

# Learning Across the Life Course

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## Abstract

Owing to intense changes in educational demands in a globalized world and demographic shifts in almost all developed countries, structures and content of educational and vocational training have to adapt. *Specificity* refers to the need for a broad-based education, allowing people to train for more than one occupation. In terms of *content*, social skills must be taught to embrace diversity. Educational *institutions* need to be open for all stages in the life course. Moreover, possibilities of disconnecting time and space owing to progress in educational *media* need to be explored.

These global challenges for the educational system also place demands on education *research*. We need to overcome the *segmentation* in disciplines and narrowly defined life stages. We need to reconsider the trend toward a *standardized system* of educational and vocational training. One size does not fit all. Finally, emerging *group differences* in educational outcomes have to be more thoroughly explored.

## INTRODUCTION

The term *education* has traditionally been associated with learning and teaching in the first two decades of our lives. According to that view, it is during those early years that we build the foundation for everything that is to follow: four to five decades of employment, lifelong integration into society, taking care of our health, raising children, and active citizenship.

In the face of demographic change and the evolution of a globalized knowledge economy, this conceptual approach falls short of what is needed today. Let us begin by looking at demographic change. Each of its three components—death rates, birth rates, and immigration—poses unique challenges to education and the educational system. Declining death rates and higher life expectancy accompanied by good health mean that, proportionally, we invest less and less of our time in education. Our grandparents spent a higher proportion of their lives on education and training than our children will. As a result of sharply declining birth rates in many countries, most people need less time for raising their children and thus have more time available for work. While this has always been the case for men, it is

now equally true of women. This trend is reinforced by women's higher levels of education and the need for them to take charge of their own lives financially. Likewise, both men and women need new competencies to be able to care for their aging parents and grandparents. Immigration, too, poses new challenges to education. Up to this point, it has only been in a small number of countries that people have actively taught and learned at school how to live with wide-ranging ethnic diversity and a multiplicity of religions and cultures. For the most part, these competencies are either taken for granted or addressed much later in life by means of "diversity training" programs at the workplace, for example.

Demographic development alone has at least four consequences for education. *Specificity.* We need a more broad-based education in early childhood. We need an education that can progressively be built upon on an ongoing basis, allowing people to train for more than one occupation. *Content.* We need different education contents. At the moment, curricula are being increasingly stripped down to teaching hard cognitive skills. We need to teach social skills for embracing *diversity*, the mounting challenges of giving care to the elderly, and for new gender roles resulting from women's increasing and better participation in the work force. Learning contents also need to be adapted with regard to the local, national, and global dimensions of education. Maintaining the right balance here is not an easy task to accomplish. *Institutions.* We also need to open our educational institutions to accommodate a second and a third phase of education and training. One training phase at the beginning of life is no longer enough to sustain a prolonged work life. *Media.* Finally, many changes result from the fact that in the future we will be less likely to learn together and at a fixed location. In the years ahead, we will see an increase of learning in virtual space, independent of time and actual space. This trend calls for an active, not a reactive, approach and a great deal of research.

The need for such sustainable education is underscored by changes going on in the world of work. Workplace requirements are changing much more rapidly now than they did a few decades ago. In the future, changes will be even more fast-paced. Education and training have to respond to that trend. Likewise, we are witnessing a disconnection of time and space in this context as well. An ever larger share of work is no longer being completed at a fixed workplace and during fixed work hours. This trend, too, calls for educational content more geared toward empowering people to take control of their lives in a disciplined way than it is today. The idea of a self-entrepreneurial work force is accurate, and educational institutions need to prepare their students for embracing it. Ultimately, however, what these new work contents also mean is that we need a higher overall level of basic education for everybody. In a lot of countries, technology is now so advanced that many tasks

can be performed by robots—without breaks and at a much lower cost. The work that remains to be performed by humans will thus be knowledge-based work, defined precisely by what robots cannot do.

Let us turn from these global challenges for the educational system toward the more specific demands placed on education research. Here, we see four major areas of action. The *diversification* of education research into ever more disciplines and disciplinary knowledge bases has to be reduced. The *segmentation* of education research into studies of ever shorter life and education spans has to be reduced in favor of studies that look at long-term educational trajectories. The *standardization* of educational outcomes needs to be questioned. Why, and to what extent, should we strive to establish the same educational goals throughout the world, given the many unintended secondary effects brought on by that approach? Finally, we need a new take on group differences in educational outcomes. Why is it that some groups keep improving their educational outcomes whereas others keep falling behind, thus widening the gap between the groups? To address these developments, we need a stronger focus on *individualization* in education research and pedagogy.

#### THE DIVERSIFICATION OF EDUCATION RESEARCH

In recent decades, empirical education research has experienced a major boom. Initial studies of purely cross-sectional social statistics were followed by retrospectively collected life course data that allowed for determining the short, medium, and long-term impact of educational credentials on a wide range of other life domains. Later, panel data were added, which in many countries now focus on educational trajectories. Increasingly, these data are then linked to process-produced administrative data, enabling us to study educational trajectories, health trajectories, labor market movements, and family formation processes in conjunction.

The indicators of education research have evolved, too. While researchers previously looked “only” at the duration of education and training or at the credential obtained, cognitive competencies in reading, mathematics, and science have recently made a breakthrough beginning with the 2000 PISA study, if not earlier. Measures for social and emotional competencies are currently being developed and implemented.

On the basis of those major improvements regarding the methodological foundations and indicator design, education research began to diversify, resulting in the strengthening of various disciplines. Educational economics, for example, became an independent line of research in economics. Education took a methodological turn. The life sciences were added, providing information about the foundations of educationally relevant biological

developments. Political science is a more recent newcomer to the field of education research. Researchers in each of these disciplines pursue their own research questions. Economists focus on the returns to education, pedagogy researchers look at classroom interactions, and sociologists are concerned with social inequality in educational outcomes, whereas psychologists examine motivational structures, personality traits, and behavioral patterns. Political scientists enquire into the general conditions that give rise to changes in the educational system and allow for supplementing welfare state typologies with educational regimes.

One of the most pressing tasks of the future will be to systematically integrate these diversifying disciplines and their respective methods and tools. We need more than a multidisciplinary kind of research that merely places the various disciplines alongside each other. What we need is transdisciplinary research and researchers capable of looking beyond the boundaries of their own discipline. Only then will we be able to not only see patterns of educational decisions and educational returns but also to explain the overall conditions responsible for such outcomes. This will require nothing less than a reform of our doctoral and postdoctoral training curricula, as well as a reform of our research funding system, which needs to adopt a programmatic outlook and an evaluation system that goes beyond disciplinary boundaries.

If we manage to connect the disciplines in this manner, we will likely be able to explain some of the inconsistencies that arise because of the increasing diversity of indicators. For example, we rarely find that the duration of school attendance or the acquisition of a specific certificate are adequate expressions of the competencies an individual has achieved. There are countries that award high-level certificates to a vast number of people and seem to be leading the way in this regard. At the same time, it turns out for many of these countries that the competencies measured in international comparisons do not match this high degree of certification at all. In other words, there are countries that are rich in certificates but poor in competencies, and then there are countries that are poor in certificates but rich in competencies. We do not know why this is the case. The rising importance of internationally defined benchmarks may provide one explanation. In that case, we would be witnessing a kind of certificate inflation as some countries try to raise their percentage of tertiary education graduates by awarding easy-to-obtain certifications.

#### SEGMENTATION OF EDUCATION RESEARCH

In addition to the diversification of education research into single disciplines, we see an increasing segmentation of education research. The vast majority of studies now only look at short episodes in people's educational trajectories, whereas the complete educational chains are increasingly being

disregarded. This may well be due to a synchronization of the evaluation criteria and the assets required for building a reputation and a career in academia. These assets increasingly consist of peer-reviewed journal articles, which, taken together, are now cited more frequently than scholarly books. The shift from monographs to cumulative doctoral theses as a prerequisite for earning a PhD is among the drivers of this segmentation of research into limited, small-scale studies. In the future, we will have to rethink this trend. We need perseverance and courage to look at learning across the entire life course from an intragenerational and intergenerational perspective. Only then will a transdisciplinary approach come to fruition.

And only then will we be able to understand whether, and if so how, early incidents in children's educational trajectories have an impact on how children learn later in life, what kinds of transitions they make into the labor market, and how their competencies and qualifications evolve. Moreover, it is only by looking beyond single educational stages that we will be able to make full use of the rich potential of the newly collected datasets. We may find, for example, that health problems later in life can often be traced to early educational processes. Similar findings can be expected with regard to the processes of choosing a partner and starting a family.

#### STANDARDIZATION OF EDUCATIONAL OUTCOMES

In addition to the diversification and segmentation of education research, we see an increasing degree of standardization with respect to educational outcomes. The OECD creates benchmarks and then uses these benchmarks to produce neat international rankings. Such benchmarks concern the national percentage of individuals at each level of educational attainment but also the degree of tertiarization in the education system. Faced with this global competition, national systems may easily come under pressure. The dual vocational training systems in Germany, Austria, Denmark, and Switzerland are a good example of this. Because the benchmarks are aimed at increasing tertiary enrollment, they challenge even highly successful vocational training systems without having previously reviewed the specific ways in which tertiary education is organized in each of these countries. One might think that the systems currently being modified or even phased out are those that fail to meet nationally defined education needs, but far from it. Restructuring takes place without prior national review; it is solely based on standardization and one-size-fits-all benchmarks.

The much called for shift from elite to mass higher education may mean giving up tried and tested—and often quite rigorous—vocational training programs below the tertiary level, and may thus lead to many unintended consequences. Germany's dual vocational training system provides a case in

point. There are plenty of good reasons for keeping this system. First of all, it combines practical on-the-job training with theoretical instruction at vocational schools. At least as far the practical components are concerned, the various jobs for which dual training programs exist can quickly be adapted to new challenges in the labor market, and thus have the necessary degree of flexibility. The highly standardized curricula of the school-based part of the training program provide trainees with non-company-specific, transferable skills that they are free to use with more than just one employer. Furthermore, the transition from dual vocational training to the labor market has been shown to occur swiftly compared to other vocational training systems. Finally, it is not rare for trainees to be hired right away by the companies at which they trained.

Providing more incentives toward a higher degree of tertiarization constitutes a multiple threat to these vocational training programs. In many disciplines, a bachelor's degree takes 3 years to complete, meaning that a university education is now shorter than an apprenticeship in the dual system. Moreover, individuals with a university degree are usually placed on a higher level in collectively agreed pay scales than individuals who have completed a dual vocational training program; likewise, they experience higher economic returns over the life course. It should also be noted that university-based programs are not connected, or nowhere near as closely connected, to company needs and structures as dual vocational training programs are. The transition from university to the labor market generally takes longer, and employers often have to take university graduates through an additional, company-specific trainee stage.

In addition to this tension between tertiarization and dual vocational training structures in some European countries, the envisaged increase in tertiarization could lead to a rising number of less educated or no longer highly educated persons. This would be the case if the transition from undergraduate to graduate study became a new kind of filter that only permitted a small number of graduates to pursue a master's degree. In that case, tertiarization would involve a higher degree of diversification within the tertiary sector, and thus a smaller number of persons earning a degree comparable to the former 5-year *Diploma*.

## INDIVIDUALIZATION OF EDUCATION

Owing to the globalization of our society, children and adults with very different cultural and religious backgrounds are increasingly being taught in the same classrooms. At the same time, we are witnessing an increase in social inequality, usually accompanied by an increase in educational inequality. A socially, culturally, and religiously homogenous group of students in

the classroom is as much a thing of the past as a homogenous workforce. Staff diversity is becoming an increasingly bigger challenge for many employers, who more and more often regard it as a positive challenge that they take active steps to address. The diversity in our classrooms, by contrast, has so far received comparatively little attention, and has often been approached with an undertone of criticism. This is especially true of school systems that continue to track students into different types of schools at an early age and thus often deprive them of the opportunity to experience and learn diversity.

To unleash the potential of as many people as possible and to empower them to lead independent lives, we need a pedagogy that is much more focused on the development of the individual student and, at the same time, able to engage students with vastly different backgrounds. In other words, what we need is a pedagogy of diversity.

This seems to be a top priority for a very different reason as well. For years, we have seen a widening gap between the academic performance of men and women. While women, on average, used to have lower level secondary degrees than men until well into the 1970s, they are now far ahead of the men in this respect. In most industrialized countries, women represent the majority of first-year university students and are much less likely than men to end up in a state of educational deprivation. This is true with regard to certificates as well as competencies. In the vast majority of competence areas, including reading literacy and foreign language skills, women now outperform men by large margins. The extent of these differences, however, varies significantly by country and education system. The same may be said about those areas in which men continue to have an edge over women, especially in mathematics. Even if we do not understand at this point how these differences may be explained, we do know that they are not a fact of nature. It is also with respect to gender, therefore, that we need an individualized pedagogy of diversity, a variety of different instruments, and enough time to unleash the potential of each and every student.

In sum, education as a lifelong process is a challenge that needs to be addressed in a transdisciplinary manner and by looking beyond single educational stages. Only then will we be able to counter the Matthew effect so prevalent in education, and especially in the area of adult education. At the moment, we are still seeing low levels of overall participation in adult education, and its main beneficiaries are those that already have a good level of education and training. As a consequence, the existing inequality of educational outcomes, which has its main roots in social origin, is reinforced. Adult and continuing education has to encompass all education systems at the same time. Policies that put too much emphasis on tertiarization ignore the challenges as well as the great opportunities provided by dual training in the classroom and at the workplace.

### FURTHER READING

- Ballantine, J. H., & Hammack, F. M. (2009). *The Sociology of Education. A Systematic Analysis* (6th ed.). Upper Saddle River, NJ: Pearson.
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### JUTTA ALLMENDINGER SHORT BIOGRAPHY

President of the WZB (Social Science Research Center Berlin) and professor of sociology at the Humboldt University of Berlin.

**Jutta Allmendinger** received her training in sociology and social psychology at the University of Mannheim (MA 1982), the University of Wisconsin and Harvard University (PhD 1989) and the Free University of Berlin (Habilitation, i.e., second book, in 1993).

Jutta Allmendinger worked at the Center for Educational Sciences at the University of Wisconsin and at Harvard University (1984–1988). From 1988 to 1991, she was with the Max-Planck-Institute for Human Development in Berlin. From 1992 to 2007, she was a full professor of sociology at the Ludwig-Maximilians-University of Munich and from 2003 to 2007 the director of the Institute for Employment Research (Institut für Arbeitsmarkt- und Berufsforschung der Bundesagentur für Arbeit, IAB) in Nürnberg.

Jutta Allmendinger was a fellow at the Harvard Business School from 1991 to 1992 and at the Center for Advanced Studies in Behavioral Sciences at Stanford University from 1996–1997. She was chairperson of the German Society for Sociology (DGS) from 1999 to 2002. In 2009, she received the Communicator Award—Science Award of the Donors' Association, awarded by the German Research Foundation (DFG) to researchers who have been exceptionally successful in communicating their scientific findings to the public.

Jutta Allmendinger is a member of the Berlin-Brandenburg Academy of Sciences and Humanities (BBAW), the German Academy of Natural Scientists Leopoldina and the high-level economic expert group "Innovation for Growth" of the European Commission.

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**Marcel Helbig** is a researcher at the president's project group at WZB (Social Science Research Center Berlin).



He received his training in sociology, social science, and Communication Studies at University of Erfurt (BA 2004) and Humboldt University of Berlin (MA 2007; Dr. phil. 2012).

Marcel Helbig worked since 2007 at the WZB among others in research group "Education and Transitions into the Labour Market" and in the project group "National Educational Panel Study: Vocational Education and Life-long Learning."

His main research interests are the gender-specific change in educational success, educational differences among different social groups, and the influence of educational systems on social inequality.

#### RELATED ESSAYS

- Genetics and the Life Course (*Sociology*), Evan Charney  
Patterns of Attachment across the Lifespan (*Psychology*), Robyn Fivush and Theodore E. A. Waters  
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Biology and Culture (*Psychology*), Robert Peter Hobson  
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Maternal and Paternal Employment across the Life Course (*Sociology*), Michaela Kreyenfeld  
Longitudinal Data Analysis (*Methods*), Todd D. Little *et al.*  
Social Change and Entry to Adulthood (*Sociology*), Jeylan T. Mortimer  
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Becoming Adult: Meanings of Markers to Adulthood (*Sociology*), Richard A. Settersten, Jr. *et al.*  
DNA Revolution and the Social and Behavioral Sciences (*Psychology*), Maciej Trzaskowski and Robert Plomin  
Crime and the Life Course (*Sociology*), Mark Warr and Carmen Gutierrez