

Editorial

Digital education, geography and multidisciplinarity: Themes, methods and critical issues¹

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Abstract: The article is the Editorial of the Special Issue “Digital Education, Geography and Multidisciplinarity: Themes, Methods and Critical Issues”. It explores some fundamental and theoretical issues on the interrelated subjects of digital education, geography and multidisciplinarity. More in particular, the article takes into account the manner in which this Special Issue of AIMS Geosciences reflects on links between the teaching/learning of geography (at any school/university level) and the digital world in a multidisciplinary perspective. That includes both the critical issues and the advantages in terms of sustainability and greater awareness of geographical phenomena, also in relation to cultural dynamics (e.g., migrations, urban transformations, development, geopolitics, tourism).

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¹ The authors shared the general idea of the text. Although Leonardo Mercatanti is author of the section n. 1. Gaetano Sabato is author of the section n. 2.

1. Geography and digital education

Regarding new networks, higher data transfer speeds and the diffusion of home automation, in recent years, digital technology has led global society to sudden changes, the effects of which are evident both on a sociocultural and material level. In parallel to the development of the Internet and Web 2.0, technology and digital technology have allowed millions of users around the world to discover and appreciate the facts that 1) it is possible, unlike in the past, to become a part of many commercial sectors without having offices, direct employees, warehouses and depots, 2) you can shop from home without going to the supermarket, 3) you can read a book or a newspaper without paper and 4) you can listen to music or watch a newly released film without leaving your home.

The world of work has also enjoyed the benefits of digital connections and the existence of advanced communication platforms. Before the recent COVID-19 pandemic, which has plagued many of us since 2020, digital technologies had already opened up the possibility of interacting, regardless of distance. However, during the pandemic containment, there has been a significant increase in this; particularly, conferences, seminars and business meetings have been able to continue to be held thanks to the various online platforms such as, among others, Teams, Zoom and Cisco Webex.

The increasingly advanced and user-friendly information technologies and the related devices to support them are rapidly changing the idea of space and time. The compression of the two categories that David Harvey [1] had already identified as a trademark of the globalization process today has brought further meaning and depth. Society, in fact, is preparing to go (or has it already gone?) far beyond the intuition of the great geographer. We are in fact in the presence not only of a compression, but of a real cancellation of distances and an ever greater and sophisticated reduction of times. From a symbolic point of view, digitization affects the perception, construction and use of space, as it is able to (re)define new frontiers, thus making its dimensionality less obvious [2].

During the pandemic period, a sudden acceleration was given to these processes, which, in reality, conceal an acquired and chronic dependence on the digital world. It is teaching that, at any level, has perhaps forged a very strong and advanced link with the digital paradigm more than all other areas. Indeed, it is now clear that digital resources represent a formidable ally for teaching, especially in a situation as difficult as the one experienced in the last two years. Without this opportunity, it would not have been possible to carry out many lessons, as has already happened in the past on the occasion of other similar events; think of the “Spanish Flu” of 1918 and the closure of all schools across the world because of it; during that time, there was not the possibility of activating distance learning, so millions of students were unable to attend any lessons for about two years. And the use of digital resources not only concerns lessons, but even other important educational opportunities, such as seminars and workshops, or collegial bodies of scholastic and university institutions, such as department council meetings and school staff teacher meetings. Moreover, digital resources can be used for the final sessions of educational cycles, such as high school, graduate, post-graduate and doctoral exams. Compared to the past, the novelty today not only lies in the possibility of being able to “meet” your teacher at a distance, but also that of being able to search for and use didactically useful resources on the web. This has produced an additional incentive for teachers who are more predisposed to using the Internet to carry out their work, while, for those who are more reluctant to change and are tied to traditional teaching, it has induced a useful forced change in their way of thinking. Even the most reticent teachers have thus made a commendable effort to adapt to the new needs dictated by the pandemic period. It is certain that these new skills will be useful and used even in normal times. Already today, with the relaxation of many

anti-pandemic measures, it can be seen that some uses of the aforementioned technologies are stable acquisitions, maintained well beyond their original moment of need.

Considering the relevance and importance of the topics discussed so far, this Special Issue of the AIMS Geosciences journal titled “Digital Education, Geography and Multidisciplinarity: Themes, Methods and Critical Issues” intends to reinforce the links between the teaching/learning of geography (at any school and/or university level) and the digital world from a multidisciplinary perspective, which includes both the criticalities and the advantages in terms of sustainability and greater awareness of geographical phenomena, particularly in relation to cultural dynamics (e.g., migration, urban transformation, geopolitics, tourism).

The extent of the link between education and digital technology is especially evident in the unprecedented interest on the part of the scientific community and experts, as demonstrated over the past three years through numerous conferences, seminars, research projects and publications. Thousands of scholars and teachers from different disciplines have discussed the subject and have often done so through the use of digital technologies.

From these simple considerations, issues of wide interest can arise. For instance, we can ask ourselves whether the pandemic has contributed to reducing the digital divide between the different territories through e-teaching and e-learning. In fact, we know that, from many points of view, the advances in technological innovations continue to have ambivalent outcomes as far as regarding the digital divide, especially in terms of the difference between urban areas and rural areas that are more disadvantaged from a socioeconomic point of view. The diffusion and use of cutting-edge technologies can bring distant communities closer to primary services, but, at the same time, it can easily create new fractures and differences (for example, digital infrastructures have material costs that are sometimes unmeetable, or other infrastructures and services that are concentrated in large urban centers may be required). As is well known, the digital divide is a social (and even ethnic) issue with serious economic and democratic implications. Although the results are often different from territory to territory and it is not possible to say more about them here, within the debate on the digital divide, distance learning has frequently been presented as an opportunity to guarantee all students the same opportunities. In fact, although there are evident limitations on the production and reception of e-learning content, this method, to date, already has the potential to reduce the digital divide thanks to minimum costs and operational constraints which have at least been partially overcome [3–6].

More specifically, when analyzing digital education from the perspective geography, it is necessary to take into account the issues, methods and critical matters that are at the center of a continuous teaching and learning process. Among all of the fields of knowledge that have experienced distance learning before and during the pandemic period, certainly, the teaching of geography plays a leading role due to its preeminent visual nature. In fact, the subject provides for the continuous and integrated use of maps, graphics and photographs to understand the various phenomena under study. In this sense, different themes, such as migratory movements, tourism and geopolitical events, can be synthetically “visualized” in cartographic contexts (thematic maps, cartograms, anamorphic maps, etc.). In fact, landscape and territorial analysis require a visual approach. Furthermore, most of the tools supporting geography teaching are visual-based, e.g., documentaries, films, photographs and slides. Geographical Information Systems are optimally reconciled with the Internet, which now hosts a very important wealth of resources for all teachers (not just geography teachers).

2. Teaching geography, IT and multidisciplinarity

Geography, precisely because of its epistemological status of “complex science”—using the words of Morin [7]—is interested in various themes and objects of study that record continuous and rapid changes; therefore, it easily lends itself to multidisciplinary approaches. More specifically, the spatial analysis and study of human-environment interaction at any scale [8,9] leads to the creation of successful multidisciplinary research synergies [10]. The contribution of the specializations and skills of other disciplines often becomes fundamental in the geographical analysis, which, otherwise, would be generic and without adequate in-depth analysis. This is why, in recent decades, there have been more and more fruitful collaborations between geographers, anthropologists, semiologists, sociologists, urban planners, etc. The effects of the growing use of digital technologies in teaching methodologies show that these tools are useful for strengthening the interdisciplinary nature of geography, thanks to the use of a transdisciplinary language and audio-visual documents that overcome the barrier of a single discipline. As Andrew Barry and Georgina Born have well pointed out, “ideas of interdisciplinarity imply a variety of boundary transgressions, in which the disciplinary and disciplining rules, trainings and subjectivities given by existing knowledge corpuses are put aside” [11]. Of course, it is not just a matter of choosing the right platform and software to convey content; thinking about e-learning can never be limited to a reflection on the tools, as one must take into account the entire teaching/learning process and contextualize it in the specific structure in which it takes place. This process, in fact, implies deep epistemological questions, because the face-to-face interaction between teachers and students is also a reciprocal gnoseological process and, in the event that this interaction is mediated by IT, the entire educational context is inevitably crossed and transformed. For example, a lesson conducted by the same teacher can reveal very different levels of effectiveness, depending on whether it is carried out in person or online. In fact, the possibilities of production and reception of the messages (and therefore the communicative context) would be different, just as the sources of distraction for the students would be equally different.

Another reflection may concern the tourism sector, which is one of the areas of global mobility most covered by human geography. It seems legitimate to ask ourselves how the way of experiencing tourism in the digital age and age of the new frontiers of distance communication is changing. Furthermore, how does this process also affect the tools for organizing tourism geography training courses? Here, too, the same arguments made before apply: using new devices and tools for teaching, regardless of their effectiveness and level of sophistication, does not exempt teachers (and therefore learners) from targeted didactic planning. Indeed, an effective didactic planning should be capable each time of contextualizing theoretical problems and practical applications of the topics covered. Certainly, the complexity of the possible connections between related and complementary themes calls for great attention to be paid to the way in which they are to be presented, in order to avoid unnecessary confusion. Mobility, tourism and cultural heritage are central themes in every course of human geography, and these are probably areas in which the didactic experimentation offered by new digital media finds interesting opportunities. During the months of the pandemic, the editors of this Special Issue had the opportunity to experiment with forms of distance learning for the teaching of geography at the University of Palermo, Italy (degree courses in “Tourism” and “Primary education sciences”). Several hours of lessons were dedicated, through the audio-visual materials available on the web, to the knowledge of the landscapes, cultural heritage and the most interesting regions, didactically speaking. The results, in terms of student satisfaction, were very encouraging. Is this not a sort of virtual travel that one day the students will be able to turn into real travel? It is not true that teaching that uses multimedia digital tools trigger effective processes of knowledge of places by first stimulating the curiosity of the students? The link between

digital and virtual is therefore profound and a very interesting point to be explored in scientific debate. Pierre Lévy stated the following: “The virtual, strictly defined, has little affinity with the false, the illusory or the imaginary. It is by no means the opposite of the real. On the contrary, it is a fruitful and powerful way of being, which gives space to creative processes, opens future perspectives, attributes wide margins of meaning to the banality of immediate physical presence” [12]. And, speaking of the possibility of developing forms of “virtual” tourism, geographer Maurizio Giannone has stated that “[i]t is clear, first of all, how the subjective phenomena that make up the tourist experience, such as the perceptions, emotions and sensations triggered by the act of visualization, have a mental content. This, it seems to us, is independent of the physical practice of tourism” [13]. In fact, it is precisely in the possibilities offered by digital technology that the virtual tourist finds powerful simulacra around which to build complex narratives. In addition to images, audio-visual products can also contribute effectively to convey geographic content in an educational course. With their narrative potential given by the intersection of different and complementary textualities, audio-visuals and films are also a valuable aid in multidisciplinarity, such as in the teaching/learning of a foreign language in combination with geographic content.

Among the tools to be used in an educational manner, we can also include the narratives of digital tourist guides, which become a further opportunity to offer easily accessible content to students. In fact, through their study, it is possible to observe (and exemplify) complex cultural dynamics that, above all, concern their role in mediating otherness and identity.

Digital technology today also takes on interesting values in migratory processes. Important geopolitical and ethical issues are, in fact, involved in the reflection on the application of technologies in the field of human mobility and digital education. As mentioned earlier, fundamental issues such as a difference in access to IT, as well as in the planning and management of reception in the countries of arrival, certainly have direct repercussions on individual freedom and movement. These are new ethical, social and cultural challenges that are already current today and focus on the (potentially controversial) issue of digital identity. Furthermore, migration, as an object of geographic study, can also be presented to students who are recipients of distance learning through a visual approach that triggers critical reasoning and that overcomes, as much as possible, the limits imposed by the IT medium. Also, in this case, it is a question of building a conscious teaching method for both teachers and students that is able to intrigue, interest and make people reflect through the apparent simplicity and immediacy of the images, which are, in reality, complex narratives affected by processes of individual and collective (re)semantization. Furthermore, another objective that online teaching, and, in particular, that of geography, may provide is the facilitation of remote interactions, even between students. For instance, in many cases of e-learning, one of the most evident advantages for students is precisely the possibility to collaborate, albeit virtually, in order to respond to immediate tasks (e.g., research, further studies) or, also, to plan and organize collective study sessions. This is why, in both school and university geography courses, conducting lessons in a laboratory setting that includes the assignment of complementary tasks and objectives can be one of the most effective methods of distance teaching/learning.

Another area of application of digital technology to geographical issues is the way in which it allows for better management of resources and greater sustainability in the urban environment. The ecological transition of cities—especially in the western context—is an unavoidable topic within geographical reflection. Today, the great challenge for the sustainability of our world also passes through the implementation (at various levels and with various purposes) of digital technologies. Also, in this case, these are issues that must be addressed in the classroom through dynamic and modern teaching.

Acknowledgments

In conclusion, it not only seems right to us, but it is also a real pleasure to sincerely express our gratitude to all of the authors, researchers and scholars who have dedicated their time and effort to contribute to this Special Issue, and those who have shared with us the common intent of further exploring the lively reflection on digital education and geography from a multidisciplinary perspective. We also hope that our readers would find this work interesting, and that we have contributed, even slightly, to expand the reflection and the debate on issues that are subject to sudden changes. We would also like to express a special thanks to our Chief Editors, to each member of the Editorial Staff of AIMS Geosciences and to every referee for their professionalism and attention and, above all, for the confidence the journal has placed in us in entrusting us with this second curatorship after the first Special Issue, entitled “Sustainability and risk perception: multidisciplinary approaches”, published in 2021. Their constant and careful support has been a valuable and much needed aid, especially considering the difficult and complicated times, such as those we have been forced to deal with in the past year due to the pandemic crisis. Even though, in the recent months, the global situation has begun to become more serene, we shall not forget that, in the last year and a half, their valuable cooperation, as well as their creation of a profitable and positive climate, has made this collective work possible. In addition to all of this, we think that our teamwork has further shown how resilience in the face of difficulties that seem overwhelming is often the result of intense work and constancy toward a common, shared goal. Our heartfelt thanks to all of you for having traveled this enriching path together with us.

Conflict of interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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