Ministry of Education - Guyana

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

2020. CARICOM. INNOVATION ROUTE: MEDIUM LEVEL

MODULE I – INNOVATIVE EDUCATIONAL 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

OAS More rights for more people

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.

CONTENTS

KEY TERMS

Please familiarize yourself with the following terms and meaning

1. **Blog:** A website that is periodically updated compiling texts or articles by one or more authors chronologically. Provides the author complete freedom to post whatever they feel relevant.
2. **Freinet teaching method:** Based on group work. The student has the most important role. Cooperation, critical thinking and creativity are encouraged. This method uses learning experiences both inside and outside de the classroom, where students can express themselves freely and take decisions according to their interests and needs.
3. **ICT:** Information and Communication Technology.
4. **Knowledge elements:** Subject: the learner. Object: what they want to learn. Channel: how they learn.
5. **Montessori teaching method:** Students can freely choose the educational activity they want to complete, according to their needs, interests and initiatives. This teaching method is centered on the individual and also encourages discipline and competitiveness among them.
6. **Traditional teaching method:** The main role is that of the teacher, who is always right. The role of the student is to passively receive the information passed on b the teacher without questioning it.
7. **Twitter:** Social network where opinions and information are shared.
8. **Wiki:** Website where pages can be edited by multiple volunteers. Users can create, modify or delete the same text they share. Texts or "wiki pages" have unique titles.
9. **Wikipedia:** On-line encyclopedia.

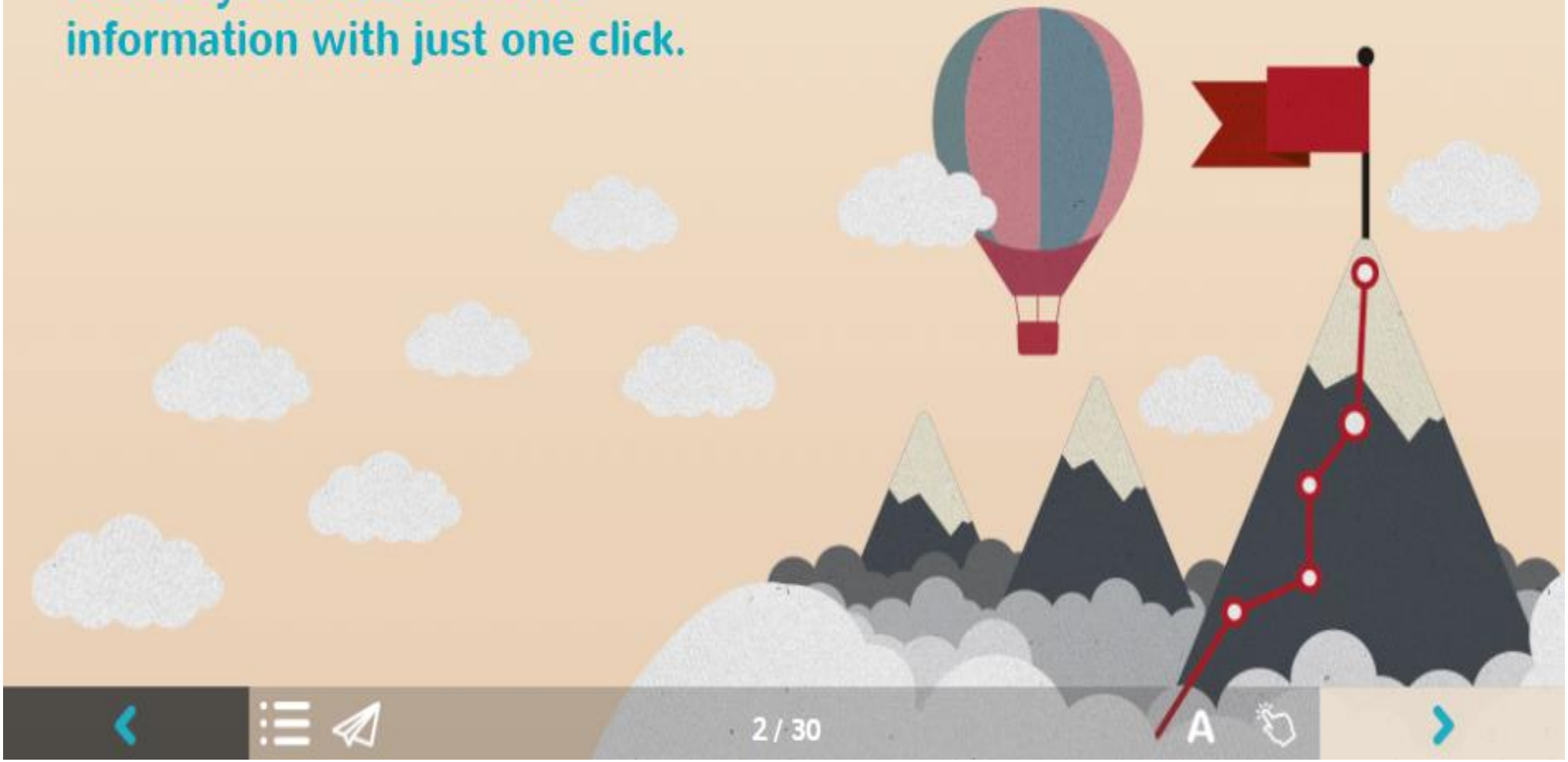
Unit 1

Innovative educational experiences

Starting point

Technological progress and new trends influence our way of living, culture, the way we think and even **the way society perceives the world.**

It is easy to access on-line information with just one click.



Objectives

- To identify the **current trends** in education which can be applied at schools.
- **To extract useful elements from the innovative educational experiences and apply them to the work plan.**
- To identify the technologies currently used in the school environment.
- To indicate the **success factors of innovative educational systems** throughout the world.
- **To develop a work outline based on creativity and innovation tools.**
- **To share experiences and work proposals.**

Unit 2

The new educational paradigm

What is going on?

In **schools**, it is **increasingly hard to convince students** that something is right just because their teacher says so.

Today, children are **more eager to learn.**

The high amount of **options** and **information**, encourages a **higher interest to research.**

These new trends and preferences are paving **the new road** for education.

The role of the teacher

For more information, click on the vertical arrows.

Today, telling students **what they should learn and how** they should do it is not the point, but taking **what they want to learn into account and guiding** them towards the best way of learning it providing them with **tools and additional information** that would help them discover things in an **innovative way.**

The role of the teacher is **key** because they will provide **guidance** to the students so they can acquire the **relevant knowledge and know how to apply it.**

What is the road?

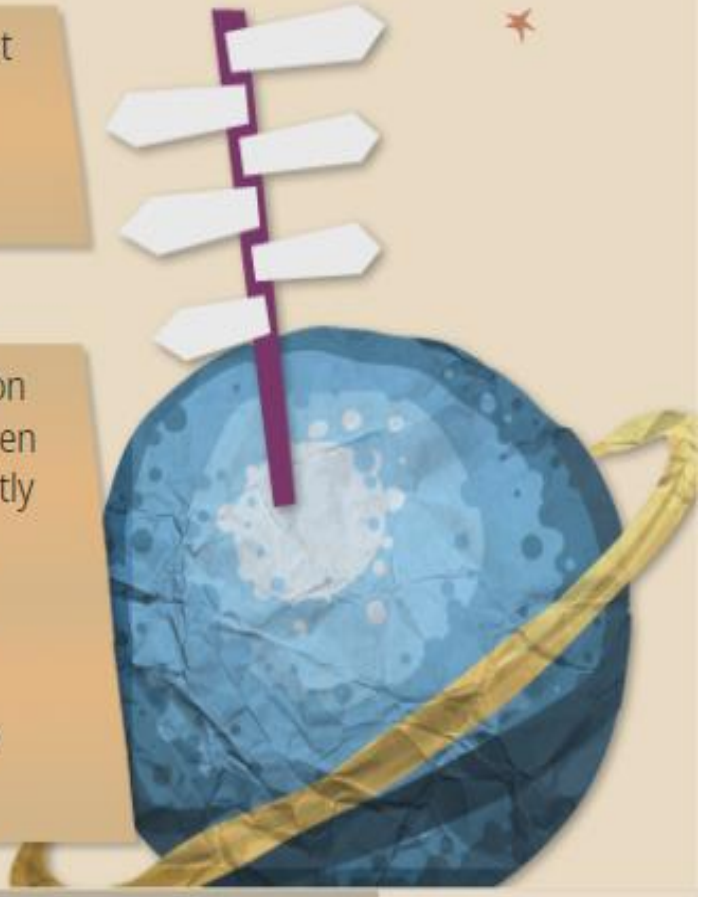
For more information, click on the vertical arrows.

1885

"The **information** we have obtained using traditional **teaching methods** is almost completely **forgotten after six months.**"
Hermann Ebbinghaus (german psychologist), in his *"Study on Memory and the Amount of Information a Person Retains for a Certain Period of Time"*.

1986

"The key is focusing education not on passing on information and contents, but on **encouraging curiosity, the scientific and literary spirits, problem solving;** children should not only hoard information, they must **learn how to innovate,** to constantly change, to play, to try and err and improve, to ask themselves questions and explore, to discover, to dream and fantasise, to invent, to compare, to asses and decide by themselves, to have initiatives, to express themselves in all languages, and, ultimately, **to be themselves**".
David de Prado (PhD in Education Science) in his thesis *"Modelos creativos para el cambio docente"* (Creative Methods for Changing Teaching).



Schools 21

Without connectivity, there are contents that will not be displayed.

For more information, click on the buttons.

Today, as an answer to the new trend in education, there is an increasing number of schools that are implementing a **new way of schooling.**

What is school21?

- They are **innovation centres** that encourage **self-directed and active learning.**
- Students form work groups according to their education **goals** (not to their age).
- There are no subjects as such but a **great variety of activities** they can choose from instead.
- The physical space is a **macro-classroom** with room for a great number of students (in some cases even over 100).
- Time commitments depend on the different **paces of learning.**
- The teacher acts as a mediator, **a guide, an advisor** and support.

This new learning environment reduces academic failure and increases students' success and motivation.

Innovative School Design

Travel to the 21st century school

Knowledge elements

For more information, click on the button.

The new educational paradigm provides for the teacher to encourage **students to be creative** and to assume the **adopt, adapt, create and share** perspective, keeping **three variables** in mind:

Subject

Encouraging the student

Object

To learn more about a chosen topic

Channel

Providing them with the necessary tools (channel) for the topic to remain attractive.

Download PDF

Unit 3

Teaching methods

Which option to choose?

Selecting a **teaching method** is **essential** for the development of creativity.

Which is the most advisable method?

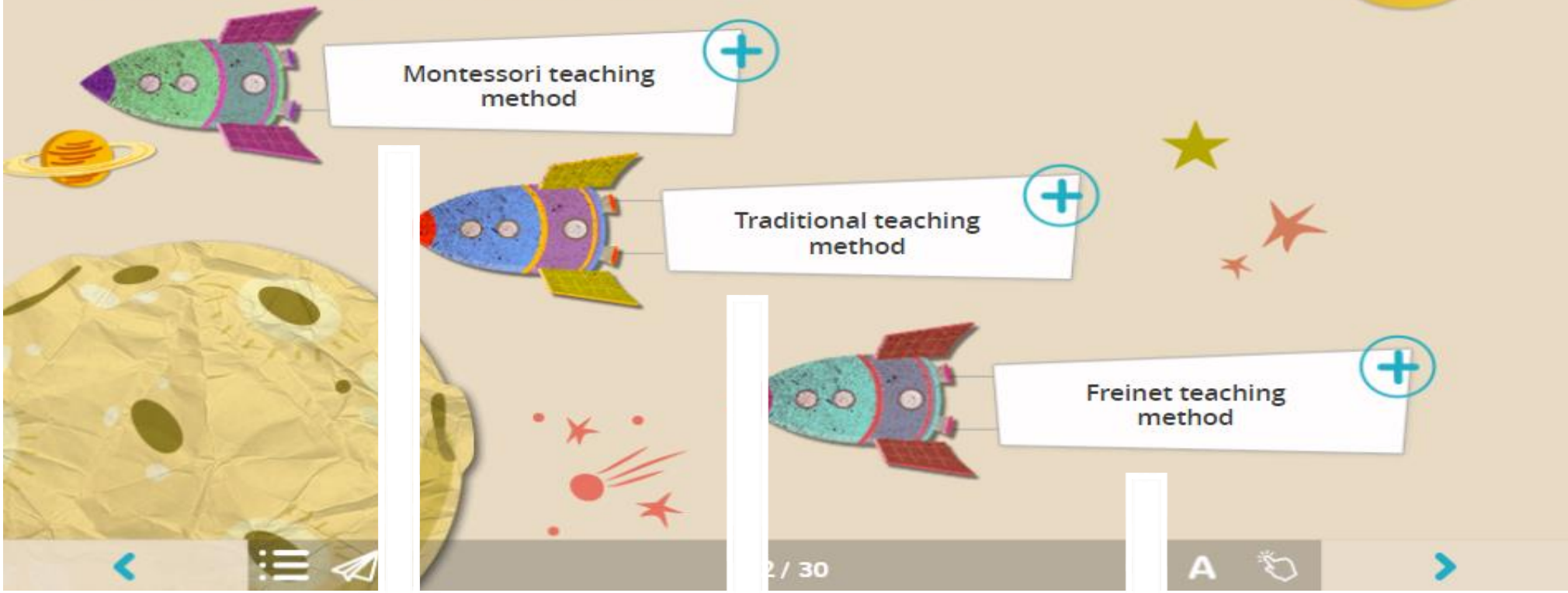
A **study** will help **answer these questions:**

- How were the work groups set?
- What methodology was used?
- What were the results?

Groups

The **main goal** of the study was to establish **which teaching methodology encouraged creativity** in the students the most. **Groups were set** as follows:

For more information, click on the buttons.



Teacher: teaching is focused on the individual, and also encourages discipline and competitiveness among students.

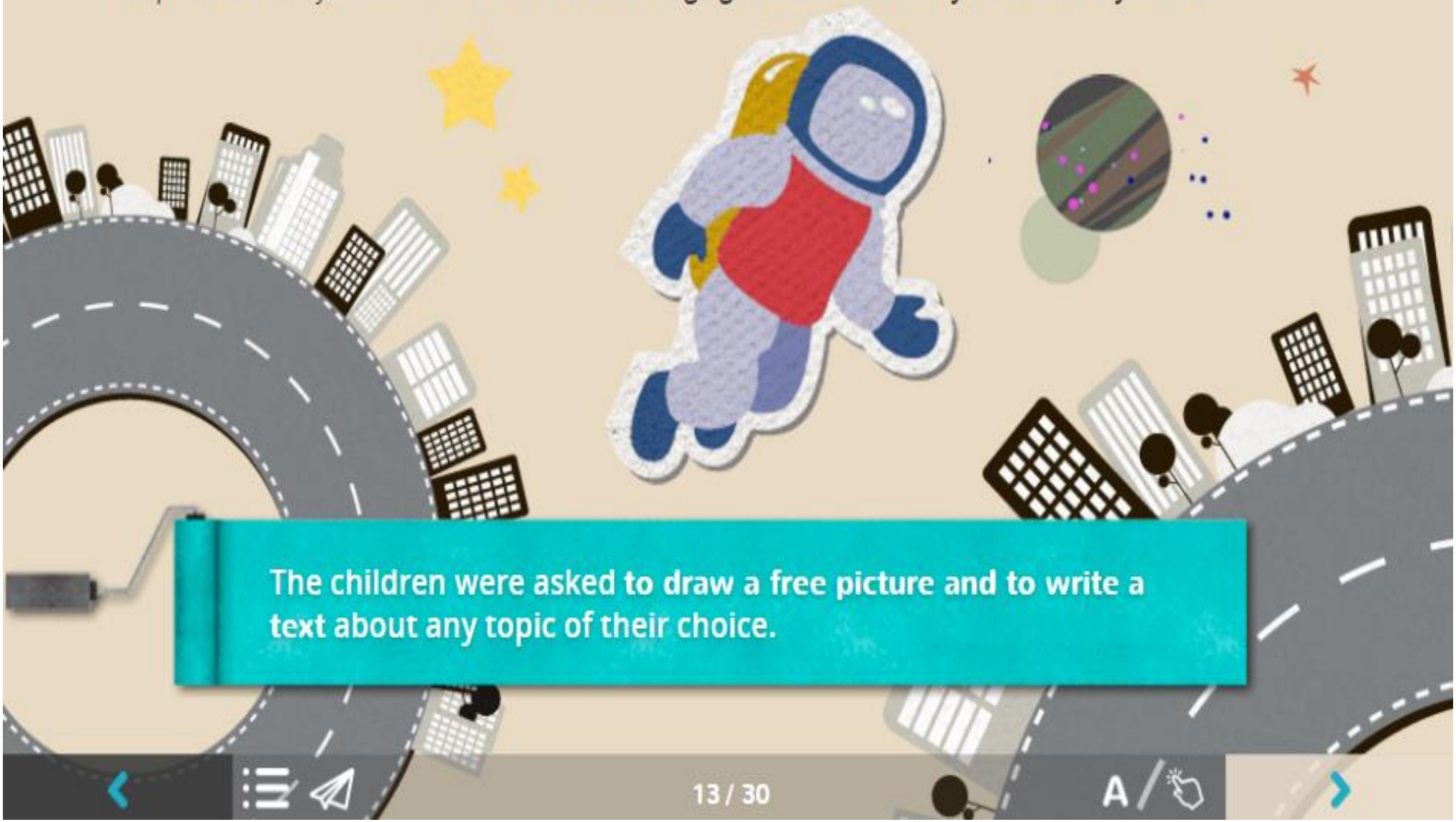
Student: can freely choose the educational activity they want to complete, according to their needs, interests and initiatives.

Teacher: main role. Is always right.
Student: passively receives the information passed on by the teacher without questioning it.

Teacher: encourages collaboration, critical thinking and creativity. This approach uses learning experiences inside and outside the classroom. The student is most important.
Student: can express themselves freely and take decisions according to their interests and needs.

Methodology

The sample of the study consisted of **259 children belonging to the 3rd and 6th year of Primary School.**



The children were asked to draw a free picture and to write a text about any topic of their choice.

Results

Once the activity was completed the following results were observed:

For more information, click on the vertical arrows.

Who found the activity easier and more motivating? Who had more creative and unusual topics in their drawings and texts?

Why did one method make students more creative?

Which group found the exercise harder and had fewer creative ideas?

Creativity

For more information, click on the vertical arrows.

When faced with the question: who found the activity to be easier and more motivating? Who had more creative and unusual topics in their drawings and texts?

Célestin Freinet created the Freinet method. He suffered a lung injury during war that limited his breathing ability. For this reason, when he became a primary school teacher he had to find **teaching methods that differed from the traditional ones, so he did not have to speak much.**

For more information, click on the vertical arrows.

Freinet method

Students who learned using the **Freinet method** scored the highest in the **creativity section.** But, why?

Cooperation is encouraged because when faced with problems, the students **exchange idea** with their groups and they **take decisions** based on group ideas.

They use a **big amount of materials and activities** used by teachers in their classes. For example:
Photography, film and slide projectors, records, radio, television, cinema, theatre, puppet theatre, special edition books, workshops, study trips, etc.

The **students** are the **raw material** of the class. Children are provided with **freedom** to **choose** how the **class** should be built. **Respect rules** are kept and guidelines are provided but decisions are taken by the students.

For more information, click on the vertical arrows.

Traditional and Montessori teaching

Students attending traditional teaching schools and Montessori schools had **fewer ideas.** Why was the exercise harder and encouraged fewer creative ideas?

Elements that encourage creativity

The **environment that fosters freedom and respect** towards the **students' abilities and interests.**

The democratic and cooperative style of classroom academic activities.

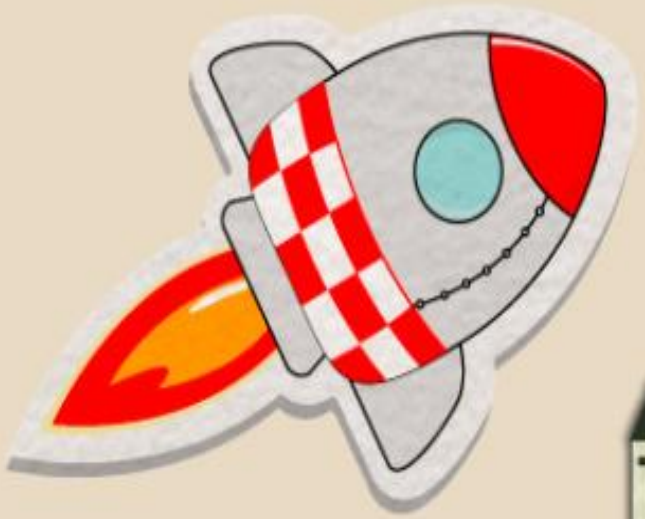
Traditional teaching styles use an **authoritarian environment** that ignores the individual interest and abilities of students. The **teacher is the only one** who is able to **take decisions** about the tasks to complete, which encourages **heteronomy.**

A good methodology

In order to approach the Freinet methodology there are four points that must be taken into account:

For more information, click on the buttons.

- Attitude towards problems
- Use of information
- Use of materials
- Working atmosphere



ATTITUDE TOWARDS PROBLEMS

- Making problems faced by the students make sense for them.
- Motivate students to use their creative potential.
- Raising awareness about how important using creativity in daily life is.
- Inviting them to analyse problems from different angles: redefining them in a more appropriate and different way and stimulating curiosity.

USE OF INFORMATION

- Highlighting how important applying knowledge is, and not only learning them by heart.
- Encouraging student participation to discover new relationships between the presented problems and situations.
- Assessing the consequences of their actions and their peers' ideas.

USE OF MATERIALS

- Using innovative support and materials that stimulate their interest.
- Using anecdotes and stories as analogies and change approaches during class.

WORKING ATMOSPHERE

- Generating a calm, friendly and relaxed atmosphere in the classroom.

An example of innovation

Music schools have always tried to encourage student creativity, not in vain the great composers have always been considered creative geniuses.

Know more...

For more information, click on the button.

Some did not considered music as a key element in the development of creativity. A study that shows children's **creative ability** when encouraged to create new things was created for them. In this case, **creating a new song was the goal.**

THE MUSIC SCHOOL

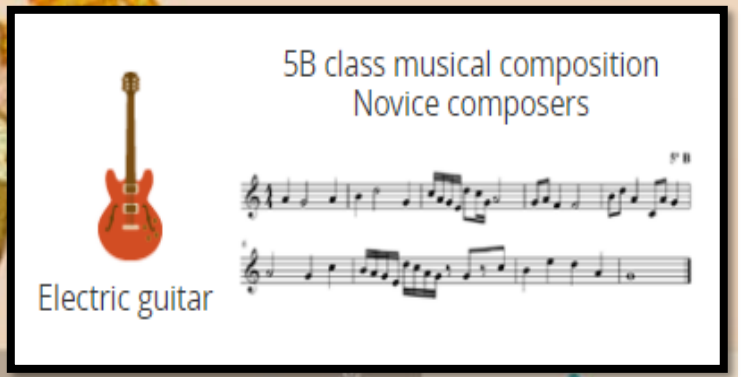
The sample for this study consisted of 102 students attending 5th and 6th grade, between ten and twelve years old.

Methodology

- **Team work to create a musical composition.**
- **An interactive digital whiteboard was used to facilitate score building.**
- **The teacher indicated the tools to be used to build the score but provided total freedom as for melody, lyrics, musical instrument and song title.**
- **The activity was carried out in groups where all the children participated in the score creation and in the end, they decided the name of the song and the musical instrument to play it.**

Result

Small art works were obtained.



Unit 4

Education excellence

Singapore

According to the OECD **PISA** survey (Program for International Student Assessment), Singapore scored higher than the rest of the countries in the 2016 PISA survey that assessed **quality, equality** and **efficiency** of education systems.

It stands out in the **three** assessed **disciplines: Science, Mathematics and Reading.**

For more information, click on the buttons.

It showed that 1 out of 4 Singaporean students had a higher level performance. The average in the OECD member countries is 1 to 10.

Singapore allocates **20% of its annual education budget,** around 7,000 million Euro in 2013, approximately **3% of the GDP** of the country.

Know more...

Example

SOME CRITICISM OF THEIR EDUCATION SYSTEM

"Education in Singapore achieves excellence at the students' expense", says José Daniel García, teacher and education researcher who lives in the country.

"Family and school pressure is so strong children are almost unable to socialise", he affirms.

EXAMPLE: WORK IN THE CLASSROOM

- "If you think Mathematics is hard you will not be successful", says a 10 year old Singaporean.
- He is presenting the Mathematics lesson alongside with his fourth-grade classmates in the Woodgrove Primary School.
- The whole class has been working on the same problem and then the students, one by one will stand in front of the class and will explain how they tried to solve it.
- Additionally, they do it in English, one of the many languages spoken in Singapore.
- This activity proves that there is more than one way of solving the problem, and it shows them.
- "If we only watch what the teacher is doing we will not be able to solve any problem when we are older", affirms another student.

Unit 5

ICT in the classroom

What is ICT?

ICT is Information and Communication Technology. It is the full group of physical tools, like computers, and non-physical ones, such as the Internet, for example, that are used to facilitate communication and information exchange.

For more information, click on the buttons.

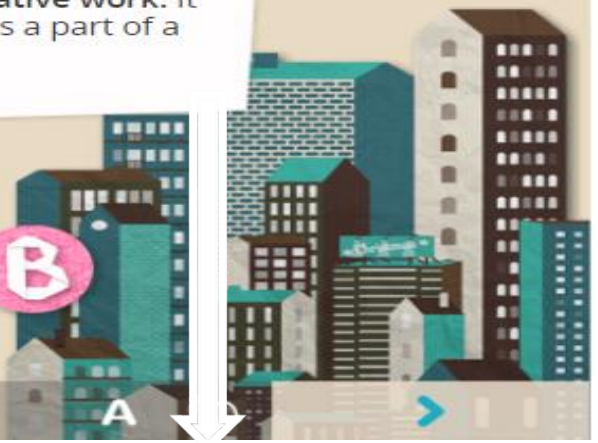
Know more...

A

They have encouraged the development of **collaborative work.** It is now possible to work as a part of a **multinational team.**

B

They **have revolutionised the world** and the **frontiers to knowledge have almost disappeared.**



20 / 30

DID YOU KNOW THAT?

The Internet was created in 1969 by the US Department of Defence so the different bodies of the nation could communicate. The main goal was for messages to be divided and each part would be sent through a different channel for enhanced security.

There are different e-learning platforms offering a virtual classroom. Some examples:

- Moodle is one of the more popular ones. Based on free software.
- Chamilo software helps create a virtual campus to provide on-line or blended courses. Their products are free and have no cost.
- Caroline is one of the oldest e-learning platforms. Free software that demands no special ability to create classes. It is quite easy and intuitive to manage. It offers different tools for collaborative learning.
- Atutor was born from the need to provide education to those ¡who suffer a disability. Open source software. One of the disadvantages of Atutor is that the little information it has is only in English.

REVOLUTION

The world turns faster thanks to ICT, we are obtaining information more and more easily, we pose more questions and therefore, we expect faster responses.

COLLABORATIVE WORK

This makes it easier to build new concepts, hypotheses and even whole projects in which there is not a single opinion or idea, but rather multiple knowledge and experience contributions.

Teachers can also benefit, as it allows them to share information about new teaching methods, learn about new trends and the ability to create new methods for their students.

On-line learning

On-line learning is becoming increasingly popular because it helps students access information no matter where they are.

For more information, click on the buttons.

WHATEVER...

This kind of programs highly encourage students' creativity, as they must be selfdriven and have initiative in order to find the information they need.

WHENEVER...

On-line learning is usually managed using interactive platforms where teachers would upload materials on topics that will be used in class so the students read them. They also provide practice materials and basic guidelines for the completion of class tasks o projects.

WHEREVER...

Some platforms go beyond that and provide access to different electronic research channels, such as, on-line book compilations, bibliographies, drawing tools and map building tools, among others.

EXAMPLE

If you could develop an on-line platform for your students, what do you think you could do to encourage them to use it?
For example: adding games, opening a chat offering tips for task completion, etc.

How to use ITC?

ITC should not be regarded as a tool designed solely for engineers or experts, **as a teacher you can use it too.** You can develop a project using very simple or very complex ITC. How?

For more information, click on the buttons.

Basic Level

Intermediate level

Advanced level

BASIC LEVEL

Using multimedia disks, the Internet and videos:

- Science: The human body and health. 5th grade.
- Goal: organising groups to research what are the main organs in the nervous system and how they work using the multimedia disk "The Human Body" and Internet links.
- The research process must be organised and then presented before the other groups in the classroom.

Bringing the students closer to the possibilities it provides for:

- Technology: 7th grade.
- Goal: students should create a text about the technologies they are acquainted with and how they use them in their daily life. You should also suggest what technologies could be used in the classroom.
- To conclude which could be the best technological tool to use in schools, texts will be shared in class.

INTERMEDIATE LEVEL

Using on-line meetings to build knowledge:

- Literature: 7th grade.
- Goal: creating an on-line environment to exchange ideas to build an article on the last class reading that would be published in the school newspaper. An individual would be in charge of compiling and organizing the ideas for publishing.
- On-line meeting rooms allow to see the file being worked on while exchanging ideas using the chat.

Encouraging email exchange:

- Goal: gathering a group of experts in a field so the students could exchange emails with them and have their topic specific questions answered.
- The time frame of the activity would be limited to two weeks for the email exchange. After that period of time, the students should present the exchanged emails as well as a solution to the primary question.

Multimedia presentations:

- Goal: organizing the students in groups so they present a specific topic using software or on-line tools, such as Power Point.

ADVANCED LEVEL

Creating a class blog or website:

- Creating a blog about the topics that have been dealt with in class and those that will be addressed in the future, with the help of your students. The blog will serve as a guideline and study reference for the students.
- It should include an opinion section so the students can obtain feedback about the page.

Posting your students' work:

- Post your students' work using on-line tools. If it is a video, you can use YouTube, if it is a text you could use an opinion blog on the same topic, if it is a presentation, use Slideshare.
- Students will feel proud of their work being posted and it will encourage them to work with new formats to be present in web pages.

Before posting pictures or videos photo rights must be taken care of. We must have their consent, or their parents consent if they are under age.

The Potential of the Internet

The aforementioned are just examples, it is for **you to decide** how the **available technological tools** will be used. Additionally, the potential of the Internet and the social networks for information sharing is incredible, as shown by data:

For more information, click on the vertical arrows.

YouTube

An average of 80,000 videos are uploaded daily. Users watch around a million videos a day.

The Potential of the Internet

The aforementioned are just examples, it is for **you to decide** how the **available technological tools** will be used. Additionally, the potential of the Internet and the social networks for information sharing is incredible, as shown by data:

For more information, click on the vertical arrows.

Twitter has around 45 million users. More than 600 million tweets are posted per month.

The Potential of the Internet

The aforementioned are just examples, it is for **you to decide** how the **available technological tools** will be used. Additionally, the potential of the Internet and the social networks for information sharing is incredible, as shown by data:

For more information, click on the vertical arrows.

facebook

Has over 300 million users.

The Potential of the Internet

The aforementioned are just examples, it is for **you to decide** how the **available technological tools** will be used. Additionally, the potential of the Internet and the social networks for information sharing is incredible, as shown by data:

For more information, click on the vertical arrows.

Google

Owns 6% of Internet traffic. 70% of searches. 32 billion enquiries per month. Google Books publishes 1 million books per year.

Unit 6

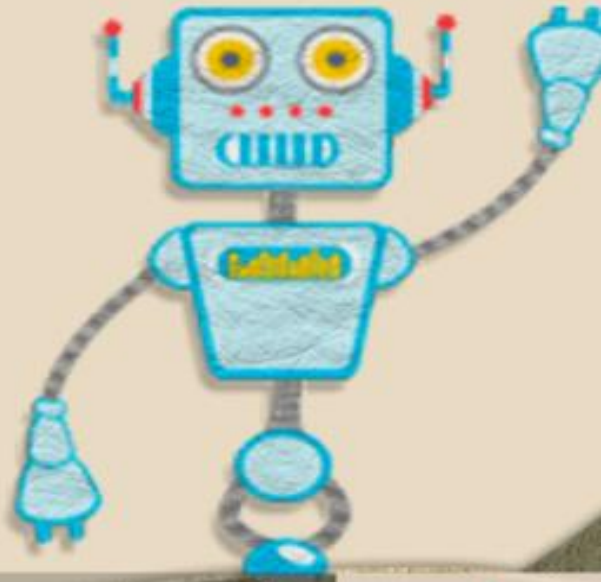
Applying creativity

The Dilts and Baetson model

For more information, click on the button.

This model states that innovation is a challenge and that, as such, it influences the behaviour of those who decide to implement it. There are 6 clear parameters that impact the behaviour and the way change is met:

- **Belonging:** what are the collective values that turn us into good teachers?
- **Identity:** what will be the implications of an innovative project for the way we are?
- **Values:** what ideas or principles encourage us to fulfil the project?
- **Skills, abilities and resources:** how to make the project? What is needed?
- **Actions:** where do we begin? What do we do?
- **Environment:** what are the expected results for the students that will benefit/ be affected by the project?



Know more...

25 / 30

IN WHAT WAY DO THEY INFLUENCE?

These parameters influence the way the teacher will act when faced with a project that tries to change the way he teaches. The point is to identify the influencing factors and how to act when faced with them.

The analogy

Comparisons of **similarities** between two things, mental tools that help us spy ideas to improve and innovate.

What analogies can you find between elements of nature and existing products? Lets have an example. Think about a hummingbird.

Unit 7

Farewell

Summary

Students from the 21st century are different from those from **the last century.** Differences are increasingly bigger.

Some schools use different methods **to create a better learning environment for their students.** It is surprising how small changes provide for excellent results. For example, applying the **Freinet method** in some schools has **developed students' creativity,** significantly differentiating them from all those who attend traditional schools.

Remember that there is room for **innovation** in the future occupation of the students, just as there is in their present student life.

Practical activity

Activity

Set out an academic innovation project. Use all the tools and methodologies you have learned.

- **Topic:** How to improve students' attention in your class?
- **Objectives:** What do you want to obtain?

Objective

- Analysing all teaching methods.
- Researching additional methods.
- Applying the analogy method and relating your problem to possible solutions provided by existing models.

Result

Once you have completed the project, share it with your colleagues so you can receive additional information and you have the opportunity to assess different points of view.

Final word

We encourage you to implement innovative educational experiences.

Are you ready to implement an innovation culture in your classroom?

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