INNOVATIVE TOOL FOR RURAL SCHOOLS - VIRTUAL CLASSROOM

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Abstract

The article presents the application of a virtual classroom in a rural school in collaboration with other institutions. The Erasmus+ Strategic Partnerships project to develop a virtual classroom in a rural school aims to create a virtual collaborative space where rural schools can support each other and immediately fill their gaps in terms of teachers, content and activities. The idea involves not only the technological environment, but also the surrounding community, which is primarily made up of rural schools and other organisations active in the field of education and rural development.

Keywords: Education, classroom, innovative, rural, virtual.

Introduction

Education processes plays a significant role in maximizing individual's potentials (I. Amosa, M. James, and C. Olubode, 2013). It is important to highlight that virtual schooling brought a different perspective to the teaching and learning experiences for rural classrooms. Furthermore, virtual schooling reminds that technology integration is a social, not technical problem, largely hindered by how technologies reify or disrupt existing power and organizational arrangements. What is missing from virtual classrooms is less particular technologies but educational practices with the same technologies (Squire, K. D., 2021).

The design of virtual learning is based on the conceptual frameworks of dialogue, structure and autonomy. Dialogue, based on a humanistic approach, where the implication of humanistic approach in education is how to educators encourage students to think critically and act according to the values of humanity (Firdaus, F. A., & Mariyat, A., 2017), is linked to student communication and student engagement in educational activities, because only through active participation in dialogue is successful learning possible, and students' reasoning, debating, and critical thinking skills develop. The principle of structure involves detailed planning, systematic organisation and development of virtual meetings, calendaring, time-keeping, control, i.e. the responsibility of the students to participate. The principle of autonomy allows the learner to act creatively in the virtual learning environment, with independent tasks and decision-making (Gedvilienė G., Vaičiūnienė V, 2016).

Indeed, during virtual teaching/learning, there should be mutual interaction between teacher and student (Simonson et al., 2015). Virtual teaching is making a breakthrough in pedagogy and is effective in that it focuses on the role of the self-learning student (Coombe P. (2017).

Motivating students to participate, engage socially and discover themselves in a virtual learning environment is essential. It is also important to build positive relationships and develop supportive classroom communities (Greenan K.A., 2021).

EU rural virtual classroom

The systematic development of technologies, the abundance of various sources and forms of information and the technological skills acquired during the covid 19 pandemic influence the need for virtual learning not only in general education schools, but also in remote rural schools.

The EU Rural Virtual Classroom project - number 2021-1-ES01-KA220-SCH-000023731 is strongly anchored in ICT, has an innovative approach to face educational deficiencies in rural areas: a collaborative virtual space in real time where rural schools can support each other, filling their deficiencies in teachers' shortage, content, and activities immediately.

Project aim to focus on education in rural areas, where 28% of the EU population lives. In these areas the early dropout rate is higher than in urban areas (12% as opposed to 9% in urban settings). Rural areas also face other challenges such as insulation of centres, less students, insecure facilities, or fewer materials which reinforces the need to target rural education.

Rural schools, as well as their students and teachers and the educational community, are the direct beneficiaries of the project and will benefit by improving connectivity and educational resources. Likewise, public and private entities will benefit from the project indirectly.

Project partners: Vytautas Magnus University, Associaco d'Initiatives Rurals de Catalunya, Universidad de la Inglesia de Deusto Entidad Religiosa, Roscommon Integrated Development Co. Ltd t/a Roscommon Leader Partnership, Instituto Omnicompresivo di Bobbio Capoluogo.

Methodology

Within the framework of the Rural Virtual Classroom (RVC) Erasmus+ project an inventory of best practices in education has been developed for rural classrooms. This inventory corresponds to Work Package 2 (WP-2), Best practices Study and includes methodology. It shows the process of identification, selection and analysis of best practises.

The search for best practises started with selection of information. It was focused mainly on scientific articles published in indexed journals of impact in education. In addition, reports and documents from international organizations (e.g. European Commission, Unesco, Unicef, etc.) that provide relevant information for the proposed objective were selected and reviewed. To simplify the research for information, certain keywords facilitated the identification of relevant publications. To enhance the search Spanish words were also included in the keywords.

Keywords	
Target / Population	**Intervention / Context**
Rural education, Primary school, Rural school, Rural community, Family, Student Teacher, Community.	School activities, ICT, Educational resources Educational deficits, Collaborative learning, Education project, Active learning, Training project, Virtual classroom, Good practices Best practises, Impact, Evidences.

Fig. 1 Keywords for the search

In the Figure number 1 it is seen that while searching for the information, two categories of keywords were used for the search – words describing target or population and words about context/intervention. Keyword were kept simple, consisting of 1-2 words only, to not overcomplicate the search, narrow it also to be as clear as possible to get the best results.

The bibliographic sources chosen for the search were:
Scientific databases, such as Scopus, Web of Science (WoS) and Education Recources Information Center (Eric); Erasmus+ projects; Toolkits; European projects; Other education-related organizations.
Based on analysis of scientific literature it was considered that a best educational practice can be defined as an exemplary education intervention, that guides the teaching process supported by actions already carried out and with satisfactory results. For the identification of the best educational practices, only those that met the following requirements have been considered in elaboration of this repository:
- o   It produced conclusive results when implemented.

o Evidence of social impact has been identified, meaning that there are scientifically endorsed evidence.

o The social impact required from these practises had to reflect the improvement in academic success, individual and school well-being, motivation, social cohesion of the community and families also promotes equity and inclusion.

o A best practice must be sustainable, whose social, economic and environmental requirements must be maintained over time and produce long- lasting effects (Unesco, 2021).

o Finally, a best practice should be replicable, i.e. to serve as a model for developing educational policies, initiatives and actions in other places and contexts (Includ-ed Consortium, 2015).

To summarize, the methodology for researching the best practises that would be used in Rural Virtual Classroom (RVC) Erasmus+ project was clearly defined. Specific keywords were used in the search to narrow it down and get the best results possible. These keywords were utilized in scientific bibliographic sources to find relevant scientific literature for the project and to create a database of best practises. However, not all scientific articles describing best practises have been considered as a reasonable example. A definition of best practices term was established and examples of best practises needed to met certain requirements to be considered applicable in this project, therefore that means that only the best of good practises will be applied at rural schools during the implementation of this project.

Structure, content and delivery of virtual learning in rural schools Implementation

Activities are planned to achieve the desired results in EU_VRC project are organized into work packages (WP) co-managed by all partners. The WP are executed according to the planned schedule of 24 months in an orderly manner, generating specific results needed to reach final products.

WP1 - Project Management: Signing of contracts, design and implementation of project management and monitoring manuals, preparation of interim and final reports. Project monitoring, preparation of interim and final reports. Design of dissemination and exploitation plans, , IPR agreement, monitoring and evaluation tools. Result: Management tools and Project management. Month 1 - Month 24. Leader: Estela Cantabria.

*WP.2- Good Practice Inventory***:** Systematic search in scientific literature, research and training projects of European Commission, as well as other international databases. Input Collection of form partners as well as from existing rural education networks in Europe and internationally. Purpose of the study: source of information for development of project´s platform. Collection of information/resources for professional development rural teachers. Result: Publication of report, list of resources to be uploaded in teachers' area. Month 2 - Month 4 Leader: Deus to.

WP 3- Platform Design: Logical and functional design of Collaborative Rural Learning Space with 4 areas. Area of collaborative exchange for joint educational projects, area of online multigrade classes/workshops, area of professional development and resources for rural teachers, community area. Design assessment and validation process with teacher's experts group (associated partners). Outcome: Final design of the Product. Assessment by the expert group. Month 5 -8. Leader: Estela Cantabra.

WP.4 - Technical development: IT, technological and functional development of the product, internal testing, testing of programmable routines, incorporation and testing EU languages, partners training on platform operation. Result: Collaborative Rural Virtual Learning Space Collaborative (in the 4 languages of the partners). Multi-grade classroom delivery area (in all EU languages), Training of partners in the use of the platform. Months 9 -14 Leader: Estela Cantabria.

WP.5- Pilot testing. To pilot an educational project among the participating schools, for primary schools' pupils (multigrade) to learn English language. Participation of observers (expert teachers, parents and researchers). Outcome: Implementation of the pilot test, Evaluation Questionnaire to participants, collection of evaluation data. Months 9 -14 Leader: RLP and Institute di Bobbio.

WP.6- Dissemination and Exploitation: Design and Implementation of Dissemination Plan and Intermediate and Final Dissemination Report, Project information leaflet, Project presentation card, 4 newsletters at key points of the project. Design and Implementation of Exploitation Plan: parallel actions of dissemination (national database with key contacts to exploit the results), signing of intellectual property agreement, coordination of exploitation events (half-day events, at least 15 participants where the project and its results will be presented) Results: Dissemination and Exploitation Plan, Intellectual Property Agreement, 5 Multiplier Events, Final Exploitation and Dissemination Report, 1 key database for each partner. Virtual Classroom Community: Launching of the virtual community around the collaborative Rural Virtual Classroom, inclusion of information about the project in the

Estela Cántabra (Spain)	Associació d'Iniciatives Rurals de Catalunya (Spain)	Istituto Omnicomprensivo di Bobbio (Italy)	Universidad De Deusto (Italy)	Roscommon LEADER Partnership (Ireland)	Vytautas Magnus university (Lithuania)
VET Communities	Educational communities	Public National institutions	Public Regional Institutions	Public Regional Institution	Public National Institutions
Government bodies	Rural schools	Rural schools	Regional education communities	Universities	Educational centres
Policy makers	Public Regional Institutions		National Education Related Asociation	Rural schools	Rural schools
VET centres			Rural schools		Universities
Communities					Research centers

e-twinning and school education gateway platforms. Leader Associació d'Iniciatives Rurals de Catalunya Month 1 – 24

WP 7- Quality management: design and implementation of the Quality Control Plan and tools. Results: Quality Plan, control questionnaires. 5 Intermediate Reports and 1 Final Report. Leader: VMU Month 1 – 24.

Exploitation database

EU Rural Virtual Classroom project's consortium is composed of six partners from four European Union countries: Spain, Italy, Ireland and Lithuania. All the partners have a long experience in EU-funded projects and that is one of indicators, that this project will be successful and sustainable. The overall sustainability of the project will be ensured with project's exploitation within each partner.

The main goal of project's exploitation is to ensure that the virtual platform will be used after the project is over. Each partner of the project had to establish a database which will promote the widespread use of the product inside each country and be a foundation for effective exploitation.

Fig. 2. Exploitation database

By looking at the exploitation database it is visible, that each partner chose different target groups where the project could be applied. By analysis of the database it is clear that the project's partners from Spain chose two strategies, how to exploit created platform's use. Estela Cantabra will exploit project more wider with government institutions – government bodies, policy makers, VET centres and communities. The Associació d'Iniciatives Rurals de Catalunya on the other hand concentrated more on regional public bodies – rural schools, educational communities and public regional institutions. In this way it will be ensured that exploitation will be more expanded and ensure that wider network of institutions would be reached and benefit from this project implementation.

According to the information seen in the Figure nr. 2, partners from Italy will take more regional approach to exploitation. Istituto Omnicomprensivo di Bobbio will concentrate only on public national institutions and rural schools, because it is organization based on rural schools in Italy. As a university Universidad De Deusto have a lot more connections with various public regional institutions linked with education that is why it chose to exploit project to rural schools, regional education communities, education related associations. Although these two organizations are different, they will exploit project according to their organization's background and will include various regional institutions from Italy that will benefit from this project.

Project partner from Ireland - Roscommon Leader Partnership is an organisation that brings together key development projects including rural enterprise, development and social inclusion that is why it chose to exploit project to various public regional institutions, universities and rural schools. It chose only regional institutions, because this organization concentrates only working in one regions in Ireland – county Roscommon.

Similarly to university in Italy, Vytautas Magnus university from Lithuania will also exploit project to organizations mainly related to education – educational and research centres, other universities and schools. The exploitation

by university will also reach public national institutions linked with education and through them it is believed that project would reach even more schools located in various areas in Lithuania.

To summarize, in order to ensure successful and sustainable exploitation of EU Rural Virtual Classroom project's results all the partners will take steps and exploit project to various organizations. The exploitation database analysis shows that project's partners focus not only on rural schools, that already cooperates with partners, but also on other national, regional and public organizations that would spread project result more wider geographically to other schools that could benefit from this project. It is also seen that partners choose involve organizations to database according to what type of organization the partner are – public organization like Roscommon Leader Partnership and Estela Cantabra, chose to exploit project to governmental institutions while universities chose organizations linked with education and development. Nonetheless analysis of the database shows, that exploitation will involve many institutions, that would ensure effective process of exploitation and sustainable project existence after its implementation.

Project's results

A virtual European rural collaborative learning space for rural schools (initially aimed at primary education) will be created that will consist of:
a) Area of exchanging offers and demands of collaborative educational projects
b) Teaching area of workshops / classes in real time structured for multigrade classrooms
c) Area of professional development and resources for rural teachers
The project will also start a community around the space created with an initial adhesion of 100 members (schools, entities and professionals / entities from the educational field and relevant rural development).
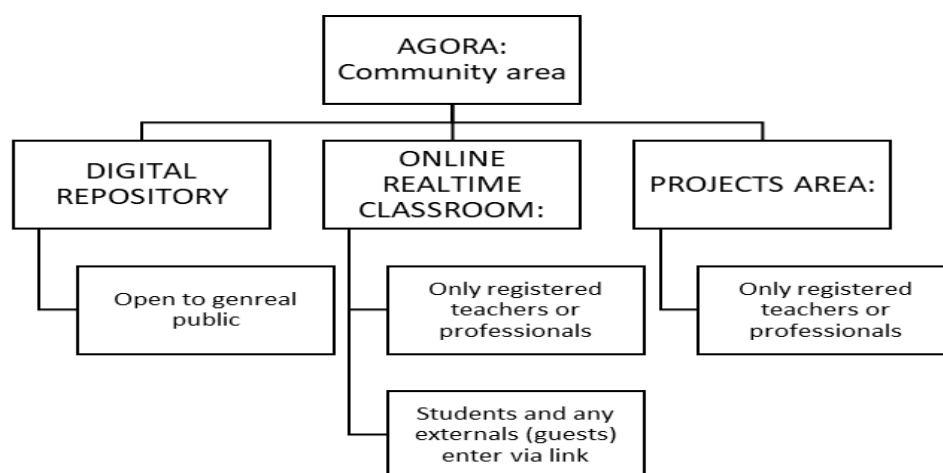

Fig. 3. Platform structure

The space will be multilingual, schools will be able to freely agree on the language in which they will carry out their educational projects. All virtual area will be protected by EU data protection legal regulations (3 fig.).

Conclusions

- With the rapid development of technology and the proliferation of information sources and their forms of delivery, the significance of distance learning is undeniable, as it impacts on the quality of learning, changes the culture of university studies and is often a major contributor to the shaping of this culture. Since the information consumer is involved in the communication process with a specific intention, his behaviour and values require a deep and consistent analysis.
- Virtual learning, as a contemporary phenomenon, is closely linked to the new information technologies, which are radically changing the quality of life and having a major impact on education in schools. Virtual learning is an

effective tool for promoting learning. It is therefore essential to apply it to the technological development of rural schools.

- The latest technology and the opportunities it bring with it allow students to learn remotely, to interact with each other and with teachers.

The use of virtual learning can facilitate the solving of learning problems of students in rural schools and can form the basis for innovative learning in this area.

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