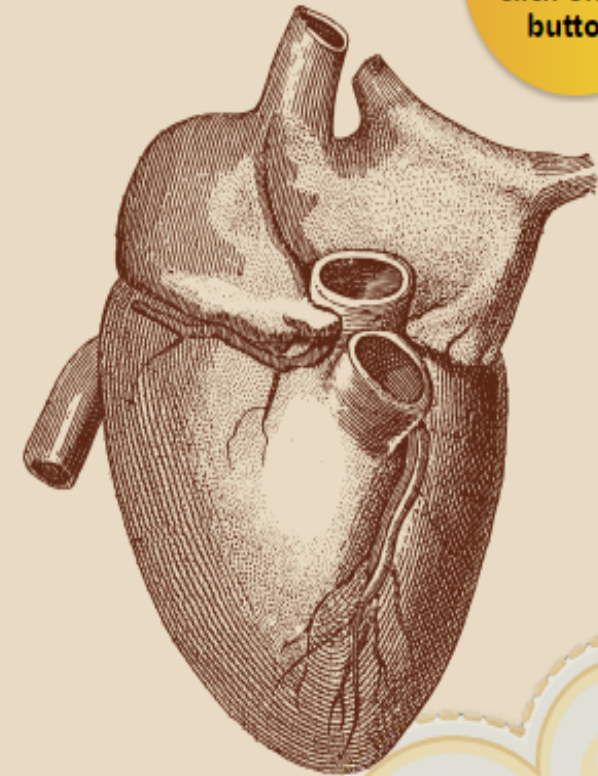
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Interaction with the physical world

Among the educational experience of this competence the following activity is set:

Subject	Anatomy of the heart and the vascular system.
Resource	Tablet.
Activity	Dissection of a pig heart.



For more information, click on the button.



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Dissection of a heart



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Processing of information

Regarding the development of information processing of this competence, mobile devices have an image and video editor adapted to this kind of device.

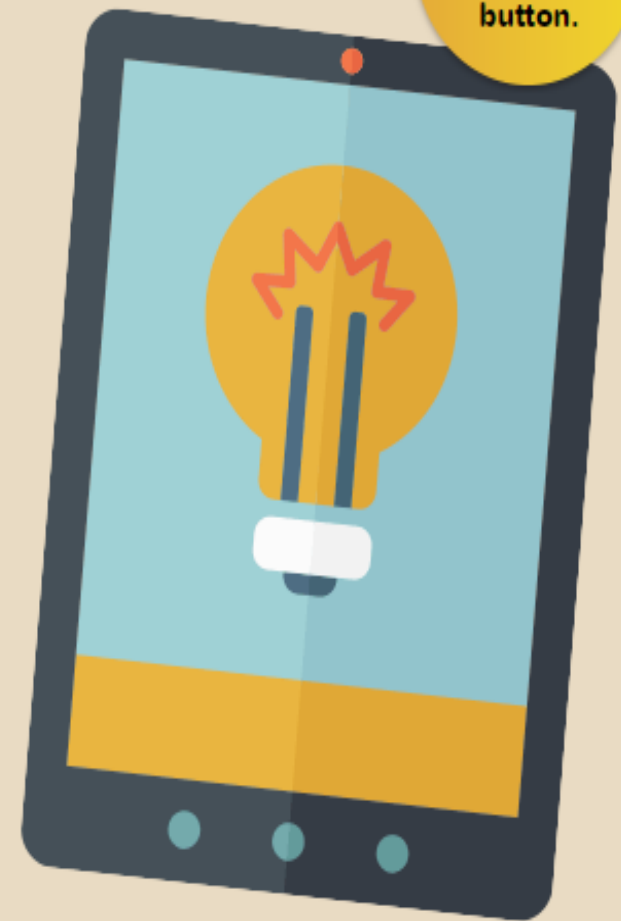
Subject	Augmented reality applied to education.
Resource	Tablet, portable computer, or mobile phone with camera connected to the PC.
Activity	Analysing a space from your daily environment.



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Augmented reality

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Digital competence

Subject	School radio station.
Resource	Mobile phone or tablet.
Activity	Creating a school radio station.



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Example

The school radio station

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For more information, click on the button.

HOW TO WORK ON THE SOCIAL COMPETENCE?

Using the phone picture and video camera cultural excursions can be illustrated so that they can later be published in a blog or web page, serving as links between school work and the social environment of the institution.

Students can interview classmates about a significant subject, interview teachers and other people related to the social context of the educational centre, using the phone's video camera, and create a school magazine or newspaper inside a blog or wiki.

Cultural and artistic competence

Digital technologies, such as animation, graphic design, drawing, history creation and song composition **apps** provide the students with the opportunity to create, build, design, communicate, connect, present and reflect on, as a part of their learning process in the artistic competence.

How can learning activities for the visual arts and music be designed so they make an appropriate use of educational technologies?

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Artistic representation



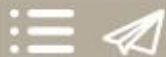
Musical competences



SingToKids



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ARTISTIC REPRESENTATION

Students develop artistic representations, individually or in a collaborative form, using different channels to shape their ideas: digital photography, apps for digital narrations, digital cameras and video cameras, digital picture and video editing or artistic apps

MUSICAL COMPETENCES

Free musical improvisation. Students listen to familiar melodies played by the teacher or otherwise, and they play or sing them without any help of the original melody. Technologies can provide the melody or some rhythmic/ harmonic accompaniment. They are specially useful for practice.

Learning to learn

Subject	Interpreting a photograph
Resource	Done using the drawing application iPocket Draw v1.92 for iPad. Drawings can be exported as PDF files (by Ana Isabel Sánchez).
Activity	We can interpret a photograph by using geometrical shapes, lines and colour.



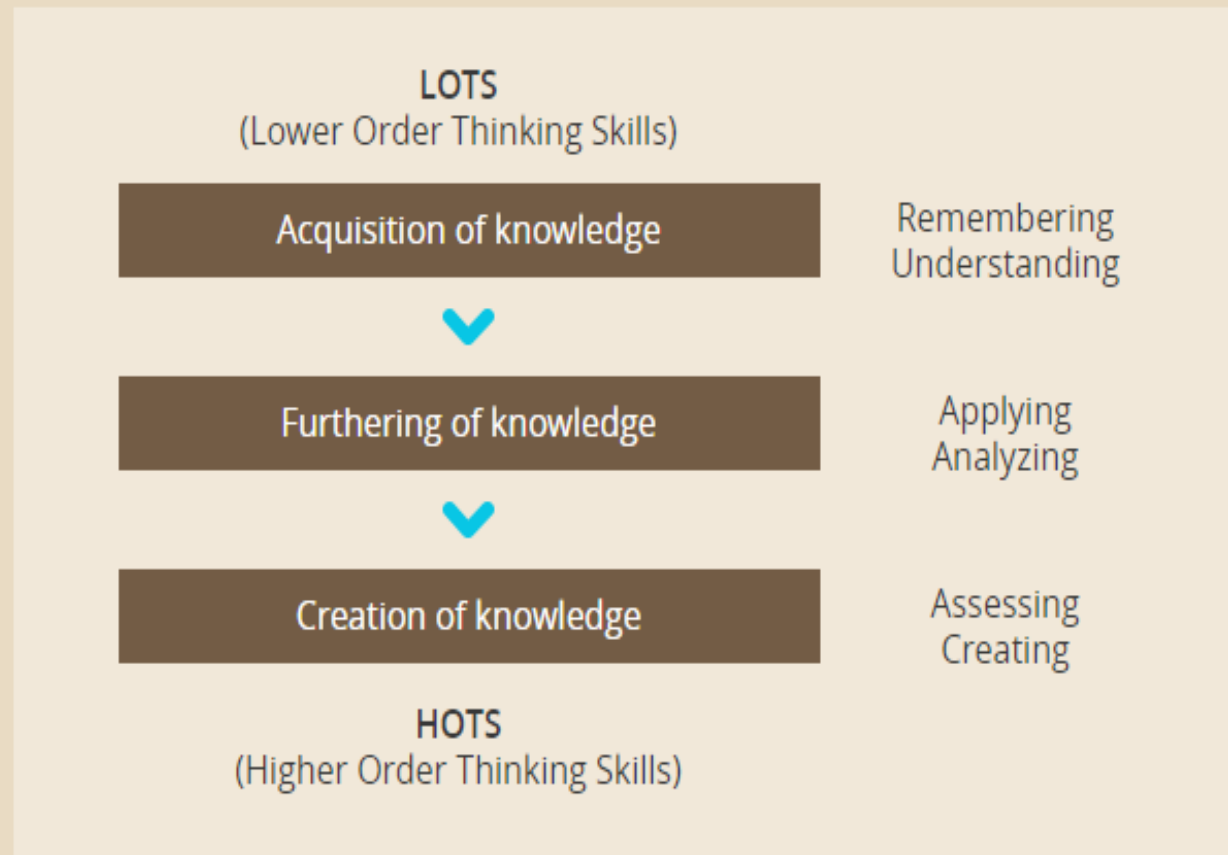
Unit 5

Activities



Thinking skills

Fundamental because once they are acquired they **will remain** with the students for **their entire lives**.



The mobile and digital activities that contribute to the knowledge acquisition category are applying and analysing.



Applying

Applying is related and refers to situations where **material that has already been studied** is used for products such as models, presentations, interviews and simulations. It involves carrying out or using a **procedure** during the **course of a representation or an implementation**.

For more information, click on the button.



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Categorizing Annotating Tweeting Blogging Subscribing Explaining

Interviewing Simulating Demonstrating Presenting Editing Illustrating



Analysing

It is about **breaking down things into material or conceptual parts** and determining if they relate or interrelate with a full structure or with a certain aim. Mental actions in this process include **differentiating, organizing and attributing**, as well as the **ability to establish the differences between components**.



Outlining



Structuring



Organizing



Surveying



Deconstructing



Mashing



Interviewing



Simulating



Demonstrating



Presenting



Editing

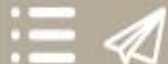


Illustrating

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Unit 6

Farewell



Practical activity

Activity

It is time to create Daily TV in the classroom. Set out heterogeneous work groups and provide each member with a role. The activity consists in finding a current news and reproducing it using a mobile device.

Objective

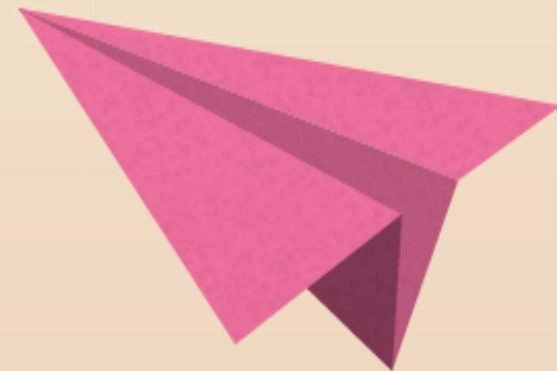
Creating an educational experience using mobile devices.

Result

Video presenting a piece of current news recorded with a tablet or mobile phone camera and using the [+ AndroVid](#) program.



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Summary

When facing the initiative of incorporating mobile phones and/ or tablets to the daily classroom life, **different levels of integration commitment** can be chosen:

- ✓ They can be useful to keep on "**filling our students with contents**".
- ✓ Students can use **them freely and creatively** when carrying out a project they are interested in.
- ✓ They encourage learning in a **real context** and they contribute to their use for **daily challenge** solving.



Final word

Fundación Telefónica, in the Guía de m-learning (m-learning guide) states that the **unstoppable technological development** has placed a **versatile and chameleon-like device with an extraordinary potential** in our hands. A device that is able to adapt to almost any need we may have regarding **information and communication**.

Are you ready to start educational experiences using mobile devices?

We remind you that to finish you can take the evaluation test and check what you have learnt.

