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Research article

Teaching geography and blended learning: interdisciplinary and new learning possibilities

Lorenzo D'Agostino^{1*} and Daniela Santus²

¹ Department of Romance Studies, UNC at Chapel Hill, Chapel Hill, North Carolina, USA

² Department of Foreign Languages, Literatures, and Modern Cultures, Università degli Studi di Torino, Turin, Italy

* **Correspondence:** E-mail: lodagost@email.unc.edu; Tel. +1(919)2653087.

Abstract: The pandemic due to Covid-19 ushered Italian universities into the world of digital education, with geography being one of the disciplines that derived multiple benefits from a worldwide, technological transition. Our contribution focuses on the Turin experience of Cultural Geography teaching for the degree-courses of Languages and Cultures for Tourism (Undergraduate course) and of International Communication for Tourism (Master's degree-course). It highlights how the combined use of Moodle, WebEx, Google Earth, and Instagram stimulated an interest in a traditionally neglected subject, but also offers food for thought on the use of the same technologies in teaching Italian language, through geography, in US universities.

Keywords: e-learning; teaching; geography; social media; languages

1. Introduction

Geography is not popular among Italian students. In fact, Italian mass media periodically underline this aspect. We also find evidence of this by taking as an example the article published on the site of *Radio 105*, a radio channel belonging to *Mediaset* group. It is a result of a survey conducted by a very popular student website called *Skuola.net*. This survey, sent to about 1500 Italian students from middle schools to universities in 2017, highlights how only 50% of them know how many regions there are in Italy or where the main Italian cities are located. For 74% of those

surveyed, the capital of Switzerland is Zurich and 46% have no idea about the capital of the United States of America¹.

The various reforms of the curricula are certainly complicit in this scarce affection that penalized the discipline to the point of making it almost disappear from educational programs of secondary schools. In other curricula—especially high schools—geography has been relegated to the first and second years only in its role of geo-history [1,2]. Among the economic curricula only those linked to tourism retain the teaching of the subject for all five school years [3]. Therefore, it is at least distressing, even within the degree-course of Tourism, to meet an increasing percentage of students—both graduate and undergraduate—who have no confidence in an atlas (paper or digital). Such a gap in knowledge has resulted in some students, reading some responses from our tests, mistaking Israel for India, and India for Arizona on a map, while others believed that Italy borders with Spain, and that Germany has an outlet on the Mediterranean Sea or, even worse, that islands float and that the capital of Saudi Arabia is Tel Aviv. The situation does not improve when we come to cultural geography: speaking of Middle Eastern religious specificities, also when we find students who know how to describe all the rites of Islamic pilgrimage, when we ask them to locate Mecca, or Ka’ba, the answers are often embarrassing: “Mecca is in Jerusalem”, they say, “The Ka’ba is in Saudi Arabia which is in Palestine,” they conclude. This is not something completely new for us, since in our previous studies we underlined this difficulty when students were asked to draw a mental map in order to verify and help them in building their spatial skills [4].

The explosion of the Covid-19 pandemic and the need to teach remotely turned out to be partially successful compared to the in-person class experience, significantly favoring the ability to perceive cultural events and manifestations of social, material, and spiritual life as events that find their specific geographical locations in the various territorial areas. In fact, localization errors in our exams are decreasing from 25% to about 6%, all thanks to a massive use of Instagram and Google Earth, tools whose potential even the so-called “digital natives”—or our students—were unable to fully exploit. Furthermore, on many occasions (see the research on the subject conducted by Stanford University), we begin to reflect on the fact that those we hastily defined as such are above all “digital illiterates” who live on social media, but do not know how to use a computer, nor can they recognize a reliable source from a less reliable one².

The final goal of this contribution is to show our personal experience. We will emphasize the good results that distance learning had on the exams taken by our students. This methodology, which compares results before and after the beginning of the pandemic, will provide, we hope, a hint for future researches on this field.

2. Social media: Facebook and Instagram

The Internet is now part of our lives, but it has had an increasingly meaningful role since 2008, when Facebook also appeared in Italy, after having changed dramatically the way of communication of young people in the US as underlined by Coyle and Vaughn [5]. The Internet has a much more remote origin, which dates back to the 1960s. It became popular in the 1990s with the development

¹ See <https://www.105.net/news/tutto-news/241398/gli-studenti-italiani-non-conoscono-la-geografia-indagine-shock.html>, last accessed on March 2022.

² See <https://ed.stanford.edu/node/%2010003?newsletter=true>, last accessed on December 2021.

of the information sharing system “www”, World Wide Web [6]. However, social media, Facebook first and foremost, was what sparked a real revolution in the forms of communication. Nowadays, the social network is available in over 100 languages and is followed by about 3 billion active users every month, mostly individuals between the ages of 35 and 65, while young people prefer Instagram and other social media, such as TikTok, YouTube, or Snapchat (at least in the US)³. Born in 2010, Instagram represented the fortune of a new professional figure, the influencer, someone who was able to create a real marketing campaign around herself or himself - thanks to the photos and, starting from 2013, the videos posted on the platform [7]⁴.

In 2012, Facebook bought Instagram for a billion dollars, which became an integral part of our life, continuing to evolve although the main goal is to allow users who subscribe to the platform to take, edit, and upload photos or videos. However, the real strength of this social network, compared to the more static Facebook, Twitter and so on, consists in its continuous updates which, in the space of a few years, have also intrigued and piqued the interest of companies in various sectors, especially the tourism one. In addition to the possibility of inserting comments and adding heart-shaped likes, the introduction of the hashtag (from the hash symbol #, used to identify content and associate it with a specific topic) and geotag (the ability to share one’s position and to specify the position of the place represented in the photo) has allowed the platform to expand and, from our point of view, to be exploited for educational purposes especially in tourism courses [9].

In fact, we may ask, what is the link between the tourism sector and Instagram? While it is true that tour operators, from the outset, have grasped the advertising potential represented by social media, in the short term they have realized that the simple promotion, through an insert, on Facebook or Twitter did not represent a significant change compared to classic television advertising: a way should have been found to provoke the imagination of potential tourists and, at the same time, encourage their own sharing of experiences. What we know as “reviews” are nothing more than zero cost advertising.

3. Google Earth

Google Earth is not a social media. Likewise, too often we have to remind students that “Google Earth is not synonymous with Tom Tom”. The satellite navigator, which many Italians familiarly call Tom Tom (from the name of the most popular Dutch brand in Italy), was born in 1971⁵. Today it is so widespread that it is found as standard equipment on many cars. On February 8, 2005, Google Maps was born, whose fortune was decided in 2007 thanks to its smartphone application, and its success was guaranteed in 2009 when it became a real navigator. In 2019, a further update proved to be of great use in the pandemic period as Maps was enriched with forecasts of crowding on public transport and with the “Live View” mode for journeys on foot. With Live View you can view driving directions both in the real world and in a mini map at the bottom of the screen.

As for Google Earth, the first version was born in 2001. It is a software that generates virtual images of the Earth obtained both thanks to terrestrial remote sensing and with aerial photographs

³ See <https://www.pewresearch.org/internet/2021/04/07/social-media-use-in-2021/>, last accessed on December 2021.

⁴ On the importance of influencer’s marketing, see also Haenlain et al. [8].

⁵ See also https://www.repubblica.it/motori/sezioni/sicurezza/2014/05/09/news/i_40_anni_del_navigatore_satellitare-85582873/, last accessed on December 2021.

and topographic data stored on a GIS platform. However, compared to Google Maps, Google Earth not only helps us not to lose direction, but responds to one of the main functions of a map, not simply figuring out how to go from one place to another, but providing real knowledge. The objective achieved with Google Earth Education, which provides teachers and students with an incredible series of geographical activities to be carried out in the classroom or at home: do not miss the “Games On World” (designed for primary and secondary schools, but also useful in the University), and the possibilities related to the creation of trips as well as the measurement of the distances between two points to make geographically visible the fact that Mecca is not located in Jerusalem.

4. Method: our personal experience

The Covid-19 pandemic has taken the world by surprise. In Italy, earlier than in other parts of the world, classrooms were emptied, and DAD (acronym for “distance learning” in Italian) took over. The same happened to universities, realms par excellence of lectures. Each school or university has quickly organized its own methods to guarantee education, even from home. The University of Turin and the Department of Foreign Languages, Literatures, and Modern Cultures have relied on three methods: WebEx, Moodle and Kaltura. WebEx is an application of Cisco (a multinational company specializing in networking equipment) which, in pre-pandemic times, was used exclusively by companies to overcome the long transfers of managers who, in this way, could connect to meetings from anywhere. Immediately after the outbreak of the crisis caused by Covid-19, Cisco promptly joined the task force wanted by the Ministry of Education to ensure that lectures could continue, making WebEx meetings available for free to teachers for distance learning. An acronym for Modular Object-Oriented Dynamic Learning Environment, Moodle is a particularly useful platform for online teaching that offers numerous dynamic potentials and takes advantage of social methods such as chat, forum and allows the teacher to subject students to didactic tests and quizzes, including through images. And, finally, Kaltura, is a platform for video management, which in our case interacts directly with Moodle.

Starting with the academic year 2020–2021, our didactic choice was aimed at fully exploiting all three channels. The lectures were recorded on Kaltura, then imported in Moodle. Here each topic was enriched with insights taken from the web (interviews, documentaries, and supplementary readings). The skills acquired could be put to test through self-assessment exercises as well as moments for live discussion on WebEx. However, we soon realized that, by doing so, we had done nothing but transfer the frontal lecture into e-learning. Everything depended on the student’s desire to access, follow, and fill in their gaps by dedicating time to in-depth studies. (Meanwhile, Mecca continued to be in Jerusalem.) What we wanted to offer, thanks to e-learning, was the possibility of changing the way we learn. We held strongly, as Patterson states, that “[s]tudies have demonstrated that the use of online resources has helped to improve student comprehension of major concepts and skills while also helping students gain confidence in their knowledge of geographic issues” [10] and that psychological studies have also shown that memorization is favored using images rather than from the word or written text [10]. We decided to try to involve our students more and, above all, to flood them with images⁶.

⁶ For teaching geography online, see also Solem and Gersmehl [11].

The first step was not just to send them on WebEx and ask them to keep the camera on. No teacher can catch the eyes of students if they hide behind the gray rectangles of the screen and no student can resist the temptation to chat with friends on WhatsApp if they know that the teacher cannot see them. In the face of every lecture recorded on Kaltura and made available on Moodle, in the WebEx meetings we have chosen to start by launching challenges starting from what is most familiar to them: Instagram [12]. Let us examine a practical example. In our case dealing with students in tourism courses, after a lesson on hydrography in Israel and on the specificities of the Dead Sea, the first step was to ask them to track down a tourist destination on the shores of the Salt Lake (for example the oasis of Ein Gedi) or along the banks of the Jordan (for example Yardenit, a place known for being the baptismal font of Jesus). However, the students could also have gone up along the river Jordan up to its sources, on the slopes of Mount Hermon, perhaps stopping at the famous Dan reserve, one of the streams that—together with the Banyas and the Hashbani—give rise to the same river. The photographs should have been carefully analyzed in order to distinguish the different moods of those who shared the photo, bearing in mind that “the experiences shared on social networks are the result of personal experiences that change according to the situation one lives” [13].

If a good image in fact leads a tourist destination to success, it also is true that a bad image can cause its destruction, but the photo that is uploaded to Instagram will still influence the impression that people will have of that tourist destination. Secondly, it was asked to catalog all the hashtags that are used to increase the visibility of the site.

In the case of the Dead Sea, these are terms (written strictly all attached) that carry with them the very idea of travel or the beauty of nature: “traveldeadsea”, “DiamondBeach”, “sky”, while obviously most part of the visitors to Yardenit chose to underline the traditional role that locality plays for Christian pilgrims: “yardenitholywater”, “yardenitbaptismalsite”. From a more geopolitical point of view, the hashtag allowed us to notice how Italian users opted to distinguish their image of the Dead Sea with the indication #visitJordan, while the US users preferred #visitIsrael. Similarly, it is interesting to note that there are no results in Italian for the sources of the Dan (or the natural park of the Dan), while they are different the hashtags in English for the same location. This allowed us to proceed towards the third phase of our exercise: verifying the geotags.

Geotagging is the ability for the user to share their geographical location and add it to the photo that will be uploaded, thus completing the destination profile. This happens thanks to the acquisition of metadata from our GPS (Global Positioning System) which, through the correct longitude and latitude of the place, makes this tool effective. If you press on the geotag, Instagram takes you to a page that contains four very important elements: the name of the position, the description accompanied by the number of kilometers that separates the user from the destination based on their location, the interactive map that shows where you can find that destination in the world, and all posts, photos and videos with that specific geotag. At this point students are ready for Google Earth.

From an initial survey about the possible knowledge, what amazed us was more than the features of this software, it was the very little familiarity students had with it. In our classes there were 350 students, about 20–26 years old and while nearly 15% of them had no idea of what Google Earth was, 25% believed it to be a “Tom Tom-type” satellite navigator, another 25% made it coincide with Google Maps, while the remaining students were divided between a 22% who had heard of it but had never used it, 10% who had used it once to search for their place of residence, and 3% who had used it several times. These results are only partially different from those already obtained by Haslett in 2009 [14]. Thanks to the screen sharing feature on WebEx, we began to

understand how to move around the globe and how to get information of interest. Following the example of the Dead Sea and the Jordan, we have created a path: a real travel itinerary from the depression of the Dead Sea, along the Jordan valley, crossing the Lake of Tiberias and increasingly towards the north where, as we had already seen, its sources gush out. Thanks to the 3D images, we traveled from South to North, and vice versa, several times to appreciate the transformation of the landscape which, from 2814 m of Mount Hermon slopes down to -430 m below sea level. To involve the students, during the lessons, it was decided to leave them the task of creating a real commented tour: this was possible thanks to the “add tour” function that allows—in the Google Earth version for the Web—to record and comment the animations created. The functions allow you to create in-flight animations, zooms, panoramas and rotations of the globe and to superimpose your narrative voice. The most “daring” have created a real tourist itinerary from Mecca to Jerusalem, appreciating the 1482 km that separate the two locations.

Actually, Google Earth is not limited to such features but also provides other interesting functions: from “Voyager”, thanks to which it is possible to make virtual journeys in space and time up to the possibility of creating a personalized map starting from your own project. If until now the teaching of geography thanks to the use of virtual reality was almost nothing, or limited to pre-academic fields [15], we have noticed how this can instead be successful, above all for filling those gaps related to spatiality that characterize our students. There are now several universities that, especially during this pandemic period, have chosen to try to interact with their students in a different way: Google Earth represents one of the means that can be used for this purpose.

5. Suggestions and further analyses: a new possibility for student-centered learning?

In the pedagogical field, for many years now, we have been reflecting on new teaching approaches, passing from a classic lecture, still extremely used today in European education, in favor of more innovative ways, in which the student is considered an active part of the lesson (active learning) or even the real focus of it [16]. This second approach is called student-centered learning. It effectively overturns the vertical teacher-student relationship, thus placing the student at the center of the educational process and transforming the teacher into a facilitator [17].

This particular methodology has significant implications on a practical level: students are encouraged to learn through a series of practical actions, while at the same time they are asked to establish an emotional connection with their work. Student centered learning allows students to develop not only knowledge, but also a whole series of so-called soft skills that will be useful in the continuation of their academic career, be it university or high school level. As noted in previous paragraphs, the use of social media and technological tools greatly facilitates this task.

Let’s now go back to Instagram, a tool born as a social network for sharing photos and images. To date, there are numerous Instagram pages linked to a geographical theme: there are pages managed by simple enthusiasts, such as *fanmaps*, a Brazilian page that currently has almost 500,000 followers⁷. The institutional pages, such as that of National Geographic, have several million followers. The use of Instagram can be applied to geography education through a project to be carried out in a course such as the creation of a page on a specific theme of the course by a small

⁷ Last accessed on January 2022.

group of students. The goal could be to keep the page active for its entire duration, encouraging peers to follow it and establish interactions. To evaluate the level of engagement of the classmates, one could also think about a review activity at the end of the course on what has been learned. This, in addition to active learning, also would ensure the development of cooperative learning [18].

In all this, the teacher would play an organizational and supervisory role in the publication of the contents. It is the teacher's responsibility to set deadlines, fix the days of publications (for example, two posts per week for the entire duration of the course), and check the accuracy of the sources used by students. This would carry out another task which is very dear to contemporary pedagogy, so-called "scaffolding" [19].

The use of social media and new technologies can give another impetus to geography as discipline, projecting it forward into an interdisciplinary horizon. This type of approach, although not very common in Italian academic circles, is widely accepted in US universities, where teaching languages requires teachers have a certain level of flexibility and interdisciplinary skills. In many American universities, it is thought that language teaching cannot be separated from the context, so that the notions are enjoyed by students through a narrative framework that facilitates their deduction [20].

But how is it possible to teach geography without explicitly teaching geography? Let us provide some examples. Take for example the handbook *Sentieri* [21], which is used in several universities in the United States for teaching Italian language. The book proposes 12 thematic units in which the vocabulary and a series of grammatical elements are introduced. Unit 8, for instance, suggests that the city and its transport can become a learning context, thus introducing students to the structure of Italian cities, which obviously are different from American ones.

Technology helps a great deal, especially Google Maps, an application that allows us to build an itinerary and, at the same time, teach the use of the Italian conditional tense, starting from the question "what should I do to get to ...". The exercise allows students to develop two types of awareness. The first is geocultural because the layout of Italian and European cities is different from that of the United States, which is based on grids. Even the concept of a city center, so familiar to Europeans, is quite far from the American idea of "downtown". Kevin Lynch in the 1960s had already highlighted this lack in the urban structure of the New Continent, introducing the concepts of legibility and imageability [22]. The second type of awareness is of a practical nature, because it increases the sense of place of students who would find themselves immersed in a practical situation capable of improving the perception of spatiality, while transforming a space never seen before into a real lived space, to quote a concept by Frémont, albeit only electronically [23].

The big payoff is about language learning itself: by using Google Maps, students may learn, not only to use the Italian language correctly, but also to familiarize themselves with the places of the city in the target language, thus learning the vocabulary of the unit.

6. Results: students' improvement and satisfaction

It's far from easy to discuss and categorize students' results from a strictly scientific point of view. This is due to the fact that these changes may or may not correspond to a significant improvement in students' effective understanding of the basics of geography as a discipline. At the beginning of our experience, challenges were significant; we were in Italy, and the pandemic had suddenly forced us to change our way of teaching, literally from one day to another. Remote teaching clashed both with an older population of teachers, completely used to the idea of lectures, and with a

population of students who—as we realized during our reading of their dissertations—rarely know all the tools of Word, or the Internet in general. Moreover, in many areas of Italy, the Internet access is still difficult. Therefore, the issue was trying to set up emergency teaching that was both engaging and inexpensive, necessarily avoiding paid software such as the ArcGIS. Aware of the need for a larger space for teaching geography in secondary schools, we still believe it necessary to try to enhance our students' orientation skills on a map. The lack of geographical knowledge among University students is widespread, and doesn't affect Italy alone [24,25]. Consequently, we strongly believe that deploying even elementary tools can be useful at the University level. The results confirmed this expectation.

We compared two set of data, the percentage of success of exams, and the percentage of errors specifically related to the understanding of places on a map. The students we took into consideration were those of the academic year 2019–2020 (teaching partially in-person and partially online with only the support of classic video lessons), those of the academic year 2020–2021 (blended teaching) and those of the first semester 2021–2022 (blended teaching as a structured alternative to traditional in-person teaching, chosen by the student). We then also compared the student satisfaction rates. As we said already, the errors referred only to the geographical location of the countries under study, between the group of 2019–2020 and that of 2020–2021, decreased from 25% to 6%. We always speak of about 350 students per academic year. A further decrease was recorded among the 200 students in the first semester of 2021–2022, settling at around 3.5%. In other words, only 7 out of 200 students continue to believe that Mecca is in Jerusalem, as per our initial example. This is an astonishing result: we went from 88 students who did not know how to orient themselves in the space of the countries studied to 7 (albeit with a decrease in the size of the class, from 350 to 200 students). The blended experience of 2020–2021 left an excellent impression among students, so much so that in 2021–2022—with the disappearance of the pandemic emergency and restrictions—as many as 200 new students chose blended teaching rather than in-person teaching with traditional lessons. It is also interesting to note how the understanding of the actual size of the states studied and their position on the map also positively influenced the understanding of the problems dealt with. The awareness that Israel is not twice the size of Italy, a thought that we find in every test at the start of the course, has allowed students to better understand the dynamics related to the different migratory flows. Being able to “see” the neighborhoods of Jerusalem also made it possible to better understand the problems linked, for example, to the clashes in Sheikh Jarrah. This has led to a general improvement in performance, allowing for a significant decrease in failures during exams: if in 2019–2020 we had 38% failures during the first session, in the academic year 2020–2021 the figure dropped to 12%, while at the end of the first half of 2021–2022 the percentage of failures equal to 3% was reached.

We would like to dedicate a final reflection to the Edumeter service, a tool that the University of Turin devised to measure students' satisfaction. Edumeter records all student assessments for each academic year. In the academic year 2019-2020, student satisfaction for the Cultural Geography course stood at 68.75%, while in 2020–2021 it had risen to 89%. In 2021–2022, to our great satisfaction, the teaching received 100% of the students' satisfaction in all its aspects (both as regards the study load, the teaching material, the exam methods, and as regards the interest that the teacher was able to convey in class, the clarity of presentation, the supplementary activities). Such a good outcome, we believe, has been achieved thanks to blended teaching and the use of simple and free tools. These results, therefore, lead us to reconsider traditional teaching: to integrate in a functional and interdisciplinary way the use of these tools in our courses seem to be paramount.

This conclusion, furthermore, is partially confirmed by a survey conducted by Rajeshwari and colleagues [26], in which the authors tried to understand students' perception toward online teaching in general. Their sample included 1241 students. More than 30% of them just defined their experience of online education as “good” or “excellent”, while more than 40% defined it as “average”. This means that over 70% of them deemed the experience positive, or neutral. Such a satisfaction can be explained by the type of classes they had to take, or the digital skills of the teacher. The human factor, apparently, still plays a major role.

7. Conclusions

The outbreak of the Covid-19 pandemic has created new instructional potentials. As teachers, we are now compelled to make distinctions. Even though several students use the Internet and social media on a daily basis, many of them are not able to take full advantage of the tools that technology offers. It is fundamental to understand the way in which university students approach their studies. Until twenty years ago, the textbook was fundamental (and the atlas was indispensable as well); but today, among Italian students for the most part, notes, summaries that can be downloaded in network or slides made available by the teacher are paramount.

Paper books as well as in-depth materials posted on Moodle or recorded lessons have little appeal if the teacher does not use means to actively involve them. In other words, as far as our experience is concerned, there must always be a motivation (which is not attributable only to a good grade) to study. On the other hand, if it is true that “in a world in continuous and very rapid transformation [...] today it seems necessary to approach not so much new knowledge (which would never be exhaustive), but rather new ways to approach this complexity” [27], it is equally true that active involvement, even through play, is as fundamental in universities as in primary school.

This aspect can also be found in other educational contexts, such as in the United States, where, at least in the study of languages at the undergraduate level, there is a tendency to build the didactic approach in a context, in which practical skills are more important than knowledge of the subject itself. For this reason, we believe that geography can become an excellent interdisciplinary tool in its practical application. The so-called “sense of place”, which is the ability to orient oneself, or simply the ability to read a map, has become essential.

Conflict of Interest

The authors declare no conflict of interest.

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