Developing Digital Competence and Media Literacy through PBL: Web 2.0 tools used in #DigitalEU – we'll do! eTwinning project

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Abstract

This article discusses the role of digital literacy in education. It reviews previous framings of digital and media literacy, European policies on developing key competences and it suggests how these could be developed through eTwinning projects, presenting examples of activities and Web 2.0 tools from #Digital EU – we’ll do! eTwinning project (awarded both nationally and at a European level).

Zusammenfassung

Dieser Artikel diskutiert die Rolle der digitalen Kompetenz in der Bildung. Es überprüft frühere Rahmenvorstellungen der Digital- und Medienkompetenz, europäische Strategien zur Entwicklung von Schlüsselkompetenzen und schlägt vor, wie diese durch eTwinning-Projekte entwickelt werden könnten, und präsentiert Beispiele für Aktivitäten und Web 2.0-Tools von #Digital EU – we’ll do! eTwinning-Projekt (verliehen auf nationaler und europäischer Ebene).

1. Introduction

Media Literacy and Disinformation was the annual theme of 2021 on eTwinning. Both students’ and teachers’ need to gain competences in this area has increased since the pandemics and the eTwinning platform has become the place where teachers and students develop these competences and also, learn how to be safe online, while sharing and collaborating with their European peers.

In this article, we have made an inventory of the European policies and strategies to help teachers and schools become digitally aware, due to the importance of digital literacy in today’s education. Therefore, we will present a few successful initiatives of using Project-Based Learning as means of raising awareness about topics such as Fake News and Disinformation and to develop media literacy and digital skills. We also listed the Web 2.0 tools used to collaborate in the #DigitalEU – we’ll do! eTwinning project. This project was carried out in the 2020-2021 school year (it was founded on 12th of February 2021 and the activities were held until the end of April 2021, on the eTwinning platform). The project was awarded with First Prize for Digital Citizenship (as part of Romanian National eTwinning Prizes, 2021) and with one of the 22 prizes offered as part of The 68th European Competition (Digital EU – and you?), organised by European Movement Germany.

2. Theoretical foundation

Competences are a combination of knowledge, skills, and attitudes. The National Education Law (1/2011), Appendix 1 – The list of terms and expressions definitions used in the law - defines competence as “the proven ability to select, combine and use adequate knowledge, skills and other acquisitions consisting of values and attitudes, to successfully solve certain categories of work or learning related situations, in addition, to develop professionally or personally in terms of effectiveness.
and efficiency”. The Praxeological Dictionary of Pedagogy (Bocoș, M.-D. (coord.), Răduț-Taciu, R., Stan, C., Chiș, O., Andronache, D.-C., 2016) describes competences as the result of a dynamic process, being specific to a situation and having the capacity to be adapted to other situations, almost isomorphic with the current situation and belonging to the same family of situations: “Being competent means knowing how to act qualitatively, efficiently and promptly in a category / class of similar or atypical situations”.

The European Council (in Council Recommendation of 22 May 2018 on key competences) defines key competences as “those which all individuals need for personal fulfilment and development, employability, social inclusion, sustainable lifestyle, successful life in peaceful societies, health-conscious life management and active citizenship. They are developed in a lifelong learning perspective, from early childhood throughout adult life, and through formal, non-formal and informal learning in all contexts, including family, school, workplace, neighbourhood and other communities”. The key competences, which are equally important for the development of individuals, are, as shown in table 1:

<table>
<thead>
<tr>
<th>Key competences</th>
<th>Skills embedded throughout the key competences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literacy competence</td>
<td>Critical Thinking</td>
</tr>
<tr>
<td>Multilingual competence</td>
<td>Team-Work</td>
</tr>
<tr>
<td>STEM competence</td>
<td>Problem-solving</td>
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<tr>
<td>Digital competence</td>
<td>Communication skills</td>
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<tr>
<td>Personal, social and learning to learn</td>
<td>Negotiation skills</td>
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<tr>
<td>Learning competence</td>
<td>Analytical skills</td>
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<tr>
<td>Citizenship competence</td>
<td>Creativity</td>
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<tr>
<td>Entrepreneurship competence</td>
<td>Intercultural skills</td>
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<td>Cultural awareness and expression competence</td>
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</table>

Digital competence, part of the key competences, is defined by the European Council, in the Council Recommendation of 22 May 2018 on key competences for lifelong learning as “the confident, critical and responsible use of, and engagement with, digital technologies for learning, work, and for participation in society. It includes information and data literacy, communication and collaboration, media literacy, digital content creation (including programming), safety (including digital well-being and competences related to cybersecurity), intellectual property related questions, problem solving and critical thinking”. The Praxeological Dictionary of Pedagogy (Bocoș, M.-D. (coord.), Răduț-Taciu, R., Stan, C., Chiș, O., Andronache, D.-C., 2016) presents digital competence as a key-competence that includes safe and critical use of technology, as an instrument of learning and knowledge in general (for work, free time and communication): “the mastery of information and communication technologies as a tool of knowledge and learning: the use of the computer to obtain, evaluate, store, produce and exchange information and to communicate and participate via the Internet in collaborative networks”, in a safe environment, facilitating the development of other competences.

Media literacy education teaches students to apply critical thinking to media messages and to use media to create their own messages consequently becoming one of the key 21st century-skills for students. The most important skills for students, as a key 21st century skills, Media literacy is critical to the health and well-being of all children, as well as to their future participation in the civic and economic life of world democracy, since we live in a digital society where children are surrounded by a plethora of images (TV, websites, billboards, magazines, video games, social media, and endless types of advertising). The average kindergarten student sees around 70 images each day and, by the time they reach high school, teenagers spend over 1/3rd of the day using media. The safe and correct use of the Internet has to become a purpose of our teaching also, because we raise citizens who should be aware of fake news and disinformation, who should have the capacity to understand the correct messages behind the news, who should know what they are allowed to post online and what is harmful to others and, therefore, should be avoided.

The Digital Education Action Plan (2021-2027) is a renewed European Union (EU) policy initiative to support the sustainable and effective adaptation of the education and training systems of EU Member States to the digital age. At a European level, a comprehensive framework describing the digital competence in more detail was first published in 2013 and later updated. It has become a common reference tool, both at a European and a national level. It divides digital competence into five areas, namely, information and data literacy, communication and
collaboration, digital content creation, safety, and problem solving. The latest version, *DigComp 2.1: The Digital Competence Framework for Citizens with eight proficiency levels and examples of use* (Carretero, Vuorikari & Punie, 2017), has added proficiency levels and examples of use. DigCompEdu details 22 competences organised in six Areas. The focus is not on technical skills. Rather, the framework aims to detail how digital technologies can be used to enhance and innovate education and training. It focuses on educators’ professional competences (professional engagement), educators’ pedagogical competences (digital resources, teaching and learning, assessment, empowering learners) and learners’ competences (facilitating learners’ digital competences). In figure 1, the DigCompEdu Framework (EU Science Hub), the three competences are explained: for educators’ professional competences, the skills required are organisational communication, professional collaboration, reflective practice and digital continuous professional development. Educators’ pedagogical competences require digital resources (that are useful for selection, creation, modification, managing, protecting and sharing of relevant content); assessment (strategies, feedback and planning); teaching (guidance, collaborative and lifelong learning); and also, empowering learners (by promoting inclusion, differentiating learning and actively involving learners in their learning process). Extremely important is to focus not only on educators’ professional and/or pedagogic competences, but to have learners’ competences as a focal point (and these competences require media literacy, communication skills, content creation, responsible use of digital technologies and problem-solving skills).

Since *DigCompEdu* mentions digital continuous professional development requirements, the safest and most complex platform that can be accessed by educators all over Europe and beyond is the eTwinning Platform, where professionals can share, construct and grow together. eTwinning is the community for school education in Europe, co-founded by Erasmus+, the European programme for Education, Training, Youth and Sport in Europe. eTwinning offers a platform for staff (teachers, head teachers, librarians, etc.), working in a school in one of the European countries involved, to communicate, collaborate, develop projects, share and, in short, feel and be part of the most exciting learning community in Europe. On eTwinning, students from European Union countries and from eTwinning Plus countries (Armenia, Azerbaijan, Georgia, Jordan, Lebanon, Republic of Moldova, Tunisia and Ukraine) collaborate and learn, through project-based learning. *The Praxeological Dictionary of Pedagogy* (Bocoș, M.-D. (coord.), Răduț-Taciu, R., Stan, C., 2017) defines PBL (Project-Based Learning) as a situational learning, which requires organising teaching and learning around specific problems and/or complex themes (authentical, real or realistic, relevant and challenging), which require students’ involvement in active and constructive learning, focused on developing transversal competences and skills. PBL ensures a pragmatic education, cultivates activism and independence in thinking and acting, enhances students’ motivation, which are, also, the aims of the eTwinning...
schools’ mission: shared leadership, collaboration, sharing and teamwork, students as agents of change, eTwinning schools as models for other schools, inclusion and innovation.

3. Research questions

During this action-research, the following questions have been explored:

- Which strategies are efficient to collaborate on teaching Media literacy and disinformation to secondary school students?

- What competences can the 7th grade students from ”Petru Rareș” National College and ”Anne Frank” Schule develop through eTwinning projects?

4. Research methodology

The research methods used in the #DigitalEU – we’ll do! eTwinning project were observation, analysis of students’ work and a questionnaire-based survey. At the end of the project, respectively at the end of the 2020-2021 school year, a questionnaire elaborated by the coordinators of the project was filled in by 30 students involved in the #DigitalEU – we’ll do! eTwinning project, in order to assess the perceived impact of the eTwinning activities on their competence development, as reported by themselves. While applying these methods and data collection and interpretation we noticed changes in terms of our students’ collaboration, English language skills and digital competences.

5. Results

As part of 2021 eTwinning annual theme (Media Literacy and Disinformation), ”Petru Rareș” National College Beclean (Romania) and ”Anne Frank” Schule (Germany), registered an eTwinning project for gymnasium students, #Digital EU – we’ll do!, which was also a contribution to the 68th European Competition (Digital EU – and you?). We worked remotely (because of the SarsCov-2 pandemic rules applied in our regions) and we tried to apply the DigCompEdu framework dimensions and proficiency levels while learning, sharing and collaborating. This topic was also one of the priorities identified by The Digital Education Action Plan (2021-2027) which implied developing a digital education ecosystem and enhancing digital skills and competences that are required for the digital transformation. Figure 2 presents the Twinspace of #DigitalEU – we’ll do! project, with pages dedicated to the safe use of the Internet and collaboration between students from the two schools involved.

The work was organised in 11 transnational teams, working in Zumpad, Pixton classes, Twinspace and Twinspace Forums and had the students as protagonists (one of the eTwinning schools’ mission). The project was integrated into the curriculum, involving English and Social Studies, and it was conducted partly in Romanian and partly in German. There were three teachers involved in the project (Heidi Giese and Viktoria Harbusch from “Anne Frank” Schule, Eschwege, Germany, and Emese Cîmpean, from “Petru Rareș” National College Beclean, Romania). Figure 3 presents the international teams, with the students from each country, who collaborated to fulfil their tasks. The students were assigned randomly into the groups, so as to obtain heterogeneous transnational teams.

Each team had to collaborate and work in a different Pixton class (that is a comics and storyboard builder for education), create collaborative content (using Zumpad, a public online tool for creating text or sharing information from Centre for Teaching Media on the Internet) and post their reflections to the Twinspace’s forum. We searched for free tools, approved in both our countries exclusively using safe online places for sharing and collaborating. Figure 4 emphasises the tasks that were given to each group: interacting with each other in the Forum,
brainstorming on Zumpad to generate Comic-Strip ideas and, then building a collaborative product of the group.

Figure 4. Twinspace of #DigitalEU – we’ll do! eTwinning project: Work division and comic strips of group 5

Our favourite tools were Screencastify, a remote teaching and learning tool, a screencast tool we used to record our tutorials (both in Romanian and German), because of online teaching (both in German and Romanian school, due to pandemics regulations in that period), and Pixton, a comic maker tool, which was used as our common transnational online class, for class photos and for comics creation. Figure 5 presents the classroom photo downloaded from the Pixton application, a photo of the 2 classes working together in this project.

Figure 5. Use of Pixton in #DigitalEU – we’ll do! eTwinning project (classroom photo)

We were extremely careful with GDPR and digital footprint, since we were teaching it to our students, therefore, we appreciated what Pixton offered us (the avatar maker, the comics builder and the classrooms, with lesson plan ideas and printables). The students were able to express their creativity and learn new vocabulary while creating content.

All the work started from raising awareness about misinformation, disinformation, malinformation, playing with classroom tools that showed students how easily someone can be misled by fake news, and ended with adopting responsible on-site and online behaviour.

The website our students used to create Fake News was ClassTools Breaking News Generator (ClassTools is a free online tool that allows students to create a diversity of products), which made it possible for them to create fake news in less than five minutes. Each of them created their fake news and uploaded them to Twinspace, where they reflected on how easy it is to mislead, to create and spread fake news. Figure 6 emphasises a few materials created with the use of ClassTools, Breaking News Generator by the 7th grade students involved in #DigitalEU – we’ll do! eTwinning project.
During this project, students were challenged to collaborate and write about social media and analyse (fake) online profiles, to make them aware of the importance of digital image and behaviour. They discussed their findings during online conferences (where they had the chance to work and collaborate in groups, in breakout rooms). They even found a book to research and discuss: “The adventures of Baron Munchausen”, by G.A. Burger, and used the topic for their book reviews they had to write as part of their Language and literature classes. Figure 7 presents a few activities recorded on Padlet, a collaborative online tool, where students reflected, collaborated and shared their findings on the topic of digital footprint and fake news (real, online or in literature).

Self-assessment was an important part of this project. Students were given rubrics from the beginning and were explained the tasks they needed to complete and the content they were expected to master at the end of our project. For this, we used QuickRubric (a criterion referenced assessment tool, used to score assignments or performances. Work is scored/graded based on how well the finished product lines up with the criteria listed on the rubric. A rubric is a very powerful device for performance-based assessments, such as oral presentations or projects, but also makes grading essays, questions and narratives quick and easy. We used QuickRubric to teach our students how to self-assess their work, set the expectations about base, beginning, emerging and proficient completion of tasks. For formative assessments, we used Quizziz (a free gamified quizzes and interactive lessons creator, to engage young learners) and, sometimes, Mentimeter (an online tool for presentations, interactive Polls, Quizzes, and Word Clouds), because we worked remotely and strove to follow the progress of each of our students (this is why the quizziz and menti were set to audience pace). To have an overall picture of project success and student performance we created initial, intermediate and final assessments for students, teachers and parents.

Since we are life-long learners, we tried to master the media literacy topic, working in an online and safe environment, as partners of an international class. This was our third collaboration with the German team and our third year on eTwinning. We have to mention that, when working on a project, all the class is involved as we integrate the eTwinning project into the curriculum. Based on the Romanian Language and literature curriculum for 7th graders, we had to implement the use of projects and elements of interculturality. Moreover, since we were working online, we needed to teach our students about online safety, disinformation and media literacy. As a result, students became protagonists and agents of change while working on this topic.

The survey conducted at the end of the project shows students loved working in this project as shown in Figure 8 and appreciated cooperation, collaboration, learning about online safety and meeting new friends online.

Q 1. What did you like most about our project?

Their favourite activities were creating avatars with the use of Pixton, the activities dedicated to Safer Internet Day 2021, the video conferences with their peers, creating Fake News with Classtools Fake News Generator and others, as shown below, in Figure 9.
Q 2. Which activities did you most like?

Figure 9. #DigitalEU – we’ll do! eTwinning project participants’ opinion Q2: Which activities did you most like?

Students have developed competences (they self-assessed their work saying that they have gained digital competences, improved their English language skills, cooperation and intercultural competences).

Q 3. What skills have you improved due to the project’s activities?

Figure 10. #DigitalEU – we’ll do! eTwinning project participants’ opinion – Q 3: What skills have you improved due to the project’s activities?

The final product of the project is a collaborative ebook, created with BookCreator. The project was one of the 22 winning projects during the 68th European competition, its outcomes being presented as part of national and European conferences. Nonetheless, the most important achievements are the project work, students’ motivation to share and collaborate, the online international learning community that was created, and the Digital Competences and Media Literacy awareness we raised in our communities.

Digital Competences are key competences we should aim to develop in each lesson, no matter the subject we teach. Key competences are more important than a particular content we, as instructors, need to teach. If we remember this, we will embrace project-based learning from a life-long learning perspective, and we will encourage our students to become protagonists and agents of change.
6. Conclusions

The use of Web 2.0 as part of the #Digital EU – we’ll do! eTwinning project enhanced collaboration and helped students from “Anne Frank” Schule and “Petru Rareș” National College Beclean develop life-skills and key competences. For this project, collaboration and international teams were the correct approach. The strategies used were meant to raise awareness and also involve students in project-based learning, research and content creation (as artists, journalists, communicators). Teachers and students worked remotely in one virtual European classroom (the eTwinning platform), where they were given voice and choice. Students became aware of their digital footprint and changed their online behaviour, made friends and learned (English, ICT, Media Literacy) through eTwinning. The project was awarded as part of the 68th European Competition in 2021 and received the First Prize for Digital Citizenship as part of the Romanian National eTwinning Prizes 2021.

Congratulations to all the students involved in the activities of #DigitalEU – we’ll do! eTwinning project and special thanks to Heidi Giese, German eTwinning ambassador and co-founder of the project, for this outstanding collaboration.

Authors note: The authors have equal contributions to this article.

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