

Innovation in Public Health Teaching: The Maastricht Experience

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ABSTRACT

Maastricht University developed a new Bachelor programme in European Public Health in order to meet the challenges apparent in both the domain of public health as well as in the European higher education area. Begun in 2006, the programme attracts students and staff from across Europe and the first cohorts of students have graduated. After graduation, most students opt to do a consecutive master programme. This novel educational programme is outlined in detail by describing the mission, structure, content, dimension, and coherence, and concludes by focussing on the didactical principles associated with the programme: the Active and Self-Directed Learning (ASDL) methodology.

Key Words: Public health, academic training, pedagogy

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INTRODUCTION

In recent years, the working environment of the public health workforce has changed dramatically due to rapid social, technological, political and economic changes.^{1,2} In Western Europe, three dominant trends are apparent with respect to the healthcare sector and labour market, trends that have important consequences for education and training in public health, healthcare and life sciences. The first trend is the emergence of new healthcare problems which can only be tackled by different and diversified interventions that are reflected by new tasks, functions and professions within the

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healthcare sector. The second trend is the increasing scientific and academic content of knowledge to be utilised for those tasks, functions and professions. The third trend is the internationalisation of problems and population health solutions on the one hand, and the individualisation of interventions on the other hand.³⁻⁷

These trends have important consequences for the content of education and training in the health field. Firstly, there is an increasing demand for professional capacity in the field of public health/ healthcare.⁴ Secondly, there is the recognition of a need in the labour market for a more diverse workforce.⁵ Thirdly, education and training programmes preparing future health workers for those jobs must cover an expanding scientific and methodological domain.⁶ In a promising answer to these trends, a newly developed Bachelor of Science programme in European Public Health was established at Maastricht University, the Netherlands. This novel educational programme is outlined in detail in this article, which describes the mission, structure and content of the course of studies, and concludes by focussing on the didactic principles associated with the programme.

BACHELOR OF SCIENCE PROGRAMME IN EUROPEAN PUBLIC HEALTH

Since September 2006, the bachelor's programme, European Public Health (B-EPH), has been offered to international students. On average, 75 students per annum enrol in the B-EPH programme, representing between 12 and 15 different European and non-European nationalities. The B-EPH is part of the domain of Health within the Faculty of Health, Medicine and Life Sciences (FHML) of Maastricht University. Within the domain of Health a broad range of bachelor's and master's degree programmes is offered (Table 1). In organisational terms, research and education at FHML is structured according to the matrix model, where the departments contribute to the execution of all educational and research programmes. The educational staff necessary to fill teaching positions in the B-EPH programme are recruited from various departments of FHML, to teach the core topics including: Epidemiology, Health Promotion, Health Policy, Economics and Management, International Health, Health Ethics and Society.

Table 1

*Programmes at Maastricht University
in the domain of Health as of September 2011*

Bachelor of Science Programmes

European Public Health (180 ECTS, taught in English)

Health Sciences (180 ECTS, taught in Dutch)

Master of Science Programmes

Biology of Human Performance and Health (60 ECTS, taught in English)

Epidemiology (60 ECTS, taught in English)

European Public Health (60 ECTS, taught in English)

Global Health (60 ECTS, taught in English)

Healthcare Innovation, Policy and Management (60 ECTS, taught in English)

Health Education and Promotion (60 ECTS, taught in English)

Health Sciences Research (120 ECTS, taught in English)

Mental Health (60 ECTS, taught in Dutch)

Sports and Physical Activity Interventions (60 ECTS, taught in English)

Mission

The mission of the B-EPH programme is to educate students to become state-of-the-art, all-around specialists in European Public Health, capable of appreciating, analysing and comprehending the impact of European and transnational differentiation and integration on public health, on health systems, on health services, and on the changing role of citizens, clients and patients. Therefore, the focus within the B-EPH programme is placed upon:

- Public health as collective action for sustained population-wide health improvement, reflecting the present-day academic context of public health;
- The European dimension of public health issues and developments within local, regional, national and global public health arrangements, thus reflecting the European perspective of the programme;
- A contemporary and adaptive European agenda for public health, listing current and future public health issues, problems and challenges in the European region, thus providing the scope and limits of the curriculum.

Academic Content

The scientific domain of public health has been described as: “The science and art of preventing diseases, prolonging life and promoting health through the organised efforts of society”.⁷ The ongoing relevance of the definition is reflected in its continued application, for example in the concept of New Public Health (NPH): “The broad role of public health defines a very wide scope of organised activities, concerned not only with the provision of all types of health services, preventive and therapeutic, but also with the many other components relevant to the operation of a national health system. These involve questions on health behaviour and the environment as well as the production of resources (personnel and facilities), the organisation of programmes, the development of economic support, and the many strategies required to ensure equity and quality in the distribution of health services.”⁸ NPH therefore no longer includes only the traditional disciplines of epidemiology, social medicine, microbiology, human biology, socio-medical hygiene and prevention, and is focused not only on public groups at risk, but in the modern vision includes as its most important areas of concentration environmental hygiene, ecology, health promotion, mental and social health hygiene, social sciences, organisation and administrative studies, as well as research and theory in the field of care and healthcare systems. Within the B-EPH programme, public health is defined from the perspective of NPH, namely collective action for sustained population-wide health improvement.

European Dimension

The European dimension within the B-EPH programme places local, regional, national and global public health developments within a wider European perspective. Since the Treaty of Maastricht, the European Union has played an increasing role in the public health domain.⁹ The consequences are visible through the ways in which public health and healthcare are discussed and considered internationally, within Europe and nationally.¹⁰ According to the European Commission, community public health problems and challenges facing the Member States call for an increase in policy cooperation and coordination in the EU.¹¹

The European Commission has acknowledged the added value of working on population health and calls for coordinated actions in healthy policy making.¹² However, public health policy and actions today do not solely originate from the European Commission and EU Members States. Other international organisations are significantly active in the international public health arena: the World Health Organisation (WHO), the Organisation for Economic Co-operation and Development (OECD), the World Bank,

the Council of Europe, plus many non-governmental organisations such as the Association of Schools of Public Health in the European Region (ASPHER), the European Public Health Association (EUPHA) and the European Public Health Alliance (EPHA).

Accordingly, the B-EPH curriculum focuses on the agenda and activities of local, regional and national health authorities, (i.e., the EU, WHO, OECD, etc.). Additionally, an external Advisory Board on European Health was established at FHML upon the inception of the programme. External input within the domain of education and research is judged as an essential requirement to foster ongoing internationalisation and Europeanisation of the programme content, and as a means of staying current with unfolding developments on the international labour market and in the European policy arena.

Profile

The profile of the B-EPH programme is specified on the basis of 28 final qualifications which correspond to internationally defined learning outcomes for an academic bachelor's programme as specified by the so-called Dublin descriptors.¹³ The final qualifications are listed in the Appendix.

Table 2

Post-graduation career of B-EPH cohorts 2006 and 2007

	N	Percent
Intake cohorts 2006 and 2007	88	100%
Dropouts	20	23%
Still Studying	7	8%
Enrolment in Master's programmes:		
Maastricht FHML Master's programmes	27	31%
Master's programmes outside Maastricht University	16	18%
Labour market	8	9%
Unknown	10	11%

The B-EPH programme prepares its graduates for a scholarly continuum in public health as instigated by the Bologna Declaration: from bachelor to master to doctorate degrees. B-EPH graduates can build upon their profile in European Public Health through the consecutive Master in European

Public Health. Other FHML master programmes accept B-EPH graduates, too, as is illustrated in Table 2. Placement institutions’ interest in hosting bachelor’s students during their thesis writing phase along with the feedback provided by institutes, have shown that the B-EPH programme provides students with qualifications that allow access to a broad and diverse (internationally oriented) labour market.

Curriculum Structure

The curriculum has been designed to result in a high degree of competence in both theoretical knowledge and practical research skills at the bachelor’s level. It encompasses the requirements of both the scientific as well as the professional field. The curriculum consists of six semesters of study over the course of three years as is reflected in Table 3. Each semester is made up of modules of varying duration (between four and eight weeks) that represent the vertical building blocks of the programme, underpinning the semester theme. Throughout the programme, the horizontal trajectories of methodological approaches, skills and critical thinking are taught on an ongoing basis. The horizontal trajectories are interwoven into each semester and their corresponding modules.¹⁴ Each semester lasts for 20 weeks and amounts to 30 credits according to the European Credit Transfer and Accumulation System (ECTS).¹⁵ Each semester is broken down into modules linked to the semester theme and topics. The modules are aligned to the four successive phases within the ASDL didactic method.

Table 3

The Bachelor European Public Health Curriculum

Year	Theme	ECTS
1	Semester 1. European Public Health Problems Today: The European Agenda for Public Health; contributions of the main disciplines to Public Health	30
	Semester 2. The Shape of Public Health in Europe Today: Public Health Institutions and frameworks in a globalizing world	30
2	Semester 3. European Public Health Objectives: Markets, interests, regulations in light of ‘Health in All Policies’, ‘Health for All’, ‘Free movement of goods, services and capital’	30
	Semester 4. Minor Period: Education offered by designated national and international partner universities	30
3	Semester 5. Making Public Health Work in Europe: Strategies and tools for planned change on different levels of European Public Health	30
	Semester 6. Shaping Europe’s Future of Public Health : Real life (research) project(s) and thesis	30

Semesters and Modules

In semester 1, entitled European Public Health Problems Today, the so-called European Agenda for Public Health is introduced, clarified and outlined to the students. Furthermore, the angle of approach and problem definition within applicable public health disciplines are presented and discussed. To analyse and understand the complex nature and background of the problems, the contribution from the various (mono and multi) disciplines is delineated. The Shape of Public Health Today is the encompassing theme of the second semester. Building on the general introduction of the problem area as presented in the first semester, students gain an in-depth perspective on public health institutions and frameworks in a globalising world. Semester 3 is geared towards European Public Health Objectives, especially the Health in All Policies approach. In this semester, relevant public health policy fields are explained, analysed and compared. The minor period is scheduled in semester 4. During the minor, students select and embark on educational modules offered by designated national and international partner universities. Semester 5 is entitled Making Public Health Work in Europe. Strategies and instruments for planned change are explored, with the aim to bridge or reduce the discrepancies between 'dream and reality' in the field of public health. The design of a specific planned change intervention or instrument for planned change in the form of a project completes the semester. Accordingly, in semester 6 students conduct individual research during the placement period and finalise their bachelor's thesis.

Horizontal Trajectories

Three horizontal trajectories are intertwined into all semesters of the programme. The aim of the trajectories is to relate and integrate the content of the respective modules to the subject of the horizontal trajectory. By interweaving trajectories horizontally in sequential vertically organised modules, internal coherence is ensured. The Methodology, Epidemiology and Statistics trajectory educates students on research methods and epidemiology throughout the programme's course and relates methodological questions to the content of the module. The Skills trajectory instils skills necessary for future academic professionals. Finally, the Academic Thinking trajectory forces students to critically reflect on the module concepts and content and consequently to reflect upon their own (future) performance as an EPH graduate.

Consistency

Consistency within the B-EPH curriculum is firstly achieved through coordinated teaching of content and methods on several levels. On the semester level, a consistent and coherent subject structure is present. Secondly, the subject structure follows the basic didactic approach of the programme: one first has to sensitise students to a specific subject before exploring knowledge in greater detail. Once this has been achieved, students are able to integrate their knowledge and to apply it. Thirdly, at the module level, consistency and coherence is upheld in the sequence of modules, instigated by the applied didactic approach whereby students build on their previous knowledge when approaching new subjects. For example, students learn about the different determinants of health in the first week of their studies. The semesters continue by focusing on different determinants, in turn acquainting students with the scope of NPH while exploring certain topics in depth and breadth. The subsequent semesters and modules then approach public health in Europe at different levels and from different angles.

ACTIVE AND SELF-DIRECTED LEARNING METHOD

To fully grasp the structure of the programme and the arrangement of the semesters, the methodology of ASDL—a variant of Problem-Based Learning – is explained and demonstrated.¹⁶ ASDL was developed as a new learning method especially for B-EPH. A key feature of the model is that the student plays an active role in his/her own learning process, which is focused specifically on meaningful learning that fosters the recognition of the coherence between concepts, and the ability to critically evaluate those concepts. The method stimulates an investigative attitude and independent learning. The ASDL model emphasises student progress through four successive learning phases: sensitising, exploration, integration and application (Figure 1).

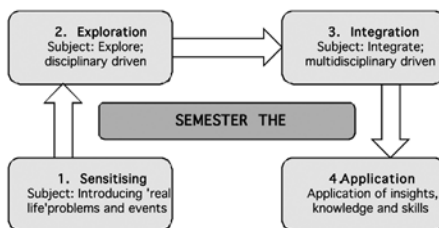


Fig. 1. The four phases of the ASDL method of teaching.

Phase 1: Sensitising

Students must be open to and increase their awareness of existing (and future) problems in professional practice. They are made aware of the problems within the field. The core of this first phase is for the students to become engaged in the subject and for staff and students to determine what prior knowledge students already have about the subject. This phase of 'awareness' and 'ownership' operates by having students identify problems in their own country and/or by confronting them explicitly with situations and problems within Europe.

Phase 2: Exploration

Once students have become aware of the problems and feel the need to devise solutions to them, they are given the opportunity to identify the nature of the problems and to study relevant information and potential solutions. Students are expected to display an exploratory attitude when finding explanations and solutions, working from both a disciplinary and an interdisciplinary perspective.

Phase 3: Integration

Once students have acquired relevant information enabling them to understand and solve identified problems, they are assisted in integrating the knowledge gained. During this phase, it is crucial for the students to reflect critically on and be creative with respect to the solutions presented. The students should be able to identify both the strengths and weaknesses of explanations and solutions. New options are presented that could enhance those explanations and solutions.

Phase 4: Application

During the final phase, the focus is on the application of what has been learned and on a critical reflection by the student upon the entire study cycle. Consideration is given to the extent to which problems can be solved effectively, how a solution could be applied and what progress has been made in absorbing and understanding information. Students consider what shortcomings may still exist and what area-specific problems still need to be tackled and solved.

The ASDL model with its four phases is fully implemented in the B-EPH programme. Each semester starts with the sensitising phase in which a given topic is introduced and the first approaches to the content of the modules are made. In the second phase topics and methods are explored

in further depth. In semester papers and cumulative tests, students then have the opportunity to integrate and apply their knowledge. The four phases also manifest themselves in the overarching programme level in such a way that the first semester is constructed principally to sensitise students to essential and traditional problems and tasks of (European) public health, adhering to the so-called ‘Health Field Concept’ by Lalonde.¹⁷ Semesters 2, 3, 4 and 5 are dedicated to exploration of topics and methodologies in greater depth and breadth at the bachelor’s level. The final semester, when students carry out a practicum and write a thesis, is the integration and application phase of students’ knowledge and skills. Students apply their acquired knowledge to conduct their own research and finalise their research thesis before graduating. The layout of the B-EPH curriculum is exhibited in Table 5.

Table 5
*Overview of the B-EPH programme per year and semester,
 ASDL phases and module titles*

	ASDL Phase	Module	Weeks	ECTS
1st Year	1st semester: European Public Health Problems Today		20	30
	Sensitising	Introduction	1	1
	Exploration	Infectious Diseases: Tuberculosis	7	9
		Educational Approach: Active and Self-directive Learning		
		Social and Cultural Determinants: Work-Related Stress and Burn-out	4	5
		Environmental Determinants: Ambient Particulate Matter	4	5
	Integration and Application	Frames for Public Health: Semester Paper	3	4
		Cumulative test 1	1	6
	2nd semester: The Shape of Public Health in Europe Today		20	30
	Sensitising	Introduction and field-trip to Brussels	1	1
	Exploration	European (Public Health) Institutions	7	9
		Public Sector: Mother and Child Care	4	5
		Private Sector: Aging in Europe	4	5
Integration and Application	Institutions in EPH: Semester Paper	3	4	
	Cumulative test 2	1	6	

	ASDL Phase	Module	Weeks	ECTS
2nd Year	3rd semester: European Public Health Objectives		20	30
	Sensitising	Introduction	1	1
	Exploration	Alcohol and Drugs Use	7	9
		Food, Novel Food, Food Safety	7	9
		Lifestyle as a Common Denominator?	1	1
	Integration and Application	European Pharmaceutical Market: Semester Paper	3	4
		Cumulative Test 3	1	6
4th semester: Minor period			20	30
3rd Year	5th semester: Making Public Health Work in Europe		20	30
	Sensitising	European Public Health Policy and Practice: Planned Change	1	1
	Exploration	Health Systems in Europe	7	9
		Health Strategies in Europe	7	9
	Integration	Excursion to Central and Eastern Europe	1	1
	Application	Writing a Research Proposal and Preparation for Placement	3	4
	Integration and Application	Cumulative Test 4	1	6
	6th semester: Shaping Europe's Future of Public Health		20	30
Application	Placement and Draft Thesis on (research) Project	16	24	
	Finalising the Bachelor's Thesis	4	6	

RESULTS

In February of 2010, FHML put forward the B-EPH for voluntary accreditation by the German *Akkreditierungsagentur für Studiengänge im Bereich Gesundheit und Soziales* (AHPGS). The expert group assessed the aspects regarding the objectives of the study programme as being realistic given the limitations of the programme on the one hand and as innovative and pioneering for the further development of European thought on health on the other hand. Furthermore, particularly the means of achieving the mentioned objectives are considered to be extraordinarily innovative. The

structure of the study programme enables students to take up qualified gainful employment.¹⁸

For the obligatory re-accreditation of the programme, as instigated by Dutch law, the Quality Assurance Netherlands Universities (QANU) executed an external review in the autumn of 2010. The panel of experts was impressed by the statements and ambition of the programme, and judged the learning outcomes both promising and challenging. The panel valued the fact that the high level, multidisciplinary nature and broad scope of the learning outcomes prepares students for graduate study in a variety of possible master's programmes. In addition, the panel concluded that the programme provides graduates with a solid basis for a career. As the programme is still new, the committee was not able to draw valid conclusions concerning the options for graduates to enter different labour markets. The committee concluded that the ASDL method works exceptionally well in practice, but equally applauded the way in which it is embedded within the B-EPH programme itself.¹⁹

CONCLUSION

In this article, we have sketched out a recently developed educational programme at Maastricht University, which attracts and serves new groups of international students and could fill new emerging niches within the public health labour market, nationally and internationally. From this perspective, the B-EPH programme is a strategic addition to the existing FHML portfolio of educational programmes.

The B-EPH programme is exclusive given its tailored didactic method of ASDL and the application of ASDL throughout the programme, and within the semester and module structure. Additionally, the B-EPH distinguishes itself by embracing the concept of NPH and the European focus throughout the curriculum.

Appendix: Final qualifications of BSc European Public Health programme

Knowledge and Insight

1. to have a robust disciplinary knowledge in public health issues;
2. to have the capacity to look beyond the boundaries of core disciplines;
3. to be able to analyse complex disciplinary, multi- and interdisciplinary public health problems, in terms of actors and factors;
4. to have knowledge and understanding of the interconnection between public health problems and solutions at a global, European, national, regional and local level;
5. to have knowledge and understanding of public health analyses and interventions, including a serious understanding of research methods and techniques;

6. to be capable of understanding and interpreting the historic background of the field of study, including the history of public health ideas and concepts;
7. to be capable of understanding and interpreting the historic international and European background in the field of study;
8. to have knowledge and understanding of the relation between cultural backgrounds on the one hand and the perception and framing of public health problems and solutions on the other;
9. to have knowledge and understanding of the structure and practice of international institutions, i.e., European institutions, including regulations and incentives, as political and economic mechanisms;
10. to have knowledge and understanding of the potential benefits of research, academic research methods and techniques;

Applying Knowledge and Insight

11. to have experience with public health analysis and interventions including research methods and techniques;
12. to have experience with regulations and incentives as the core basic political and economic mechanisms;
13. to be able to critically reflect on the field of study and its relation to other fields of study and the social environment;
14. to be capable of analysing the ethical and normative aspects of the consequences of scientific thinking and acting and discussing them with confreres and non-confreres and integrate these aspects into their own scientific work;
15. to be capable of analysing the consequences of scientific thinking and professional acting;
16. to be capable of analysing the social consequences (economic, social, political, cultural) of new developments in the field of study and discussing them with confreres and non-confreres and integrating these consequences into the scientific work.
17. to be able to critically reflect (independently) on their own thinking, decisions and actions and adjust them;

Formation of Judgement

18. to acquire an original and critical style of scientific thinking and analysis and professional intervention;
19. to be capable of anticipating and analysing the consequences of one's own professional decisions and actions;
20. to be capable when necessary of reviewing their own professional knowledge;
21. to be able to choose a place as a professional in society.

Acronyms list:

ASDL = Active and Self-Directed Learning

B-EPH = Bachelor's programme, European Public Health

ECTS = European Credit Transfer and Accumulation System

FHML = Faculty of Health, Medicine and Life Sciences

NPH = New Public Health

Conflict of Interests: None declared.

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