



EDITED BY JAN HANSEN, JOCHEN HUNG, JAROSLAV IRA,  
JUDIT KLEMENT, SYLVAIN LESAGE, JUAN LUIS SIMAL, AND  
ANDREW TOMPKINS

# THE EUROPEAN EXPERIENCE

A Multi-Perspective History  
of Modern Europe, 1500-2000





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## 4.3.1 Education and Knowledge Transfer in Early Modern History (ca. 1500–1800)

*Lilla Krász and Dirk van Miert*

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### Introduction

*Cornelius:* My ink is too thin. I poured in water now and then.

*Andreas:* My pen cloth has become hard and dry.

*Cornelius:* Blow your nose in it unless you'd rather pee on it!

*Andreas:* No, I'll ask somewhere else for one.

*Cornelius:* It's better to have one at home than to borrow one.

*Andreas:* What is a student with no pen and ink?

*Cornelius:* What a soldier is without shield and sword.

Thus runs, translated from the Latin, a fragment from one of Erasmus' *Colloquies*. The great humanist reformer established them as a collection of simple dialogues geared towards schoolchildren, published in 1522. For a change, readers of the colloquies could relate to their own daily lives instead of some Roman conqueror. Gradually, as the collection of colloquies grew, they were reprinted time and again and used at grammar schools to teach Latin, even well into the nineteenth century. As was his custom, Erasmus not only familiarised school students with Latin phrases for daily use, but also ridiculed many pastors and monks in these elegant Latin conversations. Theologians teaching at universities across Europe were not amused—and in Rome, the dialogues were put on the Index of Forbidden Books, along with many other works by Erasmus.

### Humanism and Scholastics: Side by Side

For all his critique of monks and the corruption of the church, Erasmus was above all a reformer not of religion, but of education. He built on a tradition that had been firmly established since the mid-fourteenth century, the time

that Petrarch started to give a voice to scholars who were attempting to breathe new life into Roman antiquity, as well as Greek antiquity from the early fifteenth century. The new *studia humanitatis* were implemented at the schools of famous humanist educators such as Gasparino Barzizza (1360–1430), Guarino da Verona, and Vittorino da Feltre (1373–1446/1447). They were also the endeavour of a mass of lesser-known people who worked at the grassroots level, implementing the pragmatic focus on rhetoric, the pedagogic genre of manuals and textbooks, and the aspiration to go back to classical sources. Meanwhile, the economic upsurge of northern Italy had led to an increased focus on the teaching of merchant skills, such as handling the *abbaco* (counting frame) and double-entry bookkeeping. From the thirteenth century onwards (up until the end of the nineteenth century), the transfer of vocational knowledge across Europe was largely channelled via the guilds, where the tacit knowledge of crafting was taught through years of guided practice. One of the more peculiar institutions that was rooted in the guild system was the university.

Although humanists were active at the universities, it proved more difficult to change the curricula of these conservative institutions, which continued to be dominated by theology faculties until the end of the early modern period. Universities retained the base hierarchy of three major faculties—theology, law, and medicine—supported by a propaedeutic faculty comprising the liberal arts. This hierarchical classification of the domains of knowledge continued to act as a framework for the organisation of universities across Europe. Scholastic theology held strong, with Protestant universities retaining scholastic methods in their theological faculties until well into the seventeenth century. Gisbert Voetius, the orthodox reformed theologian and rector of Utrecht University, railed against colleagues who started to expound Cartesian ideas in their teachings—even at a time when philosophers across Europe were adopting thoughts and methods from philologists and other philosophers like Joseph Scaliger, Isaac Casaubon, Francis Bacon, René Descartes and Marin Mersenne. Voetius stuck to Calvin, but also (and somewhat counterintuitively) clung to Catholic commentators from the School of Coimbra. Despite all the religious differences throughout Europe, the hierarchy and methods in science and scholarship were surprisingly similar across the continent.

## The Organisation of Teaching

Although Erasmus in his *Colloquies* frequently staged women who outsmarted their male interlocutors in their own fields, academia kept its doors closed to women. Even if Voetius in Utrecht famously allowed the polymath Anna Maria van Schurman to follow his public lectures from behind a curtain, and even if

Schurman and others (male and female) argued for the intellectual capabilities of women, her case proved a rare example. In Italy, Elena Cornaro received a doctorate in philosophy (Padua, 1678) and in Bologna the physicist Leonara Bassi became the first female professor in 1732. While primary education was open to girls, secondary and in particular tertiary education was not.

In Habsburg territory the teaching of elementary knowledge in all major and some minor localities took place in primary schools run by Catholic parishes and Protestant ministries. The main goal was to acquaint students with the basic principles of religion and ethics, and in relation to these, the basics of reading, and possibly writing and counting in the mother tongue of the localities (in German, Hungarian, Slovakian, Croatian, etc.). These institutions were attended primarily by the children of craftsmen and merchants. Further sites of elementary education were the municipal Latin schools and, typically in Hungary and Transylvania, the beginner classes of Protestant grammar schools.

Until the advent of the Counter-Reformation, the Protestant provincial schools (*ständisch-protestantische Landschaftsschulen*) in the Habsburg Hereditary Lands acquired the leading role in the secondary education of noblemen and urban citizens. They adapted the pedagogical models introduced by Melanchthon, Jakob Sturm, and Valentin Trotzendorf in the Lutheran schools of the Holy Roman Empire. As for Catholic education, the old monastic schools continued to operate, but with the appearance of the Jesuits, the dynamic rearrangement of power structures had begun. From the second half of the sixteenth century, Protestant schools were gradually taken over by them, and even in the Protestant north, humanistically oriented pedagogues were inspired by the Jesuit *Ratio Studiorum* (adopted in its final form in 1599), which emphasised the traditional classical-rhetorical ideal of education. Yet, in Habsburg territory, the victory of the Counter-Reformation in the Thirty Years' War meant the collapse of the Protestant school structure. As a result, the education system of the Hereditary Lands took on an emphatically Catholic-ecclesiastical character.

## Central Europe

The Thirty Years' War led to massive displacement of scholars: many a Protestant in Central and Eastern Europe fled westward to Dutch gymnasia and universities, or eastward to Transylvania. Thus, the German poet Martin Opitz arrived at the college in Gyulafehérvár in 1622. A few years later, he was followed by other German scholars, such as the encyclopaedist Johann Heinrich Alsted, the physicist Johann Heinrich Bisterfeld or Ludwig Piscator, the professor of Greek and Hebrew. Having helped set up educational

institutes in Thuringia, Essen, Moravia, Silesia, England and Sweden, Jan Amos Komenský (Comenius, the Moravian educator of European fame) taught from 1650 in Sárospatak and there wrote his *Orbis Sensualium Pictus* (1658), a multilingual elementary textbook with illustrative engravings. Moving to Leszno and then fleeing Catholic persecution, he arrived in Amsterdam in 1657, where plans to make him a professor at the local Athenaeum foundered. Yet, he exercised a profound influence on later generations of educators, a consequence of his unabated activity in English-Dutch-German intellectual networks, alongside his education theories regarding curricula that could fit the natural development of children. His ideas were also central to the so-called Hartlib Circle—a network of Protestant educational reformers who spanned the arc of Northern Europe, from England to Bohemia. The activities of these people led to modern, practice-oriented subjects finding their ways into curricula, including geography, mathematics, or experimental physics, which incorporated the theories of Leibniz, Wolff, and Newton.

Yet, despite the so-called scientific revolution, it was the philological-historical humanist tradition that in Germany was drilled into every new generation until well into the eighteenth century. It is often assumed that the devastation of the Thirty Years' War destroyed the institutions and networks of learning, but scholars, teachers, and the learned book trade proved remarkably resilient. Individual German states might have attempted to exert rigid control over their educational systems, but from a bird's-eye view, the patchy territories of Germany showed not only a large number of schools and universities but also a highly diverse and incredibly competitive market. Political fragmentation did not cripple the educational system, but enriched it. Latin schools proved tremendously flexible and independent in attending to local needs and regional competition. Despite the constant adaptations in pedagogical method, in the daily routine there was little taught or discovered that was truly innovative. Ramism, a procedural system of classification expounded by the French philosopher Pierre de la Ramée (1515–1572) as an alternative to Aristotelian categorisations, proved very popular in the schools of central Germany in the seventeenth century. Latin schools were often centres of learning outside courts and academia. German Latin schools played a crucial double role in education: their lowest forms were tailored to a German-speaking market of artisan families, while their higher forms targeted aspiring students. These schools were successful in enhancing the social mobility of families—not quickly, but steadily over generations.

The mobility of scholars was not only caused by wars and persecution. It tied in with a generations-old practice of students travelling around Europe for educational reasons. As part of their *peregrinatio academica* or *gelehrte Reise*, or *Kavalierstour*, students and noblemen toured the universities of Europe,



often following established routes. Though not all were headed for the Italian Peninsula, a doctorate at an Italian university was indeed a jump-start to a successful career in science and scholarship. The innovative theatrical teaching of anatomy in Padua was something of a scientific spectacle. Following empirical methodologies, natural history developed specialised anatomical and botanical insights, along with *Kunstkammern*: cabinets of curiosities that displayed both regularities and monstrosities from the mineral, vegetable, animal and human kingdoms. Such practices were part of a culture of collection and curiosity that tied together scholars and scientists in what these correspondents themselves referred to as the 'Republic of Letters'. These empirical approaches also made their way north. The popularity of the University of Göttingen for traveling students was due partly to their propagation of practical studies. The empirical approach is particularly striking among both Lutherans and Calvinists from the 1750s onwards.



Fig. 1: Johann Heinrich Tischbein, "Return from the *Kavalierstour* of the Sons of the Count of Stadion to Warthausen" (1780), Public Domain, Wikimedia Commons, [https://commons.wikimedia.org/wiki/File:Adel\\_im\\_Wandel12.jpg](https://commons.wikimedia.org/wiki/File:Adel_im_Wandel12.jpg). This oil painting shows the tradition and drama surrounding early European study tours. This wealthy family from Mainz, Germany greets their sons as they return from their studies abroad.

From the middle of the eighteenth century, under the reign of Maria Theresa and Joseph II, the educational reforms introduced in the Habsburg Empire brought about spectacular methodological and structural changes in the school system on each level, from elementary schools to universities. Practices characterised by concepts rooted in Enlightenment thinking, such as utility, or citizens' welfare and the duty of rulers to care for their subjects, came into

force when the whole imperial school system was taken under state control and reformed according to uniform and universal models. The primary goal was to promote the training of public officials who would serve the state as 'useful subjects'.

In short, the diversity of educational and academic institutions resulted in the simultaneous presence of rather heterogeneous forms of knowledge in the Habsburg Empire that motivated both the gradual rise of scientific and educational standards in already-existing institutions, but also the development of the modern disciplinary structure.

## Western Europe

While the Austrian branch of the Habsburg family coped with the Reformation, the Spanish branch set in place the Counter-Reformation, in the Iberian Peninsula and further afield in the American territories that they occupied. In fact, alongside violence, schooling was an important instrument of colonisation.

The Spanish Empire was a flourishing part of the international Republic of Letters and boasted a string of intellectual centres, such as one of the three oldest universities of Europe, at Salamanca. They were followed by universities in Valladolid and Madrid in 1293. Just as elsewhere in Europe, new universities were founded over the next few centuries. They floated on the vast infrastructure of schools run by humanistically oriented masters, whose interest in Latin was, like on the Italian Peninsula, joined by studies of Greek after the fall of Constantinople in 1453. They were not all as famous as Antonio de Nebrija or his student, Erasmus' *protégé* Juan Luis Vives, the antiquarian Antonio Augustín, or the philologist Benito Arias Montano. But they were successful pedagogues. The small Aragonese town of Alcañiz, for example, produced schoolmasters, playwrights, theologians and many Latin poets, including Pedro Ruiz de Moros, who studied in Bologna and went on to make a career as the legal advisor of King Sigismund II Augustus of the Polish-Lithuanian Commonwealth. Moros established a university in Vilnius and opened up an avenue for Spanish Jesuits to build schools in Lithuania, even though he himself feared competition from them.

Erasmus inspired many, but he himself had been inspired by the teachings of others. One was the humanist and biblical scholar John Colet, whom Erasmus met in England. Erasmus also found a cognate spirit in the humanist Thomas More. More fostered relatively liberal ideas for the learned education of girls, although in his *Utopia* (1516), the masses are expected to learn primarily agricultural skills. English educational reform was propelled moreover by the Latin grammar of Thomas Linacre (1524). Colet and Linacre strongly



advocated the learning of Greek, which then inspired Erasmus to create a trilingual college in Leuven in 1517. While humanism was firmly implemented in the sixteenth century, it later became somewhat stifled in the seventeenth century. The Dutch School-Order of 1625 was meant to create a curriculum allowing mobility across the provincial borders of the United Provinces, but such federative ideals proved no match for the competition between regional schools, where masters opted for their own published books. This was more a question of competition than of dynamic innovation.

Competition was also noticeable on a larger scale, as rulers tightened their grip on the universities in their countries. Universities also became more bureaucratic, drawing up rules for examinations and becoming more streamlined in their organisation. Newtonian natural science had largely replaced Aristotelian physics by the end of the seventeenth century; and over the course of the eighteenth century, natural science grew in importance at the expense of theology and of humanist topics taught traditionally at faculties of liberal arts, such as history and rhetoric. Philosophy as a whole, and metaphysics in particular, was maintained throughout the Enlightenment, culminating in Kant's plea for its primacy. But universities were not centres of innovative ideas and lagged behind in their programming. Whereas the sixteenth century had been the heyday for the growth of universities, the number of students in Europe stabilised or even dropped in the seventeenth century. Then, in the first half of the eighteenth century, registrations in southern universities started to increase again. In France, for example, student numbers were on the rise, particularly in law faculties, while in most northern European institutions their numbers continued to drop. In the second half of the eighteenth century, numbers rose again all over the continent. Lower classes, however, enjoyed fewer opportunities to enter the universities: whereas the humanistic institutions of education had been relatively open to people from poorer backgrounds, the universities of the eighteenth century were increasingly populated by students drawn from the aristocratic layers of society. Overall, the universities became more 'national' in character.

As public administration tightened along national lines, student mobility was constrained. The mobility of pedagogical reformers such as the Dutch Erasmus, the Bohemian Comenius and the Spanish Ruiz de Moros was facilitated by the universal use of Latin. But during the Enlightenment, the rise of the vernacular and the centralisation of states stifled student mobility: the traditional study trip, in which students hopped from one university to the other, became a journey enjoyed only by aristocratic students.

## Conclusion

Across Europe, higher education adopted a relatively uniform humanist paradigm in the sixteenth century. Although this paradigm survived the scientific revolution and continued to shape students during their first years at universities, the liberal arts—informed by history, philology, and rhetoric—failed to hold their ground alongside the emancipation of natural sciences. The development of atomistic, Cartesian, Newtonian and Leibnizian metaphysics rendered the Greek and Roman tradition outdated. It was not until the modern age that a combination of Kantianism and a neo-humanistic study of antiquity accompanied the rise of a new type of research university, which spread from Germany to the rest of the continent.

The institutional landscape was in broad terms largely the same across Europe: a secondary tier prepared students for a tertiary education based on scholastic and humanist learning, rooted in a productive combination of Greco-Roman and Christian traditions, which were also shaped in many ways by Arabic and Jewish scholarship. Latin was important as a European *lingua franca*, despite the rise of Italian in the sixteenth century and French in the seventeenth century. What is particularly striking is the high number of schools: relatively small towns harboured Latin schools that might not have attracted many students, but that were symbols of cultural capital for communities that wished to elevate themselves in the regional competition for power. Although confessional differences hampered institutional exchange, and universities as a rule did not appoint professors of different religious backgrounds, universities generally accepted students of other confessions. The wide array of topics that were understood to be part of the *artes*, along with the three higher faculties of theology, law and medicine, offered a rich body of skills and ideas. With the overarching frames of Christendom and classical tradition ensuring a common frame of reference, learning might have appeared conservative locally, but from a bird's-eye view, the educational landscape was rich and variegated, creating a relatively open market for ideas.

## Discussion questions

1. What was the role of the Thirty Years' War in the development of education and knowledge transfer in early modern Europe?
2. What was the role of religion in the development of education and knowledge transfer in early modern Europe?
3. Why did early modern scholars travel so much?

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