

pioneer of biological field research.<sup>[8]</sup> Founded in 1088, the [University of Bologna](#) is considered the first, and the oldest continually operating university.<sup>[9]</sup>

Elsewhere during the Middle Ages, [Islamic science](#) and [mathematics](#) flourished under the Islamic [caliphate](#) which was established across the Middle East, extending from the [Iberian Peninsula](#) in the west to the [Indus](#) in the east and to the [Almoravid Dynasty](#) and [Mali Empire](#) in the south.

The [Renaissance](#) in Europe ushered in a [new age of scientific and intellectual inquiry](#) and appreciation of ancient Greek and Roman civilizations. Around 1450, [Johannes Gutenberg](#) developed a printing press, which allowed works of literature to spread more quickly. The European Age of Empires saw European ideas of education in philosophy, religion, arts and sciences spread out across the globe. Missionaries and scholars also brought back new ideas from other civilisations — as with the [Jesuit China missions](#) who played a significant role in the transmission of knowledge, science, and culture between China and Europe, translating works from Europe like [Euclid's Elements](#) for Chinese scholars and the thoughts of [Confucius](#) for European audiences. The [Enlightenment](#) saw the emergence of a more secular educational outlook in Europe.

In most countries today, full-time education, whether at school or otherwise, is compulsory for all children up to a certain age. Due to this the proliferation of compulsory education, combined with population growth, [UNESCO](#) has calculated that in the next 30 years more people will receive formal education than in all of human history thus far.<sup>[10]</sup>

## Formal education

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Formal education occurs in a [structured environment](#) whose explicit purpose is teaching students. Usually, formal education takes place in a school environment with [classrooms](#) of multiple students learning together with a trained, certified teacher of the subject. Most school systems are designed around a set of values or ideals that govern all educational choices in that system. Such choices include curriculum, [organizational models](#), design of the physical learning (e.g. classrooms), student-teacher interactions, methods of assessment, class size, educational activities, and more.<sup>[11][12]</sup>

## Preschool



Young children in a [kindergarten](#) in Japan