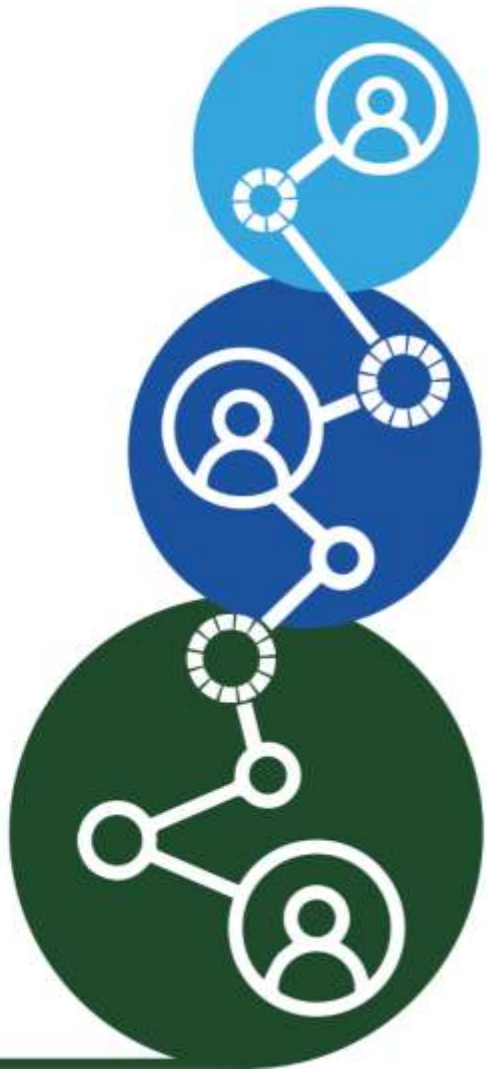
SYNERGY AND ENVIRONMENT TO EMPOWER DECENTRALISED SCHOOLS

GREEN·S.E.E.D.S

TOOLKIT GREEN S.E.E.D.S.

MODULE 5
Seeds for Networking

UNIT 2
Cloud-based teaching and learning



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GREEN S.E.E.D.S. - Synergy and Environment to Empower Decentralised Schools, www.greenseeds.eu

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1. Training of the national responsible (5-6.03.2020)
2. Training of the teachers at local level (1.04.2020 – 31.06.2020)

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PARTNERS

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UNIT 5.2

CLOUD-BASED TEACHING AND LEARNING

Marisa is an experienced primary-school teacher who has been sent to a rural school for this school year. In it, there are 25 students, aged 5 to 12. It is strategically located in a mountainous area, sharing townhall services with three other schools located in a radius of 25 km. Marisa is worried by the organizational characteristics of her classroom: few students and different ages, which makes the use of active methodologies and cooperative learning difficult. How easy it would be, both for the students and for her, if the classrooms had more students, if they were organized by age, if the schools were closer, or if there were more teachers. It is inevitable that comprehensive education requires teamwork and the collaboration of the entire education community.

In this account, one can identify the feeling of isolation and the difficulty of imagining a collaborative project, both by students and teachers, due to the numerical variety of students at the same level. Although multi-level classrooms have a series of advantages and can be taught using diverse methodologies (as set forth in *Module II. Seeds for Teaching*), on occasions it is important that those working together are of the same age, are doing the same studies, and present the same interests. At the same time, teaching requires collaborative work aimed at both the design and development of formative proposals for the students for whom they are responsible. Collaboration opportunities may be of different natures (teaching, innovation, research, management, etc.) with different professionals involved (specialist teachers, area or grade coordinators, management team, etc.) and following different models, exactly as laid out in *Module III. Seeds for Managing*. As Lavié, (2006), says, schools are places for collaborative work.

This is to say that the teaching profession means working on a team, whether to 'provide our students with quality education (...) it is required that among the people we teach there be certain common approaches as well as sufficiently-consistent criteria and principles for action. These requirements are not possible without sufficient coordination provided by collaboration through teamwork' (Antúnez, 1999: 94);

IT resources provide support.

On the other hand, today it is normal to recognize the benefits of digital tools and networks, both in terms of communication (focus of unit *4.3. Technology mediated Communication)* and for productivity and collaborative work. These tools can be an option so that, as in the previously explained case of Marisa, working in a team is possible, despite geographical distance.

This unit will attempt to bring you closer to a new concept, *cloud computing*, and to available, free web tools, all while exposing you to the WebQuest methodology, which has already been explained in unit *5.1. WebQuest: an active methodology supported on the web*, in this project, titled *SeedQuest,* which is explained below.

1. SEEDQUEST

Title: *"In the cloud", to teach and learn.*

Author: CIES Group (University of Vigo, Spain. http://webs.uvigo.es/grupocies).

Language: English, Spanish.

Description: This SEEDQUEST shows experiences and web resources which allow working in groups, distance collaboration and productivity, both by students and teachers.

1.1. INTRODUCTION

Image 1: Graphical representation of Cloud Computing (Needpix.com, copyright free)

In today's information and knowledge society, information and communication technology are key to educational processes taking place both in formal and informal education. They represent new possibilities in terms of teaching and learning, a personalized education, and opportunities to collaborate with the entire educational community.

Cloud Computing is the concept utilized to refer to a technological system which makes it possible to store, access, and use IT programs and resources located in a webspace also known as 'the cloud'. Internet connection is essential. Currently, there are for-pay technological systems, such as *Google Cloud Platform* (https://cloud.google.com/) as well as free ones, although the majority of these have certain limitations (for example, in terms of storage capacity or the number of subjects in a connection, etc.). In this SeedQuest we will see some of them.

In an educational context, cloud computing becomes a methodology which allows the user to document, communicate, produce, share, collaborate and learn about different types of content (narratives, visuals, sounds, audiovisuals, animations, and more). With this, physical location (the space where you find someone) is no longer relevant. Nor is the time (the moment when you connect to 'the cloud to solve a particular piece of groupwork).

1.2. LEARNING OBJECTIVES

- Get familiar with the web tools which allow for collaboration and productivity on networks of diverse teams.
- Know about educational experiences related to the Internet and different digital resources can facilitate/favor groupwork at rural and/or dispersed schools.
- Mitigate the feeling of isolation by taking advantage of the opportunities offered by IT, and communication, technology.

1.3. TASKS

TASK 1. EDUCATIONAL POSSIBILITIES. Explore the resources which interest you and adapt these to your class's needs, available in the project *Cool Tools for School* (*Resource 1*). Each topic or "thing" will include:

- An introduction, describing what it is.
- Some tips and ideas about how the tools can be used in school libraries, education and/or for personal use.

- Resources to explore.
- A short activity to complete.

Give a presentation using *SlideShare* (*Resource 2*) on the tools you have used (a minimum of 5 and a maximum of 10) For each of them state:

- What tool it is
- Where it is available
- How it can help you in your classroom

TASK 2. WEB TOOLS. Familiarize yourself with web tools (*Resource 3*) which allow for the collaborative creation, annotation, revision, and storage of documents as part of the teaching-learning process.

Create a wiki on Wikispaces (*Resource 4*) organized by knowledge area. For each of these carry out of use proposal for including specific content with different tools, explaining:

- What tool it is
- How it can be used in that particular knowledge area

TASK 3. EXPERIENCES ON THE CLOUD. Analyze two experiences applying cloud computing to the world of teaching:

1. The project *Rural School Cloud* (*Resource 5*), particularly the final report. This project experimented with the use of various types of technology (cloud computing, open software, and mobile devices) in 12 rural schools in 6 different countries.
2. The project, *Network of schools on the cloud* (Resource 6) that links 4 rural school networks (CRAs) which count on 23 schools in Galician.

On the collaborative mural (*Resource 7*) indicate what products or services would help your school, why, and how they could be used.

TASK 4. REFLECTION. Create a conceptual map (*Resource 8*) representing the opportunities and difficulties which may arise from putting an educational experience based on *Cloud Computing* into practice. You can analyze these through three lenses:

TECHNOLOGY, i.e. online tools and resources.
PEDAGOGY, i.e. what is learnt and taught.
THE PERSONAL, your own reflections and opinion.

1.4. PROCESS

The process to follow is based on active participation and the development of skills related to searching, selecting, analyzing, and evaluating the information presented via the proposed resources.

Although the toolkit this unit is immerged in is individual in nature, WebQuests are fundamentally a methodology for group development. As such, it is recommended that the activities of this SeedQuest be done in groups with classmates. You can work with teachers from the same school or other ones.

This SeedQuest is organized around four activities which must be completed in the order they are formulated, by using the resources mentioned in the Resources section and taking into account the established evaluation criteria.

1.5. EVALUATION

This SeedQuest will be evaluated following the completion of the activities, which will each make up 25% of the grade.

LEARNING OUTCOMES

Understand how collaboration and productivity can be developed through appropriate technology resources.
Contrast different technological tools that enable group productivity at a distance

KNOWLEDGE ACQUIRED	SKILLS ACQUIRED	COMPETENCES ACQUIRED
Concepts related to Cloud Computing Notions on how to use the Cloud in the classroom Practical experiences with Cloud Computing in the areas of knowledge	Handling of presentation software Handling of collaboration software Skills to search, process, organize and analyze information	Digital competence and media literacy Ability to collaborate and work in groups Analysis and reflection capacity Project management ability

The criteria to bear in mind are those indicated below.

ACTIVITY	EVALUATION CRITERIA
1. CREATE A SLIDESHARE PRESENTATION ...	- SlideShare is used - At least 5 tools are mentioned - Where said tools are available is stated - How each of these tools can help in the classroom is explained - The information contained in the presentation is correct - The presentation is sufficiently aesthetically pleasing
2. CREATE A WIKI ON WIKISPACES...	- It uses Wikispaces - Wikis are organized by knowledge area - The different web tools for different knowledge areas are pointed out - Its existence is justified because a it is particular web tool which can be used in a knowledge area
3. ESTABLISH ON A COLLABORATIVE MURAL...	- Padlet is used in the creation of a collaborative mural - It lays out what products and services will serve the school - It justifies why they serve the school - They show how these resources might be utilized
4. CREATE A CONCEPTUAL MAP...	- A conceptual map shows opportunities for *Cloud Computing.* - Conceptual maps show the difficulties of *Cloud Computing.* - They reflect a technological point of view, with reference to web resources and tools. - They show the pedagogical viewpoint of Cloud *Computing.*

- They include a personal opinion and reflection.

1.6. CONCLUSION

C*loud computing* is a good alternative for groupwork at geographically isolated schools, fundamentally because:

1. It only requires simple and centralized access to virtual services, archives, programs… the use of online tools in remote teams.
2. It makes it possible for teachers and students from different schools to collaborate and contributes to improving school networks.
3. It offers students technology-based education opportunities.
4. It allows teachers to create learning communities based on digital technology, as well to develop teaching skills and active methodologies.
5. It supports learning based on *anytime, anywhere*, with learning being a continuous process which goes beyond schooltime and physical locations.

Nonetheless, we note two significant difficulties when implementing this methodology. Firstly, how to ensure data stays private, and secondly, the reality that rural schools, in many occasions, are characterized by being isolated and not having a good web connection.

This SEEDQUEST includes web resources and user experiences, based on *cloud computing,* which means learning about tools which make storage, productivity, and collaboration possible. We hope that having experienced the completion of this SeedQuest has served to be able to imagine others and to understand the teaching-learning process associated with them.

1.7. RESOURCES

The following is a detailed explanation of the resources for solving the tasks laid out.

RESOURCE 1 TO SOLVE TASK 1

Cool Tools for School. https://cooltoolsforschool.net/
A group of New York State School Library Systems has compiled many of the web-based services and networking tools that are currently available and explore how they can be used in a K12 setting.

RESOURCE 2 TO SOLVE TASK 1

SlideShare. https://es.slideshare.net
Website for uploading and sharing, privately or with the general public, PowerPoint presentations, Word documents, OpenOffice, PDF's, Portfolios. Recently a function called Zipcasts, which is a conference system through social media which allows presenters to broadcast an audiovisual signal while giving online presentations, was added.

RESOURCE 3 TO SOLVE TASK 2

Cool Tools for School. https://sites.google.com/view/cool-tools-for-schools/home
Repository of free online resources organized into four topics: ♦ Cool Tools for teaching and learning, free tools to use for education, sorted by purpose. ♦ Cool Resources for teachers and learners, tools to use in your classroom, sorted by subject area and interest. ♦ Cool Add ons and extensions for education, Google Add Ons and Extensions to use for education. ♦ Cool Embed Codes to personalize your Site using HTML.

RESOURCE 4 TO SOLVE TASK 2

Wikispaces. http://www.wikispaces.com
This software is for creating and administrating wikis, and is, at the same time, a platform to store them on. Personal accounts are free, with a storage limit of 2GB.

RESOURCE 5 TO SOLVE TASK 3

Rural School Cloud. Synthesis final report. https://e-learning.cesga.es/rsc/wp-content/uploads/sites/5/2015/05/RuralSchoolCloud_handbook_EN.pdf
Project for collaboration between centers and supporting learning with student-centered projects and teaching. It connects 12 rural schools from 6 different countries: Denmark, Spain, Greece, Italy, Macedonia, and the United Kingdom.

RESOURCE 6 TO SOLVE TASK 3

Network of schools on the cloud. https://e-learning.cesga.es/escolasnanube/en/proyecto/
This project aims to build a real "learning community in the cloud", where small networks of schools are brought together thanks to technology, to share resources, activities, communicate and learn together in a very usable environment.

RESOURCE 7 TO SOLVE TASK 3

Padlet. https://padlet.com/
This is a collaborative blackboard or interactive poster which allows you to publish, store, and share different types of resources.

RESOURCE 8 TO SOLVE TASK 4

Bubbl.us. https://bubbl.us/
Tool for creating conceptual maps, which can be exported as images or webpages, in digital or print format.

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Antúnez, S. (1999). El trabajo en equipo de los profesores y profesoras: factor de calidad, necesidad y problema. El papel de los directivos escolares. *Revista Educar*, 24, 89-110. https://ddd.uab.cat/pub/educar/0211819Xn24/0211819Xn24p89.pdf

Lavié Martínez, J. M. (2006). Academic Discourses on School-Based Teacher Collaboration: Revisiting the Arguments. *Educational Administration Quarterly,* 42(5), 773-805.
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TO LEARN MORE

ENGLISH

Rural School Cloud, https://e-learning.cesga.es/rsc/

100 digital tools and services that are used in colleges and universities to underpin education, https://www.toptools4learning.com/edu100/

Bidwell, N.J., Reitmaier, T., Marsden, G., y Hansen, S. (2010, April). *Designing with mobile digital storytelling in rural Africa.* In *Proceedings of the Conference on Human Factors in Computing Systems* (SIGCHI) (pp. 1593-1602). New York: ACM. doi 10.1145/1753326.1753564

SPANISH

Top 100 de las herramientas 2.0 para educación, http://goo.gl/h8rLJS

100 herramientas de la web 2.0 para el aula, https://goo.gl/29TRNb

Herramientas 2.0, http://aula21.net/aulablog21/herramientas-2-0/

Informe síntesis Rural School Cloud https://e-learning.cesga.es/rsc/wp-content/uploads/sites/5/2015/05/Rural

SchoolCloud_handbook_ES.pdf

Del Moral, M. E., Villalustre, L. y Neira, M. R. (2014). *Variables asociadas a la cultura innovadora con TIC en escuelas rurales*. Profesorado. Revista de Currículo y Formación del Profesorado, 18(3), 9-25..... https://www.ugr.es/~recfpro/rev183ART

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