DELIVERING AN ONLINE COURSE ON 'HEALTH EMERGENCY FROM SARS-COV-2, THE NOVEL CORONAVIRUS: PREPARATION AND CONTRAST' FOR HEALTH PROFESSIONS STUDENTS AT ITALIAN UNIVERSITIES

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ABSTRACT

Many Italian universities had numerous students attending hospital wards during the coronavirus disease 2019 (COVID-19) pandemic. The training of healthcare professionals and students was necessary to facilitate good practices, disseminate knowledge about COVID-19, and minimize contagion among students who were completing internships. On 28 February 2020, the Italian National Institute of Health (NIH) created a course that aimed to guide healthcare personnel so that they can appropriately address the health emergency due to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), making use of the available scientific evidence and official sources of information and updates. The purpose of this paper was to describe the method used by the Sapienza University of Rome in delivering the Italian NIH course for health professions students at Italian universities. The research group in charge of delivering the course decided to use the Google Classroom platform. Since 1 April, 80 classes have been created, and currently, 15000 students from 28 health professions bachelor's and master's degree programs and 43 universities around Italy are attending the course. A total of 13000 students have completed the final test. This paper represents a clear advantage in the field of e-learning, not only because it describes an effective method for delivering a course to many students but also because it demonstrates how health professions students can be protected while allowing them to continue or restart internships in health facilities more safely and with more awareness.

KEYWORDS

COVID-19, e-Learning, Health Professions Students, Prevention

1. INTRODUCTION

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a major pathogen that primarily targets the human respiratory system. Previous outbreaks of coronaviruses (CoVs) include severe acute respiratory syndrome (SARS)-CoV and Middle East respiratory syndrome (MERS)-CoV, which have previously been characterized as agents that greatly threaten public health (Bogoch, 2020; Lu, 2020). Extensive measures to reduce person-to-person transmission of SARS-CoV-2 have been required to control the current outbreak. Special attention and efforts to protect or reduce transmission should be applied in susceptible populations, including children, healthcare providers, and elderly people. A guideline was published for medical staff, healthcare providers, and public health workers and researchers who are interested in SARS-CoV-2 (Jin, 2020). On 11 March 2020, the WHO Director General officially declared the outbreak of coronavirus disease 2019 (COVID-19) a pandemic. (World Health Organisation, 2020) Many Italian universities had numerous students attending hospital wards during the COVID-19 pandemic. The training of healthcare

professionals and students was necessary to facilitate good practices, disseminate knowledge about COVID-19, and minimize contagion among students who were completing internships.

Since 2004, the e-learning working group of the Italian National Institute of Health (NIH) (Barrows, 1980; Barbina, 2011; Barbina, 2014) has been delivering e-learning courses on the EduISS platform (https://www.eduiss.it), assessing the quality of e-learning programs and paying attention to several key factors, such as navigability, a multimedia approach, and the degree of interactivity. Specific e-learning methodologies developed and mainly adopted by EduISS, which were originally developed for classroom learning, are innovative ways to reproduce problem-based learning (PBL) in the e-learning context using the best available web tools (Barrows, 1980; Barbina, 2011; Barbina, 2014).

On 28 February 2020, the Italian NIH created a course that aimed to guide healthcare personnel so that they can appropriately address the health emergency due to SARS CoV-2, making use of the scientific evidence currently available and official sources of information and updates (https://www.eduiss.it/course/index.php?categoryid=51).

Experts with different backgrounds developed the course, namely, experts who provided the scientific content (Italian NIH) and experts on e-learning methods and technological aspects (Training Office of the Italian NIH). The learning method selected to develop the e-learning course was based on the integration of PBL, an active learning methodology.

The course was developed within the continuing medical education Italian regulation and delivered through the e-learning platform of the Italian NIH, EduISS (https://www.eduiss.it).

During the bachelor's degree curriculum, the student is required to acquire professional specifications by completing internships in facilities identified by the degree course council (CCL) and in the defined periods. The curriculum for healthcare professions degrees provides theoretical and practical training.

The purpose of this paper was to describe the method used by Sapienza University of Rome for delivering the Italian NIH "Health Emergency from New SARS CoV-2 Coronavirus: Preparation and Contrast" course for health professions students at Italian universities.

2. BODY OF THE PAPER

On 10 March 2020, the Italian NIH officially entrusted the Sapienza University of Rome with delivering the 'Health Emergency from SARS-COV-2, The Novel Coronavirus: Preparation and Contrast'' course, which was already available for Italian healthcare professionals, to health professions students enrolled in Italian universities.

2.1 Course Development

The research group in charge of delivering the course, who was already experienced in managing online courses (Farina, 2019; Paterniani, 2019; Galeoto, 2019a; Galeoto, 2019b), decided to use the Google Classroom platform. First, a specific email address was created (corsonuovocoronavirus@gmail.com) to administer the courses and serve as a reference contact to provide support to students. Currently, 80 twin-classes with the same content of the original Italian NIH course have been created with the reference contact, and guidelines for student registration were shared with all Italian universities. Specifically, the research group sent the guidelines to the commission of the permanent conference of the health professions, and each manager sent them to the students in the courses for which they were responsible.

2.2 Guidelines for Students

To register for the course on the Google Classroom platform, students need an internet connection and a browser on their personal computer (PC) (e.g. Chrome, Firefox, Internet Explorer, or Safari). In general, the platform is supported by the main versions of browsers on an ongoing basis. To use the tool, students need to access their Gmail e-mail inbox, and then they must access the Google menu and click on Classroom (Figure 1).

Figure 1. Classroom Icon

Alternatively, after logging in with their email credentials, they can access the Classroom application directly from the following link: https://classroom.google.com/. For participants who do not have a Gmail account, the creation of an account is required to register for the course. It is not possible to register with the institutional email; this feature is why students and teachers (corsonuovocoronavirus@gmail.com) must have the same email domain. Google Classroom does not currently support multiple domains. At the first authentication, simply click on the + symbol at the top right ('Create your first course or Register') by selecting the subscribe to the course icon (Figure 2).

Figure 2. Create a course

Once the subscribe to the course item has been selected, simply enter the course code from the guidelines. Codes are constantly updated at http://www.associazioneroma.org/covid19-Over-students /. All the course material is immediately visible in the Stream section of the course (Figure 3).

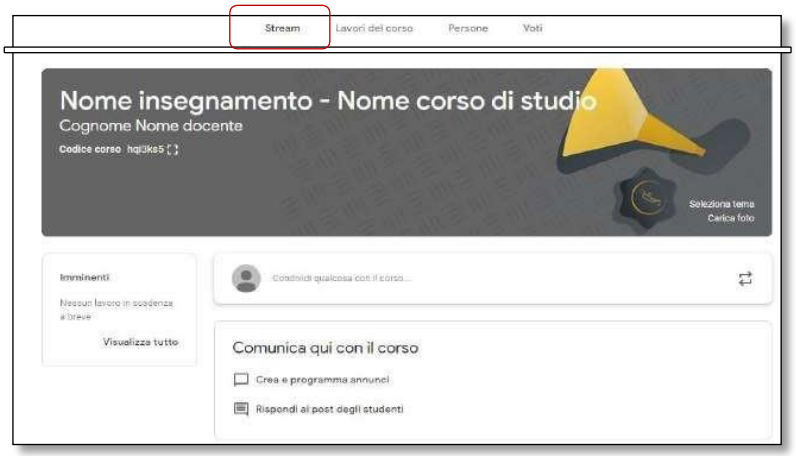

Figure 3. STREAM section

All students are required to complete the entrance test and the final test, which are found at the beginning and end of the course materials in the Stream section. To obtain the certificate of participation, it is mandatory to complete the two evaluation tests. At the end of the test, simply click on delivery, and the certificate of participation in the course will be sent to the participants at the email with which they enrolled. Only upon successfully completing all the course activities is an attendance certificate provided for each participant. The tutors are available by email to resolve any doubts regarding the course content, methodological aspects, and technological issues.

2.3 The e-Learning Course Characteristics

The course was structured in three learning units, all reproducing an entire PBL cycle. The general objectives of the e-learning course were to update the participants about the main concepts of COVID-19 and to guide healthcare professionals and students on clinical practice with COVID-19 (Figure 4).

Figure 4. Example of a course

The three units and the related specific learning objectives were as follows:

1. Characteristics of the international and national situation of the health emergency due to SARS CoV-2;

2. Surveillance, detection, and management of suspected cases;

3. Information for healthcare professionals for prevention, identification, and control in clinical settings.

Participants were expected to spend 16 hours to complete the course. They could access the course at any time; however, they were required to complete the course within four weeks. Participation in the course was voluntary for universities, courses, and students, and at the time of recruitment, the participants were informed about the modalities and objectives of the project. The results of the tests were communicated individually to the participating students and did not affect the evaluation in progress or the final evaluation, while the aggregated data were transmitted to the coordinators of the courses involved and to the university referents. A group of experts screened all these elements, establishing the number and type of questions required. Once the number and type of questions were established, the working group followed four steps: (1) development of multiple choice questions with four possible answers, one of which is correct; (2) choice of the maximum time to answer each question (approximately one minute and a half); (3) choice of the scores to give to the items (one point for each correct answer); and (4) choice of the randomization and administration methods. Randomization was considered necessary to standardize the attention levels to all questions. From this analysis, 31 questions were obtained and divided into three units in the course.

3. RESULTS

Since 1 April, 80 classes have been created. Each class allows a maximum of 250 participants (Figure 5).

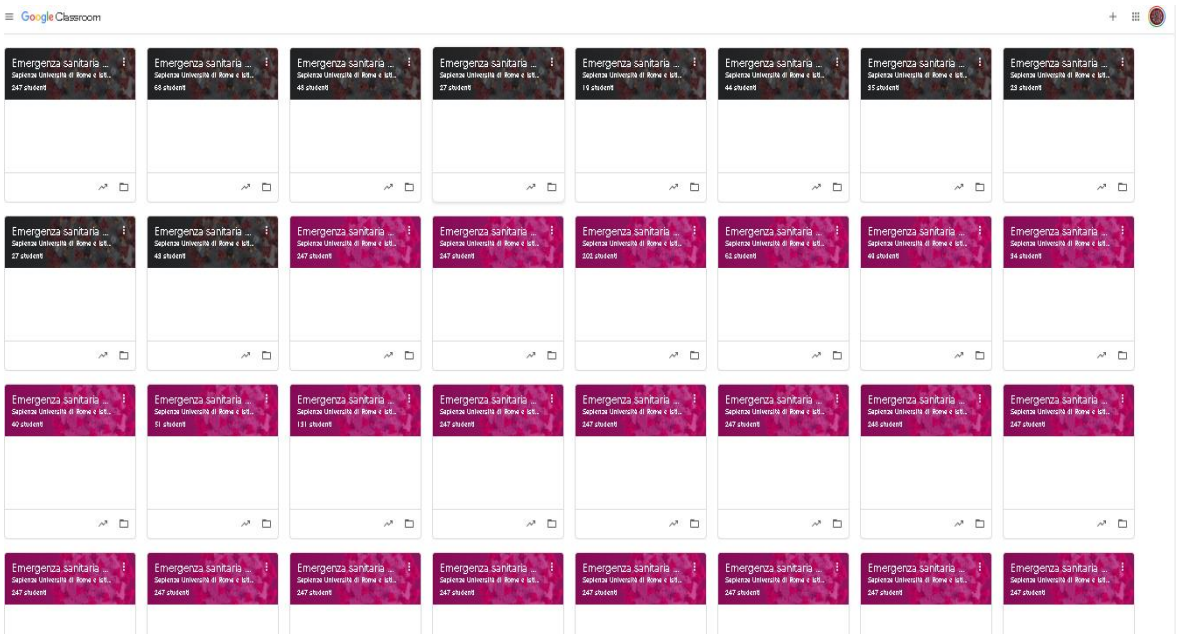

Figure 5. Courses

Currently, 25479 students from universities around Italy are attending the course, and 20000 have completed the final test. A total of 43 universities have been involved. Students from all the 28 health professions bachelor and master's degrees (e.g. healthcare, physiotherapy, nursing, speech therapy, medicine, odontology, biomedical laboratory techniques, medical radiology techniques, and occupational therapy) have attended the course.

4. CONCLUSION

COVID-19 has significantly affected all of our lives. It is challenging our ability to adapt and be resilient, and people are facing major challenges worldwide. The education sector is responding to quarantines with a sudden shift to online learning (Electronic Platform for Adult Learning in Europe, 2020). The present study represents an important element for the emergency that the world is experiencing. Experts in the academic world must be encouraged to spread and share strategies used to face difficulties. The advantage of international communication lies in the sharing that allows ever-higher standards in education. This paper illustrates clear advantages of e-learning, not only as an effective method to deliver a course to many students but also because as a method by which health professions students can be protected while allowing them to continue or restart internships in health facilities more safely and with more awareness.

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