

Chapter 10

Liberal Arts and Sciences Education for the 21st Century Knowledge Economy: A Case Study of Amsterdam University College, The Netherlands

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This chapter describes how Amsterdam University College (AUC), a liberal arts and science honours college in The Netherlands, promotes internationalization and adopts a global approach in its curriculum and academic community. It shows how global learning outcomes and 21st century skills can be fostered to contribute to the international competitiveness of higher education institutions and considers the implications for East Asia.

Introduction

As shown in Chaps. 1 and 2, the liberal arts tradition had its roots in medieval European universities. Their curriculums provided a comprehensive initial higher education which was based on the seven *artes liberales* including the *trivium* (literary arts: grammar, logic, and rhetoric) and *quadrivium* (mathematical arts: arithmetic, geometry, music, and astronomy), followed by advanced training in the main professions of the time such as medicine, law, and theology. From the 19th century onwards, the essentially European liberal arts model almost vanished from the European scene. A strong focus on professions and disciplines led to early specialisation at undergraduate level and the (almost) demise of the liberal arts (van der Wende 2011). By contrast, the liberal arts universities continued to play a strong role in the US.

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I. Jung et al. (eds.), *Liberal Arts Education and Colleges in East Asia*,

Higher Education in Asia: Quality, Excellence and Governance,

DOI 10.1007/978-981-10-0513-8_10

Throughout the 20th century, the establishment of American liberal arts universities in Europe brought the liberal arts model back to the old continent, followed by a genuine re-emergence led by European research universities since the 1990s. This trend can be observed in particular in the north-western part of Europe, including The Netherlands, England and Germany, and it is led by strong European research universities. Such institutions typically offer a comprehensive range of undergraduate and graduate programs and substantial doctoral training connected to leading research areas. Their liberal arts colleges represent a small section of their undergraduate program offerings, usually catering to their most talented and international students. In the Netherlands, such colleges are known as “university colleges” and share a common set of aims and characteristics, as shown in their recent joint statement (UCDN 2014). These moves can be seen as a response to the need to differentiate the mass and (overly) egalitarian European higher education systems. In particular, there is a quest for broader bachelor programs in order to overcome the disadvantages of early and over-specialisation, to enhance learning effectiveness, and to produce graduates with skills relevant to the 21st century global knowledge economy. There is also a search for elite education, by establishing more selective branches of higher education focusing explicitly on excellence. The Bologna Process, i.e. the introduction of distinct undergraduate and graduate degree cycles in European higher education, played a facilitating role in this by recognizing the bachelor (undergraduate) program as a phase in its own right (van der Wende 2011).

This new European version of the liberal arts model has become part of a broader global debate on ensuring how higher education accords with the needs of the globalized 21st century and redefining excellence in undergraduate education.

Although the terms ‘liberal arts’ or ‘liberal education’ are often used as shorthand for the more comprehensive notion of ‘liberal arts and sciences education’, it is explicitly recognized that the sciences are integral to this concept. Building on the concepts of mathematics and logic in the *artes liberales* (see above) and C.P. Snow’s plea for bridging the two cultures of the humanities and the sciences, this is seen as essential to preparing students for the demands and uncertainties of the 21st century and the digital future.

The arguments in favor of a liberal arts approach to undergraduate education in the 21st global century can be described in three broad categories (van der Wende 2012, 2013):

- An epistemological argument relating to the most exciting development of knowledge happening at the interface of the traditional disciplines, thus a substantial focus on cross-disciplinary or interdisciplinary broad themes and big questions needs to be reflected in the curriculum.
- An economic and utilitarian argument, relating to the employability of graduates. A society characterized by a knowledge economy, innovation, and global competition requires the so-called “21st century skills” which enable graduates

to be creative, critical thinkers, and problem solvers who can cooperate in teams and communicate across the boundaries of languages, cultures and disciplines.

- The third argument relates to the moral and social dimension and to the humanistic tradition of liberal arts. This underlines the importance of educating the whole person, including personal and intellectual development with a view to social responsibility and democratic citizenship.

As depicted in Fig. 10.1, these arguments are not mutually exclusive, nor are they radically new. In fact, the first two arguments are being strongly driven by developments in the global knowledge economy into a converging agenda for undergraduate education for the 21st century. The third category, the social-moral dimension, however, seems to be more difficult to (re-)define in this new century. Not only may tensions arise between strongly utilitarian and competitiveness-driven economic arguments and the social-moral dimensions, but the latter may also be under pressure in contexts where liberal values such as democratic citizenship cannot be taken for granted. In this sense the (start of) the 21st century does not seem to be characterized by convergence. These conceptual considerations will now be taken further and illustrated by a case study on the development, mission, and aims of Amsterdam University College.

Amsterdam University College (AUC) was established in 2009 as an excellence initiative jointly undertaken by the University of Amsterdam (UvA) and VU University Amsterdam (VU). AUC is a selective and residential honors college that offers an international liberal arts and sciences bachelor program, leading to a joint degree from the two founding universities. The fact that these two major research universities in Amsterdam joined forces to create a liberal arts and sciences undergraduate experience was based on the vision that the leaders of the future will have to work together across the boundaries of nationalities, cultures and disciplines, in order to be successful in the globally engaged and culturally diverse society of the 21st century. Hence the choice was made for the liberal arts and

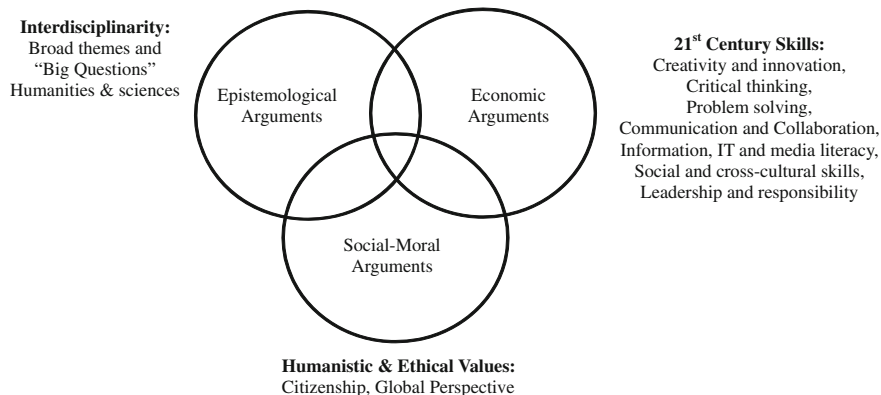


Fig. 10.1 Arguments for liberal arts and sciences in the 21st century. *Source* Elaborated on van der Wende (2012, p. 292). Permission granted from the author who holds the copyright

science model. The joint initiative in excellence at undergraduate level is an example of a “local co-operation for global competition” strategy and was supported by the Ministry of Education and Science, the City of Amsterdam, and locally headquartered multinational corporations (van der Wende 2013).

AUC’s mission, ‘*Excellence and Diversity in a Global City*’ reflects the belief that both excellence and diversity matter, as both competition and co-operation are key to success in a globalized world. Leadership does not only require excellence, but also the understanding and valuing of diversity. Consequently, AUC’s values express a commitment to excellence, diversity, and the global perspective:

- We seek excellence in all that we do and believe that it is not only the responsibility of each individual to strive for his or her best, but also to create the conditions for the success of others.
- Diversity is our strength. Different approaches, ideas, and values are integral to the creation of a vibrant and challenging learning environment. Diversity, however, requires tolerance. Tolerance, understanding, and open-mindedness are therefore expected of every member of the AUC community.
- We believe that a global perspective is central to the success of every student. A global perspective requires active engagement with other individuals, communities, and the world. This engagement is celebrated and valued at AUC (AUC website).

The rationale, mission and values have shaped the profile of AUC, which is characterized by:

- A program that ensures breadth and depth of learning by focusing on far-reaching themes and real-world problems in science and society, thus crossing the boundaries between science, social science, and the humanities.
- An international and intercultural focus, reflected in a diverse and international student and staff body, an international curriculum and classroom setting, training in intercultural competences, with English as the language of teaching and learning.
- An engaging academic and social context, supported by small class size, a residential college setting and state-of-the-art facilities.
- Strong outreach to the community through off-campus community engagement or in-company internships.
- An integrated approach to tutoring as an integral element of the teaching and learning model: tutors have a central role in the students’ learning experience and choices therein and are also themselves involved in teaching (AUC website).

Furthermore, because of a firm belief that the major, most important and most urgent questions of our time require a science education that connects and transcends the disciplines, the AUC curriculum, unlike that of most other Dutch and international liberal arts colleges, offers all students ample opportunities to focus on science and science-related majors and develop strong analytical and quantitative skills. Nowotny (2012) observes that AUC ‘seeks to link the parts of our *globus*

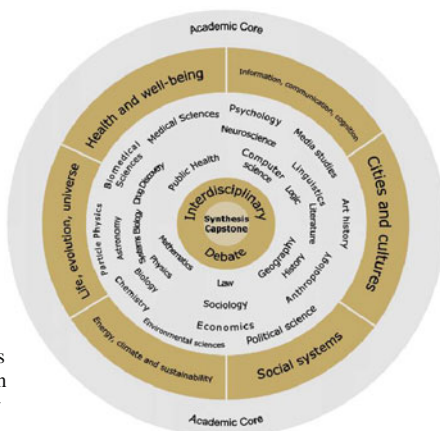
intellectualis that seem to have become separated, much like oceans dividing the continents... reconnecting the natural sciences—physics, chemistry, and the life sciences—with the humanities and social sciences. These innovative features of the AUC curriculum are supported by an emphasis on ‘big questions’ and how to approach them, namely through a research-oriented style of inquiry.’ An international quality review panel noted the strengths of aiming for diversity and the opportunities offered by a global city saying that ‘both features have been embraced by AUC, its constituent universities and its many partners in academia, business, administration and civil society’ (QANU 2013, p. 13).

An International Curriculum

As Fig. 10.2 shows, AUC’s curriculum is built around over-reaching themes and supported by the Academic Core. The broad themes guide the students through the curriculum and serve to integrate insights gained from the disciplinary courses. The Academic Core comprises skills courses (logic, research methods and statistics, mathematics, foreign languages, intercultural skills, etc.) and broad disciplinary courses in the liberal arts tradition (big books, philosophy, philosophy of science, ethics, etc.). The course which cements the students’ intercultural skills and the international focus of the curriculum is ‘The Global Identity Experience.’ This course is central to AUC’s mission and is mandatory for all students and all majors. In their first year of studies this course exposes the students to concepts and issues of identity, gender, race, discrimination and cross-cultural communication. It is designed to ensure that all AUC students, whether they are in the social sciences,

The curriculum is organized around broad themes, where students learn at an early stage how to integrate insights from various disciplines.

These themes focus on Big Questions in science and society



At the same time, students achieve depth of knowledge in their chosen major(s), allowing them to participate meaningfully in the interdisciplinary debate.

Towards the end of their studies, students bring their knowledge and expertise together in a capstone project.

Fig. 10.2 AUC’s curriculum circle. *Source* van der Wende (2013, p. 297). With kind permissions from Sense Publishers

sciences or humanities majors, develop the capacities to operate successfully in a global environment and interdisciplinary and international teams. It is taught by a team of international teachers with highly diverse backgrounds and is a mix of theory and practice. The students conduct research projects in Amsterdam, which with around 180 distinct nationalities in its population, is one of the world's most international cities. This course challenges the students to reflect on their own identities and those of other cultures and from other lands, and to consider the implications for their future lives and careers in a global society.

As a follow-up to this, students may take a 'Global Leadership' course to prepare themselves for the international businesses and organisations they will enter upon graduation. This course deals with theories of leadership and again includes a research project, exposing the students to real-life situations in global and multi-cultural businesses and organisations.

Also designed to expand multicultural understanding, is the Academic Core course, 'Chinese Studies'. This deals with popular Chinese culture and the rapid social changes taking place in Chinese society. This has been on offer from the very outset of AUC and has served as a model for many more courses which take a global, as opposed to a purely Western, view of society. The choice to place Chinese Studies in the Academic Core was prompted by the rapid economic, political and social changes taking place in China in recent years and the influence these developments are having in the global arena.

The 'Big Questions' courses are designed to challenge the students to think outside their particular major interest. For example, a Science major may choose Big Books or a Humanities major may opt for Big Questions in Science. One of the interdisciplinary Big Questions courses is 'The Big Questions in Future Society' which looks at the changing world balance between East and West (also reflected in the Chinese Studies course mentioned above). Global perspectives are also reflected in the Academic Core philosophy courses which include Arabic as well as Western philosophy, the Humanities curriculum incorporating courses such as 'Modern Urban China' and 'Fictions of Empire' and the Social Sciences curriculum with its 300-level theme course exploring global economics, global politics and global culture. The inclusion of such global courses has been recommended by AUC's International Advisory Board which is made up of prominent international representatives of business and academia. These courses are welcomed by AUC students as they reflect their concerns and interests and prepare them to live and work in a global society.

Communication and Language Programs

Regarding the knowledge and skills required for 21st century life and work, Trilling and Fadel (2009) emphasize the importance of acquiring skills in foreign languages, intercultural skills (both oral and written), and capacities for teamwork and collaboration in culturally diverse settings. These skills are provided in the

Academic Core curriculum through the Academic English and foreign language courses. In addition to achieving high-level proficiency in English, AUC also requires evidence of second foreign language skills as a graduation requirement. This ensures that AUC graduates are well-placed to progress to masters and post-graduate programs in international settings.

All of AUC's courses are taught in English, so English language competence is a prerequisite for student admission. As a result, the Academic English courses do not need to be concerned with English language and grammar per se, but focus on the higher order skills of written and spoken English required by the students in their major courses, research activities and capstone thesis project. The value of this approach has been confirmed by feedback from AUC alumni who have reported that they greatly value the skills obtained in the communications courses and working in international teams (with scores of respectively 4.52 and 4.41 on a 5-point scale), which they have found to be of enormous benefit in their subsequent graduate programs or professional activities (AUC 2013).

Providing two dedicated academic writing skills courses and a Writing Centre is a real unique selling point for the institution and again their usefulness has been confirmed in the alumni feedback.

As stated above, proficiency in a foreign language other than the native language and English is a graduation requirement for all AUC students. In the case of the European language courses French, Spanish, German and Dutch, the Common European Framework of Reference is employed. To avoid a bias towards European languages, an Arabic course has recently been introduced and a (Mandarin) Chinese course will be launched the academic year 2015–16.

In the Humanities curriculum, communication courses are provided which offer a broad overview of the media and mass communications. In these, the students explore the role of media messages and technologies in the changing political, social and cultural dynamics of local, regional and global contexts. They are also introduced to an analysis of media content and how society reacts to the media, what the media promotes, the ideologies of those responsible for the media, as well as the evolving landscape of media technologies, including print, broadcast and new media of the Internet age. Students react very favorably to these courses as they reflect their interests and contribute to the 21st century skills of communication skills and digital literacy.

Information and Communications Technologies in the Curriculum

AUC considers that digital literacy is a key requirement for the 21st century. So the AUC curriculum not only involves mastering computing skills but also developing capabilities in searching and navigating, thinking critically and analyzing, and creating and communicating information by employing the various digital media.

AUC also requires students to carry their own devices at all times for use in class and for self-study using the campus-wide wireless network services. All of the teachers also make use of the university-wide digital learning environment (BlackBoard) to deliver their courses and post course information, readings, assignments and grades.

Alumni feedback data revealed that the students would like to gain more programming skills (AUC 2013, 2014). So within the Science curriculum, a 100-level 'Programming Your World' course introduces students to programming skills. This is followed by more advanced courses in data structures and algorithms and modelling. For all majors, a 'Computational Thinking' course is being introduced in the Academic Core curriculum, cross-listed with Science, Social Science and Humanities. Computational thinking is a digital age skill which is important for everyone, not only computer scientists. So this course teaches the students about how, when and where computers and other digital tools can be used to solve problems, how to communicate with those who can provide computer-supported solutions, and how to gain understanding of human behavior by drawing on concepts fundamental to computer science. This course is a useful addition to the current (mandatory) course 'Logic, Information Flow, Argumentation'.

Another new course is entitled 'Big Data', and is one of the 'Big Questions' courses. Today's society is largely dependent upon continuous data management and information flow and big data is a process of applying technology on a scale never seen before, to all aspects of society, be it sociological, scientific or artistic. Big data is a broad term describing data sets that are so large or so complex that traditional data processing applications are inadequate. It presents many opportunities for data analysis, capture, curation, search, sharing, storage, transfer and visualization, but it also presents many challenges, for example, related to data privacy, security, governance, and ethical issues. In adjusting to digital ways of living and working it is profoundly important for our students as future citizens to comprehend the issues involved. Each issue may be rooted in a single discipline but may have far-reaching implications in others, so the 'Big Data' course is cross-disciplinary. It approaches the issues from three perspectives: conceptual and historical; technological and scientific; and sociological and moral. In this way, AUC is taking the first step towards making big data a cornerstone of modern liberal arts and science.

The Social Sciences curriculum also focuses on big data and analytics as means of defining and understanding social phenomena. New courses such as the 300-level 'Digital Anthropology' course explores human-beings based on digital traces left behind each second of the day around the world, rather than using conventional ethnographic approaches. Another new 300-level course, 'Framing in Politics and Economics' introduces computational techniques, based on parliamentary and media data, to quantify the formation and transformation of frames in the public debate on migration. By combining theoretical and data analytical approaches, the Social Sciences curriculum prepares students to become critical and reflective members of a data-oriented society who can effectively address issues such as ethics, privacy, interpretation and judgment.

The Well-Being of the Total Campus Community

An international approach to the curriculum will be difficult to achieve without an international student body and an international faculty. Both are present at AUC, with a 50 % international student body from more than 60 nationalities and an at least equally international faculty. More than 60 % of academic staff teaching at AUC has an international background in terms of their nationality, PhD training, or extensive teaching, research, or professional experience abroad. As indicated in the Introduction, AUC aims for both excellence and diversity in its mission. Consequently, an academic community is being created that reflects the globalizing world, the processes of international integration, the interchange of world views, products, ideas and other aspects of culture. AUC recognizes that cosmopolitanism and migration are consequences of globalization and should thus be represented in AUC's student population, like they are present in the population of Amsterdam as a global city. The environment fosters international and intercultural understanding through dialogue among people with a variety of experiences and life views. Thanks to the AUC Scholarship Fund, including a special Diversity Award Program, the students come from different socio-economic backgrounds. So the student community is diverse from a variety of perspectives: gender, nationality, race, ethnicity, religion and socio-economic background. This requires careful attention to ensure student well-being in the residential campus.

The extent to which the students appreciate AUC's aim to provide a vibrant and diverse international student community is evidenced in the findings of the 2011 and 2012 Surveys on the Student Experience in the Research University (SERU) which is administered by the Center for Higher Education Studies at University College Berkeley. These showed that 70 % of the AUC students considered themselves to be members of a global community, viewed AUC as tolerant of diversity and greatly appreciated the international opportunities offered by the institution. Almost 92 % of the students indicated that the atmosphere on campus was such that they felt free to express their political views, 81.4 % felt able to express their religious views and 91.4 % felt that all of the students were respected regardless of their race or ethnicity. Also, 97.9 % of students reported that they had been able to interact with students outside their own countries, both in class and socially and 82 % reported that they felt that they were well integrated socially among their fellow students. The AUC students' abilities in intercultural communication are undoubtedly supported by their strongly-developed language skills. Students master an average of 3.6 languages at conversational level and an average of 2.4 languages at a level sufficient to follow a study program in that language (AUC 2012).

Tutoring is another factor which is seen as crucial to the well-being of the students in their undergraduate studies. The AUC tutoring system has been specially designed to ensure that the mission of the college, "Excellence and Diversity in a Global City", is realized for each and every student and that they can thrive in

every way, both in terms of their academic endeavors and personal development. AUC has developed a single-tiered advisory model in which every effort is made to match each student with a tutor who is best suited to provide both general guidance during the student's first year and more specialized advice in the second and third years of their studies. The tutors' role is primarily that of academic advisor but he or she will also be able to provide personal mentoring and counseling and where necessary refer the students to professional psychological or medical services. The tutors play an important role in welcoming the students into the AUC community and residential campus life. To ensure consistency and high levels in tutor performance, a tutor evaluation system has been developed which allows the students to anonymously and confidentially provide feedback on their tutors.

Extra-curricular activities, overseen by the Amsterdam University College Student Association (AUCSA) with sponsorship by AUC, also play an important part in AUC's academic community and contribute to the students' well-being. These activities are designed to develop a sense of community, outreach and personal and social responsibility, civic and intercultural understanding, and engagement at the local and global levels. One notable extra-curricular activity is the seminar series 'Who's in Town?' These seminars are organised by or with the students and involve inviting interesting guest speakers who happen to be in town to come onto campus and make presentations or take part in debates that focus on 'the big questions' facing the humanities, science and society. The AUCSA goes a long way in ensuring that the students themselves play a central role in advancing the social and cultural dimension of campus life.

Conclusion: The Challenges and Implications for East Asian Liberal Arts Institutions

Since 2009 Amsterdam University College has grown from a first class of 200 students to its full quota of 900 students. It has developed a program that aims to bring students to excellence by adopting different approaches, ideas and values in the multi-cultural and global setting of Amsterdam. Its diversity as well as the opportunities offered by a global city has been embraced by AUC, its constituent universities and its many partners in academia, business, administration and civil society.

In coming years it will aim to consolidate these achievements and respond to the growing competition from new liberal arts initiatives in The Netherlands and abroad. Its 2020 strategy puts a sustained focus and effort on AUC's profile "Excellence and Diversity in a Global City" and its unique selling points: its science profile, its connections with the Amsterdam community, and its diversity. It will continue to strengthen institutional development by stakeholder engagement, networking, and cooperation with its local, international, scientific, civic and corporate

partners, and its alumni. It will strengthen its curriculum, its graduates' profiles and their employability by building professional tracks (in teaching and law) next to consolidating its pre-Medtrack, by extending opportunities for internships in cooperation with corporate sponsors, by enhancing interdisciplinary learning outcomes and skills, by stimulating students to actively bridge the disciplines, by narrowing the social science—humanities—science gap; and by preparing graduates for the digital reality and future: big data, e-humanities, 21st century skills, data-rich theme courses, and computational practices across all majors (AUC 2015).

We believe that these directions make a liberal arts and sciences curriculum even more fit for the future and are relevant to the future directions of higher education in East Asia. In this region, (multi) national employers also expect graduates to be creative and critical thinkers, able to communicate effectively and able to demonstrate international understanding and intercultural awareness, including fluency in at least one foreign language. These expectations call for serious reforms in many programs and systems. Various leading institutions in the region consider liberal arts and science education as an excellent medium to do this, as it nurtures exactly these skills and talents, provided that programs:

- take a global focus, embracing diversity in all its dimensions,
- cover a broad range of 21st century skills, including soft communication skills, numeracy, as well as computer literacy and digital skills,
- bridge the humanities, social sciences and the sciences, and
- build effective career pathways into the professions.

However, there are also concerns as to whether and how the liberal arts model can actually flourish in all these respects. It will be a solution for training the much sought-after (21st century) skills like creativity and critical thinking. At the same time the model may present challenges in terms of its moral and social dimensions. Central to the philosophy of a liberal arts education is the aim of educating the whole person, both personally and intellectually, and furthering the ideas and practices of democracy and citizenship. Such aims may be in conflict with the political and cultural persuasions of certain countries, for example in PR China, where the education minister recently raised alarms about the threat of introducing foreign ideas on the nation's college campuses and called for the suppression of Western values. Questions also arise about the nature of citizenship in terms of national(istic), regional, or rather global citizenship and the valuing of pluralism and interculturalism (see for instance, Camicia and Zhu 2011). And more broadly on the perception, understanding, and interpretation of liberal arts education; about its cultural fit. It can be a real challenge to balance the social-moral dimension of the liberal arts model with the increasingly economic and utilitarian emphasis imposed on it. It is recognized that the humanistic, moral, and ethical values need to be contextualized, yet they cannot be ignored or denied. A liberal arts education cannot be offered in the absence of academic freedom.

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