Relatório de Disciplina / Outline of the Course

Economics of Education

Licenciatura em Economia / BA in Economics

Pedro Nuno de Freitas Lopes Teixeira

Relatório de disciplina apresentado no âmbito do Relatório pedagógico sobre uma unidade curricular a funcionar enquanto unidade curricular das Licenciaturas em Economia e Gestão de Enpresas (podendo funcionar também como unidade curricular singular, para efeitos de educação contínua), elaborado no âmbito da área de conhecimento de Economia, em que são prestadas Provas de Agregação, segundo o Decreto-Lei nº239/2007 publicado no Diário da República, nº116 (I Série) de 19 de Junho de 2007.

Faculdade de Economia da Universidade do Porto

Novembro 2017

Contents

1. Introduction

In this Report, it is presented the outline of a course on the economics of education. This is largely based in the experience acquired in teaching a similar course for undergraduate students in economics and management, complemented by other pedagogical experiences in teaching courses in the economics of higher education at the postgraduate level, though for students with more diverse backgrounds. The main purpose of this course is to introduce students to basic knowledge in the field of the Economics of Education, an applied economic field that aims at applying economic tools to the analysis and understanding of educationally-related decisions, organizations, and outcomes.

The course presents a strong focus on the analysis of policy issues and the policy implications of certain economic analysis and proposals. This benefits from several years of experience in participating in research projects with strong policy orientation and in complementary activities of public service that highlighted the importance of taking into account policy implications when reflecting about education from an economic perspective. This can often be one of the most rewarding aspects of this type of courses, especially for students, as they realize more fully the potential (and the limitations) of using economic theory to analyze and discuss relevant social issues. Moreover, in doing this, we explore the significant opportunities to establish links with research, including our own experience.

The course has a strong international focus and this visible in various instances. One of the most obvious is the language of instruction. Previous related pedagogical experiences included both teaching the economics of education in Portuguese and in English, though it was considered that this course has significant potential to be part of that internationalization effort that has been taking place at FEP.UP and at U.Porto for reasons that will be elaborated later in this report. The international focus is also present regarding content of the syllabus, which tends to adopt a comparative and international approach to the economic analysis of education.

The pedagogical options underlying this course also reflect the experience of around two decades of teaching at different levels of higher education, with diverse groups, at different institutions and even different higher education systems. They also aim at integrating several important pedagogical concerns and priorities expressed both at the institutional and system levels regarding more active, engaging, and fruitful processes of teaching and assessment.

The report starts by placing this course in its wider systemic, institutional and disciplinary contexts. Then, it is briefly presented the emergence and evolution of the economics of education as an applied field are presented briefly, followed by the basic objectives of the course and its detailed outline, including the main reading recommendations that accompany each topic covered in the syllabus. This will be followed by a reflection about the pedagogical features of the course, largely based in the experience in teaching a similar course on the economics of education, including academic results and the feedback received from students over several years.

2. Contexts – Systemic, Institutional, and Disciplinary

In recent decades, major transformations have been taking place in Higher Education. A large part of these transformations is associated with the relentless expansion that has characterized Higher Education for several decades, but that has been particularly significant at the worldwide scale over the last twenty years (Barro and Lee, 2001; Morrisson and Murtin, 2009). The move towards mass and universal higher education was expected to bring increasing diversity to higher education (Scott, 1995). This diversity has multiple and complex meanings for the higher education realm (Trow, 2009). One of the dimensions most discussed is that of the student body regarding aspects such as socio-economic background, gender, ethnicity or geographical origin. The expect diversification of the student body, among several other factors, has promoted in many higher education systems a move towards structural change and growing differentiation on the types of higher education provided regarding aspects such as length, academic orientation, and modes of delivery (Teichler, 1988).

The worldwide expansion of Higher Education has been a decisive factor to make it a truly global reality (Altbach, 2016). Over the last decades there has been tremendous growth in the international links in higher education, through issues such as training, students' mobility, staff mobility, research activities. The emergence of this global dimension has been strongly associated with the intensification of international networks in which institutions and researchers explore, create and share knowledge (Clotfelter, 2010). Another important and controversial facet of this global dimension is the fact that the patterns of benchmarking in Higher education have become increasingly internationalized, notably through the proliferation and pervading influence of rankings and league tables in recent decades (Kehm and Stensaker, 2004).

The move towards mass and universal Higher Education has also contributed to reshape the missions of Higher education and its consolidation as a multidimensional institution (Kerr, 1994). Over the last decades Higher Education has been increasingly part of debates that highlight its complexity as an institution that combines relevant political, social, economic, and cultural purposes and dimensions. Higher Education has been increasingly asked to play important and varied economic and social roles and

this has been shaping its mission, its priorities, and its organizational and decision-making structures (Shattock, 2008; Weisbrod et al, 2008).

2.1. Overview of the Portuguese Higher Education System

Portugal has participated in the aforementioned transformations in a significant and complex way (Neave and Amaral, 2012). Until the mid-eighties, the Portuguese higher education sector remained very small and elitist. Until the beginning of the 1970s there were only 4 Universities (all of them public), but during that decade a process of expansion was initiated with the purpose of widening access to higher education. Just before the Democratic Revolution of 1974 and with a boost after that several other public universities and polytechnic institutes were created with the aim to expand and diversify the higher education system and make it more aware of social, economic and regional needs. By the eighties, the social and political pressures for expansion became very strong and the system has expanded massively since then, both in number of institutions and in students enrolled. The late 1980s saw the rise of private higher education, which benefited from the difficulty of the public sector to absorb a rapidly growing demand - and also from facilitating policies of the Minister of Education at that time (1987-91) who not only approved a large number of new private institutions but also decided to lower the access requirements to higher education which created favourable market conditions for the private sector. In recent years, the demand has stabilized due to both demographic changes and the difficulty in attracting a larger proportion of the youngsters' cohort to higher education.

This quantitative expansion was associated with growing complexity and diversification (Teixeira et al, 2012). The expansion was visible not only in the number of students enrolled, but also in the number and profile of institutions, number and type of degree programs, and growing regional expansion and differentiation. Thus, over the last 10-15 years several governments have been trying to cope with this more complex and diverse higher education landscape and to define and implement a policy agenda that might adequately deal with that system. This agenda has also been significantly shaped by the financial constraints faced by the country since 2001,

particularly aggravated since the recent financial crisis and the economic recession that followed it. If most of the system had placed efficiency and effectiveness as major issues within the higher education policy debate, the more recent financial crisis has given particularly relevance to those values, especially vis-à-vis others like equity, social cohesion, or regional solidarity.

Like in many other contexts, this expansion and growing complexity has led to increasing concerns about the quality of education provided and with the effectiveness of learning (Teixeira, 2010; Arum and Roksa, 2011). External and Internal Quality Assessment became a crucial issue in the relationship between government and higher education institutions and was associated with the new kind of relationship between those two entities that emerged in the late twentieth century in most European countries. The first attempts for quality assessment were established in Portugal by the mid-nineties (Law 38/94 of 21st November).[1] Since the system resulted from a proposition of the Council of Rectors of public Universities, it focused rather on improvement and less in accountability. In the early 2000s some erosion of trust was already visible due to the lack of consequences of the system, despite public awareness that the very fast expansion of the higher education system had gone alongside some decline in quality more perceived in some degrees and institutions that in others. In 2005, the new government commissioned the European Association for Quality Assurance in Higher Education (ENQA) to undertake a review of the quality assurance system and announced during the review process that the existing system would be dismantled and replaced by a new accreditation system in early 2007. Following the ENQA report (2006) the Government established the new quality agency that would be responsible for the evaluation and accreditation of both the institutions and their study programs. This second phase of the quality system would become rather more demanding and the new Agency has rapidly managed to become a strong regulatory factor in the system.

[1] For a detailed analysis see Rosa and Sarrico (2012).

Hence, in recent years, higher education institutions have become increasingly focused with the quality of their teaching activities. This has meant rethinking their educational portfolio, often leading to the closure, replacement, merger or significant restructuring existing programs. Moreover, even when programs persisted, there has been a rising concern with the clarification of its objectives and desired learning outcomes and the coherence of its structure. Furthermore, there is a growing willingness of institutions and individual academics to reflect and innovate in their pedagogical practices. Paramount among various examples was the launching of CNAPPES (the National Congress in Sharing Pedagogical Practices in Higher Education), launched by a group of academics in 2013 and that had in July 2017 its fourth event gathering a large number of academics from all sectors, regions, and a large diversity of disciplinary backgrounds.[2]

2.2. University of Porto

Being one of the leading institutions in the system, the University of Porto has played a relevant role in many of the aforementioned trends. U.Porto has played a pioneering role in the European attempts to develop an institutional culture of self-knowledge, reflection, and continuous improvement. Thus, it was one of the three universities that participated in the pilot phase of the Institutional Evaluation program of 1994 (together with the Universities of Utrecht and Gothenburg), launched the CRE (Council of Rectors of Europe, later becoming EUA – European Universities Association).[3] At that time, the process was coordinated by the leadership of the university and presented as an opportunity for reflection about the objectives of the University (and of each Faculty), the tools available to achieve them, and ways to improve the quality of their activities. This exercise has contributed for the preparation of data collection and information system and to start encouraging developments regarding the development of a proper institutional quality assurance system, which,

[2] http://cnappes.org
[3] http://www.iep-qaa.org

by then, tended to focus mainly in teaching activities (especially at the course and program levels).

Around 15 later this exercise was repeated by U.Porto through 3-stage process. It started at the Faculty level, through a process of self-evaluation and cross evaluation, whose results were reviewed and analysed by the Office for Continuous Improvement, eventually leading to an integrated reflection for the whole University. During those 15 years, the University had undergone major changes including a much more visible commitment to research activities, a much more intense internationalization, as well as relevant governance and organizational changes. The latter could be briefly summed-up in a growing willingness for coordination at the central level. This was also supported by important developments in quality services and practices that had been taken place over the previous years such as the strong information system, the monitoring and assessing of performance at various levels and of various dimensions (teaching and learning, R&D, Human Resources, Supporting Services), and a growing willingness to think, plan, and act according to certain strategic goals and milestones.[4]

The reflections tjat took place by then highlighted a series of issues that concerned U.Porto until now regarding quality in its various missions, notably in teaching and learning. Although the formal part of the implementation of the changes promoted by the so-called Bologna process has already been attained, the setting of the more substantive aspects may still be regarded as an incomplete and ongoing process. This includes aspects such as greater openness to innovation in teaching and assessment methodologies, the nurturing of a more autonomous and active learning attitude among students, or the development of clearer and integrated learning outcomes at the program and course levels.[5] Furthermore, mention should also be made to the consolidation of students' feedback (through formal surveys or other forms) as a key instrument in an ongoing reflection among teaching staff about their pedagogical practices and their effectiveness.

[4]https://sigarra.up.pt/up/pt/conteudos_geral.ver?pct_grupo=1585&pct_pag_id=1001375&pct_parametros=p_pagina=1001375

[5] This work was supported by the establishment in the early 2000s of a unit focused on educational technologies that helped many lecturers in the introduction of different teaching methodologies.

These concerns regarding teaching and learning, and the supporting mechanisms to sustain its quality, have received significant attention in the years subsequent to that institutional reflection. To a certain extent those reflections started prior to that and developed alongside that institutional review, fostered by international and national developments such as the so-called Bologna process (and the legal and policy consequences associated with it) or the launching of the accreditation system and the tightening of criteria regarding quality assessment in higher education in teaching and research. Moreover, many courses, programs or Faculties had already developed mechanisms of students' feedback or monitoring their teaching provision.

However, since the beginning of the current decade some relevant developments are worthwhile mentioning. First, there was the launching of a unified students' feedback questionnaire that was associated with systematic consultation and reflection upon its results. This instrument has suffered several revisions since then, notably to make it more concise and aiming at raising the levels of students' participation (and its subsequent relevance for teachers and program directors). Second, there was the launching of a program of modules of pedagogical training, particularly strengthened since 2014. Although there is still a significant resistance among academics regarding the relevance and usefulness of that type of training, this has become a more common practice among its academic staff members. Third, the University has started to promote voluntary mechanisms of sharing pedagogical practices either through an annual workshop (initiated in 2012) or through mutual observation of classes (since 2011). Fourth, there was the establishment of an annual Teaching Excellence Prize in 2011, which added to other forms of symbolic recognition to commitment to quality and innovation in teaching at the Faculties' level. Finally, there were a series of initiatives promoting pedagogical innovation, with a particular highlight being the establishment in 2015 of the Unit for the Improvement of Teaching and Learning.[6] This unit, established at the central level, complements and liaises with other units or efforts established previously in some faculties and supports various initiatives. Overall, these various efforts and developments converge in strengthening the institutional

[6] www.inovacaopedagogica.up.pt

focus regarding quality and innovation in teaching and expressing that concern to the overall academic community. This has also been reflected in the recent strategic documents of the University regarding teaching and learning for 2011-2015 and 2016-2020.[7]

Two other aspects noted by then that are still relevant are the strengthening of the links between teaching and research missions and the consolidation of internationalization in its various dimensions (and the ways those two aspects may nurture and change teaching approaches, methods and contents. Regarding research, U.Porto has expressed its institutional willingness to become a research university. This has been sustained by a significant growth of its research activities, its internationalization or the value awarded at the various levels of the university to research activities and outputs. Although this is not homogeneous across the University, reflecting different disciplinary and organizational contexts, the University has attained a prominent position nationally, being responsible for around a quarter of the overall national research output (measured by the usual bibliometric standard measures), which, to be clear, only measure some parts of it and tend to capture the outcomes of research activity more adequately in some areas than in others due to differences in the way research results are disseminated, publication practices, language issues or disciplinary symbolic reward systems.

This growing commitment to research poses inevitably issues regarding its teaching mission. Among these it is worth mentioning the orientation and contents of its programs, its teaching and assessment methods, and the ways research can nurture its teaching activities. In a recent important document, analysing the practices of teaching in research-oriented universities, it is underlined the nuanced relationships between research and student education within and beyond the curriculum (Fung et al, 2017). The interplay is not only in using research results in class, but, more significantly, in bringing to teaching activities some of the defining characteristics of research, namely: inquiring attitude, openness to innovation, the ability to identify and to solve

[7] https://sigarra.up.pt/up/pt/CONTEUDOS_GERAL.VER?pct_grupo=1103&pct_pag_id=1001375&pct_parametros=p_pagina=1001375

problems, or a collaborative approach to learning. The results of that survey suggest that in research oriented universities students do not just learn about research, but they also are involved in research and enquiry within and across disciplines and that this could be done formally, but also informally within class, by nurturing a scientific attitude in teaching that can be relevant in their subsequent professional paths (regardless of pursuing an academic career).

Hence, for several years this interplay between education and research is being nurtured at U.Porto. One of the most significant examples has been IJUP – Meeting of Beginning Researchers at U.Porto, an annual event that over the last ten years gathers hundreds of BA and Master students to present and discuss their research, most of which has been developed in the context of the programs in which they are enrolled.[8] The quantity and quality of the presentations each year reflects that a large number of academics already nurture their teaching through research results, research methods, and research problems. Other illustrations of that is the growing number of start-up projects that have been presented and developed by U.Porto students, reflecting a consolidating entrepreneurship culture that it is not narrowly focused in business-oriented activities, but that spreads across many areas of social life and engagement.

This corresponds to a major concern of the U.Porto that aims to foster active learning that is centred in solid academic training, but that aims at developing beyond that through committed citizenship. This is also showed by the numerous students awarded the prize of active citizenship each year and that includes not only entrepreneurship, but also pedagogical projects, sports, humanitarian or environmental projects.[9] Although a long way may still be ahead, the University has been developing a growing capacity to transform its teaching activities through its strengthening research culture.

Regarding internationalization, U.Porto has been an active part of important transformations that have been shaping European Higher education. On the one hand,

[8] https://ijup.up.pt/2017/

[9] https://sigarra.up.pt/up/pt/web_base.gera_pagina?p_pagina=prémio%20cidadania%20ativa%20da%20u.porto

there has been a major move towards greater integration and interdependence between national higher education systems. Major policy developments at the European level include the Sorbonne and Bologna Declarations (1998, 1999) and the Lisbon Strategy (2000). Although these have started as rather autonomous and different policy processes, they have become increasingly intertwined and the Bologna Process was increasingly informed by the Lisbon targets (Amaral et al, 2009). Underpinning this convergence is the view that emphasizes the central role of higher education institutions and systems to Europe's economic and social goals and its positioning in an increasingly globalized world. Like in other dimensions of the European integration, we are dealing with a complex process (Teixeira, 2014b). If some forces are pushing towards greater and faster integration, there are important obstacles and resistances to that process. Moreover, this process raises significant perplexities and fears among national and institutional actors that may hinder further the drive towards greater integration. Some of the major fears refer to the potential locational and concentration effects that may be promoted by further integration and competition. The current picture is blurred, with some trends suggesting that the fears of concentration are real (especially in issues such research, funding, and prestige) and others less so (especially in what refers to the mobility of individuals, especially staff).

The process of European integration in higher education is taking place against a background of wider and deeper global changes that may influence the former. Although some actors may aim at controlling the direction and the speed of the process, they should not overestimate the capacity of European actors to steer it, nor the willingness of some parts of the European higher education and research systems to participate in the development of international networks and alliances between institutions that transcend the European space. Thus, an European Union increasingly concerned with global relevance will inevitably give increasing attention to the role that will be played by its higher education and research systems. Hence, it is expected that the development of increasingly integrated EHEA and ERA will be a leading issue in the European policy agenda in the coming years.

In an University with a strong and lasting commitment to Europeanization and internationalization (notably within the Lusophone area), the U.Porto has embraced progressively the multiple layers of internationalization (see Teixeira, 2014a).[10] This is certainly reflected in the growing levels of mobility among students and (increasingly as well) academic and non-academic staff. Although these intense mobility patterns have influenced teaching and other activities, the meanings of internationalization are broader than that, having implications in the linguistic and cultural underpinnings of programs and courses. Thus, in recent years the University has established as a strategic objective to increase the number of programs and courses that use has language of instruction other languages than Portuguese, with a particular emphasis in English, which has become the lingua franca in education and research for most disciplinary and institutional contexts. These are the most visible dimensions of a complex and deeper process of rethinking educational provision for an increasingly diverse group of students.

2.3. Faculty of Economics

The undergraduate program in Economics is the oldest of the Faculty of Economics of the U.Porto and the second oldest in economics in the country. The course exists since the foundation of the Faculty of Economics in 1953 and it has enjoyed for many years a very high reputation due its high-quality standards and excellent employment records upon graduation. The objective of the program is the acquisition of knowledge and the development of technical skills that enable students to enter in the labour market as economists and managers of firms and other organizations. The program follows the so-called "Bologna model" and has a length of 6 semesters of academic work, within which students must obtain a total of 180 ECTS credits. The curriculum of the program has several disciplines in Theoretical Economics and Applied Economics, as well as disciplines in Mathematics and Statistics that provide the necessary quantitative foundations. The program also has a strong

[10] https://sigarra.up.pt/up/pt/conteudos_geral.ver?pct_pag_id=122350&pct_parametros=p_pagina=122350&pct_grupo=1137&pct_grupo=1321

component of disciplines in Management and Accounting. In the final semester, with some options being offered to allow students to personalize their academic profiles.

One of the major strengths of the programs is the high quality of its students since it has almost always registered the highest minimum and average entry grades in the National Access Competition among the various degrees in Economics that exist in the country, over the past 20 years. This ensures that the program receives a large number of qualified, motivated, and ambitious students that make congenial to develop innovative and demanding approaches to teaching. Moreover, there seems to exist a high degree of satisfaction with the program, both by students (as measured by the pedagogical survey and the survey to new graduates prepared by University) and by employers, supported by high levels of employability of the programme.

As regards the interaction with research activities, mention can be made to several aspects. The Bachelor in Economics has a course that promotes the initiation of students in scientific research activities (Seminar in Economics) and in several of the optional courses, placed in the final year, there are also regular options for students to perform oral presentations, write essays, and develop their analytical and presentational skills. Moreover, some students, especially in the final year, participate in research projects, most of them in projects developed in close collaboration with CEF.UP, a research centre funded by FCT (the Portuguese Foundation for Science and Technology) and rated “Very Good”.

This strategic options of U.Porto regarding internationalization are particularly cherished in Economics, one of the areas of the university that has progressed more significantly along these lines, reflecting deeper trends in economics and management teaching and research. Thus, FEP has signed a significant number of cooperation agreements with foreign universities to promote the international mobility of its students in the framework of the ERASMUS+ program. Currently, there are more than 100 partnerships with universities from 3 continents, with a strong emphasis in Europe and Brazil, but with a growing number of collaborations in Latin America and Asia. There are various types of agreements: mobility agreements with schools in countries that participate in the Erasmus+ programme and general bilateral or multilateral cooperation agreements, including agreements of mutual recognition of training.

Nevertheless, the progress of internationalization was significantly hindered by the small number of courses and programs being offered in other languages, notably in English.[11] Hence in recent years this has become a strategic priority for the Faculty of Economics, especially for final year courses of the BA in Economics and in Management, and for Master programs. Recent years have seen the establishment of programmes fully taught in English and the effects in the growth of the number of international students are already visible. Moreover, this commitment to internationalization is also increasingly shaping the content of programs and courses that aim at a much more diverse student body, but also at training students for an international labour market and for multicultural organizations where their language skills and their capacity to understand economic contexts different from theirs will be extremely relevant.

2.4. Teaching of Economics and Applied Economics

One of the most important development in economics' postwar history of the discipline that shaped much of its teaching is the emergence of a series of applied fields. This process gained traction in the postwar decades and, by 1970, it was becoming well-accepted that economics was based on a common core of economic theory centered on mathematical modeling of maximizing agents which could be strengthened by the extension of models based on maximizing behavior to multiple fields (Backhouse and Cherrier, 2014). This expansion would cover not only market behaviour, but a growing set of individual and social behaviour in non-market contexts, such as education, health, the family, that was often labelled as economic imperialism and that was particularly associated with the pioneering work of Gary Becker, though it goes much beyond that.[12] To these developments also contributed the spreading of econometrics and the wide use of statistical inference, notably regression analysis, in applied work, also fostered by the growing availability of data.

[11] See for instance the self-evaluation report submitted to A3ES and the report of the external evaluation committee - https://sigarra.up.pt/up/pt/conteudos_geral.ver?pct_pag_id=1031160&pct_parametros=p_pagina=1031160&pct_grupo=31936

[12] For contrasting views see Fine and Milonakis (2009) and Tommasi and Ierulli (1995).

The rise in the dominant neoclassical school hegemonized the discipline and much of the training of new generations of economists and this created favorable conditions for the standardization of curricula. Hence, more than many other social sciences, the teaching of economics became increasingly similar and the development of common tools such as textbooks was a feature of the teaching of new generations (Coats, 1996 and 2000).[13]. This rising orthodoxy brought a much greater formalism to economic analysis. This greater emphasis on abstract and theoretical analysis (Blaug, 1999; Fourcade, 2009), which led to the subsequent demise of empirically rooted and historically informed economic discourse, was more congenial to the production of standardized curricula. Students did not need to familiarize themselves with examples closer to their historical, economic, and social contexts, since economic analysis was supposed to provide a general abstract framework that could then be applied to a variety of specific situations (Colander et al, 2006; Colander, 2009). A corollary to this was the development of an articulated set of applied and specialized economic fields, following the consolidation of the neoclassical core of the discipline, exploring multiple applications of basic principles to the analysis of several specialized topics (Backhouse and Biddle, 2000; Backhouse and Cherrier, 2014). Thus, there was the need to organize the teaching of these various topics in a way that would avoid overlap and would strengthen its coherence with learning basic economics principles.

The rise of applied fields in recent decades has created an increasingly complex landscape. Although applied fields could share some characteristics, their consolidation implied significant methodological and epistemological differentiations. To these contributed, for instance, the exchanges at the boundaries with related disciplines, more feasible in some fields than in others. Or also the policy relevance of certain topics, that shaped the research agenda of certain fields more significantly than in others. The degree of methodological sophistication and rigour was also variable among the various fields, reflecting its specificities, research and policy priorities, and empirical possibilities. In their analysis of the evolution of applied work (mainly in the

[13] Several of the countries studied in these two volumes suggested the increasing influence of American textbooks, even in countries in which English was not widely spoken.

US), Cherrier and Backhouse (2014) highlight the role of computerization; the rise of new economic and social problems, and emergence of new sites for economic research and the changing relationships between existing ones, with the first two likely to be more significant in Europe and in Portugal in particular.

Despite some obvious differences in the institutional and social contexts in which economics has been developing, their conclusion is relevant for our case here. Accordingly, Cherrier and Backhouse (2014) point out that economics has changed significantly in recent decades and that these changes are strongly associated with the relationship between economic theory and applied economics, and with the growing relevance and status of the latter vis-à-vis previous periods. Following pioneering work mapping the emergence of applied economics in the postwar period (see Backhouse and Biddle 2000), they highlight that the evolution of the discipline has become increasingly influence by the dynamics and contributions of those applied fields in a situation in which they not merely reflect passively the theoretical developments and the core, but rather contribute as well to certain important developments and debates in economics at large.

3. Purpose and Nature of the Course

The main purpose of this course is to introduce students to basic knowledge in the field of the Economics of Education, an applied economic field that aims at applying economic tools to the analysis and understanding of educational decision, organizations and outcomes. Being a course in a field of applied economics, it needs to be placed towards the more advanced staged of the program in economics, as the students will benefit from having some basic background in economics, namely in being familiar with some concepts and models taught in microeconomics, public economics, and in macroeconomics. Although the course has important connections to labour economics, it can be taught without being preceded by that, though that circumstance will have to be reflected in the syllabus. In the present case, it assumes that students have not taken that course, since, in the last review of the BA in Economics, that has become an optional course.

This assumption of some prior training in economics also makes this course adequate for students from the BA in Management Studies as they also have training in some core areas in economics, especially in the case of FEP, where that has been the case since the launching of that program in 1987. In fact, those students have received prior training in those areas that have been aforementioned for students enrolled in the BA in Economics. Over the years that has been the case, with several students from that program being enrolled in it with visible academic success.

Although a similar may be taught to students with limited or not previous training in economics, this one is organized having students with some disciplinary background primarily in mind. However, some guidance is provided for students with more limited prior training in economics in order to level them up with the other students. The experience of the course, detailed later in this report, has proven that it is feasible for students coming from different institutions and from other disciplinary backgrounds to enrol successfully in this course.

The course also aims to fulfil another purpose that has become increasingly relevant in higher education systems. With the expansion of higher education and the size of enrolments, higher education has had to cater for a more diverse body of students. Although financial constraints hinder the possibility of differentiating the

curriculum followed by most students, it is important to have a few possibilities to explore particular interests. Having a large and sufficiently diverse set of optional courses is one of the most significant ways to do it and GEP has a long tradition in this respect, which has been maintained even when the BA program was reduced from 5 to 4 years (in 2003) and then to a Bologna-type first cycle of 3 years. Though a significant part of that differentiation of educational paths is now largely transferred to the second cycle, it is still important to give undergraduate students that opportunity to introduce some differentiation in their training and to develop areas of expertise

The course will start by reviewing the reflections of some major economic thinkers on education. Then we will analyse the development of human capital theory and its stimulus to the application of cost-benefit analysis to education and the discussion of individual and social costs and benefits of education. Then we will discuss various theoretical explanations for the link between education and income and the empirical evidence about those controversies. In the second part of the course we will explore the contribution of the economics of education on several areas of research, such as economic growth and development, public finance, and the microeconomic analysis of educational organizations.

Being a course on applied economics it presents a strong focus on the analysis of policy issues and the policy implications of certain alternative educational options considered from an economic point of view. This has been an important development in applied economics in recent years and has enhanced its academic and social relevance. Moreover, since students are towards the end of their first degree in economics, it is important to develop their competencies in applying economic tools to social problems and to be able to discuss the advantages and challenges associated with different policy scenarios. This often proves to be one of the most rewarding aspects of this type of courses, notably for students, as they realize more fully the potential (and the limitations) of using economic theory to analyse and discuss relevant social issues.

Likewise, this type of course also provides significant opportunities to establish links to research. This certainly refers to the possibilities of using research results as an input to classes, either by members of the academic team in charge of the course, but

also by others. The former may be particularly relevant as a tool to introduce students to research as a way to reflect about educational realities:

- How has this issue emerged in research?
- How to frame into a research question?
- What economic models and concepts could be used and why were they chosen?
- What methodologies and data were available?

In doing this one is not only using research results in a rather passive way, but nurturing classes with a research mind-set that echoes what has been said before about teaching in research-rich universities.

The course has a strong international focus and this visible in various instances. One of the most obvious is the language of instruction. Although this course can be taught in Portuguese (and it was for several years), it has significant potential to be part of that internationalization effort that has been discussed above at U.Porto and at FEP-UP in particular. This is the case for several reasons. Most of the national students will be, by then, familiar with a lot of economics' vocabulary in English, that has been acquired through their training and their reading in previous courses of the degree. Being final-year students, they are by now fully integrated in the programme and in academic routines and they do not have to cope with language and academic barriers as it could be the case for first-year students. Moreover, being a course placed towards the end of the degree, it tends to attract a good number of mobility students, many of which will be (more) comfortable in participating more actively in a course taught in English. Though this may pose certain difficulties to other mobility students coming from Lusophone or Latin countries, it creates a good opportunity for those students to improve their knowledge of technical and scientific English related to Economics.

For all students, the adaptation to a course whose main language in English is made more feasible by the fact that most of the reading materials are also in English. That is even the case of works focusing in the Portuguese reality, since there is a large body of research in the economics of education focusing in the Portuguese case published in international journals or volumes.

The international focus is also present regarding content of the syllabus, which tends to adopt a comparative and international approach to the economic analysis of education, educational systems, and educational organizations. Although there are important national specificities, there is a significant degree of commonalities. This is not only supported by the standard approach in economics, that tends to highlight major trends and commonalities, but also by the way educational research has developed, with a strong emphasis on comparative methodologies. This has been enhanced by several factors such as the processes of internationalization and globalization (see Meyer and Schoofer, 2006), that have been particularly strong in Europe (as it was aforementioned), policy-borrowing, and the role of international organizations in education.

This international and comparative approaches have also been particularly valuable over the years given the relevant number of international students that have registered in the program. This has provided multiple opportunities to explore in class and in assessment the comparison of the way a certain issue of educational economics emerges and is approached in different national contexts. It has also provided major opportunities to compare different policy options and the way these are explored or discarded given the social and political contexts. In doing this, we are more able to fulfil the purpose of the course to develop students' skills to discuss and apply economic ideas and models to multiple policy contexts, which tends to be a particularly effective learning strategy for many students.

This course is expected to help students to develop their written and oral skills, improve their capacity to articulate complex arguments about economic topics, and to be able to synthetise ideas from multiple sources of information. The classes cover the main economic concepts and theories applied to educational analysis, which are discussed as well through empirical examples and illustrations that allow the students to know this field of the economics of education, its objectives, and its development. The syllabus privileges a broader approach that may familiarize the student with a variety of themes that can be further explored both in the group essays and in the

future and autonomous learning path of the students. This is also aligned with the broader institutional trends that aim at fostering those skills among future graduates.

The classes are aimed at stimulating discussion about the potential of economic analysis to explain relevant contemporary issues in education. Students are encouraged to participate actively in the discussion and to read the recommended materials in advance. The classes aim at combining the presentation of the essential concepts and economic theories applied to educational analysis with the discussion of empirical examples. This allows the examination of the potential and the limitations of an economic analysis of education and aims at fostering among students a capacity to criticize those concepts and theories and their application to new situations. The group essay aims at developing those skills of critical thinking and is also aligned with the broader institutional strategic priorities regarding more active methods of assessment that distribute students' effort along the semester and appeal to different competencies besides those tested in more traditional written exams.

4. The Development of the Economics of Education

The emergence of economics of education as an autonomous field of study is usually associated with Theodore Schultz's presidential address to the annual meeting of the American Economic Association in 1960.[14] In his address, reinforced later by other publications (such as *The Economic Value of Education* in 1963), T. Schultz promoted the importance of educational benefits and of an economic approach to the analysis of education. Since that time, research in this field has attempted to deepen knowledge about the economic value of education, and expanded to other questions such as educational finance and the estimation of educational production and cost functions. This process of consolidation is supported by the sustained number of publications in the economics of education, and in its frequent inclusion in the economics curricula.

Some authors claim that the economics of education is a rather old branch of economics. Maureen Woodhall (1987), for example, cited authors such as Adam Smith and von Thünen. On the other hand, others such as Mark Blaug (1970) associated this field closely with the human capital theory, arguing that "(T)en years ago there was hardly such a subject as the economics of education." (Blaug, 1970: 7). In spite of these differences, there is consensus that the field took off in the sixties, following the development of human capital theory, and the attempts to define the economics of education reflect the importance of that theory.

Economics of education has been defined as studying the allocation of resources to different types of training and schooling (Cohn, 1979). Mark Blaug (1970) distinguished two main themes: the economic value of education (mainly associated with human capital theory), and the economic aspects of educational systems. Elchanan Cohn's (1979) popular textbook considered 5 major themes: the economic value of education, the allocation of resources in education, teacher's salaries, the finance of education, and educational planning. For both Blaug and Cohn it was clear that the major concern involved the economic value of education, and therefore

[14] Although reference should be made to the work of Jacob Mincer (1957 and 1958). For more details see Teixeira (2007).

human capital theory. Economics of education emerged as a separate field in economics closely associated with human capital theory.

Throughout the sixties, we find evidence of increasing attention to this new perspective. One of the most important examples was Theodore Schultz's presidential address to the American Economic Association (AEA) in 1960, in which he stressed the role of human capital in the promotion of individual and social economic development (Schultz 1961). Another important example was the *Journal of Political Economy* October 1962 supplement volume on "Investment in Human Beings", edited by T. Schultz, and based on a 1961 conference, to which contributed authors such as Gary Becker, Jacob Mincer, Burton Weisbrod, and Edward Denison. In 1964 Gary Becker published his monograph *Human Capital*, which became a standard reference in all works treating education from an economic perspective. The seventies saw a burgeoning of publication of textbooks in the economics of education (see Blaug, 1976a) and the increasing importance of these issues, in the second half of the sixties, was visible in the meetings of the American Economic Association.

In Europe attention to these subjects came later. In the forefront were people like Mark Blaug and Jean-Claude Eicher, whom developed the earliest studies of rates of return and had been in contact with North-American colleagues developing the field. Blaug also published his readings on *Economics of Education* (Blaug, 1970), and his annotated bibliography of the same name (published in 1964, extended in 1966 and 1976). The former facilitated in the diffusion of some important papers, and the latter documented the increasing attention to economics of education as a field of research. In spite of all this, human capital theory and the economics of education remained much less visible in Britain and in the rest of Europe.

Growing acceptance in academic and publishing circles is illustrated by the classification indexes used by the AEA and the JEL.[15] The classification scheme claimed

[15] In 1968 the report of the Committee on classification of the AEA, led by Richard Leftwich, proposed a new system of classification that included economics of education as a subject. It was placed in the same group of economics of health, economics of poverty, social security and general welfare programs, all included in the group of welfare economics. At the end of the sixties, the *Journal of Economic Literature* (until 1968 the *Journal of Economic Abstracts*) included Human Capital Theory and Economics of Education (consumption side) in its index of economic subjects. In 1970, the AEA's classification of themes included human capital in the group of Manpower, Labor and Population.

a distinction between human capital (production side) and economics of education (consumption side). The former received mainly those works dealing with the labor market, with the earnings profile, and with training. The latter included most of the research on schooling, on the educational production, and on the benefits and costs of education.

But what accounted for the fast and successful development of this field of study in the sixties? That can only be fully understood by considering the theoretical, methodological, institutional and political framework in which it emerged. A first important element is the momentum in the field of economic growth following World War II (cf. for example Rostow 1990). Moreover, the efforts to clarify the sources of economic growth created a space of convergence between economic growth and human capital theorists. In fact, and from its beginnings, human capital theory suggested an important link between investment in education and economic growth. The convergence between economic growth theory and human capital was also visible in the field of development economics. Accordingly, the early phase of development studies gave an important role to human capital in the promotion of growth (Arndt 1987).

The political context presented also some interesting features that promoted the emergence of human capital theory and economics of education. On the one hand, the spread of the Keynesian gospel paved the way for higher expenditures, including expenditures on education. In fact, the government was supposed to play, in the Keynesian framework (and based on a skepticism towards the market mechanisms), a more visible role in the economic management (Skidelsky, 1988). In the case of education, the increase of public expenditure seemed to be not only socially popular, but also economically meaningful (cf. Svennilsson, 1966). Accordingly, this theory attempted to define new social investment criteria. Resources would be allocated to levels of education and to years of schooling so as to equalize the marginal, "social" rate of return on educational investment. This equalized yield on educational investment should not fall below the yield on alternative private investments (cf. Blaug, 1976). However, at that time there were already some doubts about the viability of defining economic criteria to allocate funds to education (cf. Vaizey, 1966).

On the other hand, some international institutions, in particular the World Bank and the OECD, eventually absorbed the human capital mindset (Teixeira, 2017; Papadopoulos, 1994). In the OECD's case, there were both political and theory-development implications. A political example is the Washington Conference (16th-20th October, 1961) on Economic Growth Policies and Educational Investment. Among its main conclusions was that the *investment* in education was a condition for economic growth (as important as that traditionally ascribed to capital goods). The beneficial character of education, socially and privately speaking, justified increasing levels of public funding. As for theory development activities at the OECD, an important event in the dissemination of the human capital approach was the study group in Economics of Education created within the OECD. This study group, which was responsible for organizing relevant conferences in this field, worked mainly between 1962 and 1965 (Papadopoulos, 1994).

Since the early sixties, economics of education and human capital theory have gained increased prominence in the economic profession. However, the economic approach to thinking about education did not immediately raise enthusiastic reactions from other social scientists, who, in most cases, remained rather sceptical towards it. Instead, this field of economics tended to consolidate by developing links almost exclusively with other fields inside economics, with the strongest links being forged with other applied fields like labor, population, and health economics and with growth economics. The empirical techniques employed were those that had already been introduced in other fields of economics, including cost-benefit analysis and regression analysis of both cross-section and panel data. Hence, economics of education consolidated as a field of study by enhancing its economic side.

The optimism of the early phase (the sixties), in which the link between education and economic benefits seemed to be clear and straightforward, was tested in the following years. The economic crisis of the 1970s, the rising unemployment (including of graduates), the slowdown of productivity, and the small advances in inequality, all converged to weaken the initial high expectations placed upon the economic contribution of education. The ensuing vivid debates of more than three and a half decades produced a more complex view of the role of education in the promotion of private and social economic progress and wealth. However, despite the

criticisms and doubts raised over the last half a century, the basic proposition that education and training makes the individuals more productive (thus, they may expect higher earnings, due to this higher productivity), has persisted, and today seems to be as widely accepted as ever on both the academic and social front.

From the late seventies, the economics of education would develop its research agenda by giving greater relevance to issues like funding and organization of education and academic labour markets. This is clearly shown by the evolution of the major textbooks in the field, with those being published in the 1980s and 1990s awarding far more relevance to the so-called microeconomics of education (e.g., Johnes, 1993). This process would also become visible in the case of the new editions of older textbooks such as Cohn and Geske (1990), where human capital research loses prominence in favor of more recent research in the field. This evolution has a double meaning. On one hand, this indicates that the field had become more developed, incorporating other themes and contributions beyond the primeval contribution of human capital theory. On the other hand, the fact that authors do not feel the need to explain in detail the basic tenets of human capital theory (e.g. what was meant by an investment approach or the cost/benefit analysis applied to education) is a sign of its acceptance and its trivialization in the economic debates of education.

This diversification of topics of research and made the economics of education less dependent on the fortunes of its founding theoretical developments and enhance its academic and political relevance, as shown by more recent debates about efficiency and effectiveness of education (see Hanushek and Woessmann, 2015) or those about ways of funding education (see Levin, 2001; and Barr, 2004).

The detailed syllabus presented below reflects this evolution of the field. Accordingly, its gives significant attention to human capital theory and the debates about the benefits of education (both at the micro and macro levels), but it also covers at length issues such as the funding, organization, and regulation of education.

5. Syllabus

1. **Introduction**
2. **Economics of Education – historical evolution**
3. **Human Capital Theory**
4. **Alternative Theories and Empirical Debates**
5. **Education and the Labour Market**
6. **Externalities and Non-Market effects of Education**
7. **Education and Economic Growth and Development**
8. **Funding of Education**
9. **Economics of Educational Organizations**
10. **Presentation of Students' Essays**

6. Detailed content

The planning of the course is developed considering a workload corresponding to 6 ECTS distributed over 13 weeks of effective teaching (though the number of weeks of each semester has changed slightly over the years, this corresponded to the norm). Moreover, even when the number of weeks allocated was slightly bigger, it had to be taken into account the existence of national holidays and other breaks integrated in the academic calendar. The planning also assumes a number of 3h of lectures/tutorials per week that can either be divided in sessions of 1h30 placed in two different days or organized as longer blocks of 3h. In fact, the experience of several years teaching this course indicates that the latter tends to have several advantages. First, it is normally rewarded with greater and more regular attendance of students, not the least because the risk of the schedule clashing with other courses is reduced. Since this is likely offered as an optional course, this risk is particular significant. Second, this greater attendance of students also contributes for more participation and more effective covering of the different topics, as it reduces the need of students to liaise with classes that may have taken place in a previous week. Finally, the risk of fatigue is not very significant, as we are likely to be dealing with final-year students.

For each topic of the syllabus is presented a list of essential readings that may help students to prepare for classes and to consolidate their knowledge after the specific classes covering them, through individual or group study. At the beginning of the course are also presented a couple of textbooks in the economics of education that may structure students' progress through the course. However, in some cases their contents are either not fully adequate to the approach developed in the course or a bit superficial for students with significant training in economics. Hence, these are complemented by specific recommendations of basic and secondary readings for each topic. These present variable degrees of difficulty, though most of them can be dealt with by final-year undergraduate students (even though they may not be capable of dealing with some of the more technical parts). These recommendations of readings are also valuable as a guidance for the students' essays, as they often include significant overviews of specific topics.

6.1. Introduction (1 Lecture)

This first lecture aims at presenting the course, notably by focusing on the syllabus, its objectives and learning outcomes, the modes of assessment, and the expectations regarding students attending the course. In this first session, are also established the privileged modes of communication and the office hours.

A significant part of this first lecture is devoted to discuss the nature and object of the economics of education as a specialized field (1.1.). Students are introduced to some basic data documenting the growth of education worldwide and its increasing economic, societal, and policy significance (1.2. and 1.3). The attention given to society and policy-makers to this sector has been reflected in the amount of resources allocated. Thus, the need to reflect about the economic purposes and rationales of such a major allocation of individual and social resources to education and the necessity of developing specialized economic analysis applied to educational issues and educational organizations. Finally, in this lecture it is also discussed the relevance of this field for the training of students finishing a first cycle of university education in economics, namely by opening a new area of interest and possible further specialized training.

Recommended Reading:

1.1. Teixeira, Pedro (2000) “Economics of Education: An Exploratory Portrait”, *History of Political Economy*, Vol. 31, Annual Supp., pp. 257-288.

1.2. Barro, Robert J & Lee, Jong-Wha (2001) "International Data on Educational Attainment: Updates and Implications," *Oxford Economic Papers*, vol. 53(3), pages 541-63, July.

1.3. Morrisson, Christian and Fabrice Murtin (2009) “The Century of Education”; *Journal of Human Capital*, vol. 3, no. 1: 1-42.

Basic Readings Recommended

- Brewer, Dominic and Patrick McEwan (Eds.) Economics of Education, 2010, Elsevier, 2010
- Cohn, Elchanan and Terry Geske; The Economics of Education, 3rd edition, Pergamon, 1990
- Johnes, Geraint; The Economics of Education, MacMillan, 1993
- Johnes, Geraint and Jill Johnes (2004) International Handbook on the Economics of Education
- VV AA –The Handbook of the Economics of Education, Elsevier (5 vols.)

6.2 Economics of Education – historical evolution (3 lectures)

This second topic of the syllabus will be devoted to cover in a brief manner the main economic thinkers that have devoted attention to education and to its economics relevance prior to the 1960s and the emergence of a specialized field dedicated to it. The main purpose of this topic is to show that there is a long-standing tradition in economic thought of devoting attention to educational issues, though the economics of education only emerged as a specialized field of study in economics from the 1960s onwards. This historical digression is also relevant as it will uncover some of the main arguments and debates that will frame contemporary ones about issues such as the benefits of education, the role of the State and the Market in education, or the ways to fund education.

In the first lecture of this section will be covered the most important references to education in the leading classical political economists, from Adam Smith to John Stuart Mill (1750-1870). It will be shown that education was an important subject for Classical Political Economists. According to these authors, education was relevant not only due to its intellectual rewards (the consumption perspective), but also because of its effect on human reason, and the possibility of correction of error. When analysing the benefits of education, Classical political economics would concentrate on the political and moral ones. In fact, education was valuable mostly because it had a socialising effect on the labour/poor classes, particularly visible in all authors after Adam Smith. Education was important, and should receive governments' support because it promoted better human beings and better citizens, hence better workers (see text 2.1.).

Despite these early developments, during the latter part of the nineteenth century and the first decades of the twentieth century the economic analysis of educational issues received limited attention. The second lecture of this section will cover the period 1870-1940 and focus on a few interesting attempts to promote the study of education from an economic point of view. Education was important for those that wanted to prevent, or at least limit, the use of child labour, which included the self-interested behaviour of unions and the more altruistic one of some academics or voluntary groups. Human capital was also important for those assessing national

wealth, in particular those discussing the costs of war. These different contexts meant that neither human capital nor the economic value of education meant the same for the various debates, or even for each author. The economic value of education could be understood in a very broad sense, meaning the moral, political, and social advantages of an educated people. This was very much the case in educational policy debates, and also in the work of actuaries on the economic value of human life. Only seldom was human capital referred to as the qualification of labour through formal education and training. Despite some interesting developments in which a very few authors tried to develop the concept of human capital theoretically and empirically, most of these authors did not manage to have a major impact among their contemporaries and during most of the first half of the twentieth century, education was not a central aspect to the analysis of labour markets, income distribution, or economic growth (see 2.2.).

The idea of putting a value on human life and its productive potential disturbed many academics and policy-makers. Moreover, to talk about the economic value of education seemed to debase the various and high purposes of education, reducing it to a productivist/economic approach. The idea of an economic value of education was considered also at odds with the individual motivations, since the demand for education was not regarded as based on economic or monetary motivations strictly speaking. Even on a conceptual level human capital was complicated and very few would support Irving Fisher's position towards a broader definition of human capital.

The third and last lecture of this second topic in the syllabus will be dedicated to the decades after WWII, a period in which the situation would change significantly and education started to be taken far more seriously by economists (text 2.3.). One of the main factors that stimulated a growing interest in education were the developments in research in personal income distribution. The persistent expansion in the quantity and the quality of the data available would contribute to greater attention to the role of education in personal distribution of income. It was not only the visibility of education that was changing. Its role in the promotion of personal wealth changed as well. Until the forties and fifties, education was mostly regarded as the result of previous wealth and an instrument of enhancing a cumulative process of wealth inequality. It was believed that because most of the well-paid jobs required a high level

of education and training that education was important. Its importance lay in providing access to exclusive prosperous occupations. And since education and training were costly activities, the access to these financially attractive occupations tended to be restricted to those wealthy groups that could afford it. Therefore, education and training were, for these authors, a mechanism of social elite's reproduction. By contrast a growing number of economists started to argue that education would be valuable in terms of individual income not because it gave access to well-paid occupations, but because it would enhance their productivity.

The interest in the economic analysis of education was also supported by the debate about the causes of prosperity and economic development in the postwar decades. The revival of interest in the long-term prospects of Western economies promoted the analysis of the process and causes of growth and, alongside several theoretical developments regarding the most suitable form of representing any economy's growth pattern, there was an extensive development of the empirical side of growth analysis. The winds of change also signified a broadening perspective, by dedicating an increasing attention to the economic process and structure of the less developed economies and, necessarily, to the causes of their performance. Also in the case of developing countries, education started to be regarded as a possible factor for breaking away from persistent and widespread poverty.

Another important factor for the growing interest in the economic analysis of education was the transformation that occurred within labour economics by mid-twentieth century. From the 1950s onwards there was an increasing pervasiveness of neoclassical economic theory and this evolution of labour research would be very important for the development of human capital research (Kaufmann, 1993). The main idea was that, despite some imperfections, labour markets were essentially competitive and that the imperfections of real labour markets were not crucial for the its general understanding, i.e., they did not challenge the main predictions of the competitive market model when applied to labour economic relations. There was also a methodological shift that placed the emphasis on general models of individual decision, quantification and econometric testing, and the assessment of models through their predictive power rather than by their realism. Altogether, this brought

labour economics closer to neoclassical economics and favoured the application of neoclassical economics to labour issues.

Thus, several developments in economics contributed to set a more favourable context to the development of a rationale to the economic role of education. This would emerge through research on personal income distribution, economic growth and development, and labour economics. By the late fifties several economists showed signs of being willing to develop the idea of human capital as an analytical tool i.e., a theoretical framework that aimed to use skills acquired through education and training as a major tool to explain relative success in the labour market, the distribution of personal income, and the relative performance of nations in terms of growth and development. This would be a major turning point to the modern development of the economics of education.

Recommended Reading:

2.1. M. Blaug (1975). 'The Economics of Education in English Classical Political Economy: A Re-Examination', in A. S. Skinner and T. Wilson (eds.), *Essays on Adam Smith*. Oxford, UK: Clarendon Press, pp. 568–99.

2.2. B. F. Kiker (1966) The Historical Roots of the Concept of Human Capital; *Journal of Political Economy*, Vol. 74, No. 5 (Oct.), pp. 481-499.

2.3. Teixeira, Pedro (2005). 'The "Human Capital Revolution" in Economics', *History of Economic Ideas*, 13/2: 129–48.

Additional Reading:

- Fisher, Irving (1897). 'Senses of "Capital" ', *Economic Journal*, 7/26: 199–213.
- Bowman, R. S. (1990) "Smith, Mill, and Marshall on Human Capital Formation", *History of Political Economy*, Vol. 22 (2), 239-59.
- Miller, William (1966) "The Economics of Education in English Classical Economics", *Southern Economic Journal*, 32, 294-309.
- Walsh, John R. (1935) "Capital Concept Applied to Man", *Quarterly Journal of Economics*, XLIX, Feb., 255-85.
- P. Teixeira (2007) Dr. Smith and the Moderns – Adam Smith and human capital theory, *Adam Smith Review*, Vol.3, 139-157.
- Tu, Pierre N. V. (1969) "The Classical Economists and Education", *Kyklos*, 22 (2), 691 – 717.

6.3 Human Capital Theory (3 Lectures)

The modern development of the economic analysis of education is strongly associated with the development of human capital theory. Hence, the analysis of this theory and its implications for the economic relevance of education constitutes the central aspect of the third topic in the syllabus. In the first lecture of this part we will start by explaining how this idea of using human capital as an explanatory tool to different economic topics started to be developed in a more systematic manner in the turn to the 1960s by a group of economists usually associated with the Departments of Economics of the Universities of Chicago and Columbia (Kaufmann, 1993; Teixeira, 2007) (see text 3.1.). This group was led by the economists Theodore W. Schultz (1902-1998), Jacob Mincer (1922-2006), and Gary Becker (1930-2014), to whose work would become associated not only the modern development of human capital theory but several of its subsequent developments. The contribution of each of these economists to the discipline would be acknowledged several decades later through several prizes, including the Nobel Memorial Prize in Economics awarded to T. W. Schultz (1979) and Gary Becker (1992), in both cases stating explicitly their contribution to human capital research. Jacob Mincer would also be awarded several important prizes in his main field of research – labour economics (Teixeira, 2007).

Each of these authors had a particular interest in the development of human capital research and they converged in their efforts. We will do an overview of the work of these three economists that gave a major contribution to make education and training an important topic in economics, with particular attention to the uses of human capital as an explanatory principle to issues of income inequality, economic growth and development, and labour markets (see text 3.2.).

The various strands that converged and coalesced in human capital research and the idiosyncrasies of the leading researchers in the area had an important impact during the early development of human capital research and contributed to make human capital research explore the concept into various alleys. In the second lecture of this section will be analysed the topics that received greater attention in the first decades of the human capital theory, namely through the calculus of rates of return,

and the impact of schooling, together with training, on lifetime patterns of income (see 3.3.).

The consideration of education as an investment led to attempts to estimate the yield of that investment. This yield, or rate of return to education, was held by human capital theorists to explain people's behaviour in seeking education of different levels and types, and could be used as a guide in allocating public resources to education (Psacharopoulos, 1994). Rate of return estimates and calculations were used extensively in discussions of allocative efficiency, by considering alternative investments within and outside education (see 3.4). The estimates of rates of return were extremely important from an academic perspective, but also from a political one. As far as the former aspect is concerned, the rate of return was the key parameter of the human capital model of the demand of education. Moreover, the fact that estimation of the rate of return involved the application of some of the best-known instruments in the empirical economists' toolbox (such as the regression approach or the cost-benefit analysis) made it a popular area of research for (although it reduced its acceptance in other disciplinary contexts). From a political perspective, the estimated rate of return to education provided a straightforward, easily understood, and politically effective way of presenting information on the effectiveness and appropriateness of public expenditure in education.

In the third lecture of this section we will reflect about the early criticisms that were raised regarding the concept of human capital and the initial focus on rates of return, that some authors called the cornerstone of the economics of education in its initial phase (see 3.5). In spite of the vast amount of work devoted to estimating rates of return, several formal and substantive criticisms were raised. One of the main ones was the under-attention to non-pecuniary returns (either private or social ones). Another was the inaccuracy of most cost estimates, due to difficulties in the computation of the costs. Another criticism was that most of the studies provided were cross-section and not longitudinal, giving a somehow static picture. Moreover, these calculations of returns were based in the past and current situation and nothing can be taken for granted in terms of the future earnings. There was the problem that individuals choose not schooling, but a certain type of schooling, and a few studies have attempted (and even a few have succeeded) to calculate rates of return by type

of educational institution. According to these differences among subjects, some have considered that there was an overstatement of the importance of the rates of return to the decision of training and education. Finally, several authors remarked the lack of consideration of quality factors in its calculus.

Recommended Reading:

3.1. Schultz, Theodore (1961) "Investment in Human Capital", *American Economic Review*, vol. LII, Nº 4.

3.2. Becker, Gary (1994) *Human Capital*, Chicago: Chicago University Press, 3rd Ed. – Introduction.

3.3. Mincer, Jacob (1974) *Schooling, Experience and Earnings*, New York: Columbia University Press – Introduction and Conclusion.

3.4. Psacharopoulos, G & Patrinos, H. A. (2010) "Human Capital and Rates of Returns", in Johnes and Johnes (eds.) *International Handbook on the Economics of Education*, pp. 1-57.

3.5. Blaug, Mark (1985) "Where Are We Now in the Economics of Education?, *Economics of Education Review*, 4 (1), 17-28.

Additional Reading:

- Blaug, Mark (1976) "The Empirical Status of Human Capital Theory: A Slightly Jaundiced Survey" *Journal of Economic Literature,* 14.3: 827-55.
- Kiker, B. F. e M. Clementina Santos, (1991) "Human Capital and Earnings in Portugal", *Economics of Education Review*, 10, 117-203.
- LEE, J. -W. and BARRO, R. J. (2001). "Schooling quality in a cross-section of countries". *Economica*, 68, 465–88.
- Mincer, Jacob (1958) "Investment in Human Capital and Personal Income Distribution", *Journal of Political Economy*, 281-302.
- Mincer, Jacob (1962) "On the Job Training: Costs, Returns, and Some Implications", *Journal of Political Economy*, 70, 50-79.
- Mincer, Jacob and Polachek, Solomon (1974). 'Family Investments in Human Capital: Earnings of Women', *Journal of Political Economy*, 82/2 Pt 2: S76–S108.
- Psacharopoulos, G & Patrinos, H. A. (2004) Returns to Investment in Education: A Further Update, *Education Economics*, vol. 12(2), pages 111-134.
- Teixeira, P. (2010) T. W. Schultz (1902-1998); in Emmett (Ed.) *Elgar Companion on Chicago Economics*; Edward Elgar; pp. 326-330.
- Teixeira, P. (2010) Gary Becker; in Emmett (Ed.) *Elgar Companion on Chicago Economics*; Edward Elgar; pp. 253-258.
- Teixeira, P. (2007) *Jacob Mincer – A Founding Father of Labour Economics,* Oxford University Press and IZA.

6.4 Alternative Theories and Empirical Debates (3 Lectures)

After a promising beginning, human capital theory was seriously challenged by the appearance of alternative theories. In the fourth topic of the syllabus will be covered the main alternative theories proposed since then to explain the observed link between education and income. In the first lecture of this section, we will start by looking at credentialist approaches, notably the so-called screening theory (4.1.). An extreme version of the screening hypothesis asserts that education merely identifies students with particular attributes, acquired either at birth or by virtue of family background, but does not produce or improve those attributes. Therefore, education and training would not increase the productivity of individuals, but only sort them according to their innate capacities. Education had private benefits but not social ones. As a result, the arguments in favour of public support to education were seriously weakened. Less extreme versions of the screening hypothesis were also proposed. According to some authors, individual-earning differences should not be viewed solely as the result of differences in educational attainment. These criticisms created difficulties for the human-capital research program, because this theory tended to take "tastes" and "abilities" as given, and emphasized the role of present and future earnings as determinants of the education decision.

An important aspect to understand the debates about human capital theory vs. screening referred to factors such as ability. The disentangling of the effects of ability from schooling remained a difficult issue due to measurement problems, to missing observations, or to identification limitations. There is a persistent association between education and ability that requires restrictive assumption, which limits the possibility to fully separate the effects between these two factors, even when the overall results support a human capital explanation (see 4.2).

In the second lecture of this section we will cover more critical views that took distances also from the neoclassical view underpinning human capital theory. One relevant criticism came via the emergent theory of dual/segmented labour markets (text 4.3.). This view was explored in various models of labour market analysis by authors such as Michael Piore, Peter Doeringer, David Gordon, and Michael Reich.

According to this perspective the labour market was basically divided between qualified and unqualified workers. The former group was able to gain access to the primary labour market, characterized by well-paid jobs, frequent opportunities for training, and stable and attractive careers. For the latter group were reserved the poorly paid and precarious jobs of the secondary market, with high turnover and lack of opportunities of progress and training. Moreover, because the opportunities of on-the-job training were scarce or altogether absent, the possibility that these less-qualified workers would manage to move to better jobs was almost negligible. There seemed to be no redemption for the lack of initial qualifications. According to some of these authors it was this segmentation that explained the failure to significantly improve the condition of traditionally disadvantaged groups such as women and ethnic minorities. If that were the case, human capital would have a potentially minor role in redressing income inequality.

Even more critical was the view expressed by radical economists that considered the labour market as a centre-stage for the class struggle, and therefore rejected the benevolent view of the economic system that portrayed each individual as a type of capitalist able to attain a much better economic condition by improving their intellectual skills through education and training. These were very different views about the economic opportunities, path-dependence, and fairness in a market-capitalist system, reflected in one of society's cornerstones – the educational system. Authors such as Herbert Gintis, Samuel Bowles, and Martin Carnoy challenged the view that the major role performed by education was a cognitive one and that earnings were compensating for the enhancement of the cognitive capacities. These authors believed even if education had also a role in transmitting knowledge and developing vocational skills, this was neither the only nor the primary role of education (see text 4.4.). Instead, they emphasised the role of noncognitive personality characteristics as the key factor in terms of labour market success and that education was important as a socialising force that instilled values of discipline, obedience, and motivation that were rewarded by the labour market. The educational system as embedded in the social and political system, thus, its reward system had to be consistent with the values of the social system and reflected the structure of social relations in that historical context.

An important aspect to understand the ups and downs of human capital research regarding empirical evidence referred to factors such as ability and social background and this will be covered in the third lecture of this section. There were some important advances in the empirical assessment of the effects of human capital on productivity, namely through schooling. The accumulation of empirical evidence contributed to an increasing receptivity of human capital research and the threat posed by screening and signalling models became less visible (4.5.). In fact, the apparent vitality of human capital research in more recent times was also confirmed by the attitude of several of its past critics, who suggested a certain willingness to compromise. The development of the so-called sorting models combining human capital and information content dimensions, and regarded by its proponents as extensions rather than alternatives to human capital ones (see text 4.6), can to some extent be considered an attempt to strike a compromise.

Recommended Reading:

4.1. Spence, Michael (1973) "Job Market Signalling", The Quarterly Journal of Economics, Vol. 87, No. 3. (Aug.), pp. 355-374.

4.2. James Heckman & Edward Vytlacil, 2001. "Identifying The Role of Cognitive Ability in Explaining the Level of and Change in the Return to Schooling," The Review of Economics and Statistics, vol. 83(1), pages 1-12, February.

4.3. Cain, Glen (1976) "The Challenge of Segmented Labor Market Theories to Orthodox Theory: A Survey", *Journal of Economic Literature*, 14 (4), 1215-57.

4.4. Bowles, Samuel and Herbert Gintis (1975) "The Problem with Human Capital Theory – A Marxian Critique", *American Economic Review*, 65 (2), 74-82.

4.5. Card , D. (1999) The Causal Effect of Education on Earnings. In: Ashenfelter, O., Card D. (Eds.). *Handbook of Labor Economics*, vol. 3b, North Holland, Amsterdam.

4.6. Weiss, Andrew (1995) "Human Capital vs. Signalling Explanations of Wages", *The Journal of Economic Perspectives*, Vol. 9, No. 4. (Autumn), pp. 133-154.

Additional Reading:

- Arrow, Kenneth (1972) "Higher Education as a Filter", *Journal of Public Economics* 7: 193-216
- Arrow, Kenneth; Bowles, Samuel, and Steven Durlauf (2000) Meritocracy and Economic Inequality, Princeton (NJ): Princeton University Press.

- Ashenfelter, Orley and Rouse, Cecilia (1998). 'Income, Schooling, and Ability: Evidence from a New Sample of Identical Twins', *Quarterly Journal of Economics*, 113/1:253–84.
- Baker, George and Bengt Holmstrom (1995) "Internal Labor Markets: Too many Theories, Too Few Facts", *American Economic Review*, 85 (2), 255-9.
- Blaug, Mark (1976) "The Empirical Status of Human Capital Theory: A Slightly Jaundiced Survey" *Journal of Economic Literature,* 14.3: 827-55.
- Griliches, Zvi (1977) "Estimating the Returns to Schooling: Some Econometric Problems", *Econometrica*, Vol. 45, N 1, 1-22.
- Griliches, Zvi and William Mason (1972) "Education, Income, and Ability", *Journal of Political Economy*, 80, May-June, Supplement, s74-s103.
- Willis, Robert (1986) "Wage Determinants: A Survey and Reinterpretation of Human Capital Earnings Functions", in Orley Ashenfelter and Richard Layard (ed.) *Handbook of Labor Economics*, Vol. I, pp. 525-602.

6.5 Education and the Labour Market (3 Lectures)

The development of the economics of education was initially closely associated with human capital theory and with the analysis of the effects of education in the labour market, notably regarding income and employment. This has been explored looking at the short and the long term and supported by extensive research using cross-section and longitudinal data.

In the first lecture of this section we will start by covering one of the aspects to be initially developed that was the one of age and age-patterns of investment in human capital, notably by following the pioneering work of Gary Becker and Jacob Mincer (see text 5.1.). This pointed out towards an emphasis on early career investments, in order to allow a longer period to reap the durable benefits of those investments in the labour market. However, subsequent research also pointed out the elements of discontinuity in the labour force participation of several groups of workers and the way these could affect their pattern of investments in human capital investments and their potential return, notably due to problems of obsolescence. These developments were more recently explored empirically, trying to find to what extent later investments could still be beneficial from a private point of view. This has been especially relevant for more advanced levels of higher education, as the expansion led many systems to broaden their student intake and attract more mature students (5.2.).

One of the dimensions of concern referred to the fact that a lot of the early studies were based on cross-section data and that raised scepticism about the extent of which these could be used to understand the long-term prospects of present workers. With the massive increase in formal qualifications occurring worldwide, many expressed fears that this would produce a significant decline in the returns to education that would eventually question the profitability of higher qualifications. However, substantial evidence was produced in this respect pointing toward a resilience of the high returns to higher formal qualifications, despite the enormous educational upgrading of the working population. In fact, despite the continued expansion in the average education level per worker in recent decades, the return to

education did not decreased substantially and continued to be a very attractive private and social investment for a large number of countries (see 5.3).

One of the leading debates since the 1970s concerned the variability of the private returns to investments in education and training. With the expansion of data available, it became increasingly possible to explore the existence of differences in those returns among different population groups according to issues such as gender, age, ethnic background. This will be covered in the second lecture of this section, starting by analyzing the possible role of human capital in explaining gender differences and the extent of which part of what was usually considered to be the result of discrimination in the labour market, could in fact be the result of different patterns of human capital accumulation (see 5.4). The human capital explanation focused on the effect of human capital accumulation on market earnings and on market activities, but also how women's behaviour was still conditioned by a traditional unbalance in the distribution of household and family responsibilities that affected their investments in human capital vis-à-vis their less persistent participation in the labour market that characterised much of women's behaviour. This line of research has become a focus of attention in recent years as the expansion of higher education in many developing and emerging economies has created significant economic and educational opportunities for many women.

Another group that attracted particular attention from an early stage of human capital research was that of ethnic minorities. Since a lot of the early development of human capital research took place in the US, that interest was initially concentrated on the African-American population (see 5.5.). A large part of the debate had to do with the differences in the returns to investments in education and the factors underlying those differences. This work tended to suggest that the evolution of the ethnic wage gap was mainly explained via two types of human capital – education and migration opportunities. Human capital was also relevant due to its impact via unemployment. The effect of education on the progress of minorities became less controversial, though weaker than it was initially supposed, once factors such as the quality of education and the effectiveness of discrimination were taken into account. The analysis of ethnic groups in the US was also expanded, notably to the Asian and Jewish communities (see chapter 5.6). This permitted a better picture of the role of human

capital for ethnical and racial minorities, enhancing differences in level of schooling and returns to schooling, and the way these choices were also shaped by social and cultural factors.

The debates about the variability of the returns to education contributed to give a growing attention to issues of quality of education and the extent of which these could explain some of the differences found among certain ethnic or socio-economic groups (see 5.7.). As more countries expanded their educational systems and budgets, including at the higher levels, the pressure to assess the economic relevance increased. Moreover, the quality dimension was also important regarding possible differences in the way these countries dealt with that process of massification of educational access and differences in productivity and educational outcomes.

After facing troubled times during the seventies and the eighties, human capital research was placed under significant pressure in order to find a renewed vitality. This reaction evolved around crucial issues in terms of its theoretical boundaries and its empirical applicability. The empirical research was largely dominated by the discussion of the heterogeneous rates of return across specific groups, notably gender, socio-economic, and ethnic differences. Overall, the empirical research confirmed that the role of education was significant and common to all groups, though far more complex than initially suggested and with unequal effects among different groups. The effect on earnings of schooling (and other human capital variables), as well as their interaction with other relevant variables seemed also to be much more complex and empirical problems such as the identification of the effects, proxy variables or data sources available were better addressed.

In the third lecture, we analyse how recent research has strengthened the economic value of education and training in the labour market, benefiting from a more favourable context in many Western labour markets. After the decline of the educational premium in the labour market in the seventies there was a revival since the eighties throughout OECD countries, which was particularly significant at the higher education levels. Whereas the rising graduate unemployment of the seventies had led to concerns about the number of graduates being produced and the risks of *overeducation*, subsequent human capital research tended to portray it as a result of temporary disequilibria between the supply and the demand for graduates (see 5.8).

The problems of unemployment of university graduates were interpreted as being caused by the combination of a slowdown of growth and a surge in the supply of graduates, rather than a challenge to the long-term productivity and income effects of education and training. Hence, in recent years, investments in human capital came to be regarded as a significant advantage regarding employability, especially bearing in mind the long-term evolution of technological changes (5.9).

Although a lot of human capital research tended to be more favoured in the schooling type of education, more recent research has followed Jacob Mincer's early advocacy of on-the-job training as a major part of those investments (see 2.4). The development of this type of research was somewhat hindered by the more limited availability of data, but its relevance was also enhanced by the implications of Becker's original insights about the distinction between more general and more specific types of human capital. This has been a topic that received more attention and empirical content as more and better data became available (see 5.9), especially at the industry level.

Recommended Reading:

5.1. Ben-Porath, Yoram (1967). 'The Production of Human Capital and the Life Cycle of Earnings', *Journal of Political Economy*, 75/4 Pt 1: 352–65.

5.2. Audrey Light (1995) The Effects of Interrupted Schooling on Wages; *The Journal of Human Resources* , Vol. 30, No. 3 (Summer), pp. 472-502.

5.3. Polachek, Solomon (1995). 'Earnings Over the Life Cycle: What Do Human Capital Models Explain?', *Scottish Journal of Political Economy*, 42/3: 267–89.

5.4. Becker G., W. Hubbard and K. Murphy (2010) "Explaining the Worldwide Boom in Higher Education of Women", *Journal of Human Capital*, 4 (3), pp. 203-241.

5.5. Chiswick, Barry (1988). 'Differences in Education and Earnings Across Racial and Ethnic Groups: Tastes, Discrimination, and Investments in Child Quality', *Quarterly Journal of Economics*, 103/3: 571–97.

5.6. James P. Smith (1984) "Race and Human Capital"; *The American Economic Review* , Vol. 74, No. 4 (Sep.), pp. 685-698.

5.7. Card, David and Krueger, Alan (1992)."'Does School Quality Matter? Returns to Education and the Characteristics of Public Schools in the United States", *Journal of Political Economy*, 100/1: 1–40.

5.8. Hartog, J.. (2000) "Overeducation and Earnings: Where are We, Where Should We Go", *Economics of Education Review*, 19,131-47.

5.9. Robert Topel (1993) “What Have We Learned from Empirical Studies of Unemployment and Turnover?”; *The American Economic Review* , Vol. 83, No. 2, Papers and Proceedings, pp. 110-115.

5.10. Topel, Robert (1991) “Specific Capital, Mobility, and Wages: Wages Rise with Job Seniority”; *Journal of Political Economy*, Vol. 99, No. 1 (Feb.), pp. 145-176

Additional Reading:

- Hugo Figueiredo, Vera Rocha, Ricardo Biscaia, and Pedro Teixeira (2017) Should we start worrying? Mass higher education, skill demand and the increasingly complex landscape of young graduates¿ employment; *Studies in Higher Education*; Vol. 42; (forthcoming)
- Hugo Figueiredo, Vera Rocha, Ricardo Biscaia, and Pedro Teixeira (2015) Gender pay gaps and the restructuring of graduate labour markets in Southern Europe; *Camb. J. Econ*., 39 (2): 565-598.
- Flavio Cunha, James J. Heckman, Lance Lochner, Dimitriy V. Masterov (2006) Interpreting the Evidence on Life Cycle Skill Formation, In: E. Hanushek and F. Welch, Editor(s), *Handbook of the Economics of Education*, Volume 1, pp 697-812.
- Groot, W. and Maassen van den Brink, H.M. (2000). Overeducation in the Labor Market: a meta-analysis. *Economics of Education Review* 19, 159-168.
- Kiker, B. F., Manuel Mendes de Oliveira e Maria Clementina Santos (1997) “Overeducation and Undereducation: Evidence for Portugal”, *Economics of Education Review*, 16, 2,111-125.
- Kiker, B. F., M. Clementina Santos e Manuel Mendes de Oliveira. (2000) ´The Role of Human Capital and Technological Change in Overeducation”, *Economics of Education Review*, 19, 199-206.
- Robert Speakman, Finis Welch (2006) Using Wages to Infer School Quality, In: E. Hanushek and F. Welch, Editor(s), *Handbook of the Economics of Education*, Volume 2, Pages 813-864.
- Neal, Derek (1995) “Industry-Specific Human Capital: Evidence from Displaced Workers” *Journal of Labor Economics*, Vol. 13, No. 4 (Oct.), pp. 653-677.
- Nickell, Stephen (1979). ‘Education and Lifetime Patterns of Unemployment’, *Journal of Political Economy*, 87/5 Pt 2: S117–S31.
- Mincer, Jacob and Ofek, Haim (1982). ‘Interrupted Work Careers: Depreciation and Restoration of Human Capital’, *Journal of Human Resources*, 17/1: 3–24.
- Oaxaca, R., & Ransom, M.R. (1994). “On Discrimination and the Decomposition of Wage Differentials”, *Journal of Econometrics* 61, 5-21.
- Sicherman, N. (1991). Overeducation in the labor market. *Journal of Labor Economics*, 9(2), 101–122.
- William J. Collins, Robert A. Margo (2006) Historical Perspectives on Racial Differences in Schooling in the United States, In: E. Hanushek and F. Welch, Editor(s), *Handbook of the Economics of Education*, Volume 1, pp. 107-154.

- Franco Peracchi (2006) “Educational Wage Premia and the Distribution of Earnings: An International Perspective”, In: E. Hanushek and F. Welch, Editor(s), *Handbook of the Economics of Education*, Volume 1, pp. 189-254.
- Derek Neal (2006) “Why Has Black–White Skill Convergence Stopped?”, In: E. Hanushek and F. Welch, Editor(s), *Handbook of the Economics of Education*, Volume 1, pp. 511-576.
- Edwin Leuven, Hessel Oosterbeek (2011) “Overeducation and Mismatch in the Labor Market”, In: Eric A. Hanushek, Stephen Machin and Ludger Woessmann, Editor(s), *Handbook of the Economics of Education*, Volume 4, pp. 283-326.

6.6 Externalities and Non-Market effects of Education (1 Lecture)

The effects of human capital on various types of social behaviour had been stressed since its beginning. (In fact, before the emergence of human capital research, the externalities associated with education were mostly regarded as the main justification for its support.) However, the long debates on the precise contribution of education to earnings have initially eclipsed these nonmonetary benefits, eventually more attention was given to them. In this lecture will be discussed the main externalities and non-market effects associated to educated as portrayed by the current existing empirical evidence. Those will be considered in three categories: nonwage dimensions of labour market remuneration (e.g. fringe benefits), pure consumption effects, and productivity outside the labour market (see 6.1.)

A large part of this renewed interest was due to some firmer empirical evidence on the link between education and health, showing not only that education had a positive impact on health, but also that health improved educational attainment and productivity. Improvements in conceptualisation, the availability of socio-economic data, and statistical techniques, helped more recent research to suggest that schooling had an impact in an individual's health condition through numerous channels. Women's schooling has been extensively analysed, and it was suggested that it had a significant and robust impact on the children's nutrient intakes, though the impact on the children's health was less clear when controlled for other factors. Overall, there seemed to be a good case supporting the idea that more educated individuals are better producers of health, and therefore that education has a positive impact on health.

Following the work of Gary Becker, human capital became increasingly a framework to understand several aspects of human behaviour, providing an effective and powerful example of the ability of economics to deal with social issues (Becker, 1976 and 1981). Thus, in recent years there have been important developments in human capital research trying to explore the interrelated effects of education and training to aspects as diverse as crime, political behaviour), and religion. These are just the most significant examples of a broader trend that shows how in recent decades

human capital research has been at the forefront of the economics discipline's attempts to expand its boundaries (see 6.2.).

Recommended Reading:

6.1. Robert T. Michael (1973) "Education in Nonmarket Production"; *Journal of Political Economy* , Vol. 81, No. 2, Part 1 (Mar. - Apr.), pp. 306-327.

6.2. McMahon, Walter (2010) "The social and external benefits of education", in Johnes and Johnes, *The International Handbook on the Economics of Education*, Edward Elgar, pp. 211-259

Additional Reading:

- Becker, Gary and Nigel Tomes (1986) "Human Capital and the Rise and Fall of Families", *Journal of Labor Economics*, 4, N3, S1-S39.
- Becker, Gary S., Kevin M. Murphy, and Robert Tamura (1990) "Human Capital, Fertility, and Economic Growth." *Journal of Political Economy,* 98, no. 5, pt. 2 (October): S12–S37.
- Daron Acemoglu, Simon Johnson, James A. Robinson, Pierre Yared (2005) From Education to Democracy?; *The American Economic Review*, Vol. 95, No. 2; (May), pp. 44-49.
- Grossman, Michael (2006) Education and Nonmarket Outcomes In: E. Hanushek and F. Welch, Editor(s), *Handbook of the Economics of Education*, Volume 1, pp 577-633.
- Haveman, Robert and Wolfe, Barbara (1995). 'The Determinants of Children's Attainment: A Review of Methods and Findings', *Journal of Economic Literature*, 33/4: 1829–78.
- Haveman, Robert and Barbara Wolfe (1984) "Schooling and Economic Well-Being: The Role of Nonmarket Effects", *Journal of Human Resources*, 19 (3), 377-407.
- Iannaccone, Laurence R. (1990) "Religious Practice: A Human Capital Approach"; *Journal for the Scientific Study of Religion* , Vol. 29, No. 3 (Sep.), pp. 297-314.
- Lochner, Lance (2004) "Education, Work, and Crime: A Human Capital Approach"; *International Economic Review* , Vol. 45, No. 3 (Aug.), pp. 811-843 .
- Kenkel, Donald (1991) "Health Behaviour, Health Knowledge, and Schooling", *Journal of Political Economy*, 99 (2), pp 287-305.
- Lochner Lance (2011) "Nonproduction Benefits of Education: Crime, Health, and Good Citizenship", In: Eric A. Hanushek, Stephen Machin and Ludger Woessmann, Editor(s), Handbook of the Economics of Education , Volume 4, pp. 183-282.
- Matthew A. Baum and David A. Lake (2003) "The Political Economy of Growth: Democracy and Human Capital"; *American Journal of Political Science* , Vol. 47, No. 2 (Apr.), pp. 333-347.
- Tomes, Nigel (1984) "The Effects of Religion and Denomination on Earnings and the Returns to Human Capital"; *The Journal of Human Resources* , Vol. 19, No. 4 (Autumn), pp. 472-488.

6.7 Education and Economic Growth and Development (3 Lectures)

Although one of the initial motivations to the development of human capital research came via the relevance of education to the dynamics of economic growth and development, this strand of research received some more limited attention in the seventies and eighties. However, by the mid-eighties the situation started to change and, as it had happened in the fifties, human capital benefited from the revival of growth research in the second half of the eighties. In the first lecture, we discuss the most relevant aspects of the economic analysis of education and training in more recent growth models, notably due to the development of the so-called endogenous growth literature (see 7.1). This more recent work challenged a certain mechanistic view that to a certain extent had proliferated in the early years of human capital research (see 7.2). Accordingly, the returns to human capital could be expected to be high in those situations where productive learning opportunities exist and can be exploited. Moreover, this new wave of research on growth and development emphasised the externalities associated with education and training, giving additional strength for government support to these activities.

The role of human capital in this new generation of writings has been regarded as a fundamental long term shift from the accumulation of physical capital to human capital, producing major impacts in the way societies have organized themselves. However, and as we will discuss in the second lecture of this section, this more recent research has also pointed out that the capacity of societies to take advantage of those investments is more complex and uncertain than it was initially portrayed (see 7.3). In particular, some of the research started to explore the role of human capital in dealing with economic disequilibrium. This made the analysis subtler, less automatic, less confident, but more convincing for some of its critics. In fact, some of its fiercest critics came to accept recently that education makes people more productive but also through skills other than the ones considered by the production function, i.e., by moulding the behavioural response of workers, especially to sanctions and incentives by employers. The discussion will be enriched by significant developments made in recent years regarding the empirical analysis of the links between education and

growth and the detection of variabilities and patterns among a large number of national experiences.

The strengthening of the relevance of human capital for economic growth had to do with the developments regarding the role of technology and its impact in enhancing the demand for more and better qualified workers. The suggestion that there is a skill-biased technological progress pushing upwards the demand for qualified labour received new support during the last two decades as it was pointed out as a key factor in modern patterns of economic growth (see 7.4). In particular, in the U.S., the explanation for the evolution of earnings seemed to provide particular relevance to human capital-related factors, both on the supply and on the demand side. On the supply side the decline in the seventies of the premium to highly educated labour was ascribed to an accelerated rate of supply during the late sixties, and the deceleration of that trend during the seventies contributed significantly for the revival of the premium for skilled labour. On the demand side the idea of a skilled-biased technological progress seemed to receive some support, with an increased demand for skilled labour in relation to less skilled one.

In this third lecture of this section we will discuss the relevance of human capital for inequality, a topic that has also attracted significant attention in recent years. This has been fostered by the rise of inequality in many western societies and the social and political debates associated with it, notably due to the aforementioned impact of technology for the demand of skilled workers. Hence, several researchers have explored the fact that education was a determinant of and determined by inequality, namely via intergenerational studies. Related to the intergenerational aspect, more attention was given to the factors underlying children's attainment, especially in terms of schooling, and direct and indirect effects of family background on income, notably via educational achievement (see 7.5). The economic success of children was analysed in terms of the impact of governmental policies (setting the environment), the parent's behaviour (work and earnings choices), and the children's choices in using their talents and the resources made available to them (especially in terms of education, work, and family and fertility behaviour). The more persistent attention to the role of the family, education, and socio-economic background led to a

more complex picture, in which converged factors such as the genetic endowment of ability, the family cultural background, and the family's endowment of physical and human capital.

In the third lecture of this section we will also cover one significant development regarding the economic relevance of human capital in the labour market and potential inequalities associated with it at the international level. Thus, we will look at the effects of human capital on migration, including the international mobility of labour. Whereas earlier work on human capital had focused on internal migrations, more recent research focused on international movements of labour and the relevance of human capital in this respect. This topic benefited from the increasing political visibility of immigration policies in many Western countries. Immigrants frequently constituted a group of workers with fewer formal qualifications and with a lower return to their schooling, which could be due to the country-specific nature of part of their formal training. Research on this topic has become a very popular topic also due to the important flows of qualified labour and the often-heated policy debates about brain drain and brain gain in the context of economic development (see 7.6).

Recommended Reading:

7.1. Romer, Paul (1986). 'Increasing Returns and Long-Run Growth', *Journal of Political Economy*, 94/5: 1002–37.

7.2. Nelson, Richard R. and Phelps, Edmund S. (1966). 'Investment in Humans, Technological Diffusion, and Economic Growth', *American Economic Review*, 56/1–2: 69–75.

7.3. Hanushek, Eric and Ludger Woessmann (2015) *The Knowledge Capital of the Nations – Education and the Economics of Growth*; CESifo Book Series; MIT Press.

7.4. Goldin, Claudia and Katz, Lawrence (2004). *The Race between Education and Tecnology*; MIT Press

7.5. Samuel Bowles and Herbert Gintis (2002) "The Inheritance of Inequality"; *Journal of Economic Perspectives,* Volume 16, Number 3—Summer —pg. 3–30.

7.6. Beine M., F. Docquier and H. Rapoport (2008) "Brain Drain and Human Capital Formation in Developing Countries: Winners and Losers", *The Economic Journal*, 118 (April), 631–652.

Additional Reading:

- Acemoglu, Daron (1998). 'Why Do New Technologies Complement Skills? Directed Technical Change and Wage Inequality', *Quarterly Journal of Economics*, 113/4: 1055–89.
- Arrow, Kenneth (1962). 'The Economic Implications of Learning by Doing', *Review of Economic Studies*, 29/3: 155–73.
- Autor, D.; Frank Levy, Richard Murnane (2003) The skill content of recent technological change: an empirical exploration, *Quart. J. Econ*. 118 1279–1334.
- Autor, D.; Murphy, Kevin and Welch, Finis (1993). 'Occupational Change and the Demand for Skill, 19401990', *American Economic Review*, 83/2: 122–6.
- Autor, D.; F. Katz, Lawrence and Melissa S. Kearney (2008) Trends in U.S. wage inequality: revising the revisionists; *The Review of Economics and Statistics*, May, 90(2): 300–323.
- Björklund, Anders and Kjell G. Salvanes (2011) "Education and Family Background: Mechanisms and Policies", In: Eric A. Hanushek, Stephen Machin and Ludger Woessmann, Editor(s), *Handbook of the Economics of Education*, Elsevier, Volume 3, pp. 201-247.
- Card, David and John E. DiNardo (2002) "Skill-Biased Technological Change and Rising Wage Inequality: Some Problems and Puzzles"; *Journal of Labor Economics*, 2002, vol. 20, no. 4, 733-783.
- Currie J. (2009) "Healthy, Wealthy, and Wise: Socioeconomic Status, Poor Health in Childhood, and Human Capital Development", *Journal of Economic Literature*, 47 (1), pp. 87-122.
- Dustmann, Christian and Albrecht Glitz (2011) "Migration and Education", In: Eric A. Hanushek, Stephen Machin and Ludger Woessmann, Editor(s), *Handbook of the Economics of Education*, Elsevier, Volume 4, pp. 327-439.
- Gérard, Marcel and Silke Uebelmesser (2014) *The Moblity of Students and the Highly-Skilled*; CESifo Book Series; MIT Press.
- Krueger, Alan B. and Lindhal, Mikale (2001). 'Education for Growth: Why and for Whom?', *Journal of Economic Literature*, 39/4: 1101–36.
- Oded, Galor (2011) Inequality, Human Capital Formation, and the Process of Development, In: Eric A. Hanushek, Stephen Machin and Ludger Woessmann, Editor(s), *Handbook of the Economics of Education*, Elsevier, Volume 4, pp. 441-493.
- Smith, James P. (2006) Immigrants and Their Schooling, In: E. Hanushek and F. Welch, Editor(s), *Handbook of the Economics of Education*, Elsevier, Volume 1, pp. 155-187.

6.8. Funding of Education (3 Lectures)

Educational institutions have increasingly been a target of economic analysis due to the fact that they require a significant (and increasing) amount of resources and for this reason there is the question of opportunity cost. By spending resources in education, we are reducing the available resources for other activities. This way, education systems are no strangers to the kind of questions that constitute the core of economic analysis, that is, the need to make choices regarding how limited and scarce resources should be allocated in view of multiple possible uses:

- What amount of resources should be spent on education?
- To which activities should it be distributed?
- How should the resources be distributed?
- Who should contribute to these resources? In which way?

These are some of the essential questions that the education funding mechanisms must answer. In the first lecture, we will analyse the way by which economic analysis answers these questions and their underlying fundamental principles (see 8.1). First, the funding system must promote the efficiency level. This efficiency has two meanings: on one hand, a funding system must stimulate the agents to use the resources they have the best way possible, which is usually considered to correspond to the internal efficiency of the system; on the other hand, funding mechanisms should favour the external efficiency of the education system, thus ensuring that the system provides what is more desirable and necessary from social and individual viewpoints. This way, the funding system must possess mechanisms to stimulate the institutions to produce the kind of graduates and competences that promote social and individual wellbeing, which corresponds to the needs of the labour market.

The funding system has to guide itself by equality principles, either in the relationship between state and institutions, or in the relationship between the state and the families. In a sense, the funding system must have as an objective to promote equal opportunities for all, so it is necessary to correct distortions and inequalities in the access and attendance to education. The funding system should be designed to allow that specific groups are not hindered from attending education due to financial

reasons, if they so desire and if they have the necessary qualifications for that. Finally, the funding system should promote the efficacy of the education systems. Thus, the funding system should be congruent with the objectives and priorities of the system, something that usually is easier to be said than to be done. In order for that to happen, it is necessary to align the funding system with other policies defined for the system, such as the political regulation model, the quality management instruments, the evaluation and accountability inside the system, and the models of government and administration of HEIs.

In spite of the controversy aroused, the increasing economic relevance of education has had consequences in the kind of policies adopted for this sector. Although it is clear that it regards an asset with some important specificities, the pressure in favour of the adoption of mechanisms that contribute to a greater economic rationality has influenced decisively the regulatory mechanisms of the sector. This influence has been particularly visible at the funding mechanisms level. We will start by discussing how these principles have influenced the recent trends in public policies for basic and secondary education and then we will look at the higher education sector.

Thus, in the second lecture of this section we will analyse some aspects in which the reverberation of the concern about efficiency, equity and effectiveness have reflected in the funding of basic and secondary education systems. In this lecture, we will start by looking at the evolution of levels of funding to education, with particular attention to the balance between public and private funding. We will discuss differences across the world as well as possible factors that may explain the overlap and divergence vis-à-vis the economic criteria justifying either public or private funding (8.2.). This balance has been undergoing significant reassessment due to the combination of greater financial needs and limited resources, that has resulted in the development of various alternative hypotheses for funding education systems. The changes in the funding mechanisms accompany the recent trends in education, namely the attempt to import market mechanisms to this sector, including the discussion of proposals such as vouchers, competition among schools, or movements such as the charter schools (see 8.3.). Coherently with the reinforcement of institutional autonomy, governments started to transfer the amounts to the institutions as block-

grants, endowing the institutions with some liberty in the internal use of these resources. While they increased the financial autonomy of the institutions, several governments strengthened the accountability mechanisms, placing less emphasis on a detailed administrative control and being more interested in the efficient use of the resources administered independently either by public, semi-public or privately-owned schools.

Then, in the third lecture of this section we will look at funding of higher education that, despite some sharing some contextual factors, poses specific issues and challenges. In this lecture, we will also start by the analysis of some international trends regarding the level of funding of higher education as well as it composition regarding its source (8.4). As the massive recent expansion of higher education has happened in a context of significant limitations of public funds and the pressure for diversifying the funding sources is increasing significantly. So, one of the most important aspects in the present funding trends has to do with the rationalization of the funding sources. Education funding has depended on a significant amount of public funds in many countries. Such public expenditure is frequently justified through the social benefits associated to the better qualification of the population. However, the available empirical evidence on many countries indicate that such benefits to society tend to diminish as we go up the educational levels, being clearly inferior to the private benefits of higher education.

Despite the great expansion of higher education systems, a graduate diploma still is, on the average, an advantage either in terms of employability or in terms of long-term earnings. Higher education graduates still are the group that enjoys the most favourable situation in terms of job availability and even when unemployment goes up job searching time is much shorter for them than for less qualified workers. The use of cost-benefit analysis has been instrumental to call to attention the need to modify the funding mechanisms, especially through the increased contribution of students and families (see 8.5). This kind of policies that aim at diversifying the funding sources through the contribution of students and families is called cost-sharing policies and are characterized by the introduction of the payment of tuition fees, especially at the higher education level.

The changes in the funding sources have had important implications on social support mechanisms for the students, particularly having in mind the concern about equity that should guide the funding systems. Even in this case there has been the concern of introducing or reinforce those incentives that promote a greater efficiency in the use of the resources, especially in more developed countries where social support mechanisms have traditionally been more generous. This had led to the growing introduction in many countries of loan mechanisms, that have been supported by many economists and justified by reasons of efficiency and equity. Regarding efficiency, it is said that the subsidy policies tend to distort the search for higher education as they reduce drastically the direct costs of attending higher education institutions. Besides that and since the economic analysis presupposes that the most part of the individuals are sensitive to financial incentives, it is believed that a loan system would turn individuals more careful regarding their choices. Regarding equity, the argument in favour of broad loan systems is that they will make possible for many students to overcome present financial restrictions and invest in qualification, being able to pay back the loan in the future based on higher salaries associated to better paid occupations.

Recommended Reading

8.1. Barr, N. (2004), *Economics of the welfare state*, (4th edition), Oxford University Press. – Chapters on Education and Higher Education.

8.2. Mitch, David (2010) "School Finance", in Johnes and Johnes (2010) *The International Handbook on the Economics of Education*, Edward Elgar, pp 260-297.

8.3. Eric Bettinger (2011) "Educational Vouchers in International Contexts", in Eric A. Hanushek, Stephen Machin and Ludger Woessmann, Editor(s), *Handbook of the Economics of Education*, Elsevier, Volume 4, pp. 551-572.

8.4. Greenaway, David and Michelle Haynes (2010) "Funding Higher Education Funding", in Johnes and Johnes (eds.) *The International Handbook on the Economics of Education*, Edward Elgar, pp 298-328.

8.5. Teixeira, Pedro; Bruce Johnstone; Maria João Rosa and Hans Vossensteyn (2006) *A Fairer Deal? Cost-sharing and Accessibility in Western Higher Education*, Kluwer-Springer

Additional Reading

▪ Barr, Nicholas (1993) - “Alternative Funding resources for Higher education”, The Economic Journal, 103 (May), issue 418, 718-728.

▪ Eicher J.C. and Chevaillier T. (2002) "Rethinking the Financing of Post-Compulsory Education", and "Higher Education Funding: A Decade of Changes" in Higher Education in Europe Vol 27, N 1-2 pp. 69 - 88 and pp. 89 – 99.

▪ Schultz, Theodore (Ed.) (1972) *Investment in Education: The Equity and Efficiency Quandary*, University of Chicago Press.

▪ McMahon, Walter and Terry Geske (1982) Financing Education, Overcoming Inefficiency and Inequity, Urbana (IL): University of Illinois Press.

▪ Gerhard Glomm, B. Ravikumar, Ioana C. Schiopu (2011) The Political Economy of Education Funding, In: Eric A. Hanushek, Stephen Machin and Ludger Woessmann, Editor(s), Handbook of the Economics of Education, Elsevier, Volume 4, pp 615-680.

▪ L. Lochner, A. Monge-Naranjo (2016) Student Loans and Repayment: Theory, Evidence, and Policy, In: Eric A. Hanushek, Stephen Machin and Ludger Woessmann, Editor(s), Handbook of the Economics of Education, Elsevier, Volume 5, pp. 397-478.

▪ Pedro Teixeira (2009) Economic Imperialism and the Ivory Tower: Economic Issues and Policy challenges in the Funding of Higher Education in the EHEA (2010-2020); in Jeroen Huisman, Bjorn Stensaker and Barbara M. Kehm (eds) The European Higher Education Area: Perspectives on a Moving Target, Rotterdam, Sense Publishers; pp. 43-60.

8.6. Economics of Educational Organizations (3 Lectures)

One of the dominant characteristics of education evolution in recent decades has been its expansion to world scale. Still more significant is the fact that such expansion has occurred even in regions or countries in which the access to education was restricted to a small minority of their citizens. This education expansion that led to its massification has not had a quantitative dimension only. It was hoped that the higher education expansion brings in to the system not simply a quite numerous population but also an increasingly diversified population at the socioeconomic, cultural and geographic levels. This way, it is required to attend to the most diversified needs by means of a system that is also diversified in the kind of programs and institutions it provides. Another strategy has been diversification at a regional level, so that the education provision becomes more geographically balanced as opposed to the historical tendency to concentrate education in specific parts of some countries.

The emergence of mass education has promoted the development of more heterogeneous and complex systems, that made their management and regulation more difficult. Hence the redefinition of regulation models and of the relationships between the political authority and the institutions that make up the system have been observed in the last few decades. In the first lecture of this section students are introduced to different modes of regulation in the education sector. We will analyse the reflections of broader changes in the public sector and specific developments in the education sector (see 9.1.). For instance, we can observe a clear tendency to a greater autonomy of the education institutions over the last few decades, since the governments seem to have diverted their attention from a detailed and regular control of the activities of the institutions to an evaluation centred on the performance and the outputs of each institution and of the system as a whole.

This movement tends to be characterized as an evolution from the controlling and planning model of the state to a supervision model. To this increasing institutional autonomy corresponded a reinforcement of the degree of public accountability of educational institutions to governments and to society at large. Governments have conceded more autonomy to institutions and it was expected that such autonomy should be used to fulfil more efficiently the economic and social needs. Thus,

evaluation mechanisms and quality systems gained increasing importance in many education systems and we have seen the development of an extensive list of performance indicators for basic/secondary and higher education (9.2.).

The growing concerns with the internal and external efficiency levels have dominated much of the debate on education. Hence, we can observe important changes in the regulatory mechanisms of the system. The most important change tends to be characterized by an increasing influence of market mechanisms in the regulation of education, which will be analysed in the second lecture of this section where we will analyse the introduction of market regulation in educational systems, both at basic/secondary and in higher education levels (9.3). The introduction of market mechanisms in education has become visible essentially through three mechanisms. First, governments have stimulated the degree of competition in the system, particularly among institutions. The second vector of market promotion in education has been through privatization, though not necessarily through the transference of organizations from the public to the private sector, but often by the development of private supply of education and the adoption by public schools and universities of governance and management practices closer to the private entities and firms, aiming at enhancing greater efficiency. Finally, the promotion of market principles has been secured through the concession of a greater degree of freedom to schools and universities so as to strengthen their flexibility and adaptability. It is assumed that in a market context with more competition the education institutions will tend to identify more actively the needs to be satisfied and thus they will be more alert to their surroundings. Once the introduction of these elements tends to happen in a gradual and partial mode, some authors speak of the existence not of a market but a quasi-market of education (text 9.4.).

Another problem frequently debated in the context of the application of market mechanisms to the education sector refers to information issues. In a market system, it is necessary that the agents have a good level of information about the possible choices. If such information is scarce and/or of bad quality individual choices may not correspond to the option that better suits the interests of the intervenient agents. In what concerns education, these information problems are relevant and meaningful. Education is complex and its evaluation requires a knowledge that not

always pertains to all individuals, particularly to those who, because of cultural or socioeconomic reasons, are less familiarized with the benefits associated to attending education. On the other hand, education corresponds to what sometimes is called an experience good, that is, one can only evaluate it entirely through its fruition. Thus, in order for the individuals to have a complete knowledge about education it would be necessary that they experienced it. Since what is being discussed is not only the education choice but also what kind of education, that possibility would raise many significant difficulties.

Despite those caveats, there has been a growing body of research looking at educational organizations from an economic perspective. Hence, in the third lecture of this section we will look at educational organizations in terms of their production functions. We will analyse the two main approaches, that of parametric and nonparametric methods, and identify the major advantages and limitations of each approach. We will explore the major factors that seem to explain greater efficiency in schools and in higher education institutions (texts 9.4 and 9.5). This will require a reflection about the inputs and outputs to be considered, and the various ways to reflect about them. Moreover, it will also imply discussing the difficulties in defining specific production functions for an educational sector (or parts of it) and the feasibility and adequacy in doing it. It will also imply reflecting about how to integrate qualitative dimensions in this reflection, as well as the diversity of educational institutions (and their contexts). This analysis will also be important to discuss what factors seem to play a more significant role in the performance of educational institutions, an issue that has received increasing attention among researchers in recent years and that has attracted significant political and social attention. Moreover, we will discuss the relevant issues of economies of scale and scope in education, that have gained significant relevance among policy-makers and institutional managers. This will imply discussing the potential effects of mergers and consolidation in these sectors, but also the challenges and complexities associated with it.

The introduction and reinforcement of market regulation in education has been surrounded by intense controversy. Many actors in the system consider that sector specificities rule out the adoption of market mechanisms. Thus, in final part of this session we will also discuss some of the specificities of educational institutions (see

9.7) – for example, the fact that the education institutions are not in general organizations whose objective is profit (that is a basic assumption of functioning in a market). Besides that, education institutions tend to distinguish themselves by having multiple objectives and an organizational complexity that differentiates them from the entities that usually participate in a market. This way, many observers have expressed concern about the negative effects that the reinforcement of market mechanisms could have in the performance of education institutions, namely in the pursuit of their traditional missions of teaching and learning (and research in the case of tertiary education). This discuss will show both the insights that can be derived from economic analysis and also the specificities of these organizations, helping students to be familiar with the application of economic concepts to educational organizations, but also to be able to develop a critical attitude towards those applications (and its limitations).

Hence, the course, and to a certain extent, the course comes full circle, as it looks at the potential and the limitations of approaching education from an economic perspective. In this final section we underline, as in many instances during the semester, the need to balance the important contributions and insights but also the realism and compromises that one has to be prepared to when analysing such a complex and fascinating reality.

Recommended Reading

9.1. Pollitt and Bouckaert (2011) *Public Management Reform*; Oxford University Press.

9.2. Cave, M.; M. Kogan and R. Smith (1990) *Output and Performance Measures in Government: The State of the Art*, Jessica Kingsley, London.

9.3. Le Grand, Julian (2006) "School Education" in *Motivation, Agency, and Public Policy – Of Knights & Knaves, Pawns and Queens*; Oxford: OUPress; pp. 107-119.

9.4. Teixeira, Pedro; David Dill; Ben Jongbloed and Alberto Amaral (eds.) (2004) *Markets in Higher Education: Reality or Rhetoric?*, Kluwer, Dordrecht.

9.5. Eric A. Hanushek (2006) "School Resources", In: E. Hanushek and F. Welch, Editor(s), *Handbook of the Economics of Education*, Elsevier, Volume 2, pp. 865-908.

9.6. Cohn, Elchanan; Sherrie L. W. Rhine and Maria C. Santos (1989) - "Institutions of Higher Education as Multi-Product Firms: Economies of Scale and Scope", *The Review of Economics and Statistics*, 284-290.

9.7. Winston, Gordon C (1999) "Subsidies, hierarchy and peers: The awkward economics of higher education" *Journal of Economic Perspectives*; 13, 1; pp. 13-36.

Additional Reading

- Bishop, John (2006) "Drinking from the Fountain of Knowledge: Student Incentive to Study and Learn – Externalities, Information Problems and Peer Pressure", In: E. Hanushek and F. Welch, Editor(s), *Handbook of the Economics of Education*, Elsevier, Volume 2, pp. 909-944.
- Buckley, Jack and Mark Schneider (2007) *Charter Schools – Hope or Hype?*, Princeton UPress.
- Bulman, G. and R.W. Fairlie (2016) "Technology and Education: Computers, Software, and the Internet", In: Eric A. Hanushek, Stephen Machin and Ludger Woessmann, Editor(s), *Handbook of the Economics of Education*, Elsevier, Volume 5, pp. 239-280.
- Chubb, John E. and Terry M. Moe (1990) *Politics, Markets, and America's Schools*; Brookings.
- Cohn, E. and Samuel T. Cooper (2010) in Johnes and Johnes, *The International Handbook on the Economics of Education*, Edward Elgar, pp. 579-612.
- Epple, D.and R. Romano, R. Zimmer (2016) "Charter Schools: A Survey of Research on Their Characteristics and Effectiveness", In: Eric A. Hanushek, Stephen Machin and Ludger Woessmann, Editor(s), *Handbook of the Economics of Education*, Elsevier, Volume 5, pp. 139-208.
- Figlio, David and Susanna Loeb (2011) "School Accountability", In: Eric A. Hanushek, Stephen Machin and Ludger Woessmann, Editor(s), *Handbook of the Economics of Education*, Elsevier, Volume 3, pp. 383-421.
- Glewwe, Paul and Michael Kremer (2006) "Schools, Teachers, and Education Outcomes in Developing Countries", In: E. Hanushek and F. Welch, Editor(s), *Handbook of the Economics of Education*, Elsevier, Volume 2, pp. 945-1017.
- Hanushek, Eric (1986) "The Economics of Schooling: Production and Efficiency in Public Schools", *Journal of Economic Literature*, Vol XXIV, September, pp. 1141-1177.
- Hanushek, Eric A. and Steven G. Rivkin (2006) "Teacher Quality", In: E. Hanushek and F. Welch, Editor(s), *Handbook of the Economics of Education*, Elsevier, Volume 2, pp. 1051-1078.
- Johnes, Jill (2010) "Efficiency Measurement", in in Johnes and Johnes (2010) *The International Handbook on the Economics of Education*, Edward Elgar, pp 613-742.
- Levin, Henry M. (ed.) (2001) *Privatizing Education – Can the Marketplace deliver Choice, Efficiency, Equity, and Social Cohesion*, Westview Press.
- Teixeira, P., Rocha, V., Biscaia, R., Cardoso, M. F. (2013) "Competition and diversification in public and private higher education" *Applied Economics*, 45, 35, 4949-4958.
- Urquiola, M. (2016) "Competition Among Schools: Traditional Public and Private Schools", In: Eric A. Hanushek, Stephen Machin and Ludger Woessmann, Editor(s), *Handbook of the Economics of Education*, Elsevier, Volume 5, Pages 209-237.

9.8. Assessment (3 lectures)

Three lectures are usually reserved for assessment. As it was explained above, students have two options of assessment. They can choose a continuous assessment option, composed of a mid-semester partial exam and a group essay on a topic agreed with the Lecturers. The second option of assessment is to take a Final Exam. For those students that take the partial exam and the essay option, the final grade will be the result of the arithmetic average of the two parts. For those students that chose the exam option, the final grade will correspond to the grade obtained in that Exam. Thus, one lecture was reserved for the partial examination that usually took place by mid-semester and two other for the presentation of student essays. This corresponds to what were the needs over the years for a normal number of students registering in the course and tending to choose the option of continuous assessment. However, in case more time was needed for the presentations of group essays, extra sessions could be defined in accordance with the students.

10. Reflections about the Pedagogical Experience

As it was stated above, the main purpose of this course was to introduce students to basic knowledge in the field of the Economics of Education, an applied economic field that aims at applying economic tools to the analysis and understanding of educational decision, organizations and outcomes. This course was also expected to help students to develop their written and oral skills, improve their capacity to articulate complex arguments about economic topics, and to be able to synthetize ideas from multiple sources of information. The classes aimed at stimulating discussion about the potential of economic analysis to explain relevant contemporary issues in education and encouraged students to participate actively in the discussion. The classes aim at combining the presentation of the essential concepts and economic theories applied to educational analysis with the discussion of empirical examples. Furthermore, assessment was also designed in alignment with the broader institutional strategic priorities regarding more active methods of assessment that distribute students' effort along the semester and appeal to different competencies besides those tested in more traditional written exams. In the following sections are presented some elements aiming at characterizing the pedagogical experience of the years in which the course has offered and the main academic and pedagogical results attained.

7.1 Teaching and Learning

Since its launching, the course on economics of education has operated through lectures that combine more expositional parts with others that encouraged greater discussion and interaction in class. Lectures have not been compulsory, which is regarded the most adequate aspect given that this is an optional course, thus assuming that the students that chose it are clearly committed to it. Thus, one of the leading purposes of classes is to underline the relevance of a regular attendance, as well as the relevance of regular follow-up of readings by students in order to take more advantage of the possibilities of discussion in class. The latter are often stimulated through the analysis of resources (tables, graphs, and other visual

materials) either drawn from the recommended reading or from complementary resources. Besides being a useful tool to provoke discussion in class, the use of these resources also fulfils a pedagogical purpose that is to clarify the interpretation of some of that data, an aspect that it is often underestimated in learning processes, and that aims at making students more autonomous in the interpretation of data in these or in other sources.

Although it is not easy to promote a habit of regular reading among students, the number of items of recommended reading was kept at a reasonable number (usually 1 or 2 per class) to avoid discouraging students by a large amount of reading. Moreover, the elements included combine academic pieces with some less technical in order to make it less complicated for students to follow the course through complementary readings. This is also encouraged by the advertisement through the information system of the detailed planning, with an indication of each topic to be covered in each class and the main readings associated with each of them. Hence, students will know in advance which topics will be covered in each class and will be invited to browse the reading materials in advance. This also helps those students that have more limited attendance to keep track of the course's development.

Students have also been supported through the information provided in the course page made available at SIGARRA (Sistema de Informação da Faculdade de Economia e da Universidade do Porto) and its regular update with relevant materials.[16] Hence, in the course webpage students can find all the relevant information about the course such as its syllabus, recommended bibliography, planning of each individual session or assessment rules and methodologies. In the course webpage students are also provided with contact information of the members of the teaching team, including their office hours allocated to this course that may be used by students in the preparation of their essays or in the revision of any of the topic covered in class. That possibility is used by students on a regular basis and seems to be very relevant in supporting their work and their regular study.

[16] For an example from one of the years see:
https://sigarra.up.pt/fep/en/UCURR_GERAL.FICHA_UC_VIEW?pv_ocorrencia_id=218662

7.2. Assessment and Academic Results

One of the most important aspects to reflect upon the effectiveness of any pedagogical experience are the academic results obtained. Although they are not restricted to assessment, this is an important part of those, notably given the way learning processes are organized in formal education. Over the years we years the course has attracted a significant number of students, especially given that we are dealing with an optional one, with particular relevance fir 2011/12. Given the large number of courses offered, there is a larger number of students that register but only a fraction actively enrols and participates, either in class or in assessment. This feature is similar to that often found in optional courses, thought the course presented a pattern of regular growth until 2011/12, with a significant decline after that. Up to that year the proportion of students actively participating in the course vis-à-vis the number of those registered have also grown, suggesting that the course was attracting an increasing interest among students. The turning point after 2012 may largely be explained by the fact that the BA in Economics and in Management had been restructured by then with a reduction of students' credits available to register in optional courses. This has clearly affected many optional courses, reducing the opportunities of students to diversify their learning paths.

Table 1 – Overall Results regarding Assessment – 2006-2013

	Number of Students			Ratios (%)		
Year	**Enrolled**	**Assessed**	**Approved**	**ASS/ENR**	**AP/ENR**	**AP/ASS**
2006/07	**64**	**11**	**9**	**17.19**	**14.06**	**81.82**
2007/08	**80**	**18**	**15**	**22.5**	**18.75**	**83.33**
2008/09	**79**	**22**	**20**	**27.85**	**25.32**	**90.91**
2009/10	**60**	**16**	**12**	**26.67**	**20.00**	**75.00**
2010/11	**85**	**31**	**29**	**36.47**	**34.12**	**93.55**
2011/12	**113**	**59**	**58**	**52.21**	**51.33**	**98.31**
2012/13	**41**	**19**	**17**	**46.34**	**41.46**	**89.47**

Hence, when we look at the overall results presented in Table 1, it is more important to look at the ratios of students approved vis-à-vis those assessed, rather than those registered. If we do that we realize that the percentage of those assessed that has been approved has been very high, with a slight less positive case in 2009/10, though we were dealing with small numbers by then. It should be particularly underlined that in the cases when the course had the highest number of students registered and assessed presented the most positive results. Hence, the growth in the number of presentations and in the support of students did not affected their academic performance.

As it was aforementioned, the participation in the course was also encouraged through the assessment made available, namely the option of continuous assessment which covers a partial examination and a group essay. Students have two options of assessment. They can choose a continuous assessment option, composed of a mid-semester partial exam and a group essay on a topic agreed with the Lecturers. The second option of assessment is to take a Final Exam. For those students that take the partial exam and the essay option, the final grade will be the result of the arithmetic average of the two parts. For those students that chose the exam option, the final grade will correspond to the grade obtained in that Exam. This has been the dominant choice among enrolled students over the years, especially among those that attend regularly classes (see Table 2).

Table 2 – Students' Choices regarding Options of assessment

Year	Nº of students in continuous assessment	Nº of students in continuous assessment with success	Nº of students in Final exam	Nº of students in Final exam with success
2006/07	**5**	**5**	**3**	**1**
2007/08	**13**	**13**	**5**	**2**
2008/09	**21**	**19**	**1**	**1**
2009/10	**9**	**9**	**7**	**3**
2010/11	**26**	**26**	**1**	**1**
2011/12	**48**	**47**	**6**	**4**

2012/2013	**11**	**11**	**4**	**1**

The data presented in Table 2 present two major patterns. Firstly, that the dominant option regarding assessment has been that of continuous assessment. Although that was the pedagogical priority of the course, it is important that this has been validated by students, not the least because they could have played down this course due to their optional nature vis-à-vis compulsory ones (to which they would award priority). Secondly, this option by the course and by the students has clearly paid off regarding results, since the proportion of students successfully completing the course is much higher in continuous assessment than in final examination. In fact, there are very few cases of students enrolled in continuous assessment that failed, usually corresponding to students with poor or almost negligible attendance and limited engagement in the course. That corresponds to students that made a nominal option for continuous assessment, but that were not consequent with it in a substantive manner.

Table 3 - Distribution of Classifications – 2006-2013

	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
20							
19	**1**					**1**	
18			**1**		**1**	**1**	**2**
17		**1**	**1**	**1**	**1**	**3**	**2**
16	**2**		**1**	**2**	**2**	**7**	**4**
15	**2**	**2**	**2**	**1**	**8**	**11**	**3**
14	**2**	**3**	**4**		**3**	**10**	**3**
13		**3**	**4**	**1**	**4**	**8**	
12		**2**	**5**	**2**	**4**	**5**	**1**
11	**2**	**4**	**1**	**1**		**8**	**1**
10			**1**	**4**	**6**	**4**	**1**
9			**1**				
8		**1**		**1**		**1**	**1**
7	**1**		**1**				
6	**1**			**1**			
5		**2**		**1**			

4							
3							
2					**1**		**1**
1							
0				**1**	**1**		

This very positive outlook regarding academic success presented above is confirmed by an analysis of the distribution of students' grades over the years presented in Table 3. Overall, one notices the very positive results with many students attaining quite high grades. This is not surprising given the degree of motivation that optional courses usually engender. On the other hand, the course presented a significant distribution of grades, indicating that it required significant commitment from student and that those characteristics did not mean that assessment was particularly benevolent. Although the cases of students following continuous assessment were rare, that did not ensure to those students that they would attain very high grades. Top grades were only awarded seldom and corresponded to a very good performance on both components of assessment. Thus, assessment clearly had a discriminating effect as it is supposed to have even among motivated and committed students.

It could be added that those students that have chosen continuous assessment also tended to attain much higher grades, though we may not be comparing strictly similar groups. To these higher grades tended to contribute usually in a very positive way the grades obtained in group essays and presentations. Although this is usually the case, given the motivational dimensions associated with that type of assessment, his should be nevertheless underlined, as confirming the validity of the pedagogical strategy established for this course. This will be further confirmed by the feedback collected from students to which we now turn our attention.

7.3. Students' Feedback

One relevant element when reflecting about the experience of any course or program is the feedback provided by students. This can be collected in various forms, with many institutions experiencing in various forms. The general trends in higher education has been to use online resources to collect that feedback. This enable the University and the Faculty to have a common tool that provides comparability between courses, programs, Faculties, and also across time. Moreover, it is easily accessible and simple to analyse statistically, it also faces some challenges. Response rates are usually lower than when collected in class through paper surveys (though some institutions have also experienced collecting it online in class). That problem tends to become more significant if one places too much emphasis in the robustness of the survey, requiring some pragmatism in order to avoid discouraging students from answering very long surveys. If very simple surveys provide very limited guidance to professors regarding what worked well or not during the development of a course, a very sophisticated survey may have its relevance undermined by very poor response rates that question its representativeness. Moreover, there is the risk that students with poor attendance may also respond, mixing the feedback of students with variable degrees of attendance and information about the course they are supposed to provide feedback.

The experience at FEP and U.Porto illustrates several of these trends. It should be noted that many courses, programs or Faculties had already developed mechanisms of students' feedback or monitoring their teaching provision even before each Faculty or the University launched their own. This corresponds to an important concern of many professors to collect some formal feedback of students about their pedagogical practices, content, structure, modes of teaching and assessment, etc. Although this can be also done, to a certain extent, through informal mechanisms, as it is the discussion in class, the relevance of more formal mechanisms cannot arguably be replaced by that, not only for those in charge of that group of students, but also for program directors and others that should reflect upon that feedback in order to improve the quality of the education provided.

Below are presented the results of the students' surveys of several years, differentiating the three dimensions considered. First, we present those referring to the course, then those to the effects of the course, and finally those regarding the professors involved in the course. Before that we present the overall characterization of the number of answers and their representativeness, which are relevant elements for the interpretation of the data provided in Table 4.

Table 4 – Students' Participation in Pedagogial Surveys

	Number of Students Enrolled	Number of Students Assessed	Number of Responses	% of Responses regarding assessed
2009/10	**60**	**16**	**1**	**6%**
2010/11	**85**	**31**	**3**	**10%**
2011/12	**113**	**59**	**8**	**13%**
2012/13	**41**	**19**	**4**	**21%**

The data highlights the small number of responses and the fact that we are dealing with very limited feedback from students. Several factors may explain those low response rates, besides those already mentioned above. Moreover, this is an optional course placed towards the end of the degree and one may argue that most students will not feel a strong motivation to provide feedback, since they do not expect to benefit from its consequences, as they are likely to have graduated by then. One could argue that only highly motivated students (either positively or negatively) will tend to respond. Given the high rates of academic success, especially of those students regularly attending class and choosing continuous assessment, that factor also tends to be weakened, unless students are particularly satisfied with it. But even in those cases, given that these are more mature students, and also the size of the class and the close interaction with them, one could argue that many of them feel that they had already the opportunity to provide some feedback during the interaction with professors and that there is not a strong necessity to do it formally through the long survey they are asked to do on a voluntary basis (especially at a time when many of them are already

in the labour market or trying to find their first job). Thus, to a certain extent, only the last ones are a bit more representative, even though, according to the strict criteria adopted by the U.Porto, that would not be considered as statistically significant. Despite those obvious caveats, it is important to look at those results and see how much can we draw from them. Below we present the results about the dimension course.

Table 5 – Students' Responses Regarding the Dimension Course

Dimension Course/Academic Year	2009/10		2010/11		2011/12		2012/13	
	AVG	SD	AVG	SD	AVG	SD	AVG	SD
1.1. Pertinence of Objectives	5.00	0.00	6.00	0.00	4.63	1.06	6.00	0.00
1.2. Adequacy between classes and assessment	4.00	0.00	6.00	0.00	5.00	1.20	6.25	0.50
1.3. Recognition to Student's participation in learning	6.00	0.00	5.67	0.58	5.00	1.00	6.00	0.00
1.4. Degree of difficulty	6.00	0.00	4.67	1.15	3.38	0.75	4.25	1.26
1.5. Effort required	7.00	0.00	4.00	1.00	4.50	1.20	5.50	1.00
1.6. Contribution to training	5.00	0.00	6.00	0.00	4.38	1.19	6.25	0.50
1.7. Global appreciation of the course	5.00	0.00	5.67	1.15	4.88	1.46	6.50	0.58

The results presented in Table 5 about the dimension course present some common patterns and also some nuances. Overall, students present a very positive feedback of the course since on several of the items provided they award the maximum grade or close to it regarding their satisfaction with it. This is particularly the case with aspects such as the pertinence of the course's objectives, the adequacy between classes and assessment, the recognition of students' involvement in the course, its contribution for their training or even their global evaluation of the course. Students also find that the degree of difficulty and the effort required is balanced, though maybe considering the latter a bit more demanding. This may be explained by the fact that most of them involve in continuous assessment which, though usually

more gratifying and successful, also tends to be perceived as more demanding by them. The variation in students' assessment is also not very large, especially since we are dealing with a smaller sample. This pattern holds for almost every year with the slight exception of 2011/12, in which the feedback from students was still positive, though less forceful than in the other years. The fact that the standard deviation is larger in that year also indicates that the diversity of opinions was larger. However, since we are dealing with small samples this may be affected by one or two students less positive. Given that the feedback in the following year was extremely positive and that no major changes were introduced in any of those years, it suggests that that result did not correspond to any significant deterioration of the very positive feedback of students about the course and its functioning.

The University's student questionnaire also inquires students about the possible effects of each course. This dimension has had some revisions over the period covered, with a significant simplification of the aspects covered in 2010/11. Most of the overall picture presented above holds for this dimension as well. According to the results presented in Table 6, students have an overall very favourable opinion about the contribution of the course for the development of their understanding of the field, their critical analysis, their capacity to communicate ideas or the ethical implications of the issues covered in the course. The last three correspond to learning objectives of the course, notably the development of critical thinking (through more participative teaching methods), the improvement of communication skills (through oral presentations and written essays), the reflection of the social and political implications of educational policies and of economic contributions in that respect. Once again, the results for 2011/12 are slightly less positive, though the differences are very small for some of the items. Moreover, once again the standard deviations are rather small, with the slight exception of that same year, which confirms the analysis made above.

Table 6 – Students' Responses Regarding the Dimension Effects

Academic Year	**2009/10**		**2010/11**		**2011/12**		**2012/13**	
	AVG	**SD**	**AVG**	**SD**	**AVG**	**SD**	**AVG**	**SD**
2.1. Capacity for comprehensive	**6.00**	**0.00**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**

understanding of the field								
2.2. Understanding of topics covered	**7.00**	**0.00**	**6.00**	**0.00**	**5.25**	**1.04**	**5.75**	**0.96**
2.3. Development of critical reflection	**6.00**	**0.00**	**6.00**	**0.00**	**5.25**	**1.28**	**5.25**	**0.96**
2.4. Capacity to solve problems in this field	**5.00**	**0.00**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**
2.5. Capacity to develop research in this field	**7.00**	**0.00**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**
2.6. Capacity to consider the ethical, social and political implications	**6.00**	**0.00**	**6.00**	**0.00**	**5.00**	**1.20**	**5.00**	**2.16**
2.7. Autonomy in selection of relevant information	**7.00**	**0.00**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**
2.8. Capacity to analyze critically theoretical and methodological frameworks	**4.00**	**0.00**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**
2.9. Curiosity for new topics of research or professional activity	**7.00**	**0.00**	**5.67**	**1.15**	**4.88**	**2.23**	**5.25**	**0.50**
2.10. Capacity to communicate results and explanations	**6.00**	**0.00**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**
2.11. Capacity to Communicate information and ideas	**6.00**	**0.00**	**5.67**	**0.58**	**5.50**	**1.20**	**4.50**	**2.38**
2.12. Capacity to Communicate at a research level	**5.00**	**0.00**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**

Finally, we look at the third dimension covered by the students' survey, that of the professors involved in the course. Though this may seem less relevant for the analysis of the course in itself, it also reflects some relevant aspects about the functioning of the course and students' satisfaction with it. It should be noted that this dimension is very often contaminated by the type of course at stake, with the same professors receiving quite different assessments in courses with very different topics. The fact that this is an optional course, with a smaller number of students enrolled, and in the final year tends to be reflected in a more positive assessment than if we were considering, for instance, a compulsory course of an introductory subject taught to

large groups of students and with forms of assessment that appeal less to most students and their participation.

Table 7 – Students' Responses Regarding the Dimension Professor

Academic Year	2009/10		2010/11		2011/12		2012/13	
	AVG	SD	AVG	SD	AVG	SD	AVG	SD
3.1. Organization and Structure of Syllabus	6.00	0.00	6.00	0.00	4.57	1.51	6.5	0.58
3.2. Presentation of diverse perspectives	7.00	0.00	6.00	0.00	4.14	0.90	6.5	0.58
3.3. Use of Research and Professional experience	7.00	0.00	5.67	0.58	4.71	0.76	6.75	0.50
3.4. Respect for students	7.00	0.00	6.67	0.58	5.14	1.35	6.75	0.50
3.5. Promotion of Critical Thinking	6.00	0.00	6.33	0.58	4.00	1.00	6.5	0.58
3.6. Capacity to stimulate and motivate Students	6.00	0.00	6.33	0.58	4.00	1.53	6.5	0.58
3.7. Availability to support students	5.00	0.00	6.67	0.58	5.57	0.98	6.5	0.58
3.8. Observance of Assessment Guidelines	7.00	0.00	6.50	0.71	5.83	1.33	6.5	0.58
3.9. Good Relationship with Students	7.00	0.00	6.33	0.58	5.29	1.25	6.75	0.50
3.10. Commitment to quality of T & L	7.00	0.00	6.33	0.58	5.00	5.15	6.5	0.58
3.11. Use of IT and supporting materials	7.00	0.00	5.67	0.58	4.86	0.90	6.0	0.82
3.12. Global appreciation of the Professor	6.00	0.00	6.33	0.58	4.86	0.90	6.75	0.50

Overall, the data presented in Table 7 corroborates most of what have been said, though it could be noted that the values tend to be higher for the dimension than for any of the previous ones. The results observed in the last year are particularly positive, contrasting with a slightly less positive portrait of the year before. In most dimensions,

the appreciation of students by the professor in various pedagogical dimensions valued by the course should be underlined. For instance, students value very much the use of research results and experience in the course, the presentation of diverse perspectives, or the promotion of greater engagement of students in class and in their learning process. Students supported and that they were treated respectfully in a good learning environment that was motivating and congenial. With the exception of 2011/12, already noted as possibly being influenced by one or two cases of less positive feedback, that is also confirmed by the larger standard deviation, the views expressed by students are rather homogeneous, indicating that this positive feedback is not dominated by a few cases. Having said that, the caveat made above the small number of responses recommends some carefulness, though the fact that students felt motivated to express those positive views provides very good encouragement regarding the development of the course and the fulfilment of the pedagogical options supporting it.

11. References

Altbach, Philip (2016) *Global Perspectives on Higher Education*; Baltimore: John Hopkins Press.

Amaral, A., Neave, G., Maassen, P. and Musselin, C. (2009) *European Integration and Governance of Higher Education and Research*, (Dordrecht: Springer).

Arndt, H. W (1987) *Economic Development—The History of an Idea*. Chicago: University of Chicago Press.

Arum, R., & Roksa, J. (2011). *Academically adrift: Limited learning on college campuses*. Chicago and London: The University of Chicago Press.

Backhouse and Cherrier (2014) "The age of the applied economist" (forthcoming in HOPE, December 2017); available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2868144

Backhouse, R. and Biddle, J. (2000). The concept of Applied Economics. A History of Ambiguity and Multiple Meanings, *History of Political Economy*, 32/Supp.: 1–24.

Barr, N. (2004), *Economics of the welfare state*, (4th edition) Oxford: Oxford University Press.

Barro, Robert J & Lee, Jong-Wha (2001) "International Data on Educational Attainment: Updates and Implications," *Oxford Economic Papers*, vol. 53(3), pages 541-63, July.

Blaug, Mark (1999) The Formalist Revolution or What Happened to Orthodox Economics After World War II. In *From Classical Economics to Marshallian Economics: Essays in Honour of Denis O'Brien*, eds. Backhouse, R. and Creedy, J.. Oxford: Basil Blackwell, 257-280.

Blaug, Mark (1976a). *The Economics of Education: An Annotated Bibliography*. 3d ed. Oxford: Pergamon Press.

Blaug, Mark (1976b) "The Empirical Status of Human Capital Theory: A Slightly Jaundiced Survey" *Journal of Economic Literature,* 14.3: 827-55.

Blaug, Mark ed (1970) *Economics of Education 1*. London: Penguin.

Clotfelter, Charles T. (2010) *American Universities in a Global Market*; Chicago and London: Chicago University Press and NBER.

Coats, A. W. Bob (1996) *The Post-1945 Internationalization of Economics*, Supplement to volume 28, History of Political Economy. Durham, London: Duke University Press.

Coats, A. W. Bob (2000) *The Development of Economics in Western Europe Since 1945*. London–New York: Routledge.

Cohn, Elchanan (1979) *The Economics of Education*. 2d ed. Oxford: Pergamon.

Cohn, Elchanan and Terry Geske (1990) *The Economics of Education*, 3rd edition, Pergamon.

Colander, David (2009) *The Making of an European Economist*; Cheltenham: Edward Elgar.

Colander, D., R. Holt, and J. Barkley Rosser, eds. (2006). The *Changing Face of Economics: Conversations with Cutting Edge Economists*. Ann Arbor: University of Michigan Press.

Fine, B. and D. Milonakis (2009*) From economics imperialism to freakonomics: The shifting boundaries between economics and other social sciences*; Routledge.

Fourcade, Marion. 2009. *Economists and Societies: Discipline and Profession in the United States, Britain, and France, 1890s to 1990s*. Princeton, N.J.: Princeton University Press.

Fung, D., J. Besters-Dilger and R. van der Vaart (2017) 'Excellent Education in Research-rich Universities.' Position Paper: League of European Universities (LERU). http://www.leru. org/ les/general/LERU%20Position%20Paper%20Excellent%20Education.pdf

Hanushek, Eric and Ludger Woessmann (2015) *The Knowledge Capital of the Nations – Education and the Economics of Growth*; CESifo Book Series; MIT Press.

Johnes, Geraint (1993) *The Economics of Education*, MacMillan.

Kerr, C. (1994) *The Uses of the University*. Harvard University Press, Cambridge, MA.

Levin, Henry M. (ed.) (2001) *Privatizing Education – Can the Marketplace deliver Choice, Efficiency, Equity, and Social Cohesion*, Boulder (CO): Westview Press.

Meyer, J., and E. Schofer. (2006) 2009. "The University in Europe and the World: Twentieth Century Expansion." In *World Society: The Writings of John W. Meyer*, edited by G. Krücken and G. S. Drori, 355–69. Oxford: Oxford University Press.

Morrisson, Christian and Fabrice Murtin (2009) The Century of Education; *Journal of Human Capital*, vol. 3, no. 1: 1-42.

Neave, G. and A. Amaral (eds). (2012) *Higher Education in Portugal 1974-2009. A Nation, a Generation*, Dordrecht, Springer.

Papadopoulos, Georges (1994) *Education 1960–1990: The OECD Perspective*. Paris: OECD.

Rosa MJ and Sarrico CS (2012). Quality, Evaluation and Accreditation: from Steering, through Compliance, on to Enhancement and Innovation? In: Amaral A and Neave G (Eds), *Higher Education in Portugal 1974 – 2009. A Nation, a Generation*. Springer: Dordrecht, pp 249-264.

Rostow, W. W. (1990) Theorists of Economic Growth—From David Hume to the Present. Oxford: Oxford University Press.

Schultz, T.W. (1961) "Investment in Human Capital", *American Economic Review*, vol. LII, Nº 4. pp. 1-17

Scott, Peter (1995) *The Meanings of Mass Higher Education*. Buckingham: Open University Press.

Shattock, M. (Ed.). (2008). *Entrepreneurialism in universities and the knowledge economy: Diversification and organizational change in European higher education*. Maidenhead: McGraw Hill, Society for Research into Higher Education, Open University Press.

Skidelsky, Robert (1988) The Political Meaning of the Keynesian Revolution. In *Keynes and Public Policy after Fifty Years*, edited by Omar Hamouda and John Smithin. Aldershot, England: Edward Elgar.

Svennilson, Ingvar (1966) Education, Research and Other Unidentified Factors in Growth. In *The Economics of Education*, edited by J. E. Vaizey and E. A. G. Robinson. New York: Macmillan and St. Martin's.

Teichler, U. (1988) *Changing Patterns of the Higher Education System: The Experience of Three Decades*, Jessica Kingsley Publishers, London.

Teixeira, Pedro (2017) Economic beliefs and institutional politics: Human capital theory and the changing views of the World Bank about education (1950–1985); *The European Journal of the History of Economic Thought*; forthcoming.

Teixeira, Pedro (ed.) (2014a) *The Many Facets of Internationalization at the University of Porto – A Centenary Appraisa*l (ed.), Porto: University of Porto Press.

Teixeira, Pedro (2014b) Market Integration in European Higher Education: Reflecting about Drivers and Barriers; *Journal of the European Higher Education Area*.

Teixeira, Pedro; Rocha, V., Biscaia, R., Cardoso, M. F. (2013) "Competition and diversification in public and private higher education" *Applied Economics*, 45, 35, 4949-4958.

Teixeira, Pedro (2010) Higher education between the masses and the market: An outsider's view about trends in quality assurance, in Blättler et al (eds) *Creativity and Diversity – Challenges for quality assurance beyond 2010*, Brussels: EUA; *translated in Russian* (2011); pp. 8-12.

Trow, Martin (2010) *Twentieth-Century Higher Education — Elite to Mass to Universal*. Baltimore: Johns Hopkins Press.

Vaizey, John (1966) Criteria for Public Expenditure on Education. In *The Economics of Education*, edited by J. E. Vaizey and E. A. G. Robinson. New York: Macmillan and St. Martin's.

Weisbrod, B., Pallou, J., & Asch, E., (2008). *Mission and Money – Understanding the University*. Cambridge: Cambridge University Press.

Woodhall, Maureen (1987) Economics of Education: A Review. *In Economics of Education: Research and Studies*, edited by George Psacharopoulos. Oxford: Pergamon.