Ministry of Education - Guyana

In collaboration with the OAS and ProFuturo FOUNDATION

2020. CARICOM. ICT Route: Medium Level

MODULE 3 – LESSONS PLANNING EXPERIENCES

Training Manual for Teachers of Riverine and Hinterland Region



MINISTRY OF EDUCATION
ELIMINATING LITERACY, MODERNIZING EDUCATION, STRENGTHENING TOLERANCE

ProFuturo
A PROGRAMME OF: Telefónica FOUNDATION "la Caixa" Foundation

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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. **Bloom's Taxonomy for the Digital Age (Churches, 2007)**
   Remember, understand, apply, analyse, evaluate, and create.
2. **Content Knowledge**
   This refers to knowledge of the subject to be taught.
3. **M-learning**
   Or mobile learning. Goes hand in hand with the use of mobile devices.
4. **Pedagogical Content Knowledge**
   This is knowledge that enables you to understand how to organise and adapt content in order to teach it.
5. **Pedagogical Knowledge**
   This is knowledge of processes, methods and practices for teaching and learning.
6. **Technological Content Knowledge**
   Refers to knowledge of how technology relates to subject content.
7. **Technological Knowledge**
   This refers to knowledge of both traditional technology and to the most advanced technologies.
8. **Technological Pedagogical Content Knowledge**
   This knowledge should enable teachers to develop appropriate strategies for transmitting knowledge which are contextualised to suit their students.
9. **Technological Pedagogical Knowledge**
   This is knowledge of available technology, its components and its potential for use in teaching/learning contexts.
10. **Virtual Classrooms**
    These are web platforms that provide the services and features required for distance learning.

Unit 1

Lesson Planning Experiences



Starting point

Do you know what **different types of knowledge** a teacher should bring together in their day-yo-day work, as regards: **content, pedagogy and technology?**

Have you ever included ICT in your lesson plans? How did you do it?

Are you familiar with taxonomies? Have you worked with them?

Do you know about the new trends such as mobile learning and virtual classrooms?



The integration of ICT into the classroom requires teachers to have **training** that will help them to **innovate and update their knowledge**, and above all, to adapt their **lesson planning**.

Objectives

- To consider the **TPACK** model as a way of integrating ICT into the **planning** of the teaching/learning process.
- To learn about the **taxonomies** that typify different types of activities.
- **To plan lessons** so as to include ICT in the learning process.
- To understand recent **changes** in **learning environments** that favour the inclusion of **digital skills.**



Contents outline

The Model TPACK

- Subject Knowledge
- Pedagogical Knowledge
- Technological Knowledge

Taxonomies

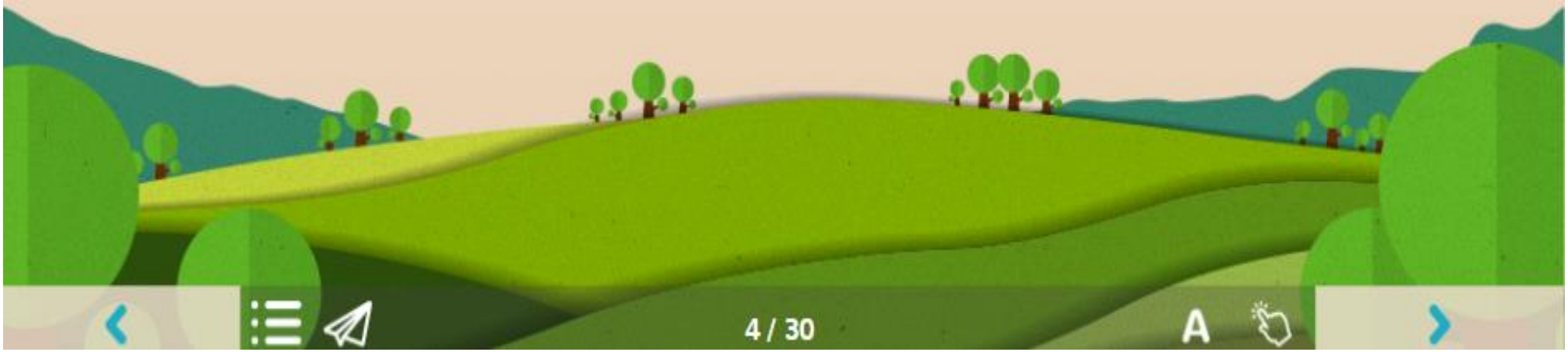
- Bloom's Taxonomy
- Bloom's Taxonomy Revised
- Bloom's Taxonomy in the Digital Age

Lesson Planning

- Example
- Explanations

Current Trends

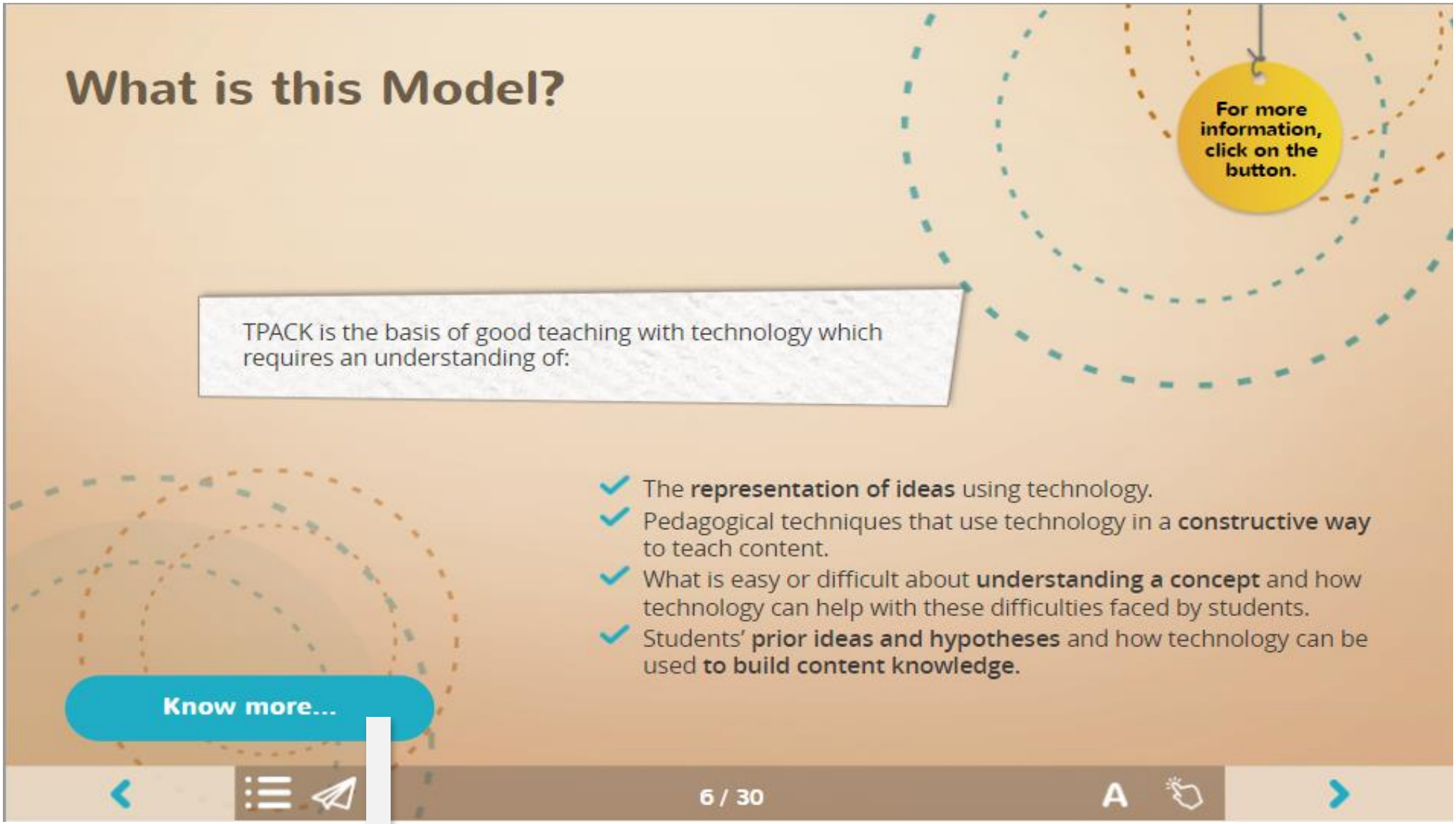
- M-learning
- Virtual Classrooms
- Mini ICT Catalogue



Unit 2

TPACK Model

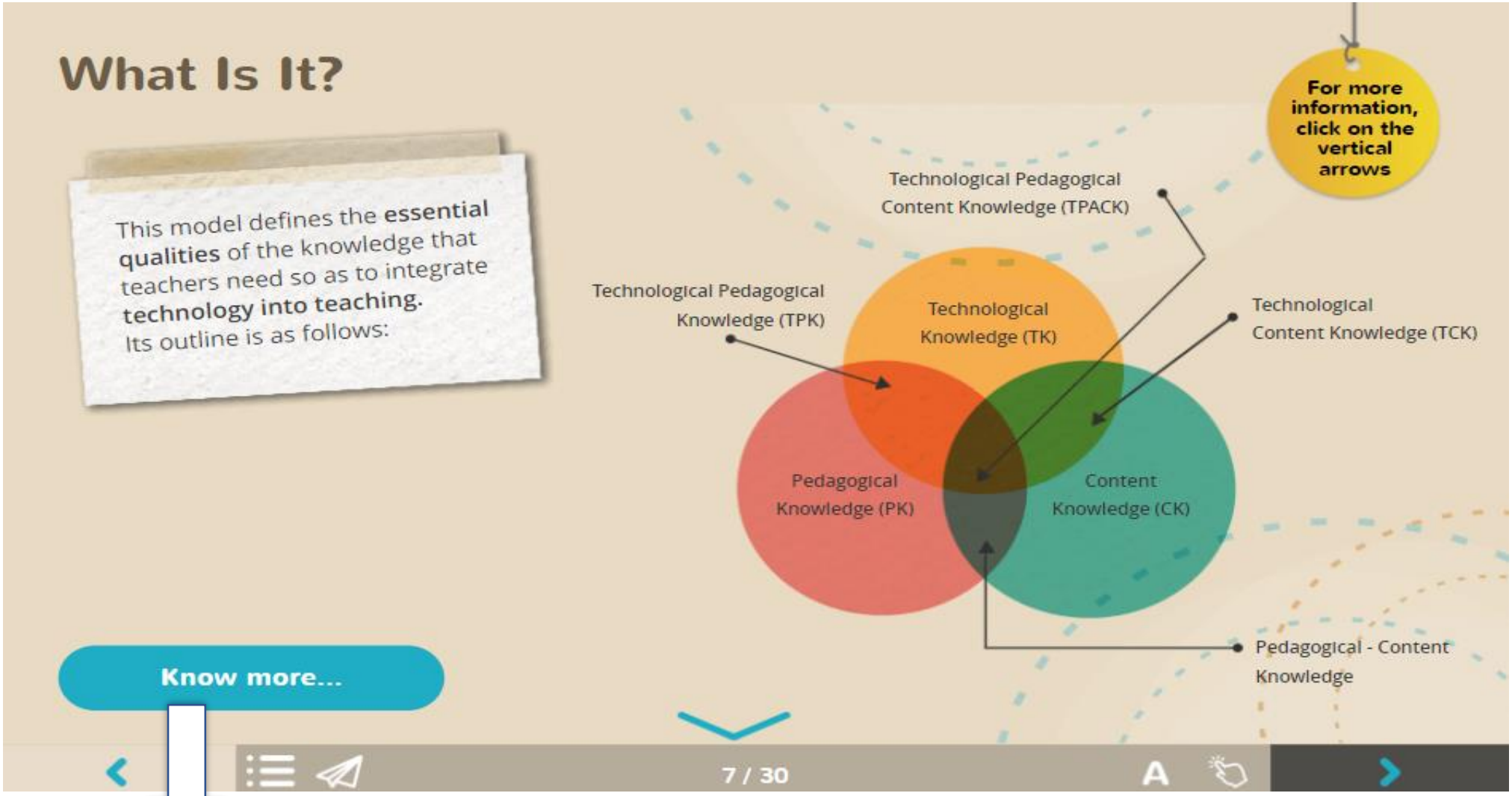




HOW TO APPLY TPACK

You are recommended to refer to the documents part of the "Material" section:

- **TPACK video explained by Jordi Adell.**
- **Learning activities depending on the curricular area.**
- **Methodological guides.**



TPACK MODEL

According to this model, good use of technology in education requires knowledge development. Mishra and Koehler (2006) called it technological, pedagogical content knowledge. But, what does all this mean? Its name is an acronym: Technological Pedagogical Content Knowledge. This is one possible model for managing and planning the integration of technology into the classroom. It represents a core type of knowledge for teachers who work with technology. It is not simply a question of subject experts who use technology, nor technologists who know about pedagogy, nor teachers who have a knowledge of their field or the technology they use. Would you like to know more about TPACK? See the "Material" section for a translated, adapted synthesis.

What Is It?

For more information, click on the vertical arrows

Technological Knowledge

This is knowledge of both **traditional technology** (books, chalk, boards, etc.) and more **advanced technology** (the internet and its applications, digital devices, etc.).



Includes the skills that enable you to do the following using technology:

- Manage files.
- Use IT tools.
- Browse the internet.

This requires the skills needed to be **constantly learning and adapting** to technology updates.

What Is It?

For more information, click on the vertical arrows

Pedagogical Knowledge

This is in-depth knowledge of **processes, methods and practices for teaching and learning.** It also involves the general purposes, values and goals of education.



Including:

- ✓ Management or organisation of classroom dynamics. Development and implementation of pedagogical proposals.
- ✓ Student assessment.

Teachers who have a good understanding of pedagogy understand how their students build **knowledge,** acquire skills and develop habits and the right disposition for learning.

What Is It?

For more information, click on the vertical arrows

Content Knowledge

This refers to knowledge of the **subject to be taught.**



This concept involves knowing:

- ✓ The facts.
- ✓ The fundamental concepts, theories and procedures of the subject.
- ✓ The networks that help explain, organise and connect the concepts.
- ✓ The rules for testing and verifying content knowledge.

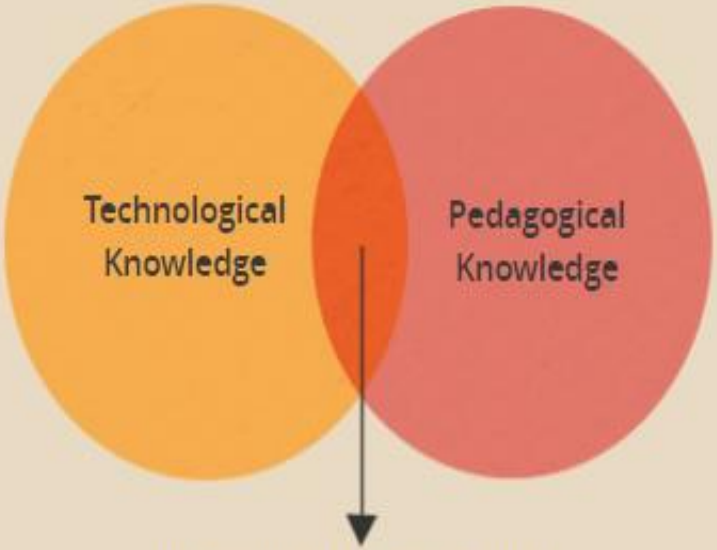
If teachers do not have a proper understanding of the subject they teach, they could pass on **erroneous interpretations** to their students.

What Is It?

For more information, click on the vertical arrows

Technological Pedagogical Knowledge

This is knowledge of **available technology,** its components and its potential for use in teaching/learning contexts. It includes knowledge of **how education can change** when using a particular technology.



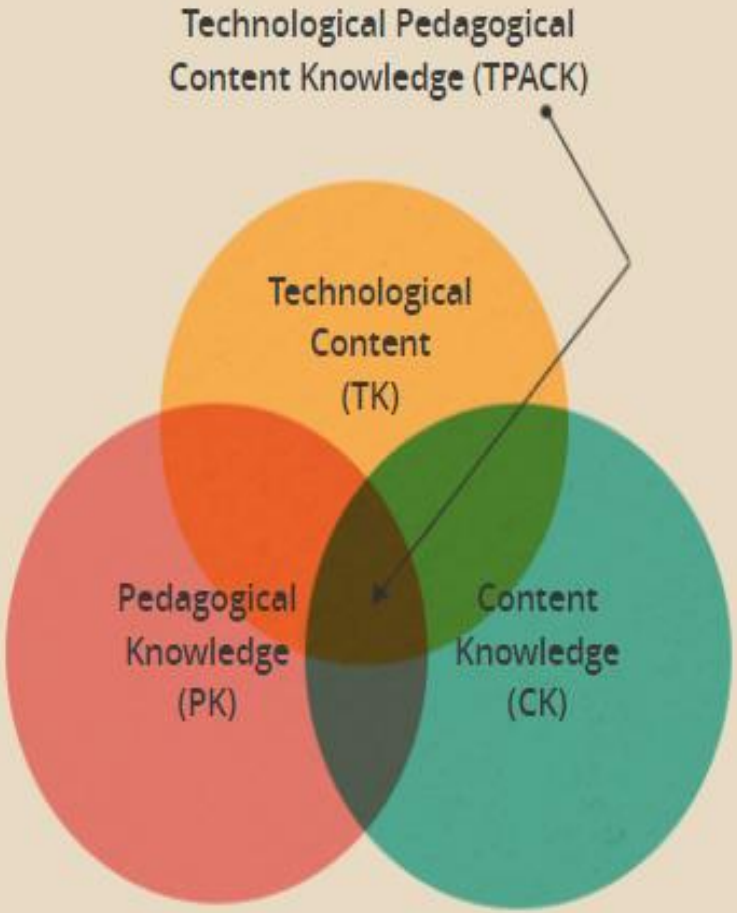
In addition, it involves knowledge about the existence of tools for performing certain **pedagogical strategies and tasks.**

This involves the development of an **open, creative mind** in order to be able to take existing **tools,** which were not always created for educational purposes, and **adapt them.**

What Is It?

For more information, click on the vertical arrows

Technological Pedagogical Content Knowledge



This knowledge enables teachers to develop appropriate **strategies for transmitting** knowledge which are contextualised to suit their students.

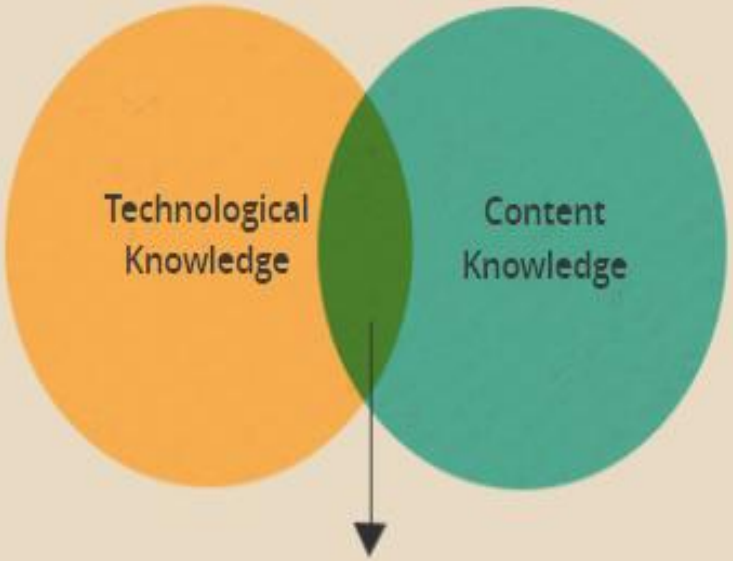
Incorporating technology is not the same as adding new content to the programme. This variation **requires** teachers to **reconfigure** the three components.

What Is It?

For more information, click on the vertical arrows

Technological Content Knowledge

This is knowledge of **how technology and subject content relate to each other**, mutually influence one another, and limit or enhance one another.



Technological Content Knowledge

This includes **being able to choose** which technologies are the best for teaching a certain subject and **how to use them** effectively in doing so.

Teachers need to know how subject content is transformed by the application of a certain technology and how content sometimes determines or changes the technology to be used.

Unit 3

Bloom's Taxonomy



What Is It?

For more information, click on the buttons.

Bloom's Taxonomy (1956) became a **fundamental tool** in structuring and understanding the **learning process.** Some of its key points are:



Cognitive Domain



Affective Domain



Psychomotor Domain

COGNITIVE DOMAIN
Relates to the processing of information and knowledge, and mental abilities.

AFFECTIVE DOMAIN
Refers to attitudes and feelings.

PSYCHOMOTOR DOMAIN
Focuses on dexterous, manual or physical skills

What is the Proposal?

The initial proposal is a continuous process that starts with lower-order thinking skills and progresses to higher-order thinking skills. Each category is described with a noun.



Lower-order thinking skills

Knowledge	Defining, naming, identifying, describing...
Comprehension	Associates, differentiates, contrasts, explains...
Application	Shows, classifies, experiments, discovers...
Analysis	Defines, names and identifies...
Synthesis	Reshuffles, substitutes, reinvents, hypothesises...
Evaluation	Decides, valuates, criticises, justifies, argues...

Higher-order thinking skills



COLLABORATION

In order to be able to work within a collaborative framework nowadays, there are a multitude of tools such as wikis, classroom blogs, collaborative tools for documents (Google Documents), social media (Ning) and learning management systems (Moodle).

If you want to consider some examples, see the "Material" section

The Ability to Remember

The increase in the amount of knowledge and information available means that it is **impossible** and impractical for the student (or teacher) to try to **remember and retain all** current knowledge that is relevant to their learning.



Remembering

Recognising, listing, describing, identifying, retrieving, naming, locating and finding. Using bullet points, highlighting, bookmarking, participating on social media (social bookmarking), searching, googling.

Download PDF

The Ability to Understand

There is a clear difference between remembering – memorising facts and knowledge in their various forms, such as using lists, bullet points, highlighting, and so on – and understanding, which we should **understand** as the **construction of meanings**.



Interpreting, summarising, inferring, paraphrasing, classifying, comparing, explaining and exemplifying. Doing advanced searches, doing Boolean searches, doing blog journalism, using Twitter, categorising, tagging, commenting, annotating and subscribing.

Understanding

Download PDF

The Ability to Apply

Applying relates and refers to situations where material already studied is used in the **development of products** such as models, presentations, interviews and simulations.



Applying

Implementing, deploying, using and operating. Running, uploading, playing, operating, hacking, uploading files to a server, sharing and editing.

Download PDF

The Ability to Analyse

The mental actions involved in this process include **differentiating, organising and attributing,** as well as the ability to establish **differences** between components.



Analyse

Comparing, organising, deconstructing, attributing, delineating, finding, organising and integrating. Recombining, linking, validating, "cracking" and media clipping.

Download PDF

The Ability to Evaluate

This consists of making judgements **based on criteria and standards,** by checking and appraising.



Evaluating

Reviewing, hypothesising, criticising, experimenting, judging, trying out, detecting and monitoring. Commenting on a blog, reviewing, publishing, moderating, collaborating, networking, reworking and testing.

Download PDF

The Ability to Create

This refers to the **gathering together of elements to form a coherent and functional whole.**



Designing, building, planning, producing, devising, drafting and preparing. Programming, filming, animating, blogging, videoblogging, mixing, remixing, participating in a wiki, publishing, videocasting, podcasting, directing and broadcasting.

Create

Download PDF

Unit 4

Lesson Planning



What is the Approach?

How to Plan Applying Bloom's Taxonomy

For more information, click on the buttons.



1. Context



2. Aims



3. Proposal

3

1. CONTEXT

Class with 25 students and availability of one computer/tablet per student.

2. AIMS

- To learn about the components and states of water.
- To identify the stages of the water cycle and the relationships between the different processes involved.
- To analyse the different uses of water by humans.

3. Proposal 3

Remembering	The teacher gives a **multimedia presentation** with the basic information from previous years, as a reminder of what students already know. Students take notes (**word processor**) so as to then make **flashcards** with the information gathered.	Complete lesson (50')
Understanding	Students summarise the material covered in class using a **conceptual map**.	
	Divide the class into groups of about 5 students. Each group is assigned a block of knowledge.	
Applying	More in-depth research will be done. To this end, the teacher designs a **treasure hunt**, composed of links to websites from which the information has to be selected.	Autonomous work outside the classroom
Analyse	Students explain the information they find to the other members of the group. They compare, choose and sort the information so as to make a **multimedia presentation**, which they will then upload to the class **blog**.	Complete lesson (50')
Evaluating	In groups, they will have to comment on the posts made by others in the class **blog**. In groups, fill in the **rubric** for assessing the presentations given to the class by each group.	Autonomous work outside the classroom
Create	As a group, design and prepare a multimedia presentation by bringing together all the blocks of knowledge worked on by the various groups of students. This will be added to the class **wiki**.	Complete lesson (50')

Suggestion: A JClic activity designed by the teacher, as a practical examination (they can reference the information in the class wiki or blog) and a memory test with the most important concepts of the subject matter.

Step-by-step Analysis



Now we are going to analyse this proposal step by step:

1. Place yourself in the **context** (whom you are addressing, where and using what means).
2. Set the **aims** to be achieved, based on the **curricular content**.
3. Show the **methodological strategy**, that is to say, how you are going to teach the content to achieve your aims.
4. Finally, decide on the **activities** to be carried out, and on that basis, which **ICT tools** best suit what you want to do.

Doesn't this remind you of something?
Indeed: the TPACK Model.

Key Aspects

Never forget that, when it comes to planning, do not focus on the tool, but rather, on the people who you are going to teach, and what you want to teach them.

For more information, click on the button.



Know more...

Role of the Teacher

The teacher will need to:

- Give the presentation in the first class.
- Respond to all the questions and queries the students raise.
- Check that they have understood what was explained.
- Evaluate the flashcards and conceptual maps used.
- Use treasure hunts to guide students in the search for information as part of their research.
- Support and assist groups when it comes to choosing and organising the information that student multimedia presentations contain.
- Comment on the multimedia presentations uploaded to the class blog by each group and moderate the comments posted by student groups.
- evelop assessment rubrics for multimedia presentations.
- Design and develop the final multimedia presentation with students.
- Manage the class wiki with the material created.
- Design and assess both the practical examination and the memory test.

In view of all of the above, it is recommended that teachers reflect on their daily planning and become aware of what adjustments they need to make so as to ensure their classes are successful.

Unit 5

Current Trends



Mobile Learning (M-learning)

For more information, click on the buttons.

With the continuous advances in technology and the emergence of new electronic devices, **changes in learning environments** are occurring that are breaking down traditional barriers and modes of action.

One example of this is **mobile learning.**



Remember

What is **truly innovative** is not the introduction of devices as resources, but rather, the **way you work** in class.

What Type of Learning is Involved in M-learning?

This learning goes hand-in-hand with the use of mobile devices: including smartphones, tablets, laptops, and electronic book readers.





M-learning enables you to create knowledge: on any subject, anywhere and at any time.



Features of M-learning

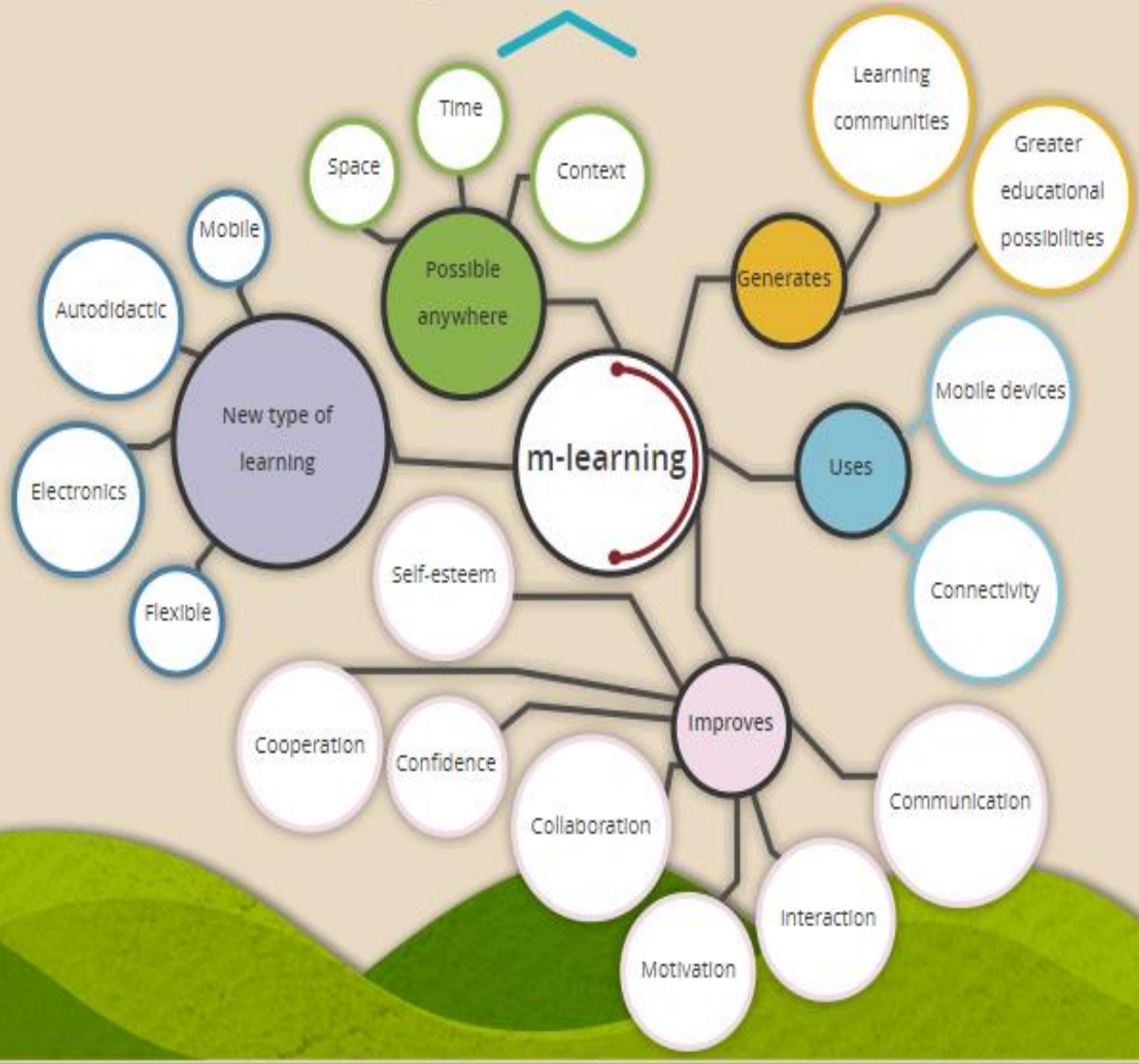
For more information, click on the vertical arrows

This new type of learning **must be viewed as** a type of learning that creates greater **educational opportunities.**



Features of M-learning

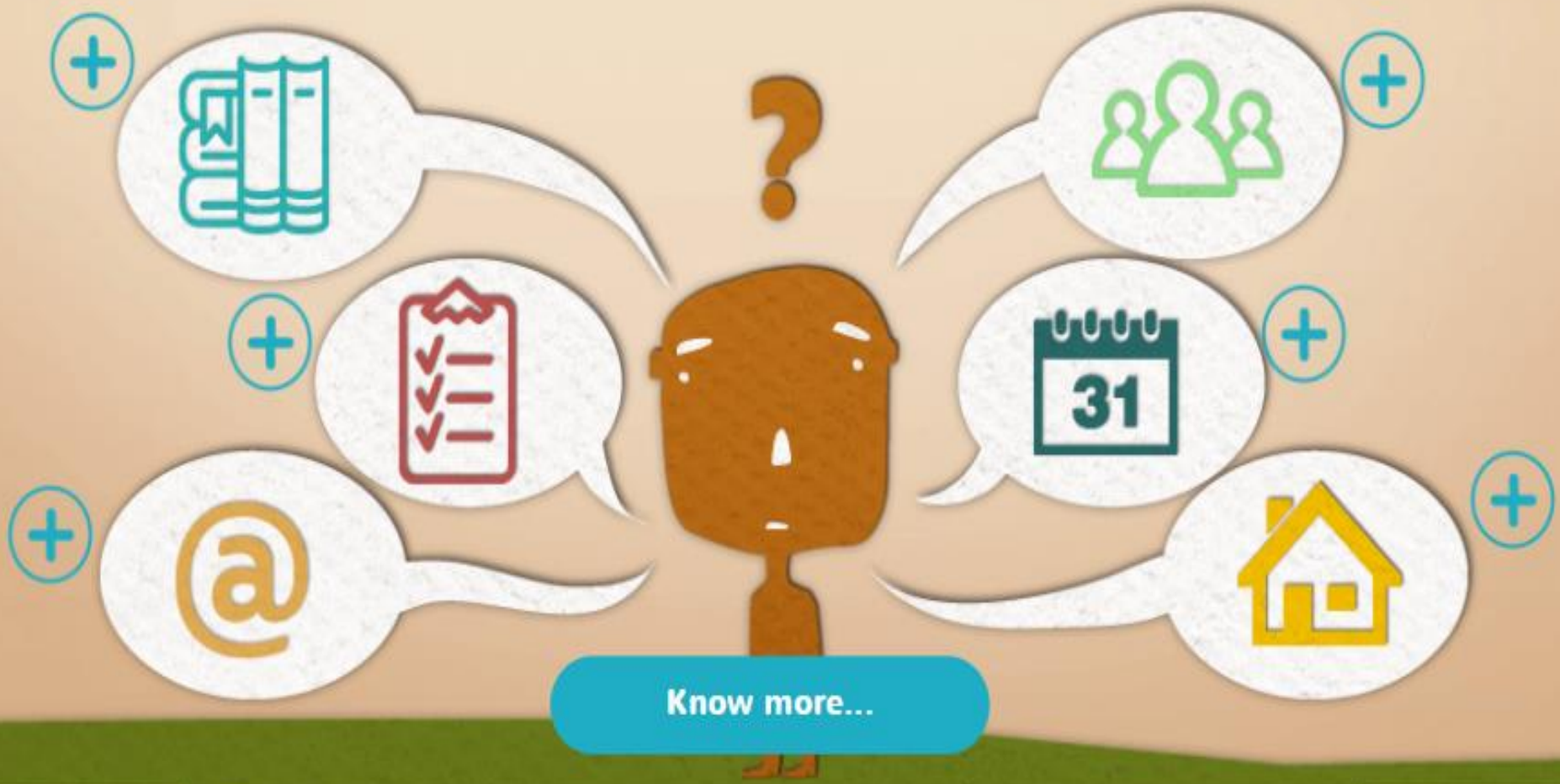
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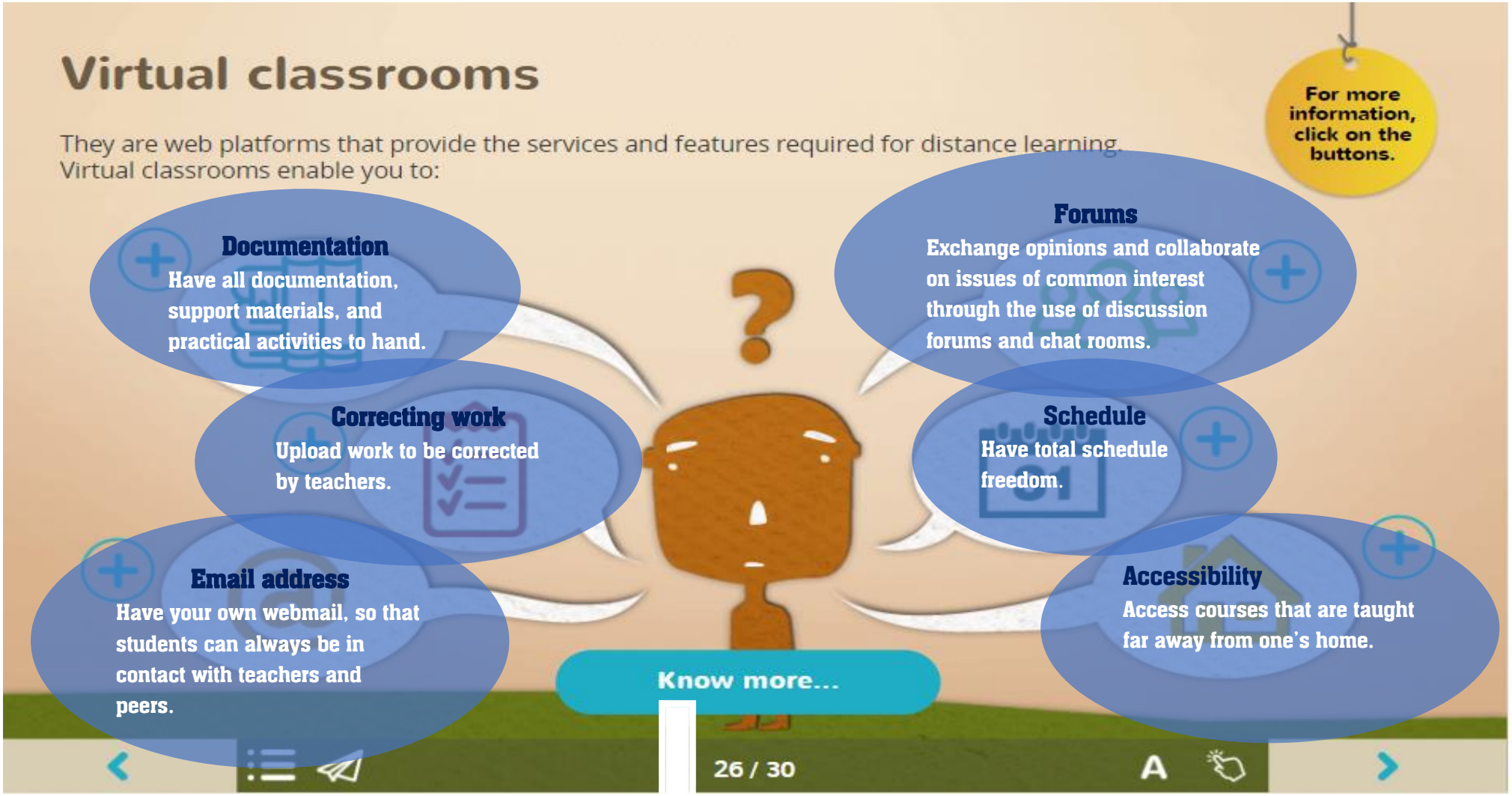


Virtual classrooms

For more information, click on the buttons.

They are web platforms that provide the services and features required for distance learning.
Virtual classrooms enable you to:





DIGITAL TOOLS AND RESOURCES

There are currently many digital tools and resources one can use. In order not to be overwhelmed by the wide range of possibilities and know what each tool is for, you can click on the following links in the "Material" section:

- **A conceptual map** that displays and categorises tools according to the different types of intelligences (Howard Gardner's Multiple Intelligences).
- Different types of **online generators** of educational material (webquests, treasure hunts, comic books, videos, stories, etc.).
- Collection of free **copyrighted tools and web applications.**
- Banks of **free resources** (multimedia, audio, images, videos, etc.).
- Glossary of **150 free tools** for creating educational materials with ICT.

Unit 6

Conclusion



Practical activity

Activity

Choose an item on the curriculum, for example:

- ✓ The Olympics throughout history.
- ✓ Living beings.

Objective

- ✓ Integrate the use of ICT in the classroom.

Results

- ✓ Share your plan with your colleagues in your educational centre.







Summary



- **TPACK** is the basis of good teaching with technology which involves the representation of ideas using technology, pedagogical techniques, knowledge of what makes it easy or difficult to understand a concept and how technology can help to ease these difficulties faced by students.
- **Bloom's Taxonomy,** for the digital age, classifies knowledge skills thus: remembering, understanding, applying, analysing, evaluating, and creating.
- When planning lessons, it is necessary to place yourself in the **context,** to establish **aims** based on curricular content, to decide on a **methodological strategy** and to select the **activities** to be carried out, and on that basis, the most appropriate ICT tools.
- The new trends are mobile learning or **m-learning** and **virtual classrooms,** which are used for distance learning.

Final word

We encourage you to apply project learning in your daily work.

Are you ready to change and/or adapt your lesson planning?

We encourage you to apply this new methodology approach in your daily work.

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

