Pilot implementation of the e-Bug Project in Italy

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A pilot of the e-Bug programme has been performed in Italy. Three thousand copies of e-Bug packs have been printed and distributed to primary and first-level secondary schools in three north-eastern regions of the country (Veneto, Trentino Alto Adige and Friuli Venezia Giulia). Following the programme design in the pack, lessons based on the e-Bug resources were delivered for 1 week in a primary school in Verona. This practical approach has been adopted by other schools in these regions, in the cities of Trieste and Udine. Excellent feedback on the e-Bug packs has been received from both students and teachers. The National Italian Institute of Health has requested a further 800 primary and 800 secondary e-Bug packs for distribution to different regions.

Keywords: microorganisms, active learning, school, hygiene

Introduction

Italy is a densely populated country with a population of 60045000 in 2009, of which 6201420 were between the ages of 6 and 16 years.1 Although there are 13 ethnic communities in Italy, Italian is the only official language and is used exclusively in schools.2 Schools are considered the best environment to teach the fundamental principles of living in a community and appropriate hygiene behaviour. These are more likely to be implemented when people understand the scientific bases for them. Since infections can be easily spread in communities sharing common spaces, such as the school environment, it is advantageous to teach the principles of viruses and bacteria, hand and respiratory hygiene, and antibiotics and vaccines as soon as they can be understood by a young audience. Currently, regional and national public campaigns are delivered via newspapers, magazines and television or radio programmes. During these campaigns, dialects are used by some regional healthcare organizations to allow their messages to be understood by elderly members of the population.

The educational structure in Italy

Education in Italy is delivered by both the state sector and the private sector. The state sector is the largest and provides 90% of educational services. The private sector can be further divided into ‘paritarie’ and ‘non paritarie’. Structures defined as ‘paritarie’ are independent of the State, but their core curriculum overlaps significantly with that of the schools in the state sector. Their students are also entitled to take the same final examinations as those in the state system. Structures defined as ‘non paritarie’ are also independent of the State, but their core curriculum tends to overlap much less with that of the state sector and the students must therefore take special final examinations.3

A first cycle of subjects is designed for 6–11-year-old students attending primary schools and 11–14-year-old students attending the first level of secondary school. A second cycle of subjects is designed for students of 14 years of age upwards, when students attend the second level of secondary school. Several options are provided to allow different degrees of specialization in specific fields.4

Within the educational cycle, teachers may decide in which year(s) given educational topics are taught. Some subjects may be taught in greater detail, but none of those included in the national curriculum can be omitted. Textbooks are the predominant teaching resource currently in use. These are selected by each school’s Teachers’ Council, following general directions issued by the Ministry of Education. For both primary school and the first level of secondary school, their cost should not exceed a fixed amount designated by the Ministry.5 A ‘National Catalogue of Multimedia Devices’ (e-Didateca) enables users to view, download and upload further teaching resources.6

It is mandatory to have at least one ad hoc computer room with an Internet connection. The average computer:student ratio is 1:15 and all schools have at least one computer. Internet access is available in 41% of primary schools, 52% of first-level secondary schools and 77% of second-level secondary schools.7

Implementation of the e-Bug pilot project

The e-Bug resources were translated into Italian and the pack was used to deliver lessons for 1 week in a primary school in Verona. In this primary school, a case of meningococcal meningitis had occurred some years ago, and both the school director and parents were happy that their children should participate in the hand and respiratory hygiene lessons. A meeting with the
parents was held after the lesson cycle was completed (Figure 1) and an article on the experience was published in a local newspaper.

This approach was also adopted by other schools in northeastern Italy, in the cities of Trieste and Udine, and was equally well received by both students and teachers. Teachers who participated in this first pilot have created a network for distribution of the translated packs and the process is on-going.

e-Bug has been welcomed by science teachers, proving a simple, ready-to-use resource that is easy to understand and well received by the students. Three thousand e-Bug packs have been printed in Italy, half for use in primary schools and half for use in secondary schools.

Future of the e-Bug programme in Italy

In 2005, the Italian National Institute of Health, supported by the Ministry of Education and Universities, published a booklet entitled Microbiology in Medicine: Hints for an Educational Action,8 which presented the findings of a project intended for use by secondary school students and teachers. The publication examined the teacher training in scientific subjects, with specific reference to Microbiology, and teaching methods were based on active/cooperative learning. In 2006, a new publication (Having a Meal with Microbes: Hints for an Education Action) examined in detail food microorganisms and zoonotic agents.9 The active/cooperative-learning method has been recognized as one of the most effective strategies to capture students’ attention10 and e-Bug perfectly fits into this programme.

In addition, e-Bug is also designed for use in primary schools; therefore filling a gap in previous Italian programmes and giving the opportunity for Internet access to appropriate educational resources. Based on this, the National Italian Institute of Health has requested 800 primary and 800 secondary e-Bug packs for distribution in different regions.

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