The Global Positioning System in the Local Cultural Heritage Mediation

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Introduction

Since the beginning of the 21st century the digital technologies are, perhaps, spreading more rapidly than anyone could ever predict. It can (and probably should) be spoken about them even in connection with the cultural heritage mediation. If digital technologies are used properly in that field, they can be of great help to the educational process. The research dealing with the cultural heritage mediation to pupils of the basic schools in the Czech Republic confirms that. In 2022 the research was started as a PhD thesis at the Palacký University Olomouc (Czech Republic). The paper presents the sub-results. Firstly, the contribution aims to introduce the statewide research briefly. It comments on the main objectives and used methods. It describes how all the state basic schools in the Czech Republic were invited to participate in the first, quantitative, part of the research. Subsequently, twenty basic schools were chosen to participate in the qualitative part of the research – a participant observation of how the cultural heritage is mediated to pupils. Secondly, that is the vital part of the contribution, the paper focuses on one of the current possibilities of conveying cultural heritage (or other curriculum objectives) that are used in current (Czech) basic schools. An interactive guide through village sights called Památky Věrovan (Věrovany sights) was created by the author of the paper in 2016 as the diploma thesis and lastly observed in use in 2022 at a basic school in Olomouc Region (Czech Republic). Teachers at the school use an interactive outdoor guide designed for smartphones, tablets or Garmin devices. The guide is based on the Global Positioning System and via tasks with the instant feedback it presents local culture heritage. The used application builder WhereIGo is free of charge and any educator can create such an interactive guide fitting his or her requirements. It gives the author various possibilities to develop unique activities for visitors. After the basic information about the guide and the WhereIGo application builder the text demonstrates some of the functions on the specific example of the guide used by the basic school mentioned above. While presenting the output, the paper will also address the process of its development. Finally, the text analyses the benefits of implementing GPS technologies into education and possible risks to be aware of. Other specific inspiring projects based on the usage of the Global Positioning System to mediate cultural heritage are suggested.

Notes on the research The mediation of cultural heritage to pupils of basic schools in the Czech Republic – the situation in the first quarter of the 21st century

At first, the paper introduces the research itself, its objectives, general approach and used methods. The research project is planned to last four years, including preparation, data collection, data evaluation and interpretation, and the intention to create a methodological portfolio. Objectives Apart from the methodological portfolio, the theoretical part of the research results will offer a comprehensive insight into the issue of access to cultural heritage in basic schools in the Czech Republic, including a probe into the history and comparison with foreign practice. At the same time, the research will contribute to theoretical knowledge by updating the set of methods and forms used today in the Czech Republic to mediate cultural heritage and evaluating how they succeed in meeting societal

educational goals Areas of the research There are four main areas of the research: (1) whether and in what ways cultural heritage (CH) is mediated in mainstream teaching, (2) whether and in what ways CH is mediated outside mainstream teaching, (3) whether and in what ways digital technologies are used to mediate CH, and (4) whether and how CH mediation is influenced by a heterogeneous group of learners. These four areas were chosen because the research focuses on the situation in Czech schools in the first quarter of the 21st century. In the author's opinion, these factors are the ones that play a significant role in the educational environment nowadays. Approach and methods An attempt was to deliver the questionnaire to all state basic schools in the country in April 2022. Questionnaires were sent electronically to basic schools listed in the Ministry of Education, Youth and Sport of the Czech Republic directory. School principals were asked in a cover letter to distribute the questionnaire to their school's teachers. Based on the evaluation of the responses, twenty schools across the Czech Republic were selected and offered cooperation in the follow-up qualitative phase of the research. This was a participant observation of CH mediation directly in the teaching process. Both quantitative and qualitative approaches offer a comprehensive view of the topic. The results are to be compiled into a methodological portfolio of activities for sharing examples of the good practice. One of the visited basic schools uses an interactive outdoor guide mentioned above (developed in 2016) to mediate the local cultural heritage to the pupils. The following lines comment on the tool. An interactive outdoor guide used at a basic school The paper presents an interactive outdoor guide based on the Global Positioning System designed for smartphones. The interactive guide was created directly into the teaching environment. The author was aware of the benefits and risks of using this tool which were considered. The author drew primarily on the Framework Education Programme for Basic Education (published by the Ministry of Education, Youth and Sports of the Czech Republic), which corresponds in its main objectives, for example, to the objectives of PISA. The guide provides facts, historical photographs, tasks with instant feedback or hints. It leads the user through sites in the village. The project was put into operation in 2016 after detailed historic research of the sights and a general study of other approaches on the boundary of edutainment1 and cultural heritage. The creation of the guide was supervised by Palacký University Olomouc (Czech Republic) and led by the author of this text. Several times during its development, the guide was tested by various groups of visitors and evaluated with pedagogical as well as technological professionals. The WhereIGo toolset for creating such guides is free of charge and anyone interested (teachers, educators, culture facilitators) can create non-commercial GPS-based projects with specific requirements or preferences. 1 The term is a blend of education and entertainment. It means that a person is entertained while learning something. The possibilities of the WhereIGo application builder Every project starts with an idea. A GPS-based educational project is not an exception. The free of charge toolset WhereIGo is intended for creating outdoor interactive guides or adventure games in the real world. It enables the author to create a cartridge2 which can be easily distributed as a usual file via the Internet or a USB-drive. It can be downloaded into a smartphone or another suitable device. In the device the cartridge starts to interact with the user (see Figure 1). It provides the pre-set texts, pictures, tasks, countdowns, sounds etc. designed by the author of the guide. When the visitor is asked to complete a task, the answer is evaluated immediately. Not only gives the guide instant feedback, but it manages the subsequent steps, too, based on the visitor's answer. It also navigates the visitor from one stop (with a task) to another. To describe how the application builder WhereIGo works and how the guided tour can be created, a basic unit of the

guided tour – zone – is going to be explained. Simply, zones can be understood as areas at the points of interest (a church, a statue, a monument etc.) and are created usually as rectangles or trapezoids on a map in the application builder (see Figure 2). A creator should be aware of the possible GPS signal variation and follow two basic rules when designing the zones. They should be of a concave shape and at least 20 times 20 metres large. This precaution should 2 Each game is represented by a digital archive that is called cartridge. prevent any inconveniences caused by fluctuating signals. This is why it is handy to understand how the GPS works. Anything that the creator wants to prepare for users, s/he does so within each zone separately (see Figure 3). Near a church you can offer the visitor to read a text and browse historical photos, answer questions and get immediate feedback. You can set a time limit or a countdown. S/he can offer a virtual bag for imaginary items collected during the journey and used later. After the visitor explores everything that the creator has prepared within the zone, s/he is navigated to the next zone. Together, the interconnected zones build a whole guided tour. Moreover, at the end of the tour the visitors can be presented with an opportunity to find a treasure. The tools can be combined in an unlimited number of ways. Each zone can be original in its design and actions to be done. The possibilities of the approach are not limited to question-answer tasks at the specific location but the creator can take the advantage of a visitor's physical movement, check if s/he really reaches the required place, walk around the historical building etc. Obviously, if the creator wants to give visitors enough time to complete a task, the time limit for this activity is not set. However, on the contrary, the time limit can be used to offer the visitor a hint (which s/he may refuse) sometimes after the task is submitted. At the discussed guide Památky Věrovan (Věrovany sights) this possibility is used at the water mill (rebuilt power station). After the visitors read a short introduction, they are shown a historical photograph of the building and asked to try to find the place where the photographer was standing when the photograph was taken. After five minutes, visitors are offered a clue. This clue focuses their attention on the two main features of the building (windows and gables). They are asked to compare the visual features in nowadays reality and in the historical photograph. The clue is also included to ensure that visitors do not stray completely off course when observing the photograph and the building. After another five minutes, they are again offered a clue that already explicitly navigates them to the required location. However, appropriate wording enables everyone to feel successful. After testing and consultation with the didactics professionals, it might be decided – as it was in the case of the guide Památky Věrovan (Věrovany sights) – that the penalties would take the form of a supplementary text that would briefly and concisely explain how to succeed in the solution. In the exceptional case, the correct answer is mentioned directly in the clue, thus supporting the development of reading literacy (e.g. searching in the text and paying attention to it). To some extent, however, it is still left up to the players whether they show interest in learning something.

Discussion on the contribution of GPS-based projects to cultural heritage mediation

Doubtlessly, there are some risks involved in this tool use. Technical difficulties can occur or the historical wealth can be overshadowed by digital technologies. However, when the creator is aware of the risks, s/he could try to take full advantage of the positive possibilities. There are several factors available to the creator-educator to use and adjust to best help achieve the educational goals. Moreover, the mentioned approach does not only teach history or art, but also strengthens information

technology knowledge, communication skills, critical thinking, problem solving, special orientation etc. When the author of this paper studied pedagogy with a focus on cultural heritage and at the same time got into the WhereIGo tool, she realised the educational potential of this tool. In this project the WhereIGo tool set is not seen as a tool to create adventure games but rather as a didactic tool to be used for fun education. This is how the author approached the entire creation of the presented interactive guide and she wants to spread the whole idea among other educators and cultural mediators. The functionality of the described approach to making cultural heritage accessible to basic school pupils was subjected to direct participant observation by the author as part of the national research she is conducting as part of her dissertation. The observation shows that it is possible to use GPS to mediate (regional) cultural heritage at basic schools. If this method of education is used in hamony with didactic principles, it can lead to the activation of pupils and the development of their key competences (work competence, communication competence, problem-solving competence, etc.). It is effective to learn not only the skills but also the basic knowledge about the history of the region that pupils acquire during the walk with an interactive guide. This approach has a great potential not only in guided tours through the real surroundings with the monuments but also when creating partially virtual tours, e. g. when an educator aims to introduce the learners centres of the remote cities or historical locations on different continents. The creator can use authentic photographs and dialects and design the track of the cartridge so that it simulates the real track through the required city centre. It also can be used to make access to the intangible cultural heritage – e.g. to go through the blend map of different nations' settlements, read about their customs, achievements and listen to the dialects. The possibilities are unlimited.

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