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Researching lifelong learning participation through an interdisciplinary lens

Abstract

This paper explores the interdisciplinary nature of studies in the field of lifelong learning participation. Until recently, participation studies have been presented in a rather fragmented way, often drawing on insights from separate disciplines such as sociology or psychology. The complex nature of lifelong learning participation, however, urges scholars to go beyond this disciplinary fragmentation and to advance knowledge in an integrative way, through the construction of new interdisciplinary theories and the adoption of interdisciplinary research approaches. This paper discusses a new integrative theory and outlines a range of methodological challenges of working in interdisciplinary teams on interdisciplinary projects. Examples include understanding each other's disciplinary background, the need to combine different insights from sociology, psychology, learning providers and governments' policy decisions in multilevel models and the desire to adopt both quantitative and qualitative research methods.

Introduction

This paper explores the interdisciplinary nature of research in the field of lifelong learning, presents a comprehensive interdisciplinary lifelong learning participation model and discusses a range of methodologies well suited to deal with the interdisciplinary nature of this research theme. The paper starts by explaining core definitions of lifelong learning as found in the international literature and why it is a relevant topic for both scholars and policy makers. A critical discussion on the nature of disciplines and the meaning of interdisciplinary work will follow, drawing on specialist readings. Having identified a number of core disciplines in the area of lifelong learning, the paper will then present a brief overview of how research in separate disciplines have dealt with the understanding of lifelong learning participation, including insights from psychology, sociology, economics and political sciences. The aim of my work is to take further the fragmented evidence available to explain why adults do or do not participate in lifelong learning activities through working with a new comprehensive and integrative interdisciplinary lifelong learning participation model.

Recommendations for sound research strategies for studying lifelong learning participation as an interdisciplinary theory will then be discussed, including challenges for working in interdisciplinary teams.

Lifelong learning participation

The core aim of the study of lifelong learning participation is to find out why adults do or do not participate in lifelong learning activities. Lifelong learning participation has attracted attention and interest from leading organisations, including the European Commission, the Organisation for Economic Cooperation and Development (OECD), the United Nations of Educational, Scientific and Cultural Organization (UNESCO) and the World Bank (Holford & Mohorcic-Spolar, 2012). While UNESCO has produced interesting reports focussing on the role of adult lifelong learning in developing countries, it is important to stress that most debates have taken place in the developed world, mainly in North America and Europe.

In a knowledge based economy, adults need a continuous update of their skills in order to contribute to innovation, technological advancement and globalised levels of competitiveness. Participation in lifelong learning is believed to contribute to these aims, e.g. discussed by Field (2012). Apart from the economic outcomes, participation is also believed to increase adults' sense of citizenship, good health and overall well-being. During the past decades, it has been argued by a range of scholars, including Biesta (2006) and Milana (2012), that policy has been changed from adopting a rather humanistic perspective of learning to a stronger economic one, driven by capitalism and globalisation. The interest of policy-makers in the topic of adult lifelong learning in recent years has been demonstrated by a range of policy-oriented research programmes, funded in order to increase knowledge on the efficiency and effectiveness of the lifelong learning system, e.g. the Sixth European Framework project LLL2010: Towards a Lifelong Learning Society in Europe: the Contribution of the Education System, in which I have been a participant. One of the core aims of these programmes is to further understand the highly unequal participation between adults from different socio-economic groups and how lifelong learning can act as a vehicle to make society more efficient and equal. As pointed out by Barros (2012), providing equal educational opportunities to everyone is currently a strongly emphasised issue.

Relating to terminology, nowadays, the term lifelong learning is more often used compared to alternative terms like adult education, continuing education or lifelong education. Lifelong learning refers to learning from cradle to grave and recognises that learning can take places outside organisational learning settings, such as schools and training centres. As such, lifelong learning can be formal, non-formal and informal (for a detailed overview see Colley et al., 2003). The terms formal and non-formal refer to learning taking place in organised settings, while the former is credential-based and the latter not. Informal learning does not take place within organisational contexts, but happens at the level of interactions with e.g. family and friends. Often, informal learning is perceived as something that is part of daily life and which happens at a non-intentional and random level. Apart from labelling learning as 'lifelong', it can also be described as being 'lifewide' as lifelong learning can be undertaken in relation to all life domains, both related to work and/or hobbies or personal development.

Policy-making in the field of lifelong learning participation is nowadays largely driven by benchmarks and indicators, widely discussed by e.g. Grek (2009). The European Commission wants 15 percent of the adult population to participate in at least one lifelong learning activity by 2020 (measured using

a four weeks reference period) and the OECD monitors the participation in lifelong learning in its' annual ' Education at a Glance' reports. It is important to note that their targets refer to adult participation in both formal and non-formal education and exclude all forms of informal learning. It is thus important to understand that the term 'adult lifelong learning participation' usually refers to learning in organised settings, with or without accreditation. Therefore, it is also this working definition that will be used in this paper.

The nature of disciplines

Before going into the interdisciplinary nature of the study of lifelong learning participation, it is important to understand what exactly is meant by the terms 'discipline' and 'interdisciplinarity'. Dutch lifelong learning specialist Ten Have branded lifelong learning a 'first floor discipline' (see Van Gent, 1998). To better understand this phenomenon, he made a comparison to 'medicine'. Candidate doctors will have to grasp a good level of knowledge of a range of disciplines, including biology, chemistry and physics, before they will be able to carry out their profession, which in fact integrates knowledge of these different disciplines. Psychology, sociology and philosophy have played similar roles in the development of the study of adult lifelong learning according to Elias and Vanwing (2002, p.346). As pointed out by 'discipline' specialist Trowler, a clear definition of 'disciplines', a word derived from the Latin word for 'disciples' is lacking, although it often refers to a body of knowledge that is specific to that discipline, and not dominantly shared by other disciplines (see Krishnan, 2009). Scholars within a discipline also have their own specific vocabulary and use specific terms to identify the objects of their study. In this respect, it is hard to say that lifelong learning, or education in a wider sense, is a separate discipline. Like Ten Have, I am inclined to agree with the idea of a study that builds on a number of core disciplines, thus putting lifelong learning in the category of a 'first floor discipline', integrating knowledge from basic disciplines such as psychology and sociology. The question is, whether this is what we then could call 'interdisciplinarity'? Trowler and colleagues have provided the following definition of interdisciplinarity:

'Interdisciplinarity can be seen, as Klein (2000) points out, as a methodological approach, a process, a way of thinking, a philosophy and/or as an ideology. It is often adopted as an attempt to solve problems and to avoid the partial, fragmented, understanding of the world that disciplinarity can involve. While multidisciplinary involves conjoining two or more disciplines in a well-defined way using an aggregative logic that adds the findings from each discipline to those of others, interdisciplinarity and its slight variant transdisciplinarity are often portrayed as 'integrationist and consultative'(Ellis, 2009, p. 7).' (Trowler et al., 2012, pp.13-14)

The words integrationist and consultative are very important here and there is no doubt that most real-life problems being studied in the social sciences are indeed too complex to be studied by one single discipline. Interdisciplinary research is thus different from multidisciplinary research as the latter does not work towards integration, but provides new additions to the knowledge base separately to their own discipline, although part of a bigger research project. In what follows, I will demonstrate that understanding lifelong learning participation can be done from a range of disciplines, which would make it a multidisciplinary subject. However, after

discussing some separate disciplinary insights, I will focus on 'integrating' these separate theories and ways of thinking into an interdisciplinary and integrative comprehensive lifelong learning participation model.

The contribution of disciplines to the understanding of lifelong learning participation

Exploring the literature that deals with contributing to the understanding of why adults do or do not participate in lifelong learning activities, it becomes clear that most work has been published drawing on insights from either psychology or sociology. Core works, like e.g. Courtney's '*Why adults learn?*' seem to have been constructed from within a tradition of social psychology, mainly focussing on factors like motivation and attitudes (Courtney, 1992). Models presented to explain why adults do or do not participate in adult lifelong learning activities include Fishbein and Ajzen's Theory of Planned and Intended Behaviour, Cross' Chain of Response Model and Rubenson's Expectancy-Valence model (Rubenson, 1977; Fishbein & Ajzen, 1980; Cross, 1981). Work presented in Courtney's book heavily represented the dominant participation discourses in North America developed in the 1970s and 1980s. Widening the search for literature, it becomes apparent that psychological traditions in lifelong learning participation research remain dominant, although insights can also be borrowed from the sociological and economic literature, the literature on the role of educational institutions and workplaces as training environments and the literature on welfare regimes and macro level determinants of lifelong learning. During the last 15 years, Europe's renewed interest in lifelong learning has also led to the fresh approaches to lifelong learning participation studies, including my own work, which aims to go beyond the level of fragmented disciplinary knowledge. Evidence from these separate disciplines will be briefly explored, before going into the integration of fragmented evidence and the discussion of examples of researching lifelong learning participation adopting an interdisciplinary lens.

From a *psychological and behavioural* perspective, a large range of authors can be used to explain why adults do or do not participate in lifelong learning activities. The question 'why' has often been linked to motivational research and within the field of adult education, Cyril O. Houle has undertaken influential work distinguishing between three types of adult learners: activity-oriented ones interested in the social components of learning, goal-oriented ones who aim to get a specific profit out of their participation, e.g. a better job or a higher salary, and learning-oriented ones, who participate because of their intrinsic interest in the subject (Houle, 1961). While Houle's work has been undertaken specifically in the field of adult education, it can be compared to other motivational work, such as the distinction between extrinsic and intrinsic motivation or newer theories such as the self-determination theory (see Deci & Ryan, 2013). However, understanding the reasons why adults participate, does not give us sufficient insight into why adults choose not to participate. The motivational psychological tradition of the expectancy-value theory, e.g. developed by psychologists like Vroom (1964), explains that people need to recognise the value of specific behaviour in order to be motivated to undertake it, but also to be confident that their efforts will generate benefits for them. Adopting a positive attitude towards learning has also been perceived as essential in order to develop an intention to participate, e.g. based on Fishbein and Ajzen's work on planned and intended behaviour (Fishbein & Ajzen, 1980). From a Maslowian perspective, one can argue that the intention to participate in lifelong learning activities will not be formulated as long as basic needs for food and shelter have not been fulfilled (Maslow, 1943). Developmental

psychologists, such as Vaillant (1977) and Levinson (1986) will argue that adults' needs change across the time span, and research has also looked into the changing nature of the brain, affecting people's capacity to learn at a later age (for an extensive overview of the psychology on adult learning see Tennant, 1997).

While psychologists tend to focus on factors like motivation, attitudes and development to predict certain behaviour, *sociologists' work* puts a stronger emphasis on lifelong learning as a way to let adults climb the social ladder through social mobility (see e.g the work of Erikson & Goldthorpe, 1992; Paterson & Iannelli, 2007; Brown, 2013). However, exploring lifelong learning statistics, it is clear that not all adults have the same chances to be a participant and that these chances are largely determined by the socio-economic and socio-demographic characteristics of adults, pointed out by Desjardins et al. (2006) and repeated by Desjardins based on new data analyses in 2015 (Desjardins, 2015). The literature refers to the Matthew principle, meaning that those who already have, will get more. Participation in education therefore becomes a cumulative issue. Those who have obtained higher education are more likely to profit from additional training or education as it is easily accessible to them and they know how to be successful in learning situations, drawing on previous experiences (Gorard, in Jarvis, 2009, p.92). Those having a job will participate more because they might want to be employed in an organisation that offer lifelong learning activities or at least have a boss who pays for them (for a review of participation in work-related learning see Kyndt & Baert, 2013). Those unemployed might profit from education and training in order to find a new job. But while the benefits are not entirely guaranteed (they still need to find a job), the costs are also presented to them. In general, this situation leads to a vicious cycle, with the risk that gaps in society are in fact widening, instead of narrowing. The unequal chances of participants can thus also be explained based on economic perspectives such as Rational Choice Theory and cost-benefit analysis arguing that people will only invest in learning if they know the outcomes will be guaranteed (see Allingham, 2002).

While psychological and sociological theories have been used to explain and explore the unequal participation of adults in lifelong learning, it is also important to take into account another stream of literature focussing on *institutional barriers and workplaces as generators of lifelong learning opportunities*. It is not enough to understand adults' psychological and sociological individual background characteristics in order to explain why they are (not) participating. In fact, participation can only take place if there is a learning opportunity available to them. While barriers to participate can relate to situational circumstances or lack of confidence, participation will also not be realised by many adults if educational institutions are asking for high enrolment fees, do not offer flexible entry routes or are at a location which is hard to reach. Schuetze and Slowey (2002), drawing on research in the field of higher education, have written about the 'lifelong learning' mode of post-compulsory education. Nowadays, it is not enough to offer campus based courses from nine to five, instead, flexible and modular courses are the new norm, so that students can learn at their own pace. A similar logic about the (non)availability of learning offers exists in the workplace. Firms lacking strong levels of training know-how or who do not have an appropriate budget to hire training staff, will be unlikely to succeed in having their employees taking part in lifelong learning activities. Expansive working environments, which tend to pay more attention to long-term planning, are more open towards new ideas and the generation of additional skills than those that are more restrictive

in nature, requiring employees to stick to the specific tasks they are undertaking (see Fuller & Unwin, 2011, in Malloch et al., 2011).

Workplaces and educational institutions are also embedded within specific country contexts. From a *macro-sociological and political perspective*, it is important to take these into account as well if one wants to understand why adults do or do not participate in lifelong learning activities. In Europe, participation rates tend to be highest in Nordic Scandinavian countries, but lower in Eastern European and Southern European ones (see Desjardins, 2015). Education and social policies in social democratic countries tend to be more inclusive and this seems to correlate with higher participation rates in adult lifelong learning (see Groenez et al., 2007). Examples include the availability of social security benefits, e.g. through means of helping unemployed adults to participate in lifelong learning so they can increase their levels of knowledge and skills, or re-skill themselves in order to obtain better chances for finding a job, but also levels of union density, the flexibility of the labour market, wage compression, the general Gross Domestic Product and expenditure on Research and Development (for an overview see Dammrich et al., 2014, in Blossfeld, 2014, p.37). Decisions being made at the political level have therefore been explored in relation to lifelong learning participation too.

Towards an interdisciplinary lifelong learning participation theory

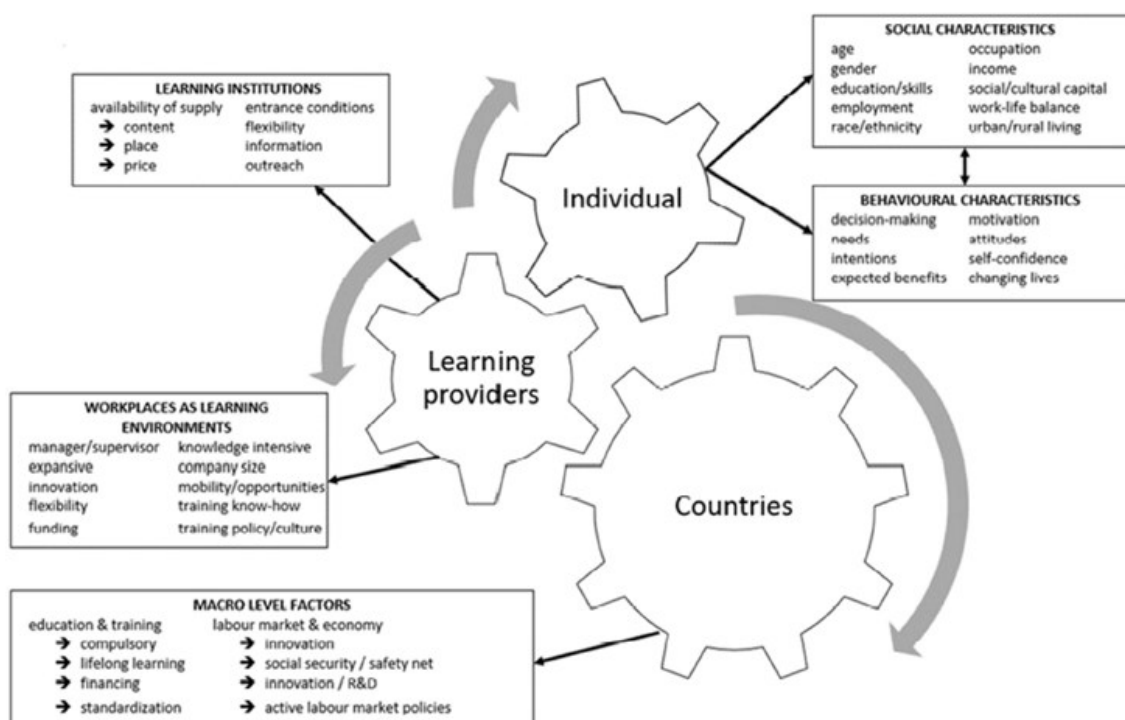
Having explored how separate disciplines contribute to the understanding of why adults do or do not participate in lifelong learning activities, it is now important to see whether we could draw on integrative theories to bring these insights together. One way of looking at this is through exploration of 'structure and agency' approaches. In accordance with Giddens (1984), one could refer to micro and macro levels, representing individuals versus society. On the one hand, there is individual agency, but structural elements also play a role in determining participation in lifelong learning. In fact, they are both interconnected and interact with each other. Individuals will have to engage in self-reflection and form their own self-identity while undergoing the decision-making process to participate, but it is also clear that behaviour can be reproduced by society, referring back to participation as a Matthew effect. Lifelong learning participation is indeed a good example as individuals can choose to participate or not, but it is also very clear from participation statistics that participation is unequal (see Desjardins, 2015), and that certain groups in society participate more, such as those with the highest levels of educational attainment or those living in urban areas. As pointed out, the integration of these perspectives into a new model is what would make the study of lifelong learning participation interdisciplinary in nature, going beyond the level of adding fragmented disciplinary knowledge to the knowledge base.

In revisiting existing integrative participation theories, it became clear that the dominant focus has been on theory building within a social psychological tradition, focussing on motivation and attitudes, surrounded by peers and close people, but not taking into account the wider social environment and the availabilities of opportunity (see Courtney, 1992), although in recent years, more scholars have come to share knowledge on the integrative nature of participation studies, such as the concept of Bounded Agency, as published by Rubenson and Desjardins in *Adult Education Quarterly* (Rubenson & Desjardins, 2009). Based on my own reading of the fragmented literature available to explain lifelong learning participation, I have constructed Figure 1, which is an attempt to integrate findings from separate disciplines into a coherent model, a core aspect of the

interdisciplinary nature of research, as pointed out above. It is clear that sociological and psychological theories at the individual level blend with insights about the availability of education and training offers and a range of corresponding social and education policies. The three actors need to work together, share responsibilities and risks, and therefore require an integrative research approach. As discussed above, previous research has often been built around the three separate cogs of the model, often only discussing the role of the individual's psychological contribution, the individual's sociological background, the role of learning providers, or the role of governments and policy actors in different countries. The model has been represented by three cogs, further explained by separate boxes providing an overview of the underlying variables per cog as extracted from an extensive literature overview undertaken in the past. The cog model indicates that the country level is a big player in setting out broad policy lines, both in the field of education and social policy. However, practitioners at the level of the educational institutions and workplaces still need to make sure their courses are accessible for learners, which are adults with their own sets of social and psychological characteristics, which are often known to correlate, e.g. adults from low socio-economic backgrounds are more likely to have poor attitudes and motivation towards education and training. The cogs need to be working together, if not, participation will not happen. If the government has worked towards a favourable lifelong learning climate, investing in adult education, and educational institutions are offering high quality learning opportunities, but the individual does not have the motivation to take part, the individual cog will block the entire mechanism.

[FIGURE 1 here]

FIGURE 1: Comprehensive Lifelong Learning Participation Model – author's own work



Source: author's work

While building an interdisciplinary theoretical model based on an extensive reading of the literature is one challenge, another one is on how to use it as a theoretical framework in interdisciplinary research, including empirical elements. In what follows, I will discuss a range of recommendations on how to deal with the challenges of working in interdisciplinary teams studying lifelong learning participation as well as propose ideas for the development of methodological tools to help interdisciplinary research in the field of lifelong learning participation succeed.

Challenges and recommendations for interdisciplinary lifelong learning research

As explained above, undertaking research formulating an answer to the question why adults do or do not participate in lifelong learning activities might be more complex than it seems to be at first thought. This general question about participation seems somehow rather 'easy' and straightforward. A review of the literature has shown it is not. Related to challenges and recommendations, firstly, I will focus on challenges in working together with scholars coming from different disciplines. Secondly, I will focus on a range of methodological issues for consideration in this type of research, specifically applied to the study of lifelong learning participation as an interdisciplinary theory. These approaches will focus on both quantitative and qualitative methodologies.

Challenges

- Understanding disciplinary cultures

In considering the potential challenges of studying lifelong learning as an interdisciplinary theory, it is important to recognise that scholars do not only come from different disciplines in itself, but also from different disciplinary cultures (see Lyall & Meagher, 2012). Becher (1981) wrote about 'contrasts between disciplines', attempting to go beyond the stereotypes, which are often hostile in nature, e.g. branding sociologists as ideologists, physicists as the die-hard scientists and lawyers as the non-academic and dubious scholars. A better way of dealing with different disciplinary cultures is to understand each other's epistemologies, and the different traditions that exist in the different disciplines, e.g. the different publication formats being used, such as the value attached to writing monographs as opposed to publishing research findings in peer reviewed journals. The use of research methods can also substantially differ. In the field of lifelong learning, scholars within economic departments might undertake econometric research explaining the financial benefits of participation in education and training (see e.g. Blanden et al., 2010), while sociologists or educationalists might want to understand decisions to participate through the lens of respondents' life histories or biographies (see Merrill & West, 2009). While research methodologies and methods tend to differ between disciplines, it is of course also important to note that these can equally differ within disciplines.

However, overall, scholars from across disciplines want to contribute to knowledge and feel valued by their colleagues, but the ways in which they want to achieve this differs. In bringing together scholars from different disciplines, it will therefore be needed to work hard on coming up with a sound research strategy valued by everyone. Having worked on large scale European projects in the field of lifelong learning, grouping together a number of specialists from different disciplines, but also different countries, it is helpful to work with explicit tools in order to avoid misunderstandings.

This can include a glossary of core terms used in the project so that everyone knows the meaning of them, e.g. the core variables used in the self-developed questionnaire as not all scholars are familiar with specific terms. This is especially important when different people are collecting data about the same topic, often in different countries, in order to ensure a high level of validity of the data. As researchers, we want to be sure that we are measuring what we are intending to measure. Sound knowledge about integrative theories and the uniformity of core terms will also help in research outcomes being truly 'transformative' instead of not going beyond the level of adding separate chunks of knowledge that do not help in transcending the complexity of the research problem, the case of this paper, understanding why adults do or do not participate in lifelong learning activities. It must be said that interdisciplinary research relating to lifelong learning will mostly involve scholars coming from social sciences backgrounds, who might, as Lyall and Meagher (2012) point out, feel more comfortable with each other than with colleagues coming from the hard sciences.

- Offering interdisciplinary training

In understanding cultural differences between disciplines, one could argue that it might be needed to implement 'interdisciplinary thinking' in the core curriculum for students. Currently, academic study is often organised in departmental structures, representing separate disciplines and Lyall and Meagher (2012) published specifically about a masterclass in interdisciplinary research. In order to advance the study of lifelong learning, and education in general, university programmes in sociology could offer students psychology courses and vice versa, but the integration of both might become more outspoken in letting students more work together and interact with each other. For current scholars carrying out interdisciplinary research, training might be provided, helping them to understand communalities and differences between them and their colleagues. Last but not least, it is also essential that administrations work towards a level of openness towards each other. Similar to the topic of lifelong learning, training should thus be provided at all levels of staff working on projects. In stimulating more interdisciplinary research, funding bodies from within separate disciplines, e.g. in the UK structure in separate research councils looking after a range of disciplines, could actively sponsor research that is interdisciplinary in nature, and administrators working at faculties, should also be adapting to working with colleagues used to supporting scholars embedded in a different disciplinary culture.

Recommendations for methodologies

- Multilevel analyses

In discussing the recommendations for interdisciplinary research in the field of lifelong learning participation, referring to the model presented above, I would like to start with a straightforward recommendation. The model is built as an interactive tool on three different levels, mainly coming from different fragmented disciplinary backgrounds. In a multilevel structure, one would deal with the hierarchical level of the data and how a range of respondents are in fact clustered together, increasing the integrative level of the research problem, making it interdisciplinary in nature (see e.g. Field, 2013).. In relation to lifelong learning participation, we could argue that individual learners are nested in specific adult learning institutions or workplaces, which are then nested in different countries. In the case of non-participants, one could still explore those working for similar companies or living in the same city. The comprehensive and integrative lifelong learning participation model is interested in 'group effects' as it wants to better understand why e.g. individuals in the Scandinavian

cluster are participating more than individuals in the Italian cluster. Additionally, it is important to know why adults clustered in 'company A' are participating more than adults in 'company B'. From a statistical point of view, recognising the hierarchical structure of data will lead to more accurate estimations in regression models.. In fact, it is not uncommon for large scale research to be designed using a multi-staged sampling frame. A well-known example in the field of education is the PISA survey (Programme for International Student Assessment). A wide range of countries take part, but within these countries, schools are sampled first. Afterwards, within these schools, a number of pupils will be asked to undergo testing. In the field of lifelong learning, international datasets can be used using a two-level design, distinguishing between the country level and the individual level. Examples include the Survey of Adult Skills, carried out by the OECD as part of PIAAC (the Programme on the International Assessment of Adult Competencies) and the Eurostat Adult Education Survey. The European funded Lifelong Learning 2010 project (see Riddell et al., 2012; Saar et al., 2013) aimed to answer questions in relation to lifelong learning participation and did indeed survey 13,000 adult learners in 13 countries, sampled through educational institutions offering formal credential-based lifelong learning activities. One of the difficulties with multilevel modelling, and one of the discussions going on in the field, is the sample size needed to undertake these types of analyses. Generally, it is perceived as better to have large samples sizes, e.g. based on the 30/30 rule for a two level analysis (see Kreft, 1996). This would mean that we need 30 educational institutions with 30 learners in each institution taking part in the project. The minimum sample then is 900 individuals, which is a lot for projects that have to be undertaken with limited resources. In general, the different disciplines, represented by different levels in the model, would be allowed to integrate and blend with each other in an interdisciplinary multilevel structure. However, it is equally important to mention that although the term 'multilevel modelling' is often used to describe a statistical technique, the logic behind the layered nature of a multilevel analyses can equally be adopted in qualitative research, e.g. through undertaking case studies of two countries in which a limited number of sub-cases of educational institutions are being studied through in-depth qualitative methodologies.

- Data linkages

In working with data at different levels, it can be a time consuming task to gather them. In the case of the comprehensive lifelong learning participation model presented above, it would require gathering data at the level of individuals, the availability of educational offers, the companies or workplaces they work for and the countries in which they reside. In fact, many of these data are available, but mostly in a fragmented way, belonging to separate disciplinary domains. However, to date, it does seem complicated to connect them to each other, making it easier for researchers to adopt an interdisciplinary lens in their research projects. In fact, lifelong learning participation can only happen if adults find a good match between their own learning needs and intentions if there is a learning offer available to them. It is common sense that specific types of educational institutions are known to be located in urban areas, e.g. universities. Adults living in rural areas might not be willing to travel long distances to attend classes, although nowadays options for distance learning are more widely spread than before. More insight about the characteristics of the areas with low participation rates might help policy makers and educational managers to adopt new measures to bring learning opportunities closer to these people, or to come up with educational offers that better match the needs of the population. Linking data at this level could be done through postcodes and from there linking survey data with e.g. Census data. In going a step further, one could argue for

data linkages with records being maintained at the level of adults' previous education, health, their benefit records or maybe even the services they use. This type of information would allow researchers to go beyond the level of simply asking for adults' intentions to participate in lifelong learning activities and their self-reported socio-economic background, but make the complex nature of lifelong learning participation more accessible for researchers to understand. However, it is doubtful whether very detailed and broad data linkage will happen in the near future. A common problem with data linkage relates to ethics and privacy (see Harron, Goldstein & Dibben, 2016). If too much information is linked to an individual record, it might become realistic to identify people and it is doubtful whether many people are willing to give their consent to share their data. One might be willing to identify the company they are working for or the schools they attended in the past, but it is unrealistic to expect that they are willing to share much more than that. As researchers, we have to carefully deal with confidential information. Some countries do have linkage mechanisms in place, e.g. The Netherlands has given respondents to surveys a unique identifier code. Applied to the study of lifelong learning participation, Dutch colleagues would be able to identify whether someone has participated in more than one study, and it would be possible to see whether someone who participated in the Survey of Adult Skills was also part of the Labour Force Survey or the Adult Education Survey. This is not yet the case in a range of other countries. However, a hypothetical linkage of data would help in merging data that might otherwise be collected in different disciplinary circles, not reaching the levels of integration, needed for interdisciplinary research. Data linkages would be helpful in order to contextualise lifelong learning environments in survey research, but also in qualitative research, high quality linked data at the statistical level might help to better understand the population researchers want to sample from.

- Longitudinal research

Longitudinal data might help increasing knowledge about research problems that are interdisciplinary in nature (see Menard, 2007). The question why adults do or do not participate in lifelong learning activities might be answered through using cross-sectional data (available through e.g. the Eurostat Adult Education, the Labour Force Survey and PIAAC's Survey of Adult Skills), but one of the aims of the integrative lifelong learning participation model is also to demonstrate which characteristics in countries and companies or learning institutions help potential learners to become participants. This reflects the idea of policy learning and borrowing, in which comparable data between countries or organisations are used to enter a discussion about how new policies can be implemented in order to make positive changes. However, in evaluating whether these changes have been successful, it is necessary to explore longitudinal data. As pointed out above, developmental psychologists state that adults' needs are changing over time. In researching changes over the lifetime, we might want to include changes in society as well, e.g. the impact an economic crisis can have on people's jobs and the possible increased need for participation in lifelong learning activities to retrain when adults have lost their job. Exploring both changes over time in relation to society, including the role of educational institutions and workplaces, and the individual is thus a clear example of how different disciplinary insights can be integrated with one another in an interdisciplinary study. The longitudinal approach will not only help in better understanding why adults do or do not participate in lifelong learning activities, it will also help in better estimating the benefits of learning, both at the individual and the societal level, economic and non-economic. While longitudinal data are often thought of as being statistical in nature, it is perfectly possible to follow-up adults using qualitative research methods such as in-depth interviews.

- **Mixed methods**

Choosing which methods to use in empirical research largely depends on the nature of the research questions and this holds true for interdisciplinary research (see Menken & Keestra, 2016). However, because of their different epistemological backgrounds, it is highly likely that researchers in interdisciplinary teams have preferences for a different set of methods and methodologies, in the social sciences often either quantitative or qualitative research. Because of the interdisciplinary nature of the study of lifelong learning participation, it is worthwhile to consider methodological pluralism and triangulation of data. As already pointed out by Bell and Newby (1977) many years ago, it is important to understand that one's preferred method is not always the best one. In general, the field of lifelong learning has been perceived as being very much qualitative in nature and lacks scholars working on large international survey data, e.g. as collected by the OECD and Eurostat. However, the current policy discourse very much focuses on benchmarks and indicators, based on quantitative data. Examples, as pointed out earlier in this text, refer to the benchmark of 15 percent of participation to be achieved by 2020 in Europe, or the monitoring of the OECD's participation benchmark in the Education at Glance report. However, monitoring these data based on quantitative datasets is unlikely to provide us with the answer as to why adults do or do not participate in lifelong learning activities. An integration of societal trends based on quantitative research as carried out by economists or sociologists might be triangulated with psychometric testing and life history interviews to gain a stronger in-depth understanding of what is happening at the individual level. However, as pointed out before, the study of lifelong learning participation will only be truly interdisciplinary in nature if all elements are integrated and working towards a transformative addition to the current knowledge base. A combination of quantitative and qualitative research methods is therefore likely the way forward in furthering our understanding of this interdisciplinary field.

Conclusions

This paper has demonstrated that, based on a wide reading of the literature over an extensive period of time, the study of adult lifelong learning participation has to be interdisciplinary in nature. While knowledge from separate disciplines contributes to fragmented evidence on why adults do or do not participate in lifelong learning activities, my contribution wants to shift the state-of-art of the field from a multidisciplinary study to a truly interdisciplinary and integrative one. A new comprehensive lifelong learning participation model has been presented, attempting to integrate the available fragmented knowledge. In order to further explore this model, undertaking interdisciplinary research will be necessary. The challenges in working together in interdisciplinary themes have been outlined, as well as a number of research methods, aiming to bring together the different disciplinary angles in a coherent and integrative way.

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