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Anke Grotlüschen, Lisanne Heilmann (eds.)

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Between PIAAC and the New Literacy Studies

What adult education can learn from large-scale assessments without adopting the neo-liberal paradigm

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Editorial

Why do we believe that large-scale assessments have something to offer for Adult and Continuing Education?

Anke Grotlüschen, Lisanne Heilmann

We live in an age of international large-scale assessments that offer the education sector internationally comparable information and data for the different educational levels of participating countries.

The Programme for the International Assessment of Adult Competences (PIAAC) launched its first cycle results and datasets in 2013. The survey builds on two international predecessors – the International Adult Literacy Survey (IALS) from the mid-1990s and the Adult Literacy and Lifeskills (ALL) Survey in the mid-2000s. Unlike other countries, Germany was unable to benefit fully from the IALS data due to major coding errors in the dataset. Moreover, Germany did not participate in ALL because, at that time, PIAAC was already under way. This led to the conclusion that the Germans are latecomers, starting from a national Level-One Survey (LEO) in 2010 and needing to catch up with the international discourse where more or less everyone is already familiar with adult large-scale assessments.

However, that assumption was wrong. There has been a long-standing tradition of aiming criticism at PIAAC and similar surveys, but major journals in the field of adult and continuing education rarely release publications that actually build on large-scale assessment data. We agree with several critical arguments, like the focus on rankings and early conclusions (Evans 2015), the human capital approach that only focuses on labour market outcomes of education (Zeuner 2009), and the rational choice assumptions behind many background questions (Grotlüschen 2017). We also argue that the OECD is gaining too much influence over national educational policies (Gorur 2015) and that this is becoming a monopoly or a 'single story' (Addey 2018). The expansion to include mid-income countries has been criticised as a re-colonial move known as 'southering' (Grotlüschen, Buddeberg, in this volume).

We see that the *skill use* or *practice* variables do not capture what the New Literacy Studies claim (Street 2003), with power relations a notable absence here (Duckworth and Tett 2019; Thériault 2019). We agree that hierarchical competence models are dominant (Barton and Hamilton 2000) and marginalise those performing below average (Belzer and Pickard 2015).

So, besides this stark criticism, is there any benefit to gain? Why would we suggest that the use of large-scale assessments advances the issues that *adult and continuing education* deals with?

First, we suggest not handing over interpretation of the largest and most expensive dataset on adult competences to authors from supra-national organisations, not leaving the interpretation to human capital standpoints or the rational choice paradigm within cognitive psychology. From an adult education perspective, the use of social theories is widespread and successful in explaining and understanding participation and marginalisation, power relations and many different facets of adult learning, professionalisation and institutionalisation. We suggest using research questions informed by social theories, theories of teaching, learning, and professionalisation with the PIAAC data. That is not always easy since the dataset was not made for such an approach. However, it is common, even among those who produced the PIAAC data (Massing and Gauly 2017; Gorges et al. 2016), and it is possible for questions that stem from adult education (Grotlüschen et al. 2020b). For instance, our interpretation of low volunteering activities by first-generation migrants would not *blame the victim* but claim that *majorities marginalise migrant subpopulations* from their volunteering organisations and *host countries* probably cause too many settling difficulties for migrants so there is no time left to volunteer (Grotlüschen et al. 2020a).

We would claim that it does make sense to use large-scale assessments to shape our own questions. Moreover, many background variables are somewhat unknown in the realm of adult education.

There are some variables in terms of time and work flexibility, sequence of tasks, how to do the work, speed of work and working hours, and the overarching question of job satisfaction.

Skill use variables cover a range of work-related activities, e.g. sharing work-related information, teaching people, giving presentations, selling, advising people, planning own activities, planning others' activities, organising own time, influencing people, negotiating with people, problem solving (simple or complex), long working hours with physical activity, using hands or fingers. Indices on task discretion, influence, planning, readiness to learn and learning at work are available in the public-use files.

Skill uses also cover reading, writing, numeracy, ICT use and problem-solving both at work and at home. Each of these areas is represented as an index consisting of several individual variables.

Job-seeking respondents are also asked about their ways of looking for work (contact public employers, apply for vacancies, ask family and friends, read and place advertisements, recruitment tests).

PIAAC contains an observation module that queries whether additional persons were around, respondents required clarification about background questions, answered phone calls, text messages or e-mails, looked after children or performed domestic tasks, whether a television, radio, game console or music player was used, and in which room the assessment took place.

The new LEO Level-One survey 2018 covers a large range of literacy practices in four domains (financial literacy, health literacy, political literacy and digital literacy) and presents questions on functional and critical competences from the respondent's standpoint. The questionnaire was translated in 2019 and is available in the download section of the blog https://leo.blogs.uni-hamburg.de/.

Data from longitudinal surveys, e.g. the National Educational Panel Survey (NEPS), and on special subpopulations, e.g. the Refugee Survey (*Geflüchtetenpanel*), complete the picture.

Naturally, there is still some way to go to arrive at the variables and understand how to treat complex survey designs. But from today's perspective, enough time is available to do that. The next PIAAC will be launched in 2023 with more than 50 participating countries and more rounds to follow. The LEO dataset will be published in 2020 for a larger audience. The World Bank launched comparable data in their STEP programme for some middle-income countries, based on the PIAAC test design and background questions, both as adult studies as well as employer surveys.

However, it still makes sense to advocate for better databases. Compared to PISA and other school-related surveys, the system data part of PIAAC is incomplete. PIAAC does not contain any information about adult education systems, e.g. second chance schooling or further education programmes by job agencies, language and citizenship education under immigration policies, or the number of academic Master's degree programmes. When it comes to training institutions, data could be collected on quality control systems, the existence of major institutions offering the programmes mentioned above, and applicable laws and funding structures.

Furthermore, PIAAC has a complete lack of data on the professional development of teachers, trainers and organisers in the adult and continuing education sector, e.g. the number of study programmes in adult education, the share of freelancers and employees, income and continuing development or digital skills. This makes country comparisons difficult and vague, often leading to reliance on macro data that do not capture the specific situation of adult and continuing education.

However, background questionnaires and assessment concepts are not fixed, rendering it useful to inform stakeholders about the needs and ideas regarding the development of the database. And yes, criticism on overgeneralisation, about the monopoly and power that comes with these programmes, and about the steep rise of data production involved in monitoring the Sustainable Development Goals will need open eyes and constant scrutiny.

Most of the articles in this volume have been published in similar or varied versions, in a range of different journals, edited volumes and countries. This collection aims to provide an overview of the spectrum and variety of questions that adult educators with a background in social theory publish using large datasets. We hope this serves regularly as a starting point and inspiration for others.

Part I:
Learning from PIAAC – alternatives and alternative interpretations

In the first part of the book, we present three papers that use PIAAC data and offer a creative and alternative view of the data and the variety of interpretations possible with the assessed data. With assessments, assumptions have to be made at every step: from choosing underlying constructs, drafting items, carrying out interviews and tests, etc. While the assumptions that influenced the measurements and tests cannot be ignored or simply disregarded, we are not required to use the same assumptions and models as the OECD does. Instead, we can engage in subversive resignification by rethinking them, playing with interpretations and assumptions, and reframing data from a different point of view.

In the first paper presented here, Barbara Nienkemper and Anke Grotlüschen combine a secondary analysis of PIAAC data with the social practices approach of the New Literacy Studies. This allows them to identify three groups of adults which can be distinguished by their frequency of skill-related activities but not (perhaps surprisingly) by their assessed literacy level. In addition, they find that in some cases, adults with low literacy who work in low-literacy work fields do compensate this with an increased use of their literacy skills in everyday life.

Similarly, by looking at occupational practices of the interviewed persons, Anke Grotlüschen, Christopher Stammer and Thomas J. Sork were able to broaden our understanding of adults who teach professionally, i.e. as part of their everyday work. They looked at the literacy skills and the digital practices of adults who – in one way or another – teach others and found that they comprise a broader than expected demographic with higher digital skill levels than sometimes stereotypically assumed.

Anke Grotlüschen, Barbara Nienkemper and Caroline Duncker-Euringer question PIAAC's sufficiency in assessing competences, especially at lower levels, and suggest additional testing here.

A fourth paper by Barbara Nienkemper and Anke Grotlüschen takes an additional step: In cooperation with the developers of a national longitudinal continuation of PIAAC and an additional National Education Panel Survey (NEPS), they looked at the knowledge that other studies had to offer regarding the causality and variation of low literacy in adult life. This would allow further quantitative assessments to account for social variables, causes and a more varied understanding of low literacy.

Part II:
Showing marginalisation in and by large-scale assessments

The second part of this volume contains four publications that deal with different forms of marginalisation. In the first two publications by Anke Grotlüschen, Lisanne Heilmann, Gregor Dutz and Svetlana Chachashvili-Bolotin, the socio-political participation of different population groups is examined using two different

statistical means. First, descriptive statistical differences between migrant populations, language minorities and the rest of the population are presented and interpreted. Second, regression analyses are carried out between these three groups to show their relation to socio-political participation. Both articles use PIAAC data from five different countries (Austria, Canada, Germany, Israel, and the USA) to demonstrate social and political exclusion that may be caused by language-based discrimination. While both articles deliver fundamentally similar insights, the direct contrast between both demonstrates the different types of results that the two statistical approaches can uncover.

However, large-scale assessments not only permit the identification and description of marginalized and excluded groups, they also reflect the process of marginalisation. In Anke Grotlüschen's and Klaus Buddeberg's Paper on 'PIAAC and the South', the re-colonising effect of the expansion of international studies into the so-called global South is discussed critically.

Finally, Anke Grotlüschen examines in the eighth paper of this volume the consequences of low literacy for adults in explicitly socially relevant areas of life like political efficacy, social trust and volunteering.

Part III: Understanding the power relations of literacy and participation

The third part of this book focuses on research conducted specifically on the interrelation of literacy and social participation along with the power structures affecting this relation. Jana Wienberg and Anke Grotlüschen use quantitative data to analyse the role of literacy and language education for refugees and migrants in Germany.

In a nationwide assessment of literacy skills in Germany, Anke Grotlüschen, Klaus Buddeberg, Gregor Dutz, Lisanne Heilmann and Christopher Stammer offer a comprehensive and broad overview of different literacy practices and competences along with their links to social participation for the German population.

Finally, Anke Grotlüschen uses PIAAC data to look specifically at learning and skill-use situations in the lives of adults with low literacy (level I or below), and to question assumptions about everyday life capabilities and participation of these adults.

In summary, this volume presents different approaches to using PIAAC as a resource for adult education. Relevant and legitimate criticism of the large-scale assessment is voiced and included in the different papers which add to the assessed frameworks in terms of alternative theories and interpretations, further research and assessment approaches, and a reflection of the underlying power structures.

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Hamburg, winter 2020
Lisanne Heilmann and Anke Grotlüschen

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Part I:
Learning from PIAAC –
alternatives and alternative interpretations

1. Using PIAAC data to learn more about the literacy practices of adults[1]

Barbara Nienkemper & Anke Grotlüschen

Introduction

The results of international large-scale assessments (e.g., IALS, ALL and recently PIAAC) are repeatedly used to inform, establish, monitor or abandon national educational policies and programmes (Brooks, 2011; Gabrielsen, 2011; Mendelovits, 2011; Pugsley, 2011; Rubenson, 2011; St. Clair, 2011). From an adult educator's perspective, it is also desirable to use such assessment data to obtain more precise knowledge of the target groups affected by lower competencies. In particular, assessment results concerning the foundational reading (or writing) skills of adults who perform below the lowest literacy (or numeracy) skill level could provide didactical-rich information about the adult educational programmes and literacy instructions that are most needed. Thus, the PIAAC 2012 decided to implement a reading components assessment (Sabatini & Bruce, 2009). The so-called reading component approach claims that different facets are relevant for reading, such as the short-term memory, a phonemic awareness for rhymes, morphemes, sound-to-sight connections or a certain command of a language (in adults) and knowledge of word meanings (in children) as well as an internal lexicon of written words as images. Struggling readers may have different profiles (like low memory but good vocabulary).

Dyslexic readers may lack one of the reading strategies (lexical or decoding) but not both, and they do not underperform in terms of memory, concentration or basic cognitive skills. Thus, the reading components give good information about where to start with teaching and training, and are important for individual diagnostics with course participants. Earlier surveys had conducted latent class analyses with English-speaking reading components data to differentiate groups of adult literacy learners (Strucker & Davidson, 2003; Strucker, Yamamoto, & Kirsch, 2007). However, the current PIAAC reading components data allow only very limited in-

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1 First published at International Journal of Lifelong Education: Barbara Nienkemper & Anke Grotlüschen (2019): Using PIAAC data to learn more about the literacy practices of adults, *International Journal of Lifelong Education*, DOI: 10.1080/02601370.2019.1596171, journal homepage: https://www.tandfonline.com/loi/tled20, link to this article: https://doi.org/10.1080/02601370.2019.1596171. Reprinted with the kind permission of Taylor & Francis.

terpretations with regard to didactical information for the field of adult literacy education. On the one hand, the reading components tend to lose the variety and scope former versions of reading components had due to international translations. For example, the language-specific knowledge of phoneme grapheme correspondences (decoding skills) could not be tested internationally (Sabatini & Bruce, 2009, p. 7). Furthermore, the reading component assessment data are not representative of the low-literate population groups (Gauly, Perry, & Rammstedt, 2016).

On the other hand, with its large background questionnaire, the PIAAC provides a lot of further information about the living conditions of population groups. The present research article resulted from our idea to use the PIAAC dataset on individual skill uses to gain didactically relevant information for adult literacy and basic education. Reder's (2009) longitudinal learner study even shows that the frequency of individual uses of literacy practices (e.g., filling out forms, voluntary reading, written communication) increases in the short-term by participation in adult education programmes, whereas this is not the case for the improvement of literacy skills. J. D. Carpentieri, policy and development officer at the former National Research and Development Centre for adult literacy, language and numeracy (NRDC) in London, considers PIAAC's approach to measure individual skill uses as the first good opportunity to have a mainstream influence on current adult literacy policy. Carpentieri argues that the PIAAC data on individual skill uses could be used to improve the national literacy performance by drawing more attention to everyday reading practices than to individual skills. He further suggests that this should be done by 'bridging the gaps' between quantitative and qualitative approaches to the study of literacy practices (Carpentieri, 2015).

The PIAAC expert groups on Literacy, Numeracy and Problem Solving took advantage of the sociocultural studies on literacy practices for shaping definitions of their skill assessment domains.

However, the analyses of the skill use section itself have not yet been linked to the ethnographic fieldwork. In fact, published analyses and interpretations of the PIAAC skill use data by the Organisation for Economic Co-operation and Development (OECD) concentrate on the connection between literacy proficiency scores and skill use. The main result is described as a close relationship:

> Adults who engage more often in literacy- and numeracy-related activities and use ICTs more (both at work and outside of work) have higher proficiency in literacy, numeracy and problem solving in technology-rich environments. Engagement in relevant activities outside of work has an even stronger relationship with the skills assessed than engagement in the corresponding activities at work. (OECD, 2013, p. 188)

And looking closer at the employed low-skilled population of the international OECD average, it can be seen that a larger percentage (4.8%) of the low-literacy population (literacy level one and below) responded with 'Never' on all items for

reading outside of work than did the overall population (1.3%) (Grotlüschen, Mallows, Reder, & Sabatini, 2016, p. 39).

The present article contains a rather explorative approach to connect a quantitative, secondary latent class analysis of PIAAC skill use data with the literacy practices approach of the qualitative, mostly ethnographical working NLS.

After the introduction, we summarize the social practice approach of the NLS, along with some of their main research results with regard to literacy practices. Subsequently, PIAAC's 'skill use' approach is explained in relation to the social practice approach, and the measurement instruments of individual skill uses are described. In the next section, we explain our empirical approach to analyse quantitative skill use data as indicators for engagement in literacy practices. Finally, the results of the latent class analysis and further cross-table calculations are elaborated and concluded in the discussion.

Literacy practices in the NLS

The NLS tradition follows the social practice approach to individual literacy practices. The NLS are closely linked to decades of theoretical and empirical work by protagonists such as Shirley Brice Heath, Brian Street, James-Paul Gee, David Barton and Mary Hamilton. The anthropological thread goes back to Jean Lave and Etienne Wenger's idea of 'situated learning' from the early 1990s. As Lave and Wenger (1991) understand learning as situated practices, the New Literacy Studies understand literacies as situated practices. The connection is firstly that literacy practices are acquired and developed through (mostly informal) learning processes (Barton & Hamilton, 2000). Secondly, the concept of 'situated practices' is transferable from learning theory to a theory on literacy. The concept stresses that reading and writing activities are located in particular times and places but equally point to broader social goals and cultural practices. Barton and Hamilton (2000) frame a social theory on literacy that describes further interrelationships between literacy and social practice. According to this social theory, different literacies are associated with different private and public domains in life (e.g., home, household, neighbourhood and community).

Furthermore, some literacies are more dominant, visible and influential than others. This is because literacy practices are patterned by social institutions and power relationships. Lastly, Barton and Hamilton state that literacy practices are historically situated, which means that they are as 'fluid, dynamic and changing as the lives and societies of which they are part' (Barton & Hamilton, 2000, p. 13). Brian Street, a representative of the first generation of NLS, used the term 'ideological model of literacy' to show that a social practice approach in research focuses more attention on 'the role of literacy practices in reproducing or challenging structures of power and domination' (Street, 1993, p. 7). Uta Papen (2005) describes the social practice view of literacy as complementary to the technical skills view of literacy (Papen, 2005, p. 25–34). She emphasises that when looking at the same examples

(reading a book, reading the 'best before' date on a milk carton, reading a web page, writing a text message, writing an essay), the social practice view draws 'attention to the different meanings and purposes these literate activities have, depending on what technology they involve, who uses them, in what context and for what ends' (Papen, 2005, p. 25–26). These literacy practices vary according to the context and vary in particular from the school context. Famous ethnographic studies of practices are the Adult Maths Project (Lave, 1988), as well as the description of Trackton ('black') and Roadville ('white') communities with 300 individuals in the United States, who were followed over three decades (Heath, 2012).

Another widely known study integrates local perspectives (Barton & Hamilton, 1998) and was replicated recently in Germany (Zeuner & Pabst, 2011). German biographical and narrative interview studies identify practices of adults with lower literacy skills to cope with literacy events (Egloff, 1997; Nienkemper, 2015). Relevant results with regard to literacy practices are as follows:

- Heath (1983, 2012) and Gee (2003) show that literacy is employed for several reasons, and literacy practices differ by class and socio-economic factors.
- Working-class families read to their children. Middle-class families read to their children and talk about what they read, asking questions similar to what will be asked in school. This gives these children an advantage when they enter school (Heath, 1983, 2012).
- For the working classes, reading is for memorising (taking notes), providing identification (e.g., an identity card or driving licence), and following instructions. For the middle classes, literacy includes reading for pleasure (Heath, 1983).
- High school students understand that they learn critical thinking, while others understand that they learn to follow instructions (Gee, 2008).
- Informal learning in relation to health and disease comprises 'literacy-mediated' learning: explicit learning of literacy and how to engage in new literacy practices (Papen, 2012).
- Low literacy performance does not necessarily lead to a 'negative' life course (Egloff, 1997).

Literacy practices can be avoided or delegated to others. Both coping strategies are legitimate unless it comes to formal test situations. Then, the strategy of pretending is no longer legitimate (Nienkemper, 2015).

Literacy as part of the 'skill use' approach in PIAAC

PIAAC is an outstanding example of another powerful strand of literacy research. The PIAAC survey was conducted by the OECD as a household survey, and it included competence assessments (literacy, numeracy and problem solving in technology-rich environments), as well as a rich background questionnaire (Organisation for Economic Co-Operation and Development, 2013).

PIAAC uses a hierarchical model of literacy, whereby literacy is understood as a continuum that is separated into levels. To assess individual literacy competence, respondents are asked to extract meaning from text and critically evaluate statements. From the NLS perspective, this literacy definition can be understood as part of a 'dominant literacy' discourse. Hamilton (2012) describes the historical process of redefining 'literacy' into a construct that can be measured in internationally comparable large-scale assessments. This process results in a powerful policy narrative filled by numerical resources and specific learner narratives. The advantage of this re-definition of literacy is the international and intranational comparability of populations, but vernacular literacy practices such as using dialect, subgroup grammar or text message abbreviations are excluded. PIAAC illuminates an important part of literacy, but not the whole picture.

The PIAAC survey includes not only the assessment of basic skills but also an examination of the individual uses of literacy, numeracy and ICT skills. This skill use section in the PIAAC background questionnaire comprises questions about the individual frequency of skill uses in the context of work and everyday life, with the term 'everyday life' meaning everything outside of work. Table 1 shows the PIAAC index variables for measuring the engagement of individuals in the skill use domains literacy, numeracy and ICT. The choice of activities is the same for the 'skill use at work' and the 'skill use in everyday life' questions.

Tab. 1: Items on the PIAAC skill use domains literacy, numeracy and ICT (which are the same for the skill use at work and the skill use in everyday life).

Domain	**Question: How often do you …**
Literacy – Read	… read directions or instructions
	… read letters, memos or mails
	… read newspapers, magazines or newsletters
	… read professional journals or scholarly publications
	… read books
	… read manuals or reference materials
	… read bills, invoices, bank statements or other financial statements
	… read diagrams, maps or schematics
Literacy – Write	… write letters, memos or mails
	… write articles for newspapers, magazines or newsletters
	… write reports
	… fill in forms
Numeracy	… calculate prices, costs or budgets
	… use or calculate fractions, decimals or percentages
	… use a calculator, either hand-held or computer-based
	… prepare charts, graphs or tables
	… use simple algebra or formulas
	… use more advanced math or statistics such as calculus, complex algebra, trigonometry or regression

Domain	Question: How often do you …
ICT – Internet	… for mail
	… work related info
	… conduct transactions
ICT – Computer	… spreadsheets (Excel)
	… word
	… programming language
	… real-time discussions

Furthermore, the frequencies of selected learning activities at work were measured in PIAAC with three variables:

(1) learning new work-related things from co-workers or supervisors
(2) learning-by-doing from tasks to perform
(3) keeping up-to-date with new products or services

The respondents had to indicate, on a Likert scale, how often they engage in each task:

- never
- less than once a month
- less than once a week but at least one a month
- at least once a week but not every day
- every day.

Empirical approach: latent class analysis

The present research project aims to connect the analyses of quantitative skill use data with the theoretical approach of 'literacy practices' and related research results from the NLS, which follow a cultural practices paradigm. Therefore, the main challenge is that the PIAAC skill use questions refer to a dominant literacy discourse (reading books, journals), whereas Heath (1983), for example, found that people in different social classes use literacy for different purposes (e.g., memorising, providing identification and following instructions, as opposed to reading books for pleasure). However, these details are too specific for large-scale assessments. Therefore, PIAAC and others have to focus on abstract skill use questions such as 'How often do you read books?', whereas the ethnographic research approach of the NLS concentrates on 'literacy practices', which imply culturally and historically developed activities, including values and attitudes. Esposito, Kebede, and Maddox (2014) demonstrate the viability of taking a quantitative route to research people's most valued literacy practices in the context of low education in the poorest region in Mozambique. Thus, these researchers reflect the main criticism of statistical methods from a sociocultural research perspective: 'They may, for example, fail to

capture aspects of diversity that are critical to our understanding of literacy practices, or the extent to which values are dependent on 'situated', domain-specific and temporal characteristics' (Esposito et al., 2014).

The sociolinguist Stephen Reder (1994) holds the view that the cultural practices paradigm and the individual skills paradigm to literacy are not opposed to one another. Rather, he emphasizes the advantages of each approach for different empirical questions. Furthermore, he offers a practice-engagement theory of literacy development, which is a particular version of the cultural practices approach. The main assumption of this approach is 'that the development and organizational properties of an individual's literacy are shaped by the structure and organization of the social situations in which literacy is encountered and practiced' (Reder, 1994, p. 48).

Following Reder's and Smith's examples in analysing quantitative skill use data as indicators for engagement in literacy practices (Reder, 2009; Smith, 1996), a secondary analysis of selected PIAAC skill use data was performed. A statistical procedure known as Latent Class Analysis (LCA) was applied to detect groups of adults who are relatively homogeneous in their skill use.

The LCA is a process by which individuals are organised into groups (or Latent Classes) based on their patterns of response to a set of questions (Geiser, 2011). In this case, nine single questions (response items) were used for the LCA, one out of the eight 'skill use' indices and one item out of the 'learn at work' index. The largest variance of responses within the group of adults with a lower literacy proficiency (level one and below) was used as a criterion for the choice of each single item out of its index.

Tab. 2: Choice of PIAAC learn at work and skill use at work and in everyday life items for the latent class analysis.

Item	Content	Index
D_Q13a	Learn from co-workers/supervisors	Learn at work
G_Q01a	Read directions or instructions	Read at work
G_Q02a	Write letters, memos or emails	Write at work
G_Q03d	Use a calculator – either hand-held or computer based	Numeracy at work
G_Q05f	Use a word processor, f. e. Word	ICT at work
H_Q01e	Read books, fiction or non-fiction	Read in everyday life
H_Q02a	Write letters, memos or emails	Write in everyday life
H_Q03b	Calculate prices, costs or budgets	Numeracy in everyday life
H_Q05h	Participate in real-time discussions on the internet, f. e. online conferences or chat groups	ICT in everyday life

Table 2 presents the resulting choice. For example, the first item (D_Q13) refers to the background question 'How often do you learn from co-workers/supervisors?' This is one out of three questions from the index 'learn at work': namely, the one with the largest variance of responses.

The LCA was carried out with the statistical software Mplus 7 and with the PIAAC scientific use file for the German population (Rammstedt et al., 2015), which comprises a representative sample of 5465 cases.[2] Pupils, students, apprentices and interns were excluded from the LCA.[3] This is because these individuals' skill use in their school, university or apprenticeship appears to be incomparable to other adults in the dataset because the educational aspect of their skill use does not fit in either of the two categories ('skill use at work' and 'skill use in everyday life').

Furthermore, adults who were unable to complete the background questionnaire for literacy-related reasons (Organisation for Economic Co-Operation and Development, 2013) were also excluded from the LCA. Finally, a sum of 4531 cases remained in the sample. Some responses are missing because of the routing process, meaning that the respondent was not asked particular questions because he or she is not currently or recently working (for the 'at work' questions) or because he or she is not working with a computer at work (for the 'ICT at work' questions). We recoded these missing values into the valid value '1', which means that this person 'never' uses a particular skill. This decision was made to retain the option of representative results for the part of the German adult population that is 16 to 65 years old and currently not mainly engaged with formal education or an apprenticeship.

We calculated three LCA models: one with a three-groups-solution, one with a four-group-solution and one with a five-groups-solution. Subsequently, we compared the results and the model-fits. The LCA solution with three groups was chosen as the best model, having the most interpretable results (Geiser, 2011). Furthermore, the average latent class membership probabilities were above 90% in this model, indicating that the classes were very different from each other.

The allocation of cases to the three classes was used for further cross-table calculations with variables from the PIAAC background questionnaire. The results of the basic sociodemographic characteristics, as well as the participation rates in formal and non-formal adult education, are described for each of the three classes below.

Results

Patterns of engagement by class

The three groups' patterns of engagement in the learning at work and in the skill use measures can be well described by their average frequencies (see Figure 1).

The skill use profile of the latent class no. 1 (blue line, Figure 1) was described as 'ubiquitous writing'. Adults belonging to this group differ from the other two latent classes mainly by a more frequent use of productive writing and numeracy skills at work and in everyday life. It seems as if their writing comprises paper-based as well as digital media. They 'write letters, memos or emails at work' almost every day, they

2 The term 'cases' designates the persons in the sample population.

3 By the variable C_Q07: subjective status.

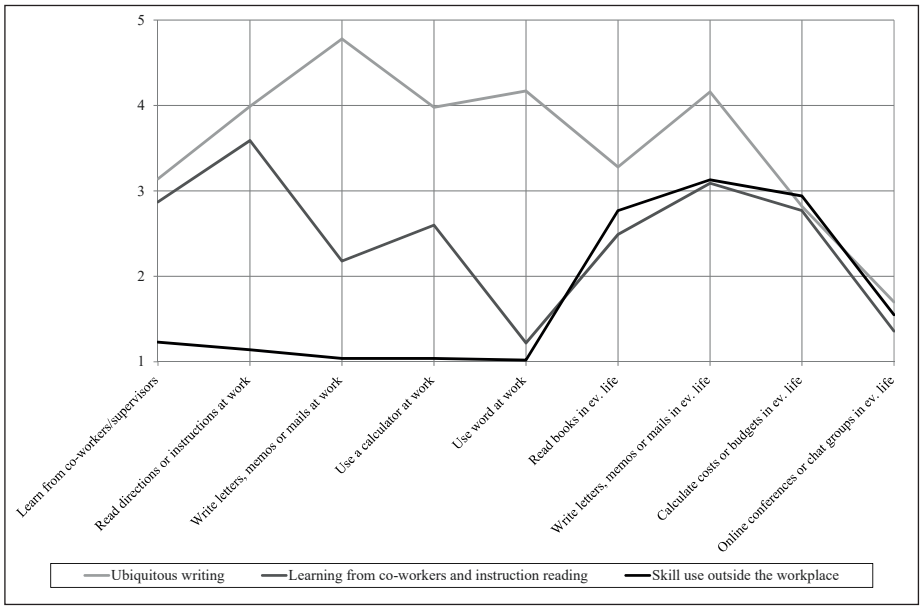

Fig. 1: Average frequencies of skill use at work and in everyday life (1 = never; 2 = less than once a month; 3 = less than once a week but at least once a month; 4 = at least once a week but not every day; 5 = every day).

use 'word processors at work' and they 'write letters, memos and emails in everyday life' on average several times a week.

The profile of latent class no. 2 (green line, Figure 1), called 'learning from co-workers and reading instructions' is characterised by a more moderate and – with regard to their working environment – a rather receptive skill use. This group's average response pattern shows that people in this category most frequently read 'directions or instructions at work' and they 'learn from co-workers and supervisors at work' at least once a month. Although they are employed, their workplaces do not require use of a word processor. In their everyday life, they also read books, write letters, memos or emails and calculate expenses or budgets several times a month, whereas they do not differ much from the latent class no. 3 in these variables.

The profile of latent class no. 3 (red line, Figure 1) was described by the term 'skill use outside the workplace'. Adults within this class are predominantly not employed and therefore do not use the observed skills at work. However, they show a similar skill use pattern in their everyday life as the second class. It could be argued that the people in this category compensate for a lack of skill use possibilities at work by their skill use in everyday life.

Table 3 shows the proportion of the three classes and the proportion of groups that were excluded from the LCA in advance within the German population.

Sociodemographic characteristics and literacy competence by latent class

Further comparative analyses regarding the sociodemographic characteristics and the distribution of literacy competence within the three latent classes more or less reflect scientifically well-known relations between competence, education and social class within the German society, as well as the above-named connection between literacy proficiency scores and skill use.

Tab. 3: Proportions of groups within the German population.

Latent class	**Profile**	**Proportion within the German population**
1	Ubiquitous writing	41.5%
2	Learning from co-workers and instruction reading	23.9%
3	Skill use outside the workplace	20.2%
Excluded from LCA in advance	Pupils, students, apprentice and internship	12.9%
Excluded from LCA in advance	Literacy-related non-respondents	1.5%

The following sociodemographic characteristics are over-represented within the largest class (the ubiquitous writing class) compared to the corresponding proportions in the German adult population:

- 53% are male (compared to 50% in the German adult population)[4]
- 79% are 25–55 years old (compared to 48% in pop.)
- 94% speak German as a first language (compared to 86% in pop.)
- 51% have a high education status (compared to 29% in pop.)
- 92% are currently or recently employed (compared to 66% in pop.)
- 73% are employed full-time (compared to 49% in pop.)
- 19% are employed part-time (compared to 17% in pop.)
- 70% participated in formal or non-formal adult education in the last 12 months (compared to 48% in pop.).

These findings illustrate that a high frequency in skill use, especially in terms of paper-based as well as digital writing at work, is connected to the socially privileged population subgroups. The direction of this correlation cannot be determined on this cross section research data. The following sociodemographic characteristics are over-represented within the learning from co-workers and reading instructions class compared to the corresponding proportions in the German adult population:

4 The Chi-square test for group differences was highly significant (p-value< 0.01).

- 57% are male (compared to 50% in the German adult population)[5]
- 52% are 45–65 years old (compared to 44% in pop.)
- 17% speak German as a second language (compared to 12% in pop.)
- 70% have a medium education status (compared to 52% in pop.)
- 91% are currently or recently employed (compared to 66% in pop.)
- 63% are employed full-time (compared to 49% in pop.)
- 27% are employed part-time (compared to 17% in pop.)
- 56% did not participate in formal or non-formal adult education in the last 12 months (compared to 41% in pop.).

When comparing the learning from co-workers and reading instructions group and the ubiquitous writing group in terms of their participation rates in adult education, the Matthew-Effect becomes obvious, which means that the higher the educational status, the higher the probability of participating. Although the correlation is assumed to be double-sided, it cannot be determined on this database.

The following sociodemographic characteristics are over-represented within the skill use outside the workplace class compared to the corresponding proportions in the German population:

- 63% are female (compared to 50% in the German adult population)[6]
- 38% are 55–65 year olds (compared to 20% in pop.)
- 20% speak German as a second language (compared to 12% in pop.)
- 27% have a low education status (compared to 17% in pop.)
- 58% have a medium education status (compared to 52% in pop.)
- 19% are unemployed (compared to 5% in pop.)
- 20% are in early retirement (compared to 5% in pop.)
- 11% are permanently disabled (compared to 3% in pop.)
- 22% are fulfilling domestic tasks or looking after children (compared to 6% in pop.)
- 79% did not participate in formal or non-formal adult education in the last 12 months (compared to 41% in pop.).

The lower employment rate of the skill use outside the workplace group is not at least determined by our methodical decision to recode the missing values of unemployed respondents (see above).

Nevertheless, the connection between cumulating structural disadvantages and the broad exclusion from skill use and adult education possibilities at the workplace are striking.

Table 4 shows the distribution of literacy competence (in terms of the PIAAC literacy levels) within the three classes compared to the German population. It demonstrates that frequent use of skills, especially writing practices at work, goes

5 The Chi-square test for group differences was highly significant (p-value< 0.01).

6 The Chi-square test for group differences was highly significant (p-value< 0.01).

along with higher literacy competencies in this class. Even so, the correlation is not explicitly linear. Not only the skill use outside the workplace group but also the learning from co-workers and reading instructions group have an over-represented proportion of adults (nearly 26%) whose literacy competencies scores on PIAAC are level one and below.

Discussion

We started our research from an idea of using the PIAAC dataset on individual skill uses to gain didactically relevant information for adult literacy and basic education and policy. Thereafter, we proceeded rather exploratively by combining the 'literacy as social practice' approach with quantitative research data. For this purpose, an LCA was carried out with selected skill use data from PIAAC. Nine single items were selected from a range of different skill use activities (learning, reading, writing, numeracy, ICT) and from the context of everyday life, as well as the vocational context. As a result, three different profiles of skill use could be described for the adult German population. These were called the following:

(1) Ubiquitous writing
(2) Learning from co-workers and reading instructions
(3) Skill use outside the workplace

According to the social practice approach of literacy, the sociodemographic characteristics of these three skill use groups have been analysed. The findings clearly indicate structural differences for literacy practices within the adult population. In particular, participation and position in the labour market proved to be relevant for individual skill use profiles. Employed (mostly male) first-language speaking adults with higher educational and vocational qualifications were strongly represented within the ubiquitous writing group. Also, employed adults who primarily have to read instructions and learn from co-workers/supervisors at work have larger proportions of lower educational and vocational qualifications, as well as larger proportions of second-language speakers.

Tab. 4: Classes by literacy competence (PVLIT).

	Ubiquitous writing (42%)	**Learning from co-workers and instruction reading (24%)**	**Skill use outside the workplace (20%)**	**German population**
Below Level 1	(0.7%)	3.8%	10.0%	3.3%
Level 1	5.5%	22.0%	28.5%	14.2%
Level 2	28.3%	45.3%	39.9%	33.9%
Level 3	48.7%	26.1%	19.4%	36.4%
Level 4/5	16.9%	2.8%	2.3%	10.7%

These results point to a socially relevant difference in reading and writing. As Heath (1983, 2012) and Gee (2003) show, literacy practices differ by class and socio-economic factors. Our findings indicate that practising writing at work seems to be a decisive factor for getting access and belonging to a higher social class than practising reading at work. These findings can be linked to the research results of Schroeder (2011). Schroeder conducted workplace analyses on the use of cultural techniques in 12 simple low-wage sector activities in Hamburg, Germany. He differentiates three types of workplaces with reference to requirements in communication, reading and writing: those workplaces with no written language requirements (clearing, packing goods, maintenance of green spaces and daily wage work); those with one-sided requirements for written language, requiring either listening comprehension, reading or writing on a very low difficulty level (cleaning, kitchen help, hospitality/catering, furniture transport and logistics); and those workplaces with complex requirements for written language (container handling, furniture assembly and car care). Large-scale-assessments often collect data and report about adult literacy by measures of reading comprehension. In light of our results, it could be an important issue to think about the social significance and distribution of writing practices and skills in the population for future literacy research and associated critical reflexions. Possibly, writing is more crucial for social participation than reading.

Furthermore, our findings illustrate that there is a comparably large proportion (20%) of adults in the population who are either outside the labour market or in jobs with low requirements in the observed skill use sections. The results of the latent class analysis show that this group seems to compensate for the few chances they have to use their skills at work by using them more often in their everyday life. With reference to the practice-engagement theory that people improve their skills with practice (Reder, 1994), this group nevertheless has to be considered as having less informal learning or skill development opportunities for work-related tasks.

Considering earlier research regarding the linear relationship between the frequency of engagement in skill use and the number of proficiency scores in the assessment domains (literacy, numeracy and problem solving in technology-rich environments) (Organisation for Economic Co-Operation and Development, 2013, p. 188), the findings here show some more differentiation. First, the three skill use profiles are not clearly hierarchical to each other. In particular, the frequencies in skill use activities in everyday life are very similar between the learning from co-workers and instruction reading group and the skill use outside the workplace group. The ubiquitous writing group has a little more frequent skill use in reading books in everyday life and writing letters, memos and emails in everyday life. Second, both groups, the learning from co-workers and reading instructions group and the skill use outside the workplace group, have large proportions of adults with lower literacy skills (level one and below). The stereotypical picture, that all adults with lower literacy skills would avoid any kind of literacy-related activity, is challenged by these research findings once more.

In summary, a research perspective that focuses on literacy in terms of what people do in social contexts (home, community and the workplace) can expand educational conclusions drawn from large-scale-assessment data. The knowledge about literacy-related preferences, habits and requirements of certain target groups provides didactical-rich information for adult education and workplace training policies. First of all, literacy education must be based on the everyday literacy practices of participants. Research results about the distribution of literacy practices in certain population groups can be used for the development of new formats of educational programmes, as well as in improvements in addressing target groups.

Although it was shown here that analysing quantitative skill use data with a social practice approach enables valuable contributions for literacy research, some weaknesses of the current PIAAC measurement instruments should be mentioned finally. First, some of the skill use items (e.g., the item 'writing letters, memos and emails') are not specific enough with regard to the differentiation of digital and paper-based literacy practices. Secondly, the function of those social practices cannot be examined and explained in more detail than 'it is used at work' or 'in everyday life' on this database. For these reasons, it is difficult to identify specific practices related to specific domains, modes and media. The second national Level One Survey (LEO, in Germany) is continuing the development of quantitative measurement instruments on individual skill uses, freed from the problem of item translation. Its background questionnaire comprises 48 questions on the specific use of basic skills in the following domains: work, finance, digital, politics, health, family and adult education. The results of the survey are expected to be available in 2019 (Grotlüschen & Buddeberg, 2019, May).

Data availability statement

The data that support the findings of this study are available from GESIS Data Archive. Restrictions apply to the availability of these data, which were used under licence for this study. Data are available at https://dbk.gesis.org/dbksearch/sdesc2.asp?no=5845&db=e&doi=10.4232/1.12385 with the permission of GESIS Data Archive.

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2. People who teach regularly

What do we know from PIAAC about their professionalization?[1]

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Introduction

Academic interest in what constitutes a profession and the process of professionalization has a long history often traced back to what became known as *The Flexner Report* (1910) which focused on medical education in the USA and Canada. In 1915, Flexner went on to propose six criteria that could be used to distinguish professions from other occupations (Flexner, 1915).

Professions such as medical doctors, judges and schoolteachers are often employed in the public sector in jobs related to health, justice or education, which provide a public good. Mapping these characteristics onto employees in education, it is usually agreed upon that they apply to schoolteachers, but seldom to adult educators (Martin et al., 2016; Schüßler & Egetenmeyer, 2018). However, the availability of new and internationally comparable datasets makes it possible to describe those who teach, in order to show that beyond those with educational studies there are also many people who teach in one form or another, but who have other academic backgrounds.

This paper aims to show that those who teach can be found in many industries, that they form a large subpopulation and their job status is far from being precarious. The majorities of those who teach have indefinite contracts, senior job positions, are more skilled and use technology more often than their population averages. The findings we will provide will challenge earlier findings on precarious jobs and low professionalization, because they do not only cover public adult education. Because of the richness and relevance of the findings, we organise this paper with a strong focus on empirical results. Still, the analysis is driven by a careful theoretical discussion on professionalization and a sound literature review on earlier findings.

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This article is based on a comparative analysis of data drawn from the Programme for the International Assessment of Adult Competencies (PIAAC) about the characteristics of those who teach. For the analysis, we selected 14 countries (Japan, Republic of Korea, Singapore, Denmark, Finland, Germany, Czech Republic, Slovenia, Ireland, United Kingdom, Italy, Spain, Turkey and Canada). The selection of countries is explained below in the methods section. We first review the theory and literature about characteristics of adult educators in terms of professionalism. Next, we provide a brief overview about which data are available, their theoretical background and their limitations.

The data will first be displayed as a comparison between countries. After describing the numbers of adults in each country who actively teach, we will describe these groups in more detail by their characteristics. Limitations concerning the differentiation between school and adult educators will be discussed. Finally, the relevance and implications of the findings are presented.

One goal of this analysis is to contribute to the international discussion of professionalism and the importance of data-based comparative research promoted by the Wurzburg Winter School Series (e.g. Egetenmeyer, Schmidt-Lauff, & Boffo, 2017). We would like to contribute a comparative baseline that hints at the scope and characteristics of the adult education profession in the participating countries.

One core finding is that the proportion of those who teach as part of their job is quite large. On average, in the 14 countries under consideration, 29% of the workforce teach regularly and an additional 11% teach occasionally.

Literature Review: Characteristics of professions and of those who teach

Flexner's (1915) criteria regarding professionalism were influential in the early 20th century and vestiges of them remain today as one form of tracking progress along the continuum of professionalization. One of the core questions posed by Flexner and others is whether 'professions' are special types of occupations (e.g. medicine, law, schoolteachers). If so, they are supposed to have several distinctive characteristics and functions (Combe & Helsper, 2017). These characteristics include diverse academic pathways, prestigious job status with high job security, and a certain level of seniority. If these can be categorized as 'hard facts' associated with professional work, there is also a 'soft aspect' (Combe & Helsper). That is, professional work is also characterized by the *interaction* between professionals (e.g. doctors, therapists, social workers, teachers, trainers, lawyers, judges) and their clienteles (e.g. patients, trainees, students). These 'soft skills' include the necessity to handle

> unsolvable paradoxical problems, which are caused by unavoidable conflicts between contradictory tendencies of orientation towards the tackling and handling of clients' problems. For example, the professional has to formulate prognoses about the unfolding of the clients' social and biographical processes, although there are

> no stable empirical grounds for them to be based on in the fluidity of social life. (Schütze, 2000, p. 49)

Professionalism in adult education does not only include the micro level of direct contact with clients or students, but also has a meso, macro and mega level (Egetenmeyer, Schmidt-Lauff, & Boffo, 2017, p. 10). These 'soft aspects' are particularly important for effective educational practice and are typically addressed in academic training programmes. Unfortunately, such detailed information is not collected in any internationally comparable large-scale survey on adult education.

For this analysis, we define professionalization as follows: Professionalization is shown in the interaction of academic education with the professional field and the prestige in the job. For our specific questions, these are a degree in education (field of study) and a profession in education (field of industry). Prestige is expressed by seniority (age), an indefinite contract (type of contract) and skilled occupations (job position).

Still, several case studies and reports show that professionalization in terms of the *formal study of adult education* is low and that job status is often precarious. Findings and theoretical interpretations paint a picture of 'low' or 'ongoing' professionalism among teachers of adults (Martin et al., 2016). Adult and further education started in several countries from a grassroots movement (Bierema 2012, p. 25) or major political shift (Guimarães, 2009; Jögi & Gross, 2009), but did not always lead to the development of formal study programmes with clear career pathways (Käpplinger, Popovic, Shah & Sork, 2015). Although some countries may require the completion of a specific course of study in adult education before one can work in a particular sector or type of programme, there are many settings where no such qualification is required (Käpplinger et al.).

Moreover, earlier findings of a nation-wide survey in Germany (*wb-personalmonitor*) that report *precarious job status* for adult educators, are based on the *public sector of adult education* (Martin et al., 2016), but do not cover occupations in commercial or industrial sectors. Here we may find *prestigious jobs and seniority* more often than previously expected.

This German *wb-personalmonitor* on adult education staff and teachers (Martin et al., 2016) is a good starting point for examining similar issues using the PIAAC data. The *wb-personalmonitor* covers only publicly funded adult education. Companies, freelance trainers and coaches as well as commercial training centres are excluded from the survey. PIAAC data offers the possibility to go beyond this limitation. Moreover, the survey was conducted in Germany. The empirical evidence examined below based on the *wb-personalmonitor* serves as a foundation for our comparative analysis using the PIAAC data.

The German *wb-personalmonitor* survey provided evidence of the characteristics of adult education staff in Germany, including age, gender and academic background. The population covered by the German survey consists of those employed by publicly funded as well as commercial training institutions, as well as freelance

teachers and trainers of all kinds. Koscheck and Ohly's (2016) analysis only covers the sector that is accessible to the public, excluding private adult education providers. According to the *wb-personalmonitor*, adult educators are on average 50.5 years of age. Between 2014 and 2016, the average age has increased from 47 to 50.5 years (Martin, 2016a, p. 64). An earlier survey of teachers in adult basic education found that half of them are above 50 years and only teach one course a week (Grotlüschen, 2011). From the standpoint of training organizations, the increasing age of adult educators leads to concerns over the change of generations (Franz & Scheunpflug, 2009). However, seniority seems to be a relevant characteristic for this profession because longer work experience and greater accumulated knowledge may be positively related to increased credibility and teaching effectiveness. We argue that age is a positive factor in this area.

Women and men are equally represented among those who teach and work in adult education in Germany (Martin, 2016a, p. 66). The majority (70%) work as freelancers (Elias, 2016, p. 74), which reflects the type of contracts typically held by teaching staff in German adult training centers.

Among German staff in adult education, 64% hold academic qualifications, well above the German average of below 20% (Koscheck & Ohly, 2016, p. 110). Roughly, a quarter (26%) studied in one of the educational sciences programmes (including teacher education programmes) (Koscheck & Ohly, p. 114). Gauging from the percentage of practitioners having obtained degrees in educational science, professionalization among those who actively engage in adult education is low in Germany.

The degree of professionalization can be compared not only by degrees and certificates, but also by the competencies of the people who teach. A comparison of teachers' literacy and numeracy skills with students' performance based on PIAAC and PISA (Programme for International Student Assessment) data from 31 countries shows a positive relationship (Hanushek, Piopiunik & Wiederhold, 2019). Moreover, the literacy and numeracy skills of teachers explain some of the differences in the comparison of student performance between countries (Hanushek, Piopiunik & Wiederhold). As far as we know, there is no comparable study available for adult educators. Literacy and numeracy proficiencies are basic competences that form the basis for further competences such as problem-solving in technology-rich environments (OECD, 2013).

Earlier findings on technology and professions led to the label 'high touch, low tech' (Vrbancic & Byerley, 2018) to refer to occupations which rely primarily on human relationships and related soft skills rather than ICT (information and communications technology). While in many businesses, technology enhances productivity, this is not always the case in parts of the health and education sectors (Arcand, 2015; Mottarella, Fritzsche, & Parrish, 2005; Vrbancic & Byerley, 2018). Having close contact with clients, patients and students may be a good approach in many cases. It also has negative aspects if it is associated with resistance to the use of ICT. German scholars claim that adult educators tend to have lower levels of experience with digital media and e-learning (Herber, Schmidt-Hertha, & Zauchner-Studnicka, 2013).

Jobs in adult education consist of many more roles than teaching, even if teaching is relevant for *all* of them (Martin, 2016c, p. 99). Before proceeding with the analysis, it is worth noting that our use of PIAAC data that follows focuses on the population who actively teach, excluding management staff of training institutions and people who lobby or advocate for adult education on a policy level. This analysis uses the self-reported activity of 'teaching' as a core and defining activity for (adult) education staff. *Those who teach* also includes persons who teach in schools.

Findings show a precarious job status of adult educators in the *public sector*, while little is known about those who teach elsewhere.

Research questions

The following section presents a set of research questions for examining three issues related to people who teach in the PIAAC sample: academic pathways, competence as measured by the PIAAC skill proficiency, and ICT use.

RQ1: Do those who teach have a low level of professionalization but do they have a higher job prestige?

We assume that the findings from the *wb-personalmonitor* will be confirmed by the PIAAC data, even if the PIAAC datasets include schoolteachers. We assume that the majority of people who teach have not studied educational sciences (with regard of the field of study and the field of industry). Conversely, we expect a prestigious job status with higher seniority and higher job positions and indefinite contracts (in terms of age, position and contract).

We do not control participation in education and training in this context. Specific academic qualifications are crucial for our definition of professionalization. Acquired qualifications e.g. on-the-job training or non-formal education, are not part of our definition.

RQ 2: Do those who teach have higher skills in literacy, numeracy or problem-solving in technology-rich environments than others do?

Compared to the overall country average, German adult educators more often hold academic degrees (Koscheck & Ohly, 2016, p. 110). We wonder whether this is also the case in other countries. Formal qualifications are different across countries and thus difficult to compare. The skills in literacy, numeracy and problem-solving in technology-rich environments measured under the PIAAC programme fit better for the purpose of comparing skills of those who teach across countries and not only within countries. We assume that the skills in the two domains are higher among persons who – regularly or occasionally – teach than country averages, with a varied picture in the cross-country comparison.

RQ 3: Do those who teach have lower ICT use than others do?

German adult educators have little experience with the use of ICT. We therefore assume that people who teach use ICT to a lesser extent than the country average.

Methods: Selected country datasets and selected variables

Results of the PIAAC were first published in 2013 (OECD, 2013). It is the latest of a number of surveys on adult basic skills administered by or in cooperation with the OECD, e.g. the International Adult Literacy Survey (OECD & Statistics Canada, 2000) or the Adult Literacy and Life Skills Survey (OECD &Statistics Canada, 2005). To examine the characteristics of those who teach, we draw on national PIAAC data files from 14 countries of the first round (2011/2012) and second round (2014/2015) of PIAAC (OECD, 2013, 2016). The selection covers countries represented in the *COMPALL Conference* in Wuerzburg, 2018, plus Canada as an example from North America. The rationale for selecting these countries is the large variation in size, culture, economy and configuration of the adult education sector, as well as the assumption that the countries represented at the conference have an interest in gathering and analyzing basic comparative data. The selection consists of all three representatives from Asia in the first two PIAAC Rounds – Japan, the Republic of Korea and Singapore – and of representatives from different regions of Europe. Denmark and Finland are two representatives of the north of Europe. Germany, Ireland and the United Kingdom are representatives from Central Europe. The Czech Republic and Slovenia are two post-communist states. Italy from the south and Spain from the southwest of Europe plus Turkey represent the southeast of Europe.

The data provides extensive information on practices of skills in workplaces and in everyday life. These variables are derived from a set of questions about different types of skills used at work. The data belong to the *job requirements approach* and follow the logic of *supply of skills* and *demand of skills* (OECD 2011, p.12) in market economies. PIAAC is a study that tries to inform and compare economies in order to improve their economic performance. This focus on economic performance on the first sight makes it less interesting and usable for those in the educational sciences, and often the variables have to be re-interpreted from an educational perspective (Grotlüschen, 2018).

The set of *job requirement variables* covers teamwork and communication skills – such as presenting and teaching. It also covers decision-making and supervision, job autonomy and satisfaction and much more. One limitation of these data is that they are based on self-reports which may contain cultural biases and reflect social desirability. Sadly, the variables do not cover all activities of adult education, so there are limits to the inferences that can be drawn.

Activities in adult education relate to micro-, meso-, macro-, and mega-levels (Egetenmeyer, Schmidt-Lauff, & Boffo, 2017, p. 10). These roughly map onto the setting inside the classroom (micro), the organization of teaching and training

programmes (meso), national policies (macro) and supranational policies (mega). Adult education work takes place on all these levels and the content of jobs usually goes beyond teaching itself, although teaching constitutes the main activity for adult educators on all levels (Martin, 2016c, p. 100).

While it is difficult to locate people within the PIAAC sample by their engagement at meso-, macro- and mega-levels of adult education, PIAAC data arguably provide a good proxy for activities at the micro-level. In particular, two of the skill use questions are related to activities at the micro-level of education, namely *teaching* and giving *presentations*. We chose to use the variable of the frequency of teaching people (F_Q02b) instead of the one on presentations (F_Q02c) out of the concern that giving presentations is an integral part of a wide range of occupations yet may lack an educational focus. By contrast, the frequency of the variable *teaching people* in the PIAAC data reflects regular teaching at least once a week or occasional teaching at least once a month in the workplace. Of course, this includes schoolteachers as well as adult educators. We discuss the data while fully aware of this fact.

To answer our research questions, we focus on a variable about giving instructions to other people at work (F_Q02b). The question was asked to employees ('How often does your job usually involve instructing, training or teaching people individually or in groups?') and to people who are unemployed at least in the past 12 months ('How often did your last job usually involve instructing, training or teaching people individually or in groups'). The response options were 'every day', 'at least once a week but not every day', 'less than once a week but at least once a month', 'less than once a month' and 'never'. We collapsed the first two categories under the description "at least once a week" and the last two categories under the description 'rarely or never'. The middle category was unmodified. We describe those who give instructions at least once a week as *teaching regularly*. We have not omitted any parts of the sample, but consider all persons who have indicated that they teach. Reducing the data to only those who did not study education would have excludes the majority of schoolteachers, but also have excluded adult educators who did study educational sciences.

We also modified the variable 'Current work – Type of contract' (D_Q09.) Due to the small number of cases, the categories 'a temporary employment agency contract', 'an apprenticeship or other training scheme' and 'other' were combined as a new category labelled 'other'. Finally, we modified the variable ISIC1C 'Industry classification of respondent's job at 1-digit level (ISIC rev 4), current job (derived)'. All values without an industry classification such as 'valid skip' were set as missing.

According to the unweighted numbers of cases, the sample has a total size of 77,681 cases. Country samples vary from 21,764 in Canada to 2,698 in Turkey. The big sample size in the Canadian dataset means that when reporting international averages, a possible bias has to be taken into account.

The IDB Analyzer and SPSS programmes were used for the analyses. In order to answer the research questions, descriptive analytical methods were chosen (frequencies and means). The population shares are displayed in graphs by country

and frequency of teaching. Significance of differences is controlled by using the standard errors with regard to the sample weights (5% level). To keep the standard errors intact, we did not eliminate cases from the sample. To verify the hypotheses, sociodemographic variables such as age, gender, contracts, formal education were integrated into the analysis. The next step involves competences (literacy, numeracy and problem-solving in technology-rich environments), which have been measured in PIAAC with Plausible Values. All 10 plausible values were applied.

Findings

Figure 1 shows that there are considerable differences between countries in the number of people who teach. Note that schoolteachers are included in all figures.

On average, 29% of the sample across all countries teach at least once a week and 59% teach rarely or never. The comparison between countries reveals clear differences without showing regional patterns. In seven of the countries, more than one-third of adults teach at least once a week. In three of the countries, a quarter of adults teach at least once a week.

On average, of the people who teach regularly, 57% are men and 43% women. In almost all countries, there are more men than women among those who teach regularly (Figure 2).

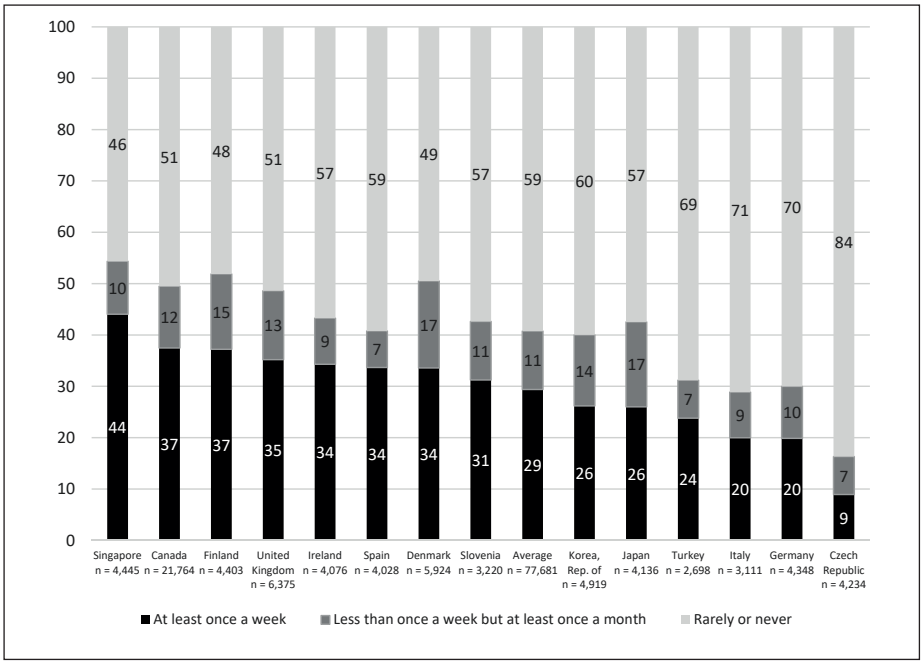

Fig. 1: Teaching people by country (percentage)
Source: Own calculations based on Programme for the International Assessment of Adult Competencies 2012 and 2016 datasets. n=number of cases is displayed unweighted, percentages are weighted.

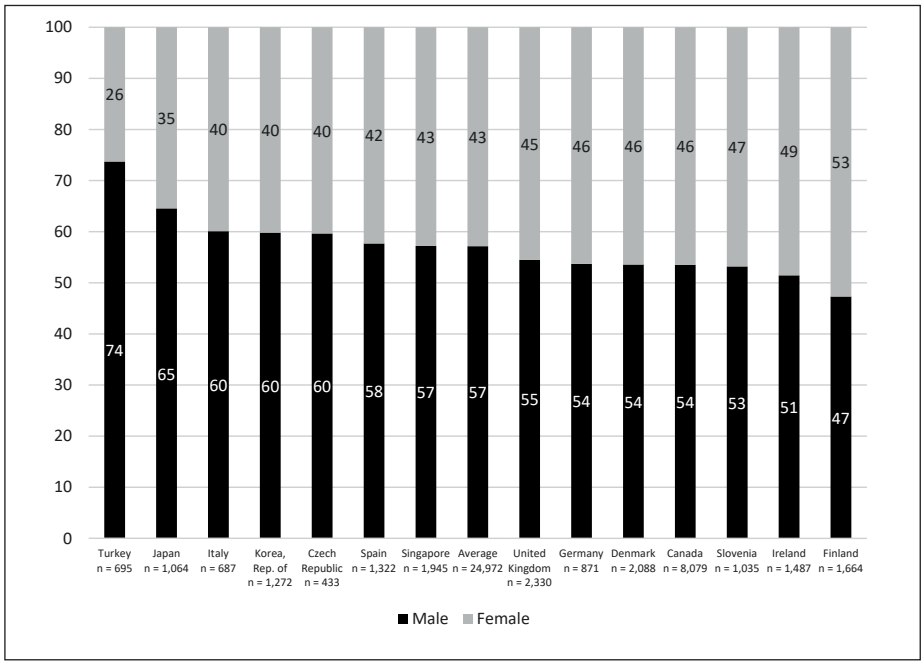

Fig. 2: Teaching people at least once a week by country and gender (percentage) Source: Own calculations based on Programme for the International Assessment of Adult Competencies 2012 and 2016 datasets. n=number of cases is displayed unweighted, percentages are weighted.

An exception is Finland (47% male, 53% female). In about half of the countries, the difference is more than ten percentage points (Czech Republic, Italy, Spain, Turkey, Japan, Korea and Singapore). The largest gaps are found in Turkey (74% male, 26% female) and in Japan (65% male, 35% female). Canada is near the average with 54% men and 46% women.

RQ1: Those who teach have a low level of professionalization but have high job prestige

One part of the operationalization of 'professionalization' is the field of study pursued by those who teach. We then checked the business or industries in which they worked. Another group of subtests focuses on prestige and seniority in terms of contract, job position and age.

The majority of those who teach did not study educational sciences. Examining the fields of study of those who teach regularly reveals a wealth of different areas (Table 1).

Tab. 1: Teaching people at least once a week by country and area of study (percentage) Source: Own calculations based on Programme for the International Assessment of Adult Competencies 2012 and 2016 datasets. n=number of cases is displayed unweighted, percentages are weighted.

	Teacher training and education science	General programmes	Humanities, l anguages and arts	Social sciences, business and law	Science, mathematics and computing	Engineering, construction and manufacturing	Agriculture and veterinary	Health and welfare	Services
Turkey (n = 501)	17	20	4*	23	14	12*	1*	3*	5*
Denmark (n = 1,943)	15	10	5	15	8	19	3*	14	10
Czech Republic (n = 413)	15	2*	8*	16*	5*	35	6*	2*	11*
Ireland (n = 1,145)	15	4*	9	21	13	14	2*	15	7
Germany (n = 834)	13	4*	5*	23	5*	28	1*	14	7*
Spain (n = 950)	13	7	14	20	12	17	2*	12	4*
Average (n = 22,160)	*12*	*12*	*9*	*20*	*10*	*21*	*2*	*9*	*6*
Canada (n = 7,241)	11	22	7	17	11	15	1	11	6
Slovenia (n = 993)	10	7	5*	24	8	31	2*	6	6
Singapore (n = 1,625)	10	10	6	25	13	28	0*	5	2*
Japan (n = 1,001)	9	35	5	13	3*	20	3*	7	4*
Finland (n = 1,538)	9	10	6	19	4	25	2*	19	7
United Kingdom (n = 2,215)	8	14	17	21	11	17	1*	10	0*
Rep. of Korea (n = 1,186)	8	23	11	13	12	22	2*	6	4*
Italy (n = 575)	8*	5*	16	24	19	14	2*	6*	6*

*The number of cases is <60.

Only a small number of people studied in the area of *teacher training and education science*. On average, 12% of those who teach regularly have studied *teacher training and education science.* The range is between 17% in Turkey and 8% in the Republic of Korea and Italy. Among people who engage in teaching, the predominant academic background is in *engineering, manufacturing and construction*. For this category, the range is from 12% in Turkey, 14% in Italy and Ireland to 35% in the Czech Republic. In the area of study of *social sciences, business and law,* values vary from 13% in Japan and the Republic of Korea to 25% in Singapore (average for all countries is 20%). Japan and the Republic of Korea form a contrast to this pattern. In both countries,

most of the people who teach studied *general programmes*[2] (average for all countries is 12%). In Japan, about one-third of the people who teach regularly studied *general programmes*. Other countries with a share of more than 20% from the area general programmes are the Republic of Korea, Turkey and Canada. In the Czech Republic, Germany, Ireland Slovenia and Spain this area of study only plays a marginal role. Another notable area of study in some countries is *health and welfare*. Denmark, Finland, Ireland, Germany, Spain and the United Kingdom have 10% or more in this area (average for all countries 9%). The other countries have percentages below 10%.

The majority of those who teach are in business or engineering industries. To distinguish between different economic sectors, PIAAC data use the United Nations' International Standard Industrial Classification of All Economic Activities (ISIC). ISIC classifies 21 sectors (UN, 2008). People whose jobs imply some type of teaching mainly work in four economic sectors. These are

- Education,
- Manufacturing,
- Wholesale and retail trade; repair of motor vehicles and motorcycles,
- Human health and social work activities.

The *education* sector accounts for about a third of the people who teach in the Czech Republic. For the other European countries, the range is between 16% and 21%. For Canada, the value is 14%; the average value is 17%.

A quarter of the Slovenian people who teach regularly are employed in the *manufacturing* sector – the highest number in this sector for all countries. In Canada, Spain and the United Kingdom the proportion is lowest at 10%, Japan and the Republic of Korea are at 20% and Singapore at 14%. On average, 16% of those who teach regularly are employed in the *manufacturing* sector.

The *wholesale and retail trade; repair of motor vehicles and motorcycles* sector has a range of 8% for Czech Republic (n=33) to 15% for the Republic of Korea. The average for all countries is 11%.

Especially in Denmark, Finland, Ireland, the United Kingdom and Germany, the sector *human health and social work activities* accounts for approximately 20% of the people who teach regularly. For Japan and Canada, the value is 13%. In the Republic of Korea and Singapore, the value is 6%. The average for all countries is 11%.

The majority of those who teach have indefinite contracts. The majority of people who teach regularly have an indefinite contract. The average for all countries is 76%. In Denmark, Finland, Germany, Slovenia, the United Kingdom and Italy, more than 80% have indefinite contracts. The Czech Republic, Ireland and Spain have values >70%. Turkey has the lowest value for a European country with 57%. This percen-

2 The OECD definition is: 'General education programmes are not explicitly designed to prepare participants for specific occupations or trades, or for entry into further vocational or technical education programmes (less than 25% of programme content is vocational or technical).' (OECD, 2014, p. 310).

tage is similar to the 59% of people with an indefinite contract in the republic of Korea and in Singapore. Japan also has more than 80% with an indefinite contract. For this aspect, data are not available for Canada.

On the other hand, Turkey (26%), the Republic of Korea (22%) and Singapore (17%) have a high proportion of people without any job contract (average for all countries is 7%). In the other countries, this is rare.

The majority of those who teach are in higher job positions. Another classification structure is the International Standard Classification of Occupations by the International Labour Organization, also part of the United Nations classifications. For this paper, we use broad categories consisting of four classes because of the low number of cases:

> (1) Skilled occupations (e.g. legislators, senior officials and managers; professionals; technicians and associate professionals); (2) semi-skilled white-collar occupations (e.g. clerks; service workers and shop and market sales workers); (3) semi-skilled blue-collar occupations (e.g. skilled agricultural and fishery workers; craft and related trades workers; plant and machine operators and assemblers); and (4) elementary occupations (e.g. labourers). (OECD, 2013, p. 132)

In all countries examined, the majority of people who teach regularly are in skilled occupations. The lowest percentage in this class are in Turkey, Japan (both 47%) and the Republic of Korea (44%). In all other countries, more than half of the people who teach regularly are in skilled occupations. Singapore has the highest value with 71% followed by Slovenia and Canada with 65%. The average for all countries is 57%.

Teaching activities are often performed by senior age groups. A similarly differentiated picture emerges when looking at the distinction of teaching persons by age. As described above, for Germany the *wb-personalmonitor* has determined an increasing average age for adult educators. Based on this, we assume a high number of older people teaching. Our focus is on seniority. Therefore, we explicitly consider those people who teach regularly who are older than 44 years old. Of the people who teach regularly in Turkey, the fewest have an age over 44 years. The proportion is 19%. Of those who teach regularly and are over 44 years old, Germany and Denmark have the highest proportion with 46%. The age distribution in Japan, the Republic of Korea and Singapore lies between these European countries. In Japan, the proportion of adults over 44 years of age who teach regularly is 40%, higher than in Singapore (34%) and the Republic of Korea (32%). Canada is above average in the 44+ age group (41%). The average for all countries is 37%.

RQ 2: Those who teach have higher skills in literacy, numeracy or problem-solving in technology-rich environments than others do

PIAAC measures three domains of skills: literacy skills, numeracy skills and problem-solving in technology-rich environments skills. These are displayed on a scale

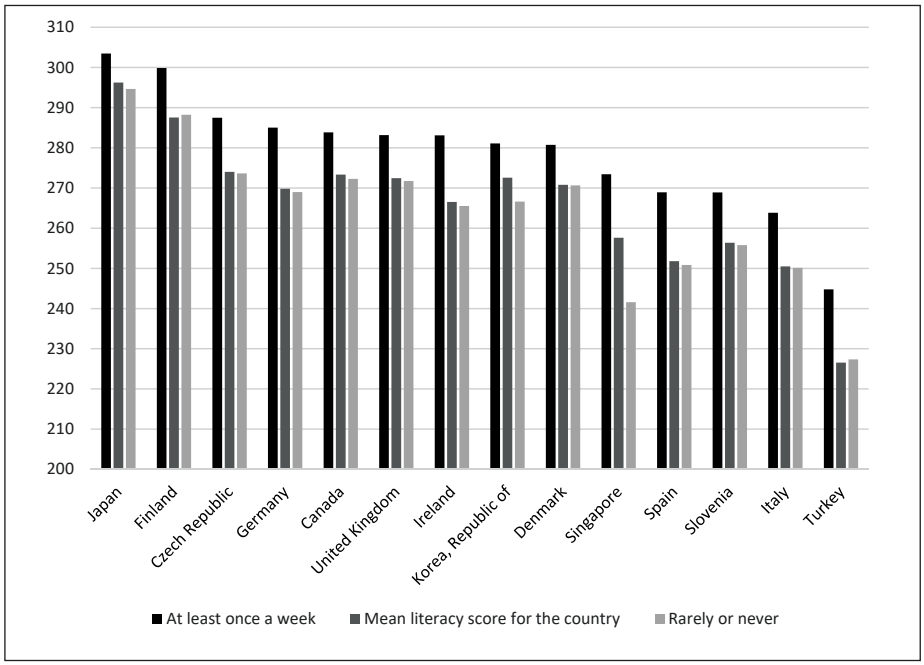

Fig. 3: Mean literacy score by country and teaching people (points)
Source: Own calculations based on Programme for the International Assessment of Adult Competencies 2012 and 2016 datasets.

with a range from 0 to 500 (OECD, 2013). Not surprisingly, the mean literacy scores of those who teach at least once a week are higher than the mean literacy scores for the respective national population and for people who teach rarely or never (Figure 3).

Figure 3 shows a comparison between the mean literacy score of those who teach at least once a week, the mean literacy score of the country in question and the mean literacy score of those who rarely or never teach. The largest difference between the people who teach rarely or never and people who teach at least once a week is in Singapore. The difference is 31 points (242 points to 273 points). In contrast, the smallest difference can be found for Japan (295 points to 303 points).

The biggest difference between the national literacy mean score and the mean literacy score of people who teach at least once a week exists in Turkey with 227 points to 245. In almost all countries examined, the literacy mean score for the country does not differ significantly from the literacy mean score of those who teach rarely or never. Only for Singapore and the Republic of Korea, the difference is more than one point. The literacy mean score for Singapore is 258 points and for people who teach rarely or never, it is 242 points. On the same measures, the difference is 6 points in the Republic of Korea.

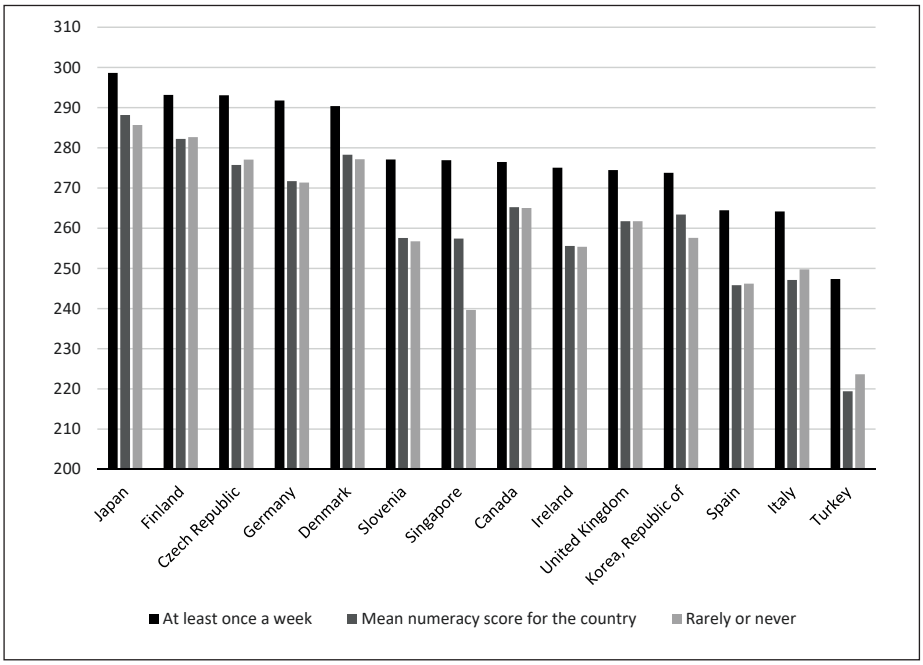

Fig. 4: Mean numeracy score by country and teaching people (points)
Source: Own calculations based on Programme for the International Assessment of Adult Competencies 2012 and 2016 datasets.

Figure 4 shows that this pattern for literacy also applies to numeracy. Those who teach have a higher mean numeracy score than those who rarely or never teach. Again, Singapore shows the biggest difference between people who teach rarely or never and people who teach at least once a week (240 points to 277 points). The smallest difference between these two categories exists for Finland and Canada. The difference for Finland is 10 points (283 points to 293 points) and for Canada 11 points (276 points to 265 points). The biggest difference between the mean national numeracy score and the mean numeracy score for people who teach at least once a week exists in Turkey. The value for this case is 28 points (219 points to 247 points). In summary, we note that in most countries the literacy and numeracy scores of those who teach rarely/never correspond to the respective national average and that those who teach frequently thus represent a particularly highly skilled group.

The results for skills in problem-solving in technology-rich environments confirm the distributions as they exist for literacy skills and numeracy skills. For this reason, no presentation has been made here.

RQ 3: Those who teach have higher ICT use than others do

The PIAAC data contain a number of variables describing the use of ICT. ICT use is grouped into ICT use at home (use of ICT in everyday life) and at work (use of

ICT at the workplace). An index variable exists for each of these areas. Both indices for ICT skill use contain the frequency of using e-mail, internet for information purposes, conducting transactions online, spreadsheets, word and real-time discussions (OECD 2013). Due to the small number of cases for the individual gradations of ICT use, we have made a dichotomous classification. The indices for ICT skill use are scaled in 20% steps. We call people who use over 60% of ICT skills 'high ICT users'. In the following analysis, we report the difference between the percentages of people who regularly teach and the national average. This difference is shown in percentage points. As an example, in Singapore, 47% of people who teach regularly are high ICT users at home. The number of high ICT users at home among all Singaporeans is 43%. The gap among high ICT users at home is therefore 4 percentage points.

Table 2 shows a comparison between people who teach regularly and the country average by ICT use at home. In all countries, those persons who teach use ICT at home more often than the country average. The difference is highest in Slovenia (11 percentage points) and Turkey (10 percentage points). Japan has the smallest difference (2 percentage points).

Tab. 2: Using ICT at home: difference between the percentages of *people who teach regularly* and the percentages of the *country average*
Source: Own calculations based on Programme for the International Assessment of Adult Competencies 2012 and 2016 datasets.

	Japan	**Italy**	**Denmark**	**Ireland**	**Singapore**	**Canada**	**United Kingdom**	**Korea, Rep. of**	**Germany**	**Finland**	**Spain**	**Czech Republic**	**Turkey**	**Slovenia**
Share of *high ICT users* (differences)	2	4	4	4	4	5	5	5	6	6	8	9	10	11

Tab. 3: Using ICT at work: difference between the percentages of *people who teach regularly* and the percentages of the *country average*
Source: Own calculations based on Programme for the International Assessment of Adult Competencies 2012 and 2016 datasets.

	Germany	**Canada**	**Ireland**	**Spain**	**Slovenia**	**United Kingdom**	**Finland**	**Denmark**	**Singapore**	**Italy**	**Japan**	**Czech Republic**	**Korea Rep. of**	**Turkey**
Share of *high ICT users* (differences)	5	5	5	5	6	7	7	7	7	8	8	9	10	12

People who teach regularly use ICT more often at work than the national average (Table 3). This applies to all countries examined. The highest gap among high ICT users and the country average exists in Turkey (12 percentage points). Canada, Germany, Ireland and Spain have a difference of 5 percentage points, which is the smallest difference between people who teach regularly and the country average.

Discussion

Limitations

When focusing on adult education, one limitation of this description of adults who teach regularly (i.e. once a week or daily) or occasionally (i.e. at least once a month) consists in the mix of *teaching in schools* and *teaching adults*. There is no clear method to separate these two groups:

- First, reducing the data to only those who did not study education will surely exclude the vast majority of schoolteachers, but may also exclude adult educators who *did* study educational sciences. The other way around, some teachers have entered the educational system without studying educational sciences (Blömeke, 2006). This is also a recent problem in Germany, but the PIAAC data collection took place in 2012. Still, this first criterion is the strictest and will be used for discussing the findings.
- Second, excluding the public sector would exclude some teachers, but in many countries school teaching also takes place in the private sector. Furthermore, excluding the public sector reduces the data to private adult education.
- Third, looking at the industries and excluding education would safely remove schoolteachers from the dataset, but will also exclude adult educators who work in the educational sector such as second chance schools and adult basic education. In many countries, this would affect large parts of the adult educational sector.

Moreover, for displaying descriptive data and population shares, that includes working with replicated weighs, reducing datasets is not recommended[3].

Overall, because more than 80% of those who teach did not study educational sciences, this group dominates the descriptive data reported here. We therefore assume that the findings roughly apply to adult educators (i.e. those who regularly or occasionally teach adults as part of their work), even if the 'people who teach' contain up to 20% schoolteachers plus the share of schoolteachers who did not study educational sciences. However, the statement remains that around 80% have no pedagogical background. We consider them to be 'de facto' adult educators because of their function (which does not have to be their main task in the job). For this

3 Discussion at the 2014 GESIS workshop on working with PIAAC data, recommendation by IEA representatives. IEA is responsible for weighing in PIAAC.

reason, studies do not go far enough when they (such as the wb-personalmonitor) focus exclusively on the education sector. This may be useful when considering teaching at school, but not for adult education.

Moreover, the subpopulation of those who teach has been described according to the *hard facts* that characterize professions. It would also be interesting to describe the *soft facts*, such as job satisfaction, job autonomy, readiness to learn, learning at work and participation in adult education and training. German findings show that even precarious job positions may correlate with high job satisfaction (Martin, 2016b, p. 140). It would be interesting to investigate this more deeply.

Relevance

Analyzing data from 14 PIAAC participating countries, this study presents a picture of people who teach regarding their academic backgrounds, various industries associated with their workplace, their competence as measured by PIAAC skills in literacy, numeracy and problem-solving, and their frequency of ICT use at work and at home. Overall, a substantial share of the adult workforce (29%) in these 14 countries claim that they regularly teach. The overall shares are large in several countries, varying from 9% in the Czech Republic to more than 44% of the population in Singapore. The proportion of those who teach is much higher as expected when only teaching within the adult educational sector is taken into account. For Germany, this large proportion is a valuable addition to former research such as the *wb-personalmonitor* (Koschek & Martin, 2016, p. 50). The *wb-personalmonitor* only covers the public adult education sector, but not teaching activities in companies. With PIAAC data we were able to widen this focus with the important result that the number of those who teach – at least in Germany – is probably 10 times as high as the numbers of those who teach solely in the public adult educational sector.

RQ 1 reveals that if one uses a match between one's academic field of study and his/her profession as an indicator of high professionalization, the PIACC data suggest that those who teach generally have a low level of professionalization. The share of studies in educational sciences among those who teach is low and varies from 8% to 17%. Across all 14 countries, more than 80% of those who teach did not study educational sciences. The formal career pathways of the majority of those who teach do not match the characteristics of other 'professions' such as medical doctors, lawyers, judges or schoolteachers. On the other hand, the majority belong to the highest class of occupations, more than three-quarters have indefinite contracts and senior age groups are over-represented. This indicates seniority and job prestige. Therefore, the RQ shows an ambiguous picture of the degree of professionalization. High job prestige contrasts with a low proportion of degrees in educational studies. It might be the case that people have opportunities to teach others after climbing up the career ladder at later ages and stages of their careers. We propose that this combination of characteristics, including age, skills, technology and professional position reflects what we call 'seniority'. We further believe that this seniority is

positively correlated with the prestige of those adult educators who teach outside the public educational sector.

There has been intense and controversial discussions for many years on whether or not professionalization in adult education is desirable. Some scholars argue that adult education should strive for greater professionalization (Cervero, 1992; Egetenmeyer, 2016; Käpplinger et al., 2015) while others claim adult educators' diverse backgrounds and variable contexts of practice should be acknowledged and further professionalization should be resisted (Collins, 1992; Nicoll & Edwards, 2012). Of course, the more recent discussions have occurred in a shifting global context where national qualifications frameworks, competency-based training, the desire for greater transferability of qualifications and increased mobility of labor have influenced policy makers and academics alike (Jütte & Lattke, 2014). There are pressures from outside the field to specify required competencies, develop more uniform preparation programs and for greater accountability for the outcomes of practice. A major complication of responding to these pressures is that many of those who teach adults do not identify themselves as adult educators (Bierema, 2010) and may not realize there is a potentially useful area of academic study they could pursue.

The findings also reveal that the vast majority of those who teach do not teach in schools, because in most cases, being a schoolteacher requires a formal degree in educational sciences or in teacher education. Roughly 80% of those who teach, do so outside a formal school setting. Instead, they teach in several industries, including manufacturing, trade sectors, and social and health sectors. This may suggest that those who teach are employed in training institutions that offer further education in their specific sector. This may also indicate that they have a regular job and once a week meet with colleagues whom they teach. It might also be the case that they have a regular job and give classes in the evening at a different institution. Or they teach youngsters, newcomers and apprentices in their companies or institutions.

The findings on the skills of people who teach (RQ 2) show average skills in literacy and numeracy significantly higher than the national average for most of the countries. Those who do not teach have skills on the national average, while those who teach represent a particularly high skilled population. Higher competences of the teachers have a positive influence on the performance of the learners. It is therefore positive to note that those who teach regularly have on average higher skills than the national average. There are significant differences between countries. For example, the skills of regular teachers in Turkey are still below those of Italian people who never teach.

Those who teach as part of their work not only show higher literacy and numeracy skills but also apply these skills more often when using ICT. The findings concerning ICT use (RQ 3) indicate that those who teach use ICT *more* often than others both at home and at their workplaces. This may seem surprising since it contradicts some earlier findings (Arcand, 2015). The difference may be attributed to different samples between this study which is based on PIAAC and previous samples taken in other surveys. The PIAAC sample includes individuals who teach

in all economic sectors, including manufacturing, engineering, business, health and social work; whereas earlier findings are based on samples only focusing on training institutions that are accessible to the public. The answers on where they use ICT most (home or work) vary between countries. This may depend on whether those who teach find full ICT equipment at their workplace (such as in trade industries) or not (such as in schools). Thus, the availability and accessibility of ICT may be a reason for the high ICT use at work. The digitalization of society and the world of work is progressing steadily. This results in new learning needs. The regular use of ICT requires a certain competence, which can then be passed on to learners. The frequent use of ICT by people who teach is therefore positive. There seems to be a need for better ICT equipment in the workplace in individual countries.

Widening the perspective from the publicly funded sector to the general workforce was possible with the PIAAC data. It enriches the understanding of adult education with regard to people who did not show up in earlier surveys. It will remain difficult to identify adult education and training for comparable surveys, and PIAAC only offers fair proxies. For those who care about professionalization in adult education, PIAAC gives a sound base for further, in-depth research.

We displayed the results for all countries under consideration, but further research will be required to fully understand country differences. For the case of Germany, the comparison with the *wb-personalmonitor* revealed interesting comparison with prior findings. Similar and more detailed analysis is possible for other countries. We strongly recommend small-scale analyses with deep understanding of countries' educational systems and historical background that may start from the findings displayed here, but narrow them down and use qualitative approaches to explain some of the country differences laid out here.

Finally, if we were to characterize those who teach across the 14 countries examined in this study, they are a group of *highly literate, technologically skilled, well-educated, established and senior men and women*.

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3. International assessment of low reading proficiency in the adult population – a question of components or lower rungs?[1]

Anke Grotlüschen, Barbara Nienkemper & Caroline Duncker-Euringer

Introduction

Relevance

Among the 17 Sustainable Development Goals (SDGs) launched by the United Nations (UN) in 2015 (UN 2015; 2016), the fourth goal (SDG 4) is dedicated to education. Extending the scope beyond the previous agenda's focus on primary education,[2] it aims to "promote lifelong learning opportunities for all". This has led to "hopes for a stronger role" of adult learning and education "in global education agendas and policies" (Elfert 2019, p. 537). While UN Agendas fall into the category of *soft law*,[3] they reflect a need for action, and by endorsing them, UN Member States have made commitments towards trying to achieve the targets.

One of the core instruments of soft law is monitoring (Grek 2019), and it often relies on assessment (Hamilton et al. 2015). Monitoring countries' progress towards achieving the targets of the SDGs on an international scale makes it necessary to discuss methods of assessment, especially for adult literacy and numeracy. One of the ten targets within SDG 4 directly addresses adult literacy and numeracy skills:

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2 The 2030 Agenda (2015–2030) with its 17 SDGs was preceded by the Education for All agenda (1990–2015) with its 8 Millennium Development Goals (MDGs). For more information, visit https://www.un.org/millenniumgoals/ [accessed 12 January 2020].

3 The term "soft law" refers to officially ratified but not legally binding instruments like resolutions and declarations of international entities such as, for example, the UN, and the European Union (EU) with the Council of Europe and the European Commission.

> By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy (SDG target 4.6; UN 2016).

To boost effective action in addressing SDG 4, the UNESCO Institute for Statistics (UIS) recently launched the Global Alliance to Monitor Learning (GAML), which

> is designed to improve learning outcomes by supporting national strategies for learning assessments and developing internationally-comparable indicators and methodological tools to measure progress towards key targets of SDG 4 (UIS 2017).

This initiative covers all ten targets of SDG 4, with thematic task forces established to address each of them. Since 2017, the task force for SDG target 4.6 has held several expert meetings in order to collect and evaluate existing tests and findings and discuss adequate testing instruments.

The dilemma is how to build on earlier – mostly Western – research on the one hand, and how, on the other hand, to avoid a monopolistic spread of definitions and test instruments throughout the world (Addey 2018). Another challenge is that the most powerful instrument, the Programme for the International Assessment of Adult Competencies (PIAAC) conducted by the Organisation for Economic Co-operation and Development (OECD),[4] is too expensive for most UN Member States. The OECD asks participating countries to organise the data collection and test analysis themselves. This requires sample sizes of around 5,000 test takers per country. Respondents' completion of the test and questionnaire takes approximately two hours and also includes a computer-aided personal interview which is usually carried out by a survey company that charges several million Euro for the data collection.

Moreover, the five proficiency levels for literacy do not cover the most basic levels of literacy, i.e. from total illiteracy onwards (there is simply a sixth category labelled "below Level 1").[5] Since GAML is monitoring improvement by 2030, at least two reports will be needed from each country before 2030: The first assessment would serve as a starting point which the second assessment can then be compared against, hopefully demonstrating improvement in adult literacy and numeracy. So the timeframe for coming up with suitable assessment methods and tools to begin

4 The first cycle of PIAAC was conducted in three rounds. Many of the countries participating in Round 1 (2011–2012) will be included again in the first round (2021–2022) of the second cycle. For more information, see https://www.oecd.org/skills/piaac/about/#d.en.481111 [accessed 24 February 2020].

5 PIAAC literacy proficiency "below Level 1" is described as follows "Individuals at this level can read brief texts on familiar topics and locate a single piece of specific information identical in form to information in the question or directive. They are not required to understand the structure of sentences or paragraphs and only basic vocabulary knowledge is required. Tasks below Level 1 do not make use of any features specific to digital texts" (OECD 2013, p. 67). For descriptions of Levels 1 to 5, see OECD 2013, pp. 66–67.

the first round of assessments as soon as possible is tight. What is especially urgently needed are tests that cover the most basic levels of literacy in a more differentiated way than "below PIAAC Level 1". Moreover, the question arises whether existing instruments that cover lower levels of literacy can be integrated into a common scale with instruments that cover higher levels of literacy, e.g. the PIAAC scale.

State of the art

In terms of existing instruments, there are two competing approaches, which we discuss in detail in the course of this article. One is the *lower-rungs approach* (Brooks, Davies et al. 2001a, b), and the other is the *reading components approach* (Sabatini and Bruce 2009; Strucker et al. 2007). In a nutshell, the lower-rungs approach takes a differentiated look at the lowest level of literacy, and the reading components approach indicates adults' proficiency in decoding, word recognition and word meaning (vocabulary). Both approaches have strengths and weaknesses.

Test items of the lower-rungs type have the advantage of correlating with, and complementing, higher levels on international literacy proficiency scales such as those used by PIAAC. But they have not, in fact, been translated into languages other than English and German.

By contrast, the reading components test items are not hierarchically organised and therefore are not aligned with the PIAAC scale, but they do exist in several languages. Moreover, they have been administered internationally as an add-on to the OECD's PIAAC programme, under UNESCO's Literacy Assessment and Monitoring Programme (LAMP)[6] as well as the World Bank's Skills Towards Employability and Productivity (STEP) skills measurement programme.[7] While both of these programmes were run in middle-income countries or regions, their suitability for low-income countries is unlikely. Another complicating factor is that the reading components test items originate from many sources and there are different versions of test sets – with different ownership.

Purpose and structural organisation of this article

Our aim in this article is to explore and clarify whether the reading components, as they are used in their international version (e.g. as a PIAAC add-on), can be

6 Initiated in 2003 by the UNESCO Institute for Statistics (UIS), LAMP was "the first international [test- ing] experience concerning youth and adult literacy comprising non-European languages" (Guadalupe and Cardoso 2011, p. 213)). For more information, see https://www.uis.unesco.org/literacy/Pages/lamp-literacy-assessment.aspx [accessed 14 February 2020].

7 Launched in 2012, the World Bank's STEP skills measurement programme was the first-ever initiative to measure skills in low and middle-income countries. For more information, see https://microdata.world bank.org/index.php/catalog/step/about [accessed 14 February 2020].

understood as hierarchical and therefore be organised on a proficiency scale which can be aligned with and connected to international literacy scales like the one applied by PIAAC. If this is possible, the reading component items would perform like lower-rungs items and then enhance the bottom end of the scale where the most basic skills are situated. This would solve the problem of where to find test items for a range of countries (including low-income ones), as the international reading components are already widely used, well-accepted and available in many languages, and have also already been pretested in the countries that participated in LAMP and STEP as well as those who bought the add-on module under PIAAC.

We begin with a review, looking back into the development of each of the two competing approaches (lower rungs versus components). This is necessary to avoid confusion between earlier and more recent versions. We also present the theoretical background, the development of test items as well as pretest and main test results for both approaches, and sum up the differences in a table. We then discuss both approaches with regard to their strengths and weaknesses for monitoring SDG target 4.6 globally. This discussion leads to our three research questions, the overarching purpose of which is to find out whether one of the item sets (the reading components test set) could be disconnected from its theoretical background (the components approach) and re-organised in a hierarchical way (as rungs on a ladder). This would meet the requirements specified by the GAML initiative for effective assessment methods to monitor a wide range of countries' progress in achieving SDG target 4.6. In our methodology, we describe and report on the relevant statistical tests which we carried out using *item response theory* (IRT)[8] and the German PIAAC reading components subset of data. After presenting the results, addressing each of our three research questions, we evaluate the outcomes and conclude our article with recommendations for further re-analysis and refinement.

Review: assessing the most basic levels of literacy

International large-scale assessments currently measure literacy with *unidimensional* and *continuous* competence models. What this means is that individual proficiencies are hierarchically described as being situated on a scale rising from low to high levels of competence. In terms of the main results, PIAAC and earlier international assessments[9] have defined four or five proficiency levels and documented the percentage of adults scoring at each of these levels for each of the participating

8 Item response theory is used in *psychometrics* (the measuring of mental capacities and processes). Initially applied in mainly educational contexts, it enables the development and evaluation of surveys carried out using questionnaires and other proficiency assessment instruments which feature test items. For an overview, see Carlson and von Davier (2013).

9 The OECD conducted the first round of PIAAC in 2008–2013. Earlier comparative international adult assessments, also run by the OECD, include the International Adult

countries (OECD 2013; OECD and Statistics Canada 2000, 2005) and an average for all of them together. For example, in 2012, on OECD average, 15.5 per cent of the participating international population (ages 16–65) scored at literacy Level 1 or below (OECD 2013, p. 257).[10]

> In the underlying theoretical model, literacy is defined asthe ability to understand, evaluate, use and engage with written texts to participate in society, achieve one's goals, and develop one's knowledge and potential (OECD 2013, p. 61).

In addition to the literacy scale, a reading components assessment was included in PIAAC's international Survey of Adult Skills (OECD 2013, pp. 59, 67). According to John Sabatini, the intention was to use the information collected through this additional "battery of reading component tasks" to "draw implications for policy, as well as for learning and instruction, for adults who score *at or below Level 1* in literacy proficiency" (Sabatini 2015, p. 2; emphases added).

There are also approaches to assessing basic reading and writing skills with continuous models, so-called "lower-rungs approaches" (Brooks, Giles et al. 2001), which think of the continuum as a ladder and take into account even barely measurable low proficiency levels. However, when complementing (rather than extending) PIAAC with the above-mentioned "battery of reading component tasks" (Sabatini 2015, p. 2), the OECD preferred a non-continuous model of three reading components and did not integrate these into the six-level literacy scale (Levels 1–5 and the "below Level 1" category). The three reading components the PIAAC add-on module tests participants on are (1) *word recognition,* (2) *sentence processing* and (3) *passage fluency* (Sabatini and Bruce 2009). It remains unclear why there have been no attempts up to now to find out whether it would be possible to link either these three components or the total set of component items to the PIAAC scale. Perhaps one reason is the theoretical quality of the three components. Since these components were developed independently of PIAAC, they are different from what is being tested on the overall literacy scale now (Strucker et al. 2007). However, the preparations for PIAAC did polish the reading component subtests in a way that made them suitable for international comparison (Sabatini and Bruce 2009). We assume that the theoretical differences may have decreased during this process while the similarity to the overall PIAAC literacy scale increased.

Unlike the PIAAC literacy scale, which builds on *item response theory* (briefly explained in footnote 8), the reading components in the add-on module are tested

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Literacy Survey (IALS), conducted from 1994 to 1998, and the Adult Literacy and Life Skills Survey (ALL), conducted in two rounds between 2003 and 2008.

10 The corresponding national figure for Italy, for example, was 27.7; for Germany it was 17.5; and for Japan it was 4.9 (OECD 2013, p. 257).

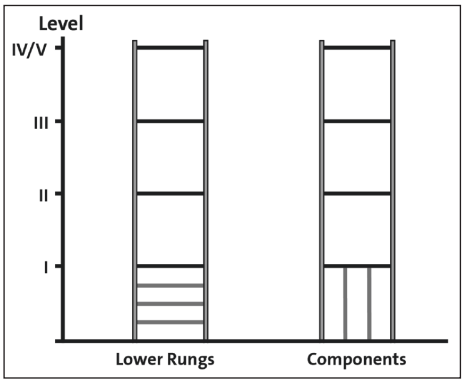

Fig. 1:
Lower-rungs vs. components approach

using *classical test theory*[11] methods (Yamamoto et al. 2013, p. 16; Zabal et al. 2014, p. 106). Again, it is not clear why this is so. It remains open to investigation whether it would be possible to run the reading component tests under an item response model as well, and also whether they would meet the necessary quality controls. If the answer to both of these questions turned out to be yes, the reading component tests would lose their full status as component tests, but they would gain the highly relevant quality of being statistically linkable to established international literacy scales.

Figure 1 illustrates the theoretical assumption about the main difference between rungs and components. While both are located inside the lowest level of literacy, labelled Level I in the graph, only the *lower rungs* claim to be hierarchical and part of the overall literacy scale. The *components* claim to be different elements of the reading process and thus non-hierarchical and non-comparable to the literacy scale. Both approaches are explained further below.

Both approaches compete with each other in assessing proficiencies of adults with low literacy skills. While the reading components approach was very fruitful in the early 2000s in Canada and the United States (US), the development of testing materials in the United Kingdom (UK) and in Germany focused on the lower-rungs approach. Among early versions of component approaches, the components were clearly differentiated and were linked to reading. When PIAAC chose to take the reading components approach on board in an add-on module, it became necessary to translate the test instruments already existing in individual countries (such as Germany, for example), and to reduce them to make them suitable for application in and comparison among a wide range of countries. It can be assumed that the components approach consequently became more similar to a (lower-)rungs approach than expected. The question is whether the reduction made to meet the needs of international comparability subsequently led the components to become

11 Classical test theory is sometimes also referred to as "true score theory", where the *true score* is an error-free measurement. Classical test theory was the predecessor of item response theory.

hierarchical parts of one *latent variable*[12] (i.e. reading). We return to this question in a later section of this article.

The lower-rungs approach and its implementation in the Level-One Survey (LEO) in Germany

A lower-rungs approach can be applied to describe and examine low skills in literacy. This means it enables differentiating the lowest level of the literacy scale more finely – in other words, "creating the lower rungs of the ladder" (Brooks, Davies et al. 2001a, b, p. 55). By including proficiencies "below Level 1", the lower-rungs approach extends the lower end of the established ranking of proficiency levels, which is based on a hierarchical and unidimensional model of literacy.

For example, the New Standards Level, developed in the UK in 2000 by the Basic Skills Agency (BSA) and the Qualifications and Curriculum Authority (QCA), comprised one "Entry Level", subdivided into Entry Levels 1–3 (E1, E2, E3), describing reading skills that are comparable to the range below IALS Literacy Level 1[13] (Brooks, Davies et al. 2001a, b; QCA 2005). These levels were applied in the Skills for Life survey conducted by the UK Department for Business, Innovation and Skills in 2011 (BIS 2012).

Another example is the Level-One Survey (LEO), which implemented four so-called Alpha Levels (α1 [letters], α2 [words], α3 [sentences], α4 [whole texts]) in Germany. They are based on theories about the acquisition of written language,[14] international large-scale assessments, national and international educational standards, and concepts of the practice of adult basic education (Dessinger 2011; Kretschmann 2011). Furthermore, the Alpha Levels were theoretically anchored within the IALS literacy scale (i.e. below IALS Level 1) by the level definitions and the "can-do" descriptions and characteristics for determining the level of difficulty (Grotlüschen 2011). Examples are provided in Fig. 2, which shows the "can do" descriptors of Alpha Level 3 in reading, and Fig. 3, which shows the "can do" descriptors of Alpha Level 4 in writing.

Furthermore, the Alpha Levels have had an influence on the development of instruments and tools for assessing adult literacy proficiency in Germany. The curriculum framework for literacy and adult basic education (DVV 2014), which contains guidelines for teaching and testing reading, writing and calculating in adult basic education, was developed following Alpha Levels 1–4 (ibid.).

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12 In item response theory, a latent variable is something which is not directly observable, but only inferred from other, directly observable variables.

13 IALS measured literacy proficiency on a scale of 0 to 500 points. Adults who had achieved 0–225 points on that scale in the assessment scored at Level 1.

14 For reading, see Bamberger and Vanecek (1984) and Coltheart et al. (2001); for writing, see Brügelmann (2000); Frith (1985); Kretschmann (2005); Reuter-Liehr (2008) and Spitta (1997).

Alpha-Level 3: Reading

Central requirement: sentence level, predominantly construing reading and lexical reading of standard words

"Can do" descriptors

- Can read single words within the context of a sentence
- Can read orthographically complex words
- Can make sentence-image connections
- Can read and understand sentences of increasing length
- Can read and understand subject-verb-object (SVO) sentences and SVO sentences with insertions.
- Can follow simple instructions, especially when they include images
- Can read the TV programme including time designations

Task characteristics

Text length: 1-2 sentences
Sentence length: 5, 6, 7 or more words; main clause; main clause and subordinated clause
Sentence construction: SVO sentences; SVO sentences with insertions; Germanised foreign words and common Anglicisms
Typography: Arial, Times New Roman
Line spacing: double; left justification (line break after units of meaning)
Difficulty of words: increasing difficulty of words; up until level 3 (level model of word difficulties)

Fig. 2: "Can do" descriptors and task characteristics of Alpha Level 3 (reading) (translated from Kretschmann 2011, p. 53)

The reading components approach and its implementation in PIAAC

Representing basic "building blocks" of reading, component reading tasks also examine very foundational reading abilities, albeit not in a hierarchical order. Before the OECD added a reading components assessment module to the international assessment of PIAAC in 2012, the Statistics Canada research institute decided to implement a components approach in the Canadian part of the OECD's ALL Survey in 2003.

Early Canadian and US-American national testing components

The reading components identified in Canada offered some additional information that differentiated among types of struggling readers. The advantage of a components approach was seen in its potential to offer insights into the different ways in which weak readers lag behind. Possible difficulties are insufficient vocabulary, difficulties with basic word decoding, inadequate strategies for dealing with new or complex texts, or general comprehension problems. Statistics Canada's expectation was that these differentiations would provide useful information to programme

Alpha-Level 4: Writing

"Can do" descriptors

- Can use final-obstruent devoicing with adjectives
- Can write the same consecutive letters in compound words
- Can use differences in lengths of vowels or consonants
- Can write the prefix "ver" correctly
- Can use s-sounds correctly
- Can use abbreviations correctly
- Can capitalise definite abstract nouns
- Can recognise and write interfixes
- Can write compound words together/ separately
- Can use commas in lists
- Can write sentences at least phonetically

Task characteristics

Written element: words, sentences
Symbol length: number of letters up to 19; five-syllable words max.
Sentence length: 11 words max. (task context: text length 13 sentences max.)
Phoneme stage 4 (Reuter-Liehr 2008): consonant cluster with stop consonants: ck, tz
Phoneme stage 5 (Reuter-Liehr 2008): Elongation of vowels ie, ah, eh, üh, ih
Phoneme stage 6 (Reuter-Liehr 2008): ß (ss) at the start of a syllable
Use: up to CEFR B1: Words with a high degree of abstraction
Strategy: alphabetic, orthographic and morphemic

Fig. 3: "Can do" descriptors and task characteristics of Alpha Level 4 (writing) (translated from Grotlüschen et al. 2010, p. 38). Note: **Final-obstruent devoicing* means that spoken words like "*Hun-d*" [dog] sound as if they were spelled with a hard consonant at the end (*Hun-t* [do-k]), making it difficult to draw conclusions from the sound towards the spelling. ** *Interfixes* are the spoken gaps between syllables in compound words, e.g. "*Bus_halte_stelle*" [bus stop]. *** CEFR is the Common European Framework of Reference which has standardised proficiency levels from A1 (lowest), A2 and B1, B2 to C1, C2 (highest)

providers and policymakers (Murray 2001). Table 1 shows the components and tests which were discussed and subsequently recommended as being suitable for a household survey investigating adults' reading proficiency – in this case the Canadian ALL Survey, conducted in 2003.

The *Adult Reading Components Study* (ARCS; Strucker and Davidson 2003) carried out in the United States by the National Center for the Study of Adult Learning and Literacy (NCSALL) served Statistics Canada as a model for clustering adult learners into groups of reading skills levels. John Strucker and Rosalind Davidson tested 955 randomly selected learners from adult basic education (ABE) and English for speakers of other languages (ESOL) classes to assess their phonological awareness, rapid naming, word recognition, oral reading, spelling, vocabulary and

background knowledge. Using a *cluster analysis*[15] methodology, they discerned ten clusters of reading skills levels in their sample which they deem relevant for effective teaching and learning (Strucker and Davidson 2003, p. 126).

Further components research was conducted jointly by John Strucker (NCSALL) as well as Kentaro Yamamoto and Irwin Kirsch from the Educational Testing Service (ETS), also in the United States. They took a sample of 1,034 adults and ran, among other things, a *latent class analysis* (LCA)[16] based upon participants' scores on:

- oral vocabulary (PPVT);
- real word reading (TOWRE A);
- pseudo-word reading (TOWRE B);
- spelling; and
- short-term memory (digit span).

The result was a distinction of five classes of readers:

(1) proficient ABE, adult secondary education (ASE), and household sample readers with very strong decoding and vocabulary skills;
(2) ABE and ASE students with strong decoding skills that tend to undermine their vocabulary skills;
(3) advanced ESOL students with strong decoding but noticeably weaker English vocabulary skills;
(4) intermediate ESOL students with moderate weaknesses in decoding and vocabulary skills in English; and
(5) low intermediate ESOL students and reading disabled ABE native speakers with marked needs in decoding and vocabulary (Strucker et al. 2007).

Further results of latent class analysis with component assessment data from the Canadian International Survey of Reading Skills (ISRS)[17] were published by the Canadian Council on Learning (Murray et al. 2008). The report distinguishes six groups (A1, A2, B1, B2, C and D) based on mother tongue, immigrant status and other key characteristics including age, gender, education and employment status (ibid.).

15 A cluster analysis methodology groups a set of data objects into clusters to analyse data distribution.

16 A latent class analysis classifies individual test respondents into mutually exclusive types, or latent classes, based on their pattern of answers.

17 The International Survey of Reading Skills (ISRS) wss conducted by Statistics Canada in 2004 and 2005. For more information, see https://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSu rvey&SDDS=5070 [accessed 28 February 2020].

Tab.1: Table of recommended components and tests*

1	Word recognition	Test of Word Reading Efficiency (TOWRE)
2	Vocabulary knowledge	Peabody Picture Vocabulary Test (PPVT)
3	Listening comprehension	Ordinate Corporation PhonePass
4	Processing and memory	Digit span test
5	Processing and memory	Rapid automatised naming (RAN) of letters

Source: Statistics Canada (Murray 2001).
*Note: Many of the tests listed in this table have been revised and updated over the course of time. For more information about their original versions, see Torgesen et al. 1999 (TOWRE); Dunn 1959 (PPVT); Ordinate Corporation 1999 (Ordinate Corporation PhonePass); Wechsler 1997 (Digit span test); and Denckla and Cutting (1999). (RAN)

International components suitable for comparative analyses

The developers of the reading components assessment in PIAAC 2012 applied none of the above-named tests, because they needed instruments that would enable international comparison. Whereas the developers' conceptual framework suggested five components, only three of these reading components made it into the final assessment set. Since languages vary in terms of their writing systems (alphabetic [e.g. English], syllabic [e.g. Japanese] or logographic [e.g. Chinese]), the PIAAC reading components test excluded tasks for alphanumeric perception and efficiency as well as tasks for word recognition and decoding (Sabatini 2015; Sabatini and Bruce 2009). Below, we explain the three remaining components and their task-sets.[18]

Print vocabulary (word meaning). To ensure cross-country comparability, the language chosen for this component in the PIAAC's add-on module was the local language being used in the respondents' neighbourhood, in the market and in popular media. The print vocabulary tasks are based on the assumption that adults know the meaning of everyday words from pictures and from listening. The 34 print vocabulary tasks assess whether a person also knows their meaning from print. For this purpose, the respondent is given a four-item multiple choice list and asked to circle the correct word that represents the meaning of an image. Thus the print vocabulary task-set seeks to determine whether individuals can identify everyday words of their local language in print.

Sentence processing. To ensure this component's cross-country comparability, the tasks in this set were created without varying the grammatical/syntactic complexity of the sentences. Variation was, however, taken into account in the length of sentences within a basic grammatical structure, and also in the logical relationships that comprise meaning. These variations were designed with increasing difficulty and therefore indicate the individual's proficiency at constructing basic meaning from print (Sabatini 2015, pp. 7, 11). The 22 sentence-processing tasks ask an individ-

18 Examples of the English-language reading component items are published in Sabatini (2015).

ual to judge "whether the sentence makes sense in relation to common knowledge about the world […] or based on the internal logic of the sentence" (ibid., p. 12). Therefore, a "yes" or "no" answer represents a 50 per cent guess probability. Thus the sentence processing tasks assess the individual's proficiency in applying his or her language skills in the context of printed text.

Passage comprehension. The passage comprehension task-set measures fluent, efficient reading performance. The 44 passage comprehension tasks are embedded in four short basic text passages designed for adult readers. In each task, respondents are asked to choose between a word that correctly fits a sentence in a passage and a second option that a skilled reader would recognise as being obviously wrong. Although reading fluency and efficiency are usually assessed by giving participants only a fixed amount of time to do the task, PIAAC 2012 allowed them as much time as they needed. The individual total time required to complete it was recorded, and average reading rates were compared afterwards. The purpose of this was to prevent biases, caused by cross-country comparison, because differences between languages, writing systems and cultural variables were expected to affect average reading rates (Sabatini and Bruce 2009, p. 13). In their conceptual framework, John Sabatini and Kelly Bruce explain that "the time to complete will add very little additional information" about the skills of "the very low-skilled beginning reader", but low-ability adults with high accuracy scores within the passage comprehension tasks can be identified by this measurement, because they need more time to complete than the subsample of skilled readers in each country (Sabatini and Bruce 2009, p. 13).

Table 2 sums up the differences between the lower-rungs approach and the reading components approach and their development for PIAAC.

Research questions

Having elaborated the differences between the lower-rungs approach and the reading components approach in the previous sections of this article, we now discuss both approaches with regard to their potential suitability for monitoring SDG target 4.6 globally, which then leads to our presentation of our own research.

To assess lower reading skills, PIAAC 2012 opted for a components approach rather than a lower-rungs approach. There are two possible reasons for this. First, the design of the survey suggests there was no plan to link the reading components to the continuous literacy scale. The reading components assessment was implemented as a new domain and as an *optional* element of the assessment in Round 1 (2011–2012) of PIAAC's first cycle. Furthermore, it was provided in pencil-and-paper format, whereas the main assessment was designed in a computer-based format (Kirsch and Thorn 2013). This certainly limits the comparability of both measures.

Second, Sabatini and Bruce state that even in theory, the components "do not strictly develop hierarchically" during the acquisition of reading skills (Sabatini and Bruce 2009, p. 7). Therefore, it might be inadequate to treat them as having a clearly hierarchical order.

Tab. 2: Summary of differences between the lower-rungs approach and the reading components approach before and during PIAAC

	Lower-rungs approach (Brooks, Davies et al. 2001a, b)	**Reading components approach as administered in Canada and the United States (Murray 2001; Strucker et al. 2007)**		**Reading components approach as administered in PIAAC and STEP (Sabatini and Bruce 2009)**
Theoretical assumption about what is being tested and Instruments which the test builds on	Literacy as defined in IALS, with can-do-descriptions for the lower rungs	Word recognition	Test of Word Reading Efficiency (TOWRE)	Reduction according to international requirements Print vocabulary Sentence processing Passage fluency
		Vocabulary knowledge	Peabody Picture Vocabulary Test (PPVT)	
	Skills for Life Survey (UK): Development of 25 new test items that are easier than the lower IALS levels	Listening comprehension	Ordinate Corporation Phone-Pass	
		Processing and memory	Digit span test	
		Processing and memory	Rapid automatized naming (RAN) of letters	
	LEO (Germany): Development of 71 new test items that are easier than the lower PIAAC levels, testing both reading and writing	Subtests (Strucker et al. 2007): oral vocabulary (PPVT), real word reading (TOWRE A) pseudo-word reading (TOWRE B) spelling short-term memory (digit span)		
Statistical testing model	Item response theory	Classical test theory		Classical test theory (so far), but the dataset can be re-run with item response theory, as demonstrated in this article
Linkable to existing international literacy scale	Yes (IALS, PIAAC)	No		No

	Lower-rungs approach (Brooks, Davies et al. 2001a, b)	**Reading components approach as administered in Canada and the United States (Murray 2001; Strucker et al. 2007)**	**Reading components approach as administered in PIAAC and STEP (Sabatini and Bruce 2009)**
Surveys which apply this model	Skills for Life (UK) Level-One Survey (LEO) in Germany	The OECD's Adult Literacy and Lifeskills Survey (ALL) in Canada; in English and French UNESCO's Literacy Assessment and Monitoring Programme (LAMP) in several UNESCO Member States	PIAAC (Round 1, 2011–2012) as a voluntary add-on, pretested in several languages and countries The World Bank's Skills Towards Employability and Productivity (STEP) skills measurement programme in several middle-income countries in several world regions The OECD's Programme for International Student Assessment (PISA) for Development survey (in preparation)
Applicable for the Global Alliance to Monitor Learning (GAML) for monitoring SDG target 4.6 (adult literacy and numeracy)	No, because translation and pretesting are too expensive	No, because translation and pretesting are too expensive	Not clear, because not linked to international scale; but linkage seems potentially feasible and the necessary checks are provided in in this article. For linkage, the items are treated as if they were lower-rungs items and as if they would test only one skill (literacy), not three components

However, the published results of the PIAAC reading components assessment (OECD 2013) as well as the progression of the components (from words to sentences to text passages) could point to a hierarchy among the three different types of the assessed reading component tasks.

A hierarchy of difficulty?

The published average proportions of the correctly answered reading component items show differences among the three dimensions (print vocabulary, sentence processing and passage comprehension). The highest average proportions of correct answers were reached for the print vocabulary dimension, whereas the lowest were reached for the sentence processing items. This result is stated independently of the individual literacy level. Furthermore, this is not only true for the German data, but also for the OECD average (OECD 2013, pp. 416–418).

Table 3 shows the average proportion of correctly answered reading component items by literacy proficiency level for the German sample. From this table it is reasonable to assume that the print vocabulary items are the easiest, and the sentence processing items are more difficult than the passage comprehension items.

> Also, Sabatini states for the US reading components:
> One may have noticed that sentence and passage reading means were closely aligned across the higher levels of literacy proficiency, with passage means sometimes higher than sentence means toward the higher proficiency levels. This is because the most difficult sentence items are typically more difficult than any of the passage items. Thus, even adults who are relatively more proficient may still make errors on these challenging sentence items while likely finding all passage items relatively easy to answer (Sabatini 2015, p. 16).

Table 4 shows the average time spent completing a reading component item, in seconds, by PIAAC literacy proficiency level for the German sample. Here, too, print vocabulary emerges as the easiest dimension, because the average time spent on completing these tasks is comparably the shortest for all literacy levels. But responding to the passage comprehension items takes a little longer than answering the sentence processing items. Therefore, in terms of time spent on completing the tasks, it is reasonable to assume that the passage comprehension items are more difficult than the sentence processing items.

Tab. 3: Average proportion of reading component items answered correctly, in per cent, by PIAAC literacy proficiency level (German sample)

	Below Level 1	Level 1	Level 2	Level 3 and above
Print vocabulary (n = 817)	93.6	97.2	98.5	99.3
Sentence processing (n = 809)	75.8	87.3	94.0	97.5
Passage comprehension (n = 785)	81.0	90.9	96.5	99.1

Source: PIAAC and PIAAC Reading Component datasets, own calculations
Note: Deviations from the OECD table (OECD 2013, pp. 416–417) are due to our exclusion of respondents who did not reach the end of the reading components assessment despite their not being given a time limit.

Tab. 4: Average time spent completing a reading component item, in seconds, by PIAAC literacy proficiency level (German sample)

	Below Level 1	Level 1	Level 2	Level 3 and above
Print vocabulary (n = 817)	7.2	5.7	4.7	3.8
Sentence processing (n = 809)	16.7	11.7	9.1	7.2
Passage comprehension (n = 785)	17.3	13.4	9.9	7.6

Source: PIAAC and PIAAC Reading Component datasets, own calculations

This pattern is also the same for the OECD average across all participating countries (in Round 1 of PIAAC's first cycle) for time spent completing the reading component items (OECD 2013, pp. 417–418).

Considering these results, the research questions (RQ) we decided to investigate in our own research, presented in this article, were:

RQ1 *Is it possible to describe the PIAAC reading component items (in the German PIAAC questionnaire) hierarchically by their difficulty?*

RQ2 *Provided that it is possible, what kind of hierarchical relationship exists among the three components and across all items?*

RQ3 *If the Rasch model proves unsatisfactory, does a 2PL Birnbaum model fit the reading component data better?*[19]

19 In a nutshell, both models (further explained in the methodology section) serve to statistically estimate the probability of survey respondents' correct answers for test items of varying difficulty. While the *Rasch model* is a so-called one-parameter logistic (IPL) model, a *Birnbaum model* has more than one parameter. The one we used for our research was a two-parameter logistic (2PL) Birnbaum model.

Methodology

In addressing our research questions, we applied methods of item response theory (IRT) to the German sample of the PIAAC reading components data. IRT provides probabilistically combined results regarding respondents' *trait level* (competences) and *item properties* (difficulties) based on the probability of a correct response to a test item (Embretson and Reise 2000).

The simplest item response model, the so-called *Rasch model,*[20] assumes that the probability of a specified response depends on two variables: the respondent's trait level and the difficulty of the test item (Embretson and Reise 2000, pp. 48–51). If a respondent's trait level exceeds the difficulty of the item, then there is a strong possibility that this person will respond correctly to the item. If the difficulty of the item exceeds the respondent's trait level, there is a strong possibility that this person will not respond correctly to the item. In other words, the more difficult an item is, the less likely it is that a person with a particular trait level will respond correctly to this item (Embretson and Reise 2000, p. 49).

In our research, we focused in particular on the item difficulties of all three reading component items, re-analysing them in terms of their hierarchical relationship. For this purpose, we chose the one-parameter logistic Rasch model, because it is particularly suitable for estimating and scaling test items on a common scale, ordered by their difficulties. In case of model conformity, the Rasch model has the property of specific objectivity. This means that differences in terms of item difficulties can be stated independently of the sample's skills distribution (Embretson and Reise 2000; Moosbrugger 2012, p. 49).

A necessary precondition of IRT analyses is the assumption of item homogeneity and local independence, meaning that all item responses depend on the same latent variable and that, given the model parameters, no further relationships exist in the data (Embretson and Reise 2000, p. 60). One important advantage of the Rasch model is that it provides appropriate and strict model fit criteria to evaluate item homogeneity and item quality.

We carried out the estimation of a one-dimensional Rasch model using ConQuest software. Sabatini states that the translation of reading component items across languages may result in different item level difficulty estimates (Sabatini 2015, p. 11). Therefore, the analysis we present here refers to the reading component data from only one country (Germany). Our input file contained the full response data of the German sample in the PIAAC reading components assessment based on the reduced version of the *German PIAAC Scientific Use File* (SUF; Rammstedt et al. 2015).

20 Named after Danish mathematician, statistician and psychometrician Georg Rasch, this model estimates test reliability in proficiency assessments where there are only two options for answering test items, either correctly or incorrectly. It considers the probability of a respondent with a certain aptitude choosing a correct answer, factoring in the difficulty of tackling that item.

The reading components sample for Germany comprises 822 cases, whereas the whole German PIAAC sample comprises 5,465 cases. Therefore, the sample is not representative for the German adult population. Furthermore, Claudia Tamassia et al. note in the OECD's *Technical Report of the Survey of Adult Skills (PIAAC)* that the criterion for routing respondents into the paper-based reading components assessment was not only lower literacy and numeracy skills, but also a lack of experience in handling a computer.

> [The] paper-based assessment was administered to respondents who either reported they had no computer experience; failed the test of basic computer skills required to take the assessment; or refused to take the assessment on the computer (Tamassia et al. 2013, p. 2).

As a consequence of this routing process, the German sample contains relevant proportions of respondents with higher literacy skills, who solved the reading components tasks with ease, while a relevant proportion of adults with lower literacy skills also remained in the sample. Across the entire 23-country PIAAC sample, an above-average proportion of 31 per cent of the adults who took the reading components assessment (compared to 15.5 per cent total) scored at or below Level 1 (Sabatini 2015, p. 9).

Comparison of the sociodemographic bias of the German sample against that of the German adult population as a whole can be described by, for example, a higher mean age and a higher proportion of adults who speak German as a second language.[21]

The dataset we analysed comprised responses for a total of 100 PIAAC reading component items. These were 34 print vocabulary items (numbered 1–34), 22 sentence processing items (numbered 35–56) and 44 passage comprehension items (numbered 57–100). For our IRT analysis, we recoded the response data into dichotomous (0/1: incorrect/correct) data. Missing values were treated as follows: in cases where questions had been skipped (refused or not done), we recoded missing values into incorrect responses; in cases where the whole reading components assessment was broken off, we recoded the first missing value into an incorrect response and left all further missing values as missing. Afterwards, we estimated, mapped and analysed the item parameters and evaluated the quality of the items. We checked the Rasch model fit by *weighted mean squares* (MNSQ). A perfect item fit in terms of mean squares would be 1.0 (Wu et al. 2007, p. 54). For this research study, we chose MNSQ ≥ 1.33 as criterion for a bad item fit (Wilson 2005, p. 129; Grotlüschen

21 Beatrice Rammstedt and Britta Gauly of the Leibniz Institute for the Social Sciences (GESIS, in Mannheim, Germany) are currently preparing their analysis of the sociodemographic data of the German reading components sample for publication.

et al. 2012, p. 63). Furthermore, we illustrated and described the distribution of item difficulties by a *Wright map* (see results section).[22]

Subsequently, we compared the results to the outcomes of a two-parameter logistic (2PL) *Birnbaum model,*[23] which considers varying item discriminations. Since items differ in their discriminating power, trait level estimates depend on the specific patterns of success and failure in the item set. In contrast to the Rasch model, items do not have equal weight in estimating trait levels (Embretson and Reise 2000, p. 53). We estimated the 2PL model using Mplus 7.

Results

RQ1: Is it possible to describe the PIAAC reading component items (in the German PIAAC questionnaire) hierarchically by their difficulty?

As a main result of our analysis, we found that the applied Rasch model confirmed the possibility of representing the 100 reading component items on a hierarchical scale (i.e. the overall answer to our first research question seemed to be yes). The mean squares of most items (n = 92) met the model fit criterion (MNSQ ≤ 1.33). Only eight items, in this analysis, did not meet this criterion. These were one item (item 17) from the print vocabulary item set, and seven items (items 39, 40, 44, 45, 50, 51 and 56) from the sentence processing item set.[24] Their mean squares range from 1.33 (item 45) to 1.47 (item 40). On the one hand, these items are characterised by very low discriminations. This could mean that respondents with higher abilities are not more likely to solve them than respondents with lower abilities. On the other hand, the unsatisfactory item fits could also indicate that these items do not fit a one-dimensional construct of the kind we applied here (Rost 2004, p. 98; Kelava and Moosbrugger 2012, p. 86).

Seven out of the eight unsatisfactory items belong to the sentence processing item set, indicating that roughly one-third of the sentence processing scale either does not discriminate well, or might be testing something other than sentence pro-

22 Named after American psychometrician Benjamin D. Wright. a Wright map is an item map, which "is organized as two vertical histograms. *The left side shows candidates and the right side shows items.* The left side of the map shows the distribution of the measured ability of the candidates from most able at the top to least able at the bottom. The items on the right side of the map are distributed from the *most difficult* at the top to the *least difficult* at the bottom" (Lunz 2010; emphases in original).

23 Named after Polish-American mathematician and statistician Zygmunt Wilhelm Birnbaum, this model extends the one-parameter (1PL) Rasch model by one or two more parameters (resulting in a 2PL or a 3PL model), factoring in the possibility that respondents' answers might be the result of guessing.

24 Unfortunately, we are unable to provide descriptions of single items, because the reading component tasks are treated as strictly confidential by the OECD and the Educational Testing Service (ETS).

cessing. Respondents are asked to check the sentences in terms of whether they make sense; it is possible that people only check whether they are grammatically correct without deciding whether or not they are reasonable.

Nevertheless, our Rasch analysis of the reading components data did result in a *coefficient alpha*[25] of 0.95. This indicates an overall internal consistency, although this is also not a measure for item homogeneity (Schermelleh-Engel and Werner 2012, p. 132).

RQ2: Provided that a hierarchical description of the PIAAC reading component items (in the German questionnaire) is possible, what kind of hierarchical relationship exists among the three components and across all items?

With the overall answer to our first research question being yes, we then addressed our second research question. The Wright map in Fig. 4 shows the results for our analysis of the 100 reading components items in the German PIAAC sample when applying a one-parameter logistic Rasch model. This map of latent distributions and response model parameter estimates displays a joint hierarchical scale. The horizontal axis designates the number of cases/respondents; the vertical axis designates the level of difficulty. The scale is adjusted in a way that uses "zero" as the average competence of the sample. This gives the difficult items a positive value and the easier items a negative value.

The left-hand panel shows a representation of the latent reading competencies distribution, and the right-hand panel indicates the difficulty of the test items. Each number represents one item and the items are plotted according to their difficulties. Here, the difficulties range from –6,86 to –2,14. Item 56 and item 89 have the highest item difficulties, so they are plotted at the top of the figure, while item 17 has the lowest item difficulty, so it is plotted at the bottom of the figure. According to Rasch's model, a person with a latent ability estimate that corresponds to the level at which the item was plotted would have a 50 per cent chance of success on that item (Wu et al. 2007).

As expected, the item difficulties are located clearly below the average of the competence distribution. This means that the majority of the sample responding to the reading components add-on was able to solve most of the items correctly.

When comparing the item difficulties of the three components, it is evident in Fig. 4 that most of the print vocabulary items (numbers 1–34, shown in red) are relatively easy, as expected. Furthermore it is noticeable that the sentence processing items (numbers 35–56, shown in yellow) and the passage comprehension items (numbers 57–100, shown in green) have higher difficulties, but mix with each other relating to their difficulties. Therefore, the implicit assumption of a components-related hierarchy of the three scales cannot be confirmed. However, while print vocabulary, sentence processing and passage comprehension are not *clearly* ordered

25 A coefficient alpha (or Cronbach's alpha) measures the reliability of the average of questionnaire items.

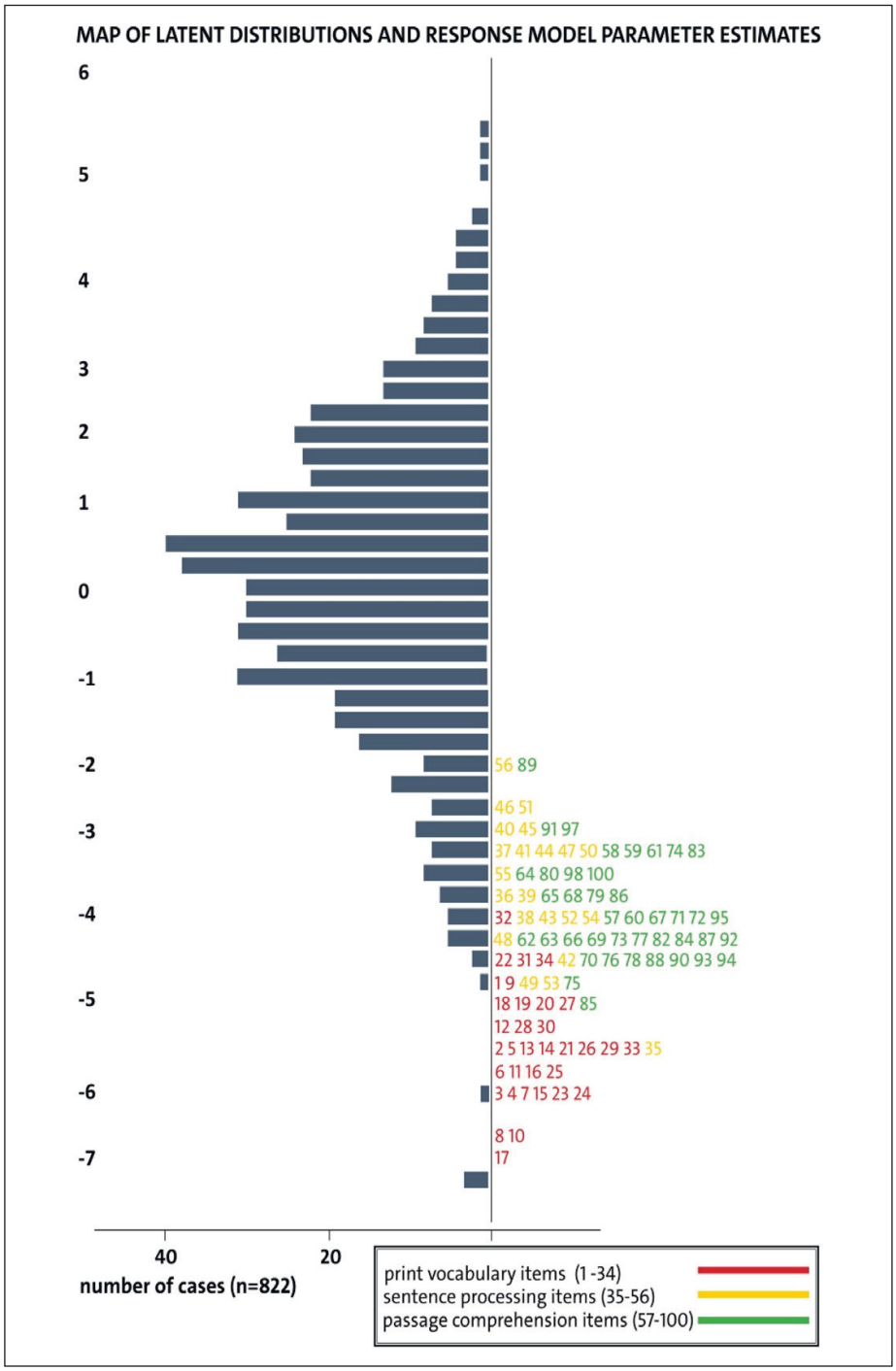

Fig. 4: Map of latent distribution and response model parameter estimates for the German PIAAC 2012 sample. Note: The vertical axis designates level of difficulty

like lower rungs, the general trend is that words (print vocabulary) are easier than sentences (sentence processing); which are easier than short texts (passage comprehension). Thus the test items do form a hierarchy. Even under the rather strict assumption of Rasch homogeneity, all but 8 items meet the model fit requirements.

The *print vocabulary* items numbered 17, 8 and 10 have the lowest item difficulties, ranging from – 6,86 to – 6,51. It is worth noting that the correct answers for these three easier items are monosyllabic, which might explain their position on the Wright map.[26] Further up in the map, the most difficult print vocabulary items do already mix with items from both the sentence processing and the passage comprehension components.

Within the *sentence processing* component, item 35 is the one with the lowest difficulty. This seems to be reasonable, because the sentence consists of one definite article, one subject and one verb in simple past form. Items 49 and 53 also have low difficulties, but their sentence structures are far more complex. For example item 49 involves an interjectional relative clause, and the length of the text comprises 14 words. By contrast, items 36, 37 and 41 have higher item difficulties, although they are main clauses and their lengths range from four to eight words. This order of difficulties disagrees with Sabatini's theoretical description, which states that the sentence processing items in the test booklet would rise in terms of their difficulties (Sabatini and Bruce 2009, p. 11).

The difficulties of the *passage comprehension* items concentrate on the range between –4,95 and –2,18. Each of the passage comprehension tasks requires the respondents to choose between two words within a short text. According to the results of the Rasch analysis, items 85 and 75 have the lowest item difficulties, whereas item 89 is the most difficult one. The varying difficulties of passage comprehension items could depend on the length and familiarity of the words, the abstractness of the word meaning, and how obviously they seem to be correct answers in the context of the text passage.

RQ3: If the Rasch model proves unsatisfactory, does a 2PL Birnbaum model fit the reading component data better?

According to Kentaro Yamamoto et al., for PIAAC, "a common set of item parameter estimates of the two-parameter logistic (2PL) model and the general partial credit model (GPCM)[27] was estimated and found to fit quite well to all countries" (Yamamoto et al. 2013, p. 16), i.e. not with a simple Rasch model. Indeed, the Rasch model assumption of homogeneous item discrimination is often non-realistic and artificial. More sophisticated models can cope with inhomogeneity of discrimination.

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26 As mentioned earlier, for legal reasons we are unfortunately unable to provide more differentiated descriptions and interpretations of single items.

27 A *general partial credit model* (GPCM) allows for partially correct solutions, while the Rasch (1PL) model only allows right or wrong responses.

As already mentioned, we found that eight reading component items showed poor Rasch model fit, that is, they did not discriminate the same way as the others or they did not test the same latent variable. For these reasons we estimated a two-parameter logistic (2PL) Birnbaum-model in order to check the item difficulties taking different discrimination characteristics into account. The item discriminations ranged from 0.73 to 11.91.

All in all, we found that the two-parameter logistic Birnbaum model fit the reading components data better than the one-parameter logistic Rasch model. In comparison (see Table 5), the 2PL model fits show lower Akaike and Bayesian information criteria (AIC and BIC)[28] and sample-size adjusted BIC and should therefore be preferred (de Ayala 2009, pp. 141–142).

Discussion

Component items do also function as hierarchical test items and therefore meet GAML requirements

To sum up, we found that the first research question (Is it possible to describe the PIAAC reading component items [in the German PIAAC questionnaire] hierarchically by their difficulty can be answered positively. Two different approaches (applying the Rasch model and the Birnbaum model) show that the component approach at least partly contains hierarchical item difficulties.

Our second research question investigated the kind of hierarchical relationships existing among the three components and across all items.

Tab. 5: Model fit of 1PL and 2PL (both calculated using Mplus software)

	1PL Model (Rasch)	**2PL Model (Birnbaum)**
Number of free parameters	101	200
Log likelihood		
H0 value	– 11,126.158	– 10,541.422
H0 scaling correction factor for multiple linear regression (MLR)	0.9914	1.0519
Akaike information criterion (AIC)	22,454.316	21,482.844
Bayesian information criterion (BIC)	22,930.202	22,425.192
Sample-size adjusted BIC ($n^* = (n + 2)/24$)	22,609.464	21,790.068

28 Akaike and Bayesian information criteria (AIC and BIC) are used in model selection to avoid overfitting. Models with lower AIC and BIC values are preferable to those with higher ones.

We found that while the print vocabulary scale is easier than the two others, the latter have internal hierarchies but mix with each other in terms of difficulty. Our first method, which applied the Rasch model, showed unsatisfactory item fits for 8 out of 100 items, with 7 of them belonging to the 21-item sentence processing subscale.

Our third research question investigated whether a two-parameter logistic model would lead to better fi values. The results indicate that the model fi was indeed better and that the reading components approach as used in PIAAC can also be interpreted as a hierarchical scale modelling a latent variable that could be called "reading".

Our findings indicate an overall hierarchy of the Reading Component items, although two of the dimensions, namely sentence processing and passage comprehension, cannot be clearly separated in terms of the rise in difficulty. Reading comprehension in a single sentence as distinct from the comprehension of a multi-sentence text section is not tested selectively in the PIAAC assessment tasks. This is certainly a consequence of choosing especially those reading tasks for the assessment that are less language-specific in order to improve the international comparability.

Moreover, our findings demonstrate that the Reading Component test set under PIAAC 2012 also works as a hierarchy which would indeed be linkable to an international literacy scale. The test items are available in many languages. This already enables usage of component items in a wide range of countries. Many of the subsets have been applied under PIAAC, STEP, LAMP or even IALS, ranging across several supra-national organisations and thus indicating that the items are widely accepted (which would probably be more difficult if the items were purely owned by the OECD or ETS).

One conclusion of our research therefore is that it is technically possible to use the full set of PIAAC reading component test items to meet the requirements of the Global Alliance to Monitor Learning (GAML) initiative's efforts to address all ten targets of SDG 4. Participating UN Member States can add the tests to national micro-censuses or similar surveys. Findings can be displayed in a hierarchy that is comparable across countries because of its linkability to an anchor literacy scale (e.g. PIAAC).

Tests that were developed under the reading components scheme become disconnected from their origins when they are made internationally comparable

To break down the reading proficiency within the lowest literacy level ("below PIAAC Level 1") into more differentiated categories, a lower-rungs approach was developed in Europe (in the UK and Germany) and a reading components approach was developed in the United States and Canada. Both have advantages and disadvantages. The most recent and widespread version of the reading components is the one used in PIAAC and STEP. It differs from earlier versions, because it was adjusted for the purpose of being applicable in different countries, settings, lan-

guages and scripts. While these adjustments and test development efforts polished the test (Sabatini and Bruce 2009), one unavoidable side effect was the blurring of some of the clear differences which had been discernible among earlier components (Strucker et al. 2007).

Earlier component versions differed much more from each other and were more closely linked to different aspects of reading. One aspect, for example, was the strategy of letter-by-letter-decoding of unknown words, mostly tested by using nonsense words (i.e. in the TOWRE test). Another aspect was the existence of *lexical memory*[29] entries according to a lexical strategy of reading where fast word recognition is required. This can be tested with word recognition tests (TOWRE, PPVT). These two aspects can be interpreted by using Coltheart's *dual-route theory of reading* (Coltheart et al. 2001)[30] and they show up in readers with different kinds of dyslexia, requiring different treatments. Both are different from tests on language and vocabulary or tests on grammar, which indicate low language proficiencies – and thus require provision of language lessons rather than making efforts to improve learners' decoding or memorising skills. Another aspect has been the test of short-term memory, attention or concentration. Many foreign-born readers may have excellent short-term memories, while locally born struggling readers may not because of generally low cognitive skills. The latter may indicate learning disabilities but may also need psychological treatment. Earlier reading component approaches also tested listening and differentiation skills, phonemics or *phonemic awareness*.[31] In cases of low test results, training would focus on syllables and rhymes, precise pronunciation and listening skills. Less important for reading but a good indicator for literacy proficiency are spelling skills which require a good command of writing skills as well. Overall, the earlier versions of reading components provided in-depth knowledge about adequate pedagogical treatment. The problem is that these tests do not work for comparative studies of surveys conducted using different language and letter systems. Most of the nationally developed reading components correlate very closely with the phonemic characteristics of particular languages and their written equivalents (Sabatini and Bruce 2009). For these reasons, it is rather difficult to develop test items that still keep a close relation with the theoretical explanations and are internationally comparable.

In sum, useful information from earlier component versions (covering the dual-route theory of reading, short-term memory or learning disabilities; language or grammar and vocabulary; phonemic awareness, grapheme-morpheme-correspondence or spelling) has been lost in the efforts of trying to make items internationally

29 Lexical memory refers to being able to remember particular written words as pictures.

30 The "dual-route theory of reading [concerns] the 2 tasks most commonly used to study reading: lexi- cal decision and reading aloud" (Coltheart et al. 2001, p. 204).

31 Phonemic awareness refers to the ability to discern distinctly separate units of sound in a particular language which determine the meaning of a word. Example: being able to distinguish between d and t in the words bad and bat.

comparable. Thus, as we already assumed before embarking on our research, an internationally comparative approach at this level indeed proves to be extremely difficult and, in cases where it does work, loses the components character, shifting slightly towards a lower-rungs approach.

While on the one hand components lose their strong connection to the original theoretical background, lower rungs in recent years have tended to be described in more detail, providing rich didactical insights and knowledge. The can-do descriptions provide a good example of better theoretical knowledge (see also Durda et al., in this issue).

Limitations: custody of an international literacy scale – who owns it?

There is no such thing as the one and only common literacy scale, even though the items used in the PIAAC add-on module have proven to test literacy in a hierarchical order. Further research with open and large datasets would be necessary to link them to the overall PIAAC scale or any other international literacy scale. For the moment, the OECD holds custody of its PIAAC scale, and UNESCO's LAMP component datasets are not large enough to run the necessary analyses. The dilemma remains the same. GAML has to avoid implementing a single scale and definition with a single test in possibly all UN Member States, because researchers claim that this would lead to a monopoly (Addey 2018) and re-colonisation of the so-called Global South (Grotlüschen 2018). The current solution (UIL 2019) is to propose two reporting levels according to Member States' income category.

Moreover, the tests in the PIAAC add-on module were developed for industrialised countries. They still have a blind spot at a certain point that lies between virtually no reading skills and the easiest test item. This section may be highly relevant for low-income countries.

Recommendation: re-analyse LAMP and STEP items and refine the theoretical approach to assessing reading proficiency in an internationally comparable manner

At this point it seems necessary to re-run analyses of reading components data from several other surveys like LAMP and STEP in order to find out whether they deliver similar hierarchies and, if not, whether eliminating some items might improve the scales. Another necessity is to discuss a common anchoring scale. This would enable countries to develop further and perhaps even easier test items, co-run them in their national surveys and link them to the existing set.

More theoretical work is needed for the development and interpretation of tests at the very lowest levels of literacy (see Durda et al., in this issue). Lower rungs can be described according to what proficiencies the items require or according to can-do-descriptions, i.e. Alpha Levels with 7–10 can-do descriptions on each level

for both reading and writing. This would provide detailed knowledge via the descriptions of lower rungs. For surveys to be run in Germany, an adult education curriculum with formative assessment tools has already been developed based on the lower rungs level descriptions.

Hence, to improve learning outcomes within the GAML initiative, instead of trying to find a language-independent set of test items, it would be appropriate to reconsider the advantages of a lower-rungs approach for the international assessment of reading skills, either to supplement the components approach or to leave the language-related area of "below Level 1" research to UN Member States.

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4. Research review on the causality and variation of low literacy in adult life – potential for adult learning, education and research

Barbara Nienkemper, Klaus Buddeberg & Anke Grotlüschen

Introduction

Large-scale quantitative studies on basic adult competences and thus on reading and/or writing skills can be considered the dominant research strategy regarding reading and writing skills (Addey, Sellar, Steiner-Khamsi, Lingard, & Verger, 2017). The aspect of international comparison labelled as the 'comparative turn' (Martens, 2007) reinforced the significance of this type of study.

Various surveys highlight the distribution of competences in various countries, such as the Survey of Adult Skills (PIAAC: OECD, 2013, 2016, 2019), the Skills for Life surveys (Department for Business, Innovation and Skills, 2012), the French IVQ surveys (Jeantheau, 2013; Jonas, 2012), and the German reading and writing assessment LEO (Grotlüschen, Buddeberg, Dutz, Heilmann, & Stammer, 2019; Grotlüschen, Riekmann, & Buddeberg, 2014).

These surveys provide detailed insights into the distribution of basic skills in different countries. They are cross-sectional surveys, hence they can only provide very limited answers about the causes of low literacy. Longitudinal studies allowing statements on causalities are rare. The data of the well-known British Cohort Study (BCS70) (Bynner and Parsons, 2006a), as well as the Longitudinal Study of Adult Learning (Reder, 2005), are earlier examples of longitudinal surveys in the field of basic skills research. Although both studies are over fifteen years old, they still offer a valuable insight into reasons for low literacy. While these two surveys investigate the situation in the US and Great Britain, two more recent surveys explore the situation in Germany. Data from the national PIAAC longitudinal study (PIAAC-L) (Rammstedt et al., 2017) and the National Educational Panel Study (NEPS) (Artelt et al., 2013) offer new opportunities to examine the causes of low literacy and numeracy skills in adult life.

Large-scale surveys base on a specific understanding of literacy. Using literacy as a measurable skill implies imposing an autonomous model of literacy. This perspective usually implies a more or less pronounced deficit view. Positions of literacy as a social practice (Gee, 2008; Duckworth & Tett, 2019) and as situated literacies (Street, 1992; Barton, Hamilton, & Ivanič, 2000) are less prominent in current lite-

racy research. Quantitative designs (often implicitly) frame the problem of low literacy as being grounded in cognitive processes. Qualitative designs use sociocultural or critical theories of literacy. Furthermore, the ways in which research literature portrays adult literacy learners probably have an effect on how adult literacy learning is discussed in policy and practice (Belzer and Pickard, 2015).

We consider publications from various methodological research traditions in this review to obtain a comprehensive picture of the state of research. This review explores earlier research on the *causality and variation of low literacy in adult life* from both a quantitative and a qualitative perspective.

In response to the low level of basic skills identified by several assessment studies, a 'National Decade for Literacy and Adult Basic Education' was launched in Germany (2016 to 2026: BMBF and KMK, 2016). This strategy involves cooperation between the Federal Ministry for Education and Research and the Federal States (*Länder*), and a large number of social, economic and political actors. By rolling out this initiative, Germany finally caught up with common practice in other countries and on a supranational level (e.g. United Nations Decade for Alphabetization).

Specific focus on the situation in Germany has an influence on this contribution. We use the term low literacy as it prevails in the German discourse. Here, low literacy means reading and writing competence up to sentence level and, at best, very short and simple texts. We are aware that this definition is not representative for international discourse. In particular, it contrasts approaches of literacy as a social practice. The discussion, especially in the Anglo-Saxon world, is several years ahead of the discussion in Germany, and likely many other countries. Therefore, the German scientific and political discourse could benefit from a shift towards internationally renowned research perspectives.

Research questions

This review answers the following questions:

(1) Which risk factors were identified by earlier empirical research in terms of development of low literacy in adult life?
(2) Which individual factors (i.e. cognitive and non-cognitive) and which structural or contextual factors (i.e. employment, starting a family) are assumed to be able to protect adults from the loss of competences?

Materials and methods

Applying very general terminology as search strings for the literature research (e.g. literacy, adult or causes) resulted in more than 700 titles in the ERIC database. These results were rather inconsistent, including early childhood, teachers' readiness for new technology, and UNESCO activities. Most of the findings do not focus on causes of (low) literacy in adult life. Nevertheless, a great deal of the research implicitly

refers to the causes of low literacy, even without mentioning terms like 'cause' or 'risk factor' in their titles or research questions. Therefore, the collection of studies took place in several circles.

Recently published articles and reviews on the causal factors of low literacy differ in more than one aspect. They may have a common hypothesis about causes (e.g. inadequate schooling and lack of domestic support, Löffler, 2014), yet they differ in terms of theoretical perspectives (e.g. sociological, educational and psychological perspectives, Grosche et al., 2016) and regarding their diagnostic properties (e.g. language-related deficits, cognitive deficits, and deficits related to numerical abilities, Vágvölgyi et al., 2016).

We ran a placeholder search in the German-language educational research system *fis-bildung* hosted by the DIPF – Leibniz Institute for Research and Information in Education. Search strings were *Ursache*, *Entstehung* or *Kausalität* (English: cause) and *Analphabet* (English: illiterate). The search resulted in 70 publications between 1982 and 2014. To extend our search results, we conducted a similar search with the terms 'cause' 'adult' and 'illiteracy' or 'illiterate' as well as the terms 'cause' and 'adult' and 'low literacy' in the ERIC database. This additional search resulted in another 83 titles.

The 153 titles were categorized by the information provided in their abstracts. In the case of edited volumes, the table of contents was checked for the search terms and corresponding articles were included in the review. In order to obtain results with a sound evidence base, our review only included publications offering their own empirical research. Moreover, as we explicitly refer to the German discourse, we excluded articles referring to empirical research into adult illiteracy in emerging and developing countries. We also excluded didactical intervention studies, evaluations of local literacy programs and empirical studies which did not specifically focus on causes of low literacy.

We complemented this literature search with studies used in other German-speaking research overviews dealing explicitly or implicitly with the question of *causes.* In total, 17 titles are discussed in this research review. We divided these studies into five categories, based on their research methods. This approach follows the position adopted by Johnson and Onwuegbuzie (2004, p. 14) whereby different research methods have different strengths and weaknesses, with each method possibly leading to complementary results.

(1) (Biographical) interview study
(2) Descriptive and multivariate analyses of quantitative interview studies
(3) Longitudinal large-scale assessment
(4) Psychological assessment studies – experimental designs
(5) Ethnographic fieldwork studies

We extracted these studies with regard to their 'new' contribution to the question of causes of low literacy in adulthood. Finally, we derived a five-factor model from our discussions of the review results.

Analysis and results

The studies considered for this research review each applied different research methods. It proved suitable to categorize the results of this literature review by their methodological research approaches as similar empirical approaches lead to corresponding empirical results and are connected with similar definitions of low literacy and theoretical perspectives of literacy.

(Biographical) interview studies

Research into the causes of low literacy among adults in industrialized countries started with case studies and methods of oral history (Empacher, 1977), structured and guided interviews (Taylor et al., 1980, Oswald and Müller, 1982, Döbert-Nauert, 1985) as well as autobiographical narrative interviews (Egloff, 1997). Sample sizes ranged from 1 to 17 adults attending adult basic education courses. A more recent interview study from educational sociology (Bittlingmayer et al., 2010, Drucks et al., 2011) combines 105 guided interviews involving educationally disadvantaged people with a literature review and 39 expert interviews involving professionals from the field.

The most important characteristic of these interview studies is that most interviewees were recruited from basic education courses. This implies a bias as the majority of interviewees are enrolled in courses, yet the majority of low-literate adults do not attend adult basic education courses (Bilger, 2012, p. 261). This may be seen as a limitation because adult basic education provides external attributions of causes to their participants to foster a motivation to learn in adult life (Grotlüschen, 2012, p. 11). In view of this, interviewees may have a tendency to report external causes since they are aware that this is socially desirable in an interview situation, in turn protecting them from the application of internal attributions.

Despite this limitation, the method of (biographical) interview studies has the benefit of grasping subjective interpretations of causes. Interviews and biographical narratives reveal important causes and contexts. This kind of information cannot be gleaned by way of quantitative methods. The analyses provide valuable contributions towards understanding the social contexts surrounding low literacy.

The interview material vividly conveys narratives involving highly problematic and poor social situations, as well as varied experiences of neglect, rejection, psychological stress, devaluation, punishment, exclusion and discrimination in the parental home and at school during childhood and adolescence (Empacher, 1977, Taylor et al., 1980, Oswald and Müller, 1982, pp. 24–56, Döbert-Nauert, 1985, pp. 16–17). Interview studies are documents of the biographies, carried out at a specific time

and place. The interviewees experienced childhood and adolescence in the poverty-stricken post-war period in Germany (Oswald and Müller, 1982, Döbert-Nauert, 1985), in a socioeconomically disadvantaged family on a farm in Michigan, USA (Empacher, 1977), and at the time of the fall of the Berlin wall (Egloff, 1997). None of the interview studies views biographical experiences as an isolated factor that could explain low literacy. The causes are reported as a bundle of mutually dependent factors.

Oswald and Müller (1982, p. 92) conclude that all interviewees experienced social disregard by teachers or classmates, all the while without receiving any emotional support from their families. Fathers and mothers were often overburdened with poor financial and social situations. Teachers attributed *external* causes of failure in terms of early acquisition of literacy to the child as personal failures. The interviewees reported that the teachers saw their failure as a lack of character or intelligence. As a result, the children developed self-doubt and found themselves in a maverick position. This situation was compounded by being transferred to special schools. The interviewed adults also reported that they did not experience any special learning support while at special schools, but rather social stigmatisation. The researchers also found four cases where permanent absence from school was approved by the authorities (Oswald and Müller, 1982, p. 56).

The methods of oral history and interviewing allow for the individual interpretations of the adults themselves. The researchers derived general explanation models for the causes of low literacy based on empirical findings. Oswald and Müller (1982, pp. 94–96) point out that the prevailing educational norm in society is responsible for the fact that illiteracy is associated with prejudice, social stigmatisation and discrimination. The researchers also call upon German social and educational scientist Willy Strzelewicz to explain the social stigmatisation of low literate adults. According to Strzelewicz, societal groups threatened by a loss of status must try to prevent 'others' from advancing on the status scale. Social devaluation thus serves to maintain one's own status.

Oswald and Müller (1982, pp. 97–100) further explain that low-literate adults adopt the prejudice of not being intelligent enough to learn to read and write properly. This is why they conceal their difficulties in reading and writing, also keeping it secret from close relatives and friends by way of deception and limiting social contacts. It may even lead to massive existential anxiety. Later research (Nienkemper, 2015, pp. 80–88) shows that deception is not a dichotomous category. People tend to use 'partial disclosure' (or 'partial outing') strategies to cope with situations where reading and writing are required. The decision to conceal difficulties in reading and writing or to report individual difficulties is each based on subjective and sensible reasons.

The results show the important connection between persistent feelings of inferiority and the development of a negative self-image. This in turn can explain why low-literate adults still avoid language activities, even if they improved their abilities by attending adult education classes (Döbert-Nauert, 1985, pp. 108–114). On the oth-

er hand, Taylor et al. (1980) find that the participants have minimal need for reading and writing during their everyday life.

The study by Egloff (1997) helped bring about a shift away from the image of low-literate adults being pitiable, dependent and deficient people. Egloff considered the interviewees experts in their life and focused on individuals' life histories rather than failed learning histories. Egloff (1997, pp. 123–129) found that a negative biographical progression curve can be interrupted if one of its causes loses its impact, even if the problem of inadequate written language skills continues to persist. Egloff identified reasons, which could prove to be a positive turning point in life:

- conversion to a religious group, accompanied by a change of social milieu
- admission to an institution that fosters individual learning and provides opportunities to take on responsibility for the community
- emancipation from the family and taking up employment

The interview study of the HABIL project (Bittlingmayer et al., 2010, Drucks et al., 2011, Drucks, 2013) does not focus on the common reasons for low literacy, but rather stresses the high social heterogeneity of those adults who are subsumed under this heading. Unlike previous studies, the research group included adults whose low literacy is due to different conditions of migration. As result of the HABIL research project, Bittlingmayer et al. (2010) and Drucks et al. (2011) describe a heuristic of an ideal typology of functional illiteracy. The seven types (and subtypes) have been categorized by subjective life criteria as well as structural criteria:

(1) Classical educational disadvantage and mechanisms of educational disadvantage
(2) Privileged milieu of origin; parents and school may compensate for performance problems
(3) Gender-specific barriers to education
(4) Critical life events in the family, among peers, at school
(5) Immigrant with restricted access to German institutions and with little educational participation
(6) Educational barriers due to persecution/discrimination in countries of origin
(7) Highly skilled migrant without literacy needs due to qualification in business using international languages (translated from Bittlingmayer et al., 2010).

This model allows an understanding of the complex and diverse causes of low adult literacy. The research group stresses that the level of written language competence is not in itself a decisive factor for participation or life opportunities. The structural factors of social origin, historical and political living conditions, and institutional exclusion and sorting mechanisms are not just conditions for the acquisition of writing, but rather for structuring opportunities for social participation (Drucks et al., 2011, Drucks, 2013).

Descriptive and multivariate analyses of quantitative interview studies

The results of our review cover few publications with data from quantitative interview studies. None of these studies surveyed a representative sample of low-literate adults. The interviewees were teachers and students (United Kingdom, 1974), soldiers in the British Army who participated in the School of Preliminary Education (Stevenson, 1985), and adult participants from reading and writing courses in German further education centres (*Volkshochschulen* in German) (Fickler-Stang, 2011). The descriptive research results of these surveys produce no additional main categories of causes of low literacy compared to the previously reviewed interview studies. Therefore, we briefly report the multivariate analysis carried out as a quantitative part of the aforementioned HABIL project (2013) based on a representative survey involving 4,350 students when leaving high school, secondary school or special education school. They examined the causal relationship between writing skills and school-related attitudes and experiences by applying a structural equation model (Osipov et al., 2011, pp. 105–107, Drucks, 2013, pp. 230–235). They found that affirmative attitude patterns are more prevalent in special education schools where writing skills are weaker in general. The model did not confirm that spelling skills are linked to positive school motivation or family support, but that parental professions are directly linked to spelling skills. The researchers interpret this result as an effect that is mediated via school type. Osipov et al. (2011) note that young people from disadvantaged backgrounds are ambivalent towards recognition. The strongest explanation for low literacy therefore lies in the reproduction of social inequalities at school.

Longitudinal large-scale assessments

Based on the assumption that low literacy is caused by an insufficient learning process during the first years at school, Gasteiger-Klicpera and Klicpera (1994) conducted annual reading assessments involving 500 pupils from several school districts in Vienna (Austria) over a period of ten years. Based on their studies, they explain the development of reading and writing (difficulties) by way of an interaction model with three causal factors influencing each other: Individual learning preconditions, school lessons, and family interaction (Gasteiger-Klicpera and Klicpera, 1994, p. 6). They found a high persistence of reading difficulties in the group of children with the lowest reading performance. Children with reading difficulties read less because they find it more strenuous. This is why they have fewer opportunities to practice and to experience reading for pleasure. Consequently, they are rarely able to overcome initial problems (Gasteiger-Klicpera and Klicpera, 1994, p. 10).

Bynner and Parsons (2006a) published results from their longitudinal analyses of a subsample of the British Cohort Study (BCS 70). They focused on adults who had their literacy and numeracy skills assessed in both 1991 (at the age of 21) and in 2004 (at the age of 34). Adults were classified into four groups: ‘poor non-mov-

ers', 'improvers', 'deteriorators' and 'good non-movers' (Bynner and Parsons, 2006b, p. 16). By comparing 'improvers' and 'deteriorators' with those with 'no change' in skill level, they found substantial relationships between movement, socio-economic status, and other personal attributes at age 34. Bynner and Parsons point out that, based on their bivariate analyses, it is not possible to clearly separate cause from effect, but they found 'clear indications of virtuous (and vicious) circles in process, in which literacy or numeracy enhancement (or loss) play a crucial part' (Bynner and Parsons, 2006a, p. 104). Improvement of skills goes hand in hand with positive developments in families' economic status. They are also associated with family life and civic participation, as well as with female health and wellbeing. Comparing the 'deteriorators' with the 'good non-movers', the male 'deteriorators' were more likely to have no formal qualifications, less likely to have been using a PC at work, and more likely to be a parent with three or more children. By contrast, the female 'deteriorators' were more likely to live in rented accommodation, less likely to have savings or investments, less likely to be in full-time work, less likely to have received work-related training, and more likely to be a single parent (Bynner and Parsons, 2006b, pp. 17–19).

The US Longitudinal Study of Adult Literacy (LSAL) systematically measured individual changes in literacy proficiency over a period of nine years (1998-2007). It started with a representative sample of a local high school dropout population. The high school dropouts were aged 18–44 at the beginning of the study, proficient English speakers, and residents of the Portland, Oregon, metropolitan area in 1998. The Sample (940 cases in total) consisted of 496 individuals from a random-digit-dialling frame and 444 from an enrolled student frame within the local adult education programmes (Reder, 2009, p. 38, 2010, p. 3). The LSAL conducted a series of six periodic interviews and skills assessments in respondents' homes. The assessments used were provided in English only (Reder, 2010).

The results of the LSAL show that proficiency in literacy as well as the performance of literacy and numeracy practices are interchangeable entities throughout adult life. Reder (2005, 2011/2008) states that the relationship between age and literacy proficiency tends to exhibit maturational processes rather than cohort effects. While younger adults in the sample of high-school dropouts tend to gain proficiency over time, adults aged thirty-five or older tend to lose proficiency (Reder, 2011/2008, p. 69).

Another significant predictor for development in literacy proficiency was place of birth, even after controlling for age. Immigrants had higher rates of proficiency change than native-born adults in the United States. Immigrants who have to acquire language skills in a second language usually start from a lower level of skill in the new written language. In terms of the cultural specifics of assessment instruments, Reder interprets that '[im]migrant adults, even those with conversational proficiency in English, may be continuing to acquire advanced cultural and linguistic knowledge throughout their life span that native-born adults already possess' (Reder, 2011/2008, p. 71).

Reder (2009) also found evidence for the 'practice engagement effect'. This means that higher levels of engagement in literacy practices at an initial point in time lead to higher levels of proficiency at a later point in time, even after controlling for numerous demographic and background variables. Furthermore, Reder (2005, 2011/2008, 2011) found that participation in formally organized basic skills programmes offered at the time of the survey, as well as self-managed learning activities, had a direct and immediate impact on the literacy practices measures, whereas there was no effect in terms of literacy proficiency. However, Reder posited that participation positively affected literacy proficiency in the longer term.

Reder (2010/2011) analyzed individuals' *self-reported changes* in reading, writing and maths skills, and in the frequency of use and types of materials associated with those skills. He found that some crucial events during an individual's life had significant effects on proficiencies and practices:

- First, starting a job after a period of non-employment has a significantly positive effect on the likelihood of self-perception of an increase in reading skills.
- Second, the recent addition of a child to the household has a significant positive impact on the frequency of reading (practice). It has no significant impact on self-perception of 'reading better'.
- Third, the presence of a new partner in the household leads to doing maths more often. Reder justifies this result with an increased need for financial records and budgeting.
- Finally, a recent increase in household income enhances the likelihood of doing maths with new kinds of materials. Reder explains that in this case, new kinds of tax and employment-related forms need to be completed.

Psychological assessment studies – Experimental designs

Psychological assessment studies argue that beyond reasons of social disadvantage during childhood, impairments in phonological information processing (Grosche and Grünke, 2011, Grosche, 2012, Eme et al., 2014) are the cause of reading problems in low-literate adults. This kind of research study uses quasi-experimental designs to examine the causes of reading difficulties. Adults from literacy classes are matched with control groups by their level of reading skills. In summary, there are certain limitations to psychological assessment studies. The results are not representative for adults with lower literacy. They refer exclusively to low literacy in terms of reading and leave out the social significance of writing. Furthermore non-native speakers and learners of a second written language are not included in the samples. Nevertheless, the results of psychological research as a whole highlight the relevance of applying tailored cognitive training in adult literacy programmes.

Grosche (2012) delineates an interaction theory of functional illiteracy. This theory explains functional illiteracy by accumulation and interaction of phonological and social risk factors. The phonological aspect of this theory was tested in an em-

pirical reading level match design (Grosche and Grünke, 2011, Grosche, 2012). The results of 54 low-literate adults completing a phonological test battery were compared with the results of 54 literate adults of the same age, and with the results of a group of primary school pupils at the same level of reading development. The group of low-literate adults showed poorer results in terms of phonological awareness, verbal working memory and speed of recall of phonological information. The children showed better phonological results. The researchers therefore rate the results as the cause (not a consequence) of the reading problems among low-literate adults. They assume that phonological impairments of low-literate adults are comparable to those of dyslexic people (Grosche and Grünke, 2011, p. 287).

Eme et al. (2014) compared 52 adult literacy students with 52 children on reading tasks, spelling tasks and oral language tasks. Both groups speak French as their mother tongue and were born in France. The children were attending primary school and were matched with the adults according to their reading levels. Results again point to phonological impairments among the adult group. Their performances were significantly lower than those of the children in their use of phonological processes to identify and transcribe written words, but also in their repetition, recall and analysis of phonological units in oral language tasks. Eme et al. (2014) revealed that the low-literate adults are not affected to the same extent by phonological impairment or oral language difficulties. The researchers concluded that resulting oral language profiles could reflect the multiple risk factors leading to low literacy: 'on the one hand, being deprived of adequate sociocultural or socioemotional experiences, with specific repercussions on learning to read, and on the other, being affected by cognitive language disorders, be they phonological, semantic or mixed' (Eme et al., 2014, p. 292).

Ethnographic fieldwork studies

Our database search did not reveal any results about ethnographic fieldwork studies. We consider the theoretical perspective of these studies, understanding literacy first of all as a social practice, as highly valuable to the process of hypothesizing. Literacy research with a social practice approach (Papen, 2005) counters the negative view of adult literacy learners. For this reason, three studies well known in Germany have been included.

Fingeret (1983) conducted a long-term ethnographical survey with 43 native-born, native English-speaking American adults with varying levels of reading difficulties. Many of them do not perceive themselves as dependent within their own social networks. They use abilities other than reading and writing to decode their social environment and to achieve their objectives within those realms. In their view, reading and writing skills can be substituted for other skills or services (e.g. handcraft or childcare) that contribute to a social network (Fingeret, 1983). Such a perception of literacy allows for an explanation of non-participation in adult learning.

The ethnographic research by Heath (1983, 2012) focused on families from black and white lower working class and middle classes in US communities over the course of three decades. It allows an interpretation of low literacy competence as being caused by using the 'wrong' social practices. Heath found that there are class-specific uses of literacy. These patterns allow middle classes to better prepare their children for school (Heath, 2012, p. 13). Thirty years later, Heath was able to re-visit the families and replicate class specifics in different types of oral and written practices. She found that working-class families use vernacular practices. Middle class families also use dominant literacy practices practised at school (Heath, 1983, pp. 193–201). Vernacular literacy practices are also part of the ethnographic research study by Barton and Hamilton (1998) as well as the newer replicate study conducted in Hamburg, Germany by Zeuner and Pabst (2011).

Considering the research results from Heath, we derive two hypotheses with regard to the causality of low literacy in adult life: First, success in the acquisition of literacy in early school years depends at least in part on the use of dominant literacy and language practices acquired in a social context outside school. Second, the use of dominant literacy practices in adulthood depends on affiliation with a social class or social milieu more than on reading and writing skills. Variation in terms of an improvement in literacy competences in adult life thus depends on an expansion of social status.

Duckworth and Tett (2019) use the social theory approach and add Bourdieu's notion of symbolic violence. They report two qualitative studies, one of them being an English ethnographic study focusing on 16 learners. The second one was conducted in Scotland with 27 learners in five organizations. The interviews pursued an autobiographic approach (Duckworth & Tett, 2019, p. 8). The discussion of findings reveals a strong impact from symbolic violence, e.g. bullying by classmates, being left aside by teachers, and unfair treatment by parents (Duckworth & Tett, 2019, p. 9–11). This results in low self-esteem and ambivalence in the field of schooling.

Five-factor model – summary and discussion of findings

The main questions in this research review were: Which risk factors for the development of low literacy in adult life were identified by earlier empirical research? Which individual (i.e. cognitive and non-cognitive), structural or contextual (i.e. employment, starting a family) factors are assumed to be able to protect adults from the loss of competences?

Different research approaches involve hypotheses about the causality of low literacy. Here, it becomes evident that the choice of research participants determines the explanation model for low literacy. The research participants in the studies cited here range from adult basic education learners, primary school children, vocational students, members of certain communities, diagnosed dyslexic people, soldiers in the British Army, and representatives of the national population to high-school dropouts and teachers. Since a very heterogeneous group is being investigated in

terms of the label 'low literate adults', there is also an array of different and interacting causes to explain this phenomenon. Based on our research review, we identified five risk and protection factors for low literacy in adult life:

(1) Self-perception and stigma
(2) Perception of literacy over the life span
(3) Practice engagement
(4) Social living conditions (social class and disadvantages regarding participation)
(5) Cognition and maturation

Self-perception and stigma: Who makes me feel I can or cannot learn?

Negative self-images of being unable to acquire literacy skills and repeated experiences of social stigmatization are correlations with a view to remaining a low literate in adulthood. A negative self-image may stem from unfavourable socialization conditions within the family and at school, coupled with devaluation or disrespect for the person. In cases where difficulties in early acquisition of reading and writing skills occurred, there was hardly any specific support at home or at school, although children often changed to special schools.

Low literacy therefore appears to be one result (among others) of a negative biographical progression curve. A positive turning point in life can improve one's self-image and attitude towards limited reading and writing skills. It can (but not necessarily) lead to the decision to improve written language skills (derived from: Empacher, 1977, Oswald und Müller, 1982, Döbert-Nauert, 1985, Egloff, 1997). Adults who feel they are generally able to learn are more likely to experience learning success in reading and writing. They are also more likely to transfer their learning progress into everyday life. The research by Ade-Ojo (2012) shows that practitioners' perception of teaching adult literacy classes might also be crucial to improving basic skills in adulthood, especially among learners with dyslexia.

Perception of literacy over the life span: Is it relevant for me?

Low-literate adults do not necessarily perceive a need to improve their skills because they already cope well with the demands of everyday life. This is possibly a development starting at school because children with reading difficulties have fewer opportunities to practice and to experience reading for pleasure. Starting a formal learning process as an adult is preceded by a change of perception in applying literacy (derived from: Fingeret, 1983, Taylor et al., 1980, Gasteiger-Klicpera and Klicpera, 1994). Adults who believe that the acquisition of written language is important to their life are more likely to make progress in learning.

Practice engagement: Does my life demand literacy practices?

An improvement in literacy and numeracy skills during adult life depends on 'positive' turning points. Such points may include starting a new job, welcoming a child or new partner to the household, an increase in household income, immigration or health improvement. These changes in daily life can be linked to an increase in skill use, which in turn translate to an improvement of skills in the end.

The deterioration of skills in adulthood, on the other hand, is associated with 'negative' developments. These developments may occur at work and be linked to economic status, family life and civic participation, as well as health and wellbeing. The direction of effect and the long-term success of literacy and basic skills programmes are not entirely clear (derived from: Bynner and Parsons, 2006a, 2006b, Reder, 2009, 2010/2011, 2011/2008). Adults whose life demands the use of literacy practices are more likely to improve their basic skills.

Social living conditions (social class and disadvantages regarding participation): Do I belong to a literate social class?

Written language skills and literacy practices are embedded in social living conditions as a whole. The causes behind low literacy cannot solely be traced back to the individual. Social origin, historical and political living conditions as well as institutional exclusion mechanisms are crucial factors in determining the extent of participation and opportunities in life. These factors most clearly influence the development of written language skills. Low literacy is influenced by social processes such as institutional and individual discriminations (Drucks and Bittlingmayer, 2009). In doing so, the discourse surrounding causality of illiteracy supports the maintenance of existing power structures (Bauer and Bittlingmayer, 2012).

The perspective of literacy as a social practice is clearly demonstrated by low use of *dominant* literacy practices and higher use of *vernacular* literacy practices by working-class families (derived from Heath, 1983, 2012, Bittlingmayer et al., 2010, Drucks et al., 2011, Drucks, 2013, Duckworth & Tett, 2019). Adults who are part of a privileged social class or milieu are more likely to cope well with dominant literacy practices and assessments (Pape, 2018). Symbolic violence as an expression of distinction between higher and lower social classes keeps struggling readers from self-empowerment and engagement in literacy practices (Duckworth & Tett, 2019).

Cognition and maturation: Are my learning needs met?

Persistent impairments in basic perceptual abilities or phonological information processing are the cause of reading problems in *some* low-literate adults. Many adults 'at risk' of dyslexia are able to overcome their difficulties and acquire the skills they need for high achievement in literacy and numeracy skills. Furthermore, maturational processes can explain a loss of literacy proficiencies in adult life. Mental

disabilities cause learning difficulties, slightly lowering results in intelligence tests, although they are considered less important in terms of explaining difficulties in learning to read (derived from: Reder, 2005, Bynner and Parsons, 2006b, 2006a, Grosche and Grünke, 2011, Reder, 2011/2008, Grosche, 2012, Eme et al., 2014). Children, adolescents and adults who benefit from adequate didactical approaches (Kretschmann et al., 1990) and individual learning support are more likely to acquire or retain their literacy skills.

For further research purposes, we have named this bundle 'five-factor model'. We keep these five factors together because disconnecting them may lead to overemphasis of individual or structural factors. It is nevertheless important to focus further research on causality and variation of basic skills among *certain subgroups* rather than generalizing the results by using the very heterogeneous group of low-literate adults as a whole. The five factors can foster the process of hypothesizing for further longitudinal research. This kind of research is currently available in Germany in the form of the PIAAC-L and the NEPS. A systematic model discussing several sources for low literacy could provide insights into how these surveys can be developed further.

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Part II:
Showing marginalisation in and by large-scale assessments

5. People like me don't have any say here?

Feelings of socio-political participation of recently arrived Migrants in Austria, Canada, Germany, Israel and the USA

Anke Grotlüschen, Lisanne Heilmann, Gregor Dutz & Svetlana Chachashvili-Bolotin

Socio-political participation: Unheard voices

In times of global corporations, trade agreements, global travel and migration, the international division of labour is closely linked with different living conditions around the globe, including armed conflict, civil war and famine. Formerly colonized countries like Syria, with artificially generated borders, find themselves in civil war after colonial powers had left. Post-colonial structures sometimes do not improve living conditions but deteriorate them. Thus, people from Syria and Eritrea as well as countries with similar conditions flee their homes and seek refuge. Some countries of the global north (like the USA, Canada and Israel) have a history of perceiving themselves as immigration countries. Others (like Germany and Austria) do not.

While many Northern countries see a strong rise of right wing politics, leftist policy makers call for (more) citizenship education, though this proposal has two downsides: it may overcharge citizenship education (Wittpoth 2013, p. 169; Zeuner, 2008, p. 188), where right-wing populists seldom participate, and those who arrived, are out of scope once more. Again, they are not considered as political agents themselves.

Gayatri Chakravorty Spivak (1994) posed the question "Can the subaltern speak?" She argues that living conditions and education do exclude marginalized groups from being able to speak up and ask for their rights. Even when they do so, dominant discourses prevent them from being heard. This points at the fact that political participation and having a voice is relevant for all people, and it is relevant to make "Unheard voices" (Doron et.al, 2011) be recognised. Free speech is a human right, applying not only to dominant groups of society but also to diverse and especially vulnerable subpopulations (Hirschberg & Papadopoulos, 2016).

For these dominant groups it is often difficult to notice marginalisation of others, as their own privileges remain invisible to them (Kimmel, 1993). Not only policies, but also adult education as a whole is prone to diverse kinds of institutional racism (Heinemann 2014, p. 20–22). In several Northern countries, the privilege of

speaking up, being heard, being the object of research and adult education courses on citizenship and political participation is held by non-migrants.

To shed light on whether migrants do feel included in these privileges, this article explores whether migrants feel politically efficacious, trust in others and are willing to volunteer in order to support society or individuals. These three feelings are closely connected (Pasek et al., p. 6f.) acknowledging migrants and encouraging their feelings of socio-political efficacy is seen here as one of the responsibilities of adult citizenship education.

Citizenship education for and with migrants and refugees

Firstly, we want to ask, whether this call for making migrants voices heard is not already being met by the citizenship education often offered to migrants, especially in Northern immigrant societies (Schugurensky 2009; Zeuner 2008)?

Schugurensky divides citizenship education offered to adult migrants into a "multicultural" and an "intercultural" approach: "The first one […] focuses on familiarizing learners with different cultures in order to reduce stereotypes and ethnocentric attitudes. […] More often than not, this is done superficially and uncritically, focusing almost exclusively on the 3Fs of folklore, food and festivities. However, occasionally multicultural education programs also encourage a deeper social analysis that includes examining dynamics of inequality, discrimination and racism" (Schugurensky 2009). The intercultural education he describes as being focussed on "proactive interaction among different ethnic groups" and on "promoting communication, cooperation and regular relations among groups." (ibid.)

Schugurensky seems to argue in favour of intercultural education, as the less paternalistic and one-way of both. What he does not include in his thoughts is education on human and citizenship rights, so as the right to speak up or claim the streets (and public places, see (Biesta 2012, p. 683). The more radical approach by Biesta, in which he argues that "such expectations" are not met by "the side of policy makers who want their agendas to be 'delivered'" (Biesta 2012, p. 691) in turn has not been developed as an approach for refugees or migrants, but for societies as a whole.

Offering a way to close this gap between intercultural transfer of knowledge on human and citizenship rights and the call to make use of these rights without simply acting according to policy makers wishes, Wildemeersch presented several ways to work for and with "newcomers" (Wildemeersch 2017). His core intention, not to work about or for refugees, but with them, points towards a relevant aspect. It entails the question, whether citizenship education in different host countries works along these lines and, more generally, who these migrants are, that are supposed to be included.

Refugees and migration into Austria, Canada, Germany, Israel and the USA

Israel's population comprises around eight million people; of these, approximately 75% are Jewish, while some 20% are Arabs (Israel Central Bureau of Statistics 2016). The Arab minority have lived in the region for generations, mostly in rural communities and villages (Semyonov and Lewin-Epstein 2011). They were granted Israeli citizenship with the establishment of the Israeli state in 1948, but until 1966 their rights were suspended in practice and they were ruled by a military administration, a policy justified as a security measure against a potentially hostile population (Shafir & Peled 2002). Since the establishment of Israel, no Arab party has been allowed to be a full partner in a government coalition, including those based on Labour and the left wing (Al-haj 2004). In addition, the Arabs are disadvantaged compared with Jews in every aspect of social stratification. These disadvantages can be attributed largely to socio-economic discrimination, and should be understood within the context of the Jewish-Arab conflict)Semyonov & Lewin-Epstein 2011).

The Jewish majority is composed of waves of Jewish immigration and those eligible for citizenship according to the Law of Return who came from many places around the world. This law allows Jewish immigrants to acquire full citizenship, including suffrage and the right to stand for office, from the day they land in Israel (Horowitz 1998). The Former Soviet Union (FSU) immigrants, who have arrived in Israel after the collapse of the Soviet Union in 1989, comprise the largest immigrant group in both absolute terms (about a million people) and relative terms (17% of the Jewish population of Israel) (Chachashvili-Bolotin et al. 2016; lIssitsa 2006; Sicron 2012). As a result, Israel carried out PIAAC in three languages: Hebrew, Arabic (the official languages) and Russian (OECD 2016, S. 1).

It should be noted, however, that the FSU immigrants' access to the political system as soon as they arrive in the country has been facilitated by the nature of Israeli immigration law (specifically, the Law of Return) and changing the electoral system in 1996. The new method of separate voting for the Knesset and the Prime Minister enables immigrants, to manifest their sectarian identity by voting for parties composed of members of their own group, without forfeiting a direct say in the identity of the prime minister. FSU immigrants have made effective use of this (Al-haj 2004).

Germany has been an area of immigration throughout its history. After World War II, however, the country[1] faced a new dynamic of immigration, starting by the absorption of returnees or refugees from the former eastern European war zones

1 It should be noted that this only concerns the former western part of the country (Bundesrepublik Deutschland until 1989), whereas the former eastern part (Deutsche Demokratische Republik) had a different migration pattern. Here only few immigrated from ‚socialist brother states' who were expected to leave the country, in general after having received some kind of education or professional training (Krüger-Potratz, Hansen & Jasper, 1991). Consequently, the number of migrants in the DDR was low

until the 1960s and intense recruitment of labour force from the early 1950s as part of the German *Wirtschaftswunder* (the 'economic miracle'). The legal fundamentals of migration include three patterns: the possibility to recruit individuals or groups for specific purposes (workers, artists, scientists etc.); the repatriation of 'ethnic Germans' (i.e. descendants of emigrants to the Russian Empire from the 17th century onwards or inhabitants of regions that historically belonged to a German state, such as Prussia); and giving refuge to people seeking protection as determined by the German Constitution and the 1951 Geneva Refugee Convention.

During the period of work force recruitment, the proportion of foreign citizens in Germany grew from 1.2% in 1960 to 4.9% in the 1970s to 8.4% in 1990. In 2016, about 18.6 million migrants lived in Germany, i.e. 22.5% of the German population; roughly half of them carry foreign passports (Statistisches Bundesamt 2017). Until the 1980s, Germany received migrants from a fairly low number of (mostly European and other Mediterranean) countries. Today, migrants represent about 190 countries of origin, i.e. almost all countries of the world.

Since 2010, Germany – like most other affluent countries – has been affected by new dynamics of migration. The numbers of migrants from Arab and African countries began to increase. In 2015, roughly (net) 800,000 new migrants came to Germany and about (net) 720,000 in 2016. As no national immigration policy exists, one possible way for new migrants to stay in the country is to apply for asylum. On average, around 20% of such applications were accepted in recent years (Bundesamt für Migration und Flüchtlinge 2017). In 2017 however, numbers of new migrants are decreasing significantly – just as everywhere in the world.

Similar to Germany, *Austria* only reluctantly accepts its role as a country for immigration. According to PIAAC data, German-speaking migrants account for nearly 20% and thus the largest share of migrants in Austria. Almost 80% of those are born in Germany and migrated for work or study related reasons to Austria. Turkish migrants came to Austria as actively recruited "guest workers" since the 1960s, as well as migrants from former Yugoslavia. In the 1990s, people from former Yugoslavian states sought refuge in Austria because of the Yugoslav Wars. New labor migrants from Germany and Eastern European countries, e.g. Romania, benefit by legally unrestricted mobility within the EU (Kraler & Sohler 2016, p. 19).

The USA, being an immigrant society, adult educators in the USA offer political programs for (undocumented) migrants to speak up and claim theirs rights (Muñoz & Wrigley, 2012). They offer programs in Spanish as well, the language of many of the immigrants. Some approaches even contain information on how to avoid deportation by the "la Migra", the immigration police. Several cities are "sanctuary cities" and do not deport undocumented migrants. However, a strong conservative party and Donald Trump's attempts to install a 'muslim ban' tell a different story about immigration.

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until the re-unification of the country. Still today, we find an unequal the distribution of migrants in East- and West-Germany.

Canada is a very diverse country with a long history of immigration and a high proportion of foreign-born population (Statistics Canada, 2013, p. 4). In contrast to most other countries, immigration is seen as desirable and part of Canadian identity. Because of its geographic location unwanted immigration only plays a minor role. Official policy follows a multicultural approach of integration instead of assimilation (Griffith 2017), but also selects migrants by skills, education and language proficiency (Castles, Haas, & Miller 2014, p. 135). Until the 1980s most immigrants came from Europe, but the proportion of migrants from Asia and the Middle East grew steadily since the 70s (Statistics Canada 2013, p. 9). In 2010, the most important countries of immigration were the Philippines, India and China (Castles et al. 2014, p. 134).

Methods and datasets

Data were taken from a merged file consisting of PIAAC round 1 and 2 (merging of rounds took place according to the PIAAC technical guidelines). While PIAAC does not cover refugees, the best proxies for comparison according to time in the host country are the generation of immigrants as well as the dichotomous split of first generation by year of arrival into *five years in the host country* (recent arrivals resp. newcomers) versus *more years in the host country* (earlier migrants). The figures show that the *generation* consists of enough cases for all countries.

Tab. 1: Numbers of cases by Generation of Migration (IMGEN)

Generation of Immigration (IMGEN)			
n	**1st generation of immigration**	**2nd generation of immigration**	**Non 1st or 2nd generation of immigration**
Austria	655	160	3.789
Canada	4.777	993	18.988
Germany	636	334	3.726
Israel	976	1.079	2.493
United States	601	195	3.845

For recent migrants (first-generation migrants who are in the host country five years or fewer) numbers of cases are small in Israel and Germany, so results are seldom significant.

Tab. 2: Number of cases by years in host country (IMYRCAT)

1st generation of immigration and returnees, by years in host country			
n	**In host country 5 or fewer years**	**In host country more than 5 years**	**2nd generation and non-immigrants**
Austria	96	570	4.338
Canada	1.582	3.250	21.665
Germany	55	590	4.709
Israel	33	970	4.255
United States	66	562	4.252

The variables used here to indicate a sense of being heard and playing a role in a host country are *political efficacy*, *social trust* and *volunteering* (see table 3). All variables use a rather conservative, rational-choice approach, but they correlate with more open variables like unorthodox protest forms (Beierlein et al. 2014; Borgonovi 2017; Rosanvallon 2013; Vetter 1997). Volunteering here asks for activities related to organizations, this does not cover the activities carried out informally in neighbourhoods and families (Grotlüschen 2017a, 2017b; Grotlüschen & Epstein 2014).

Tab. 3: Variables from the PIAAC background questionnaire

Concept	Variable	Range
political efficacy	I_Q06a (No influence on government): "People like me don't have any say about what the government does."	1 = strongly agree, 5 = strongly disagree
social trust	I_Q07a (Trust only few people): "There are only a few people you can trust completely."	
	I_Q07b (Other people take advantage): "If you are not careful, other people will take advantage of you."	
volunteering	I_Q05f (volunteering): "In the last 12 months, how often, if at all, did you do voluntary work, including unpaid work for a charity, political party, trade union or other non-profit organization?"	1 = never, 5 = every day

Description of results (1st and 2nd generation of immigration)

The research question is how highly immigrants agree to questions that indicate their political and social participation. This requires crosstabs to report and compare the immigrant generations with each other and the more recently arrived migrants to earlier migrants – as well as to non-immigrants. The cross-country comparison focusses on the gaps between the countries subpopulations instead of differences between the countries themselves, as these may include cultural answering patterns

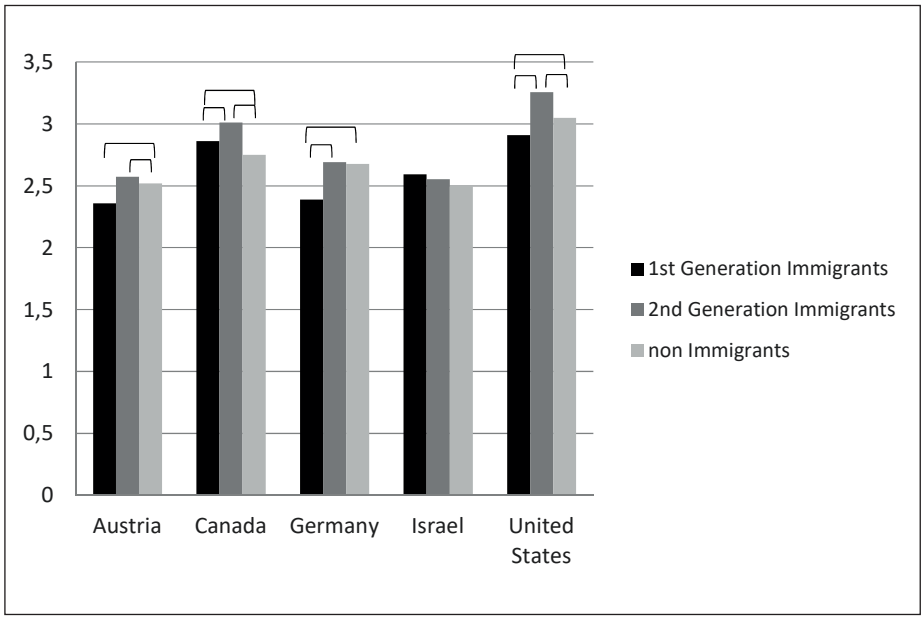

Fig. 1: „Political Efficacy" by country and migration generation (I_Q06a); bars indicating significance at a 5%-level.

or different approaches on volunteer work. The gaps between subgroups within countries remain comparable. Brackets on the graphs indicate which subgroups differ significantly below the 0.05-level.

The crosstabs make voices from the interviews heard and describe the subgroups' statements, even though subgroups only superficially consist of homogeneous individuals. For explanatory analyses – whether migration is a *reason* for feelings of political efficacy – it needs further investigation with multiple regressions or further research explicitly focused on these subpopulations. This analysis is descriptive, it only asks how recently arrived migrants do integrate, it does not ask why this is so. The discussion of results thus tries to describe, not to explain.

Second generation feels highly politically efficacious

Figure 1 shows that only in Israel the first generation of migrants indicate as often as the non-immigrants, that they do feel heard by the Israeli government (however, these differences are not significant). Austria and Germany have some similarities, with first generation migrants in Germany scoring significantly lower than all others do. In Austria, Canada and the USA the second-generation migrants score higher than non-immigrants do. The overall results for all three groups in Canada and the USA are slightly better than in other countries and the second-generation feels highly efficacious with regard to political influence.

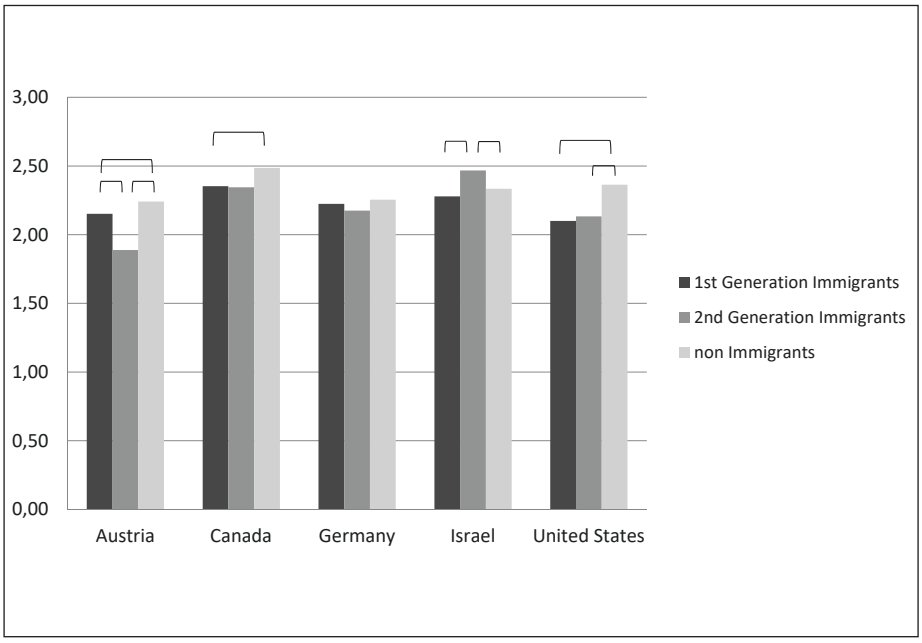

Fig. 2: "Social trust" (Trust only few people) by country and migration generation (I_Q07a); brackets indicating significance at a 5%-level.

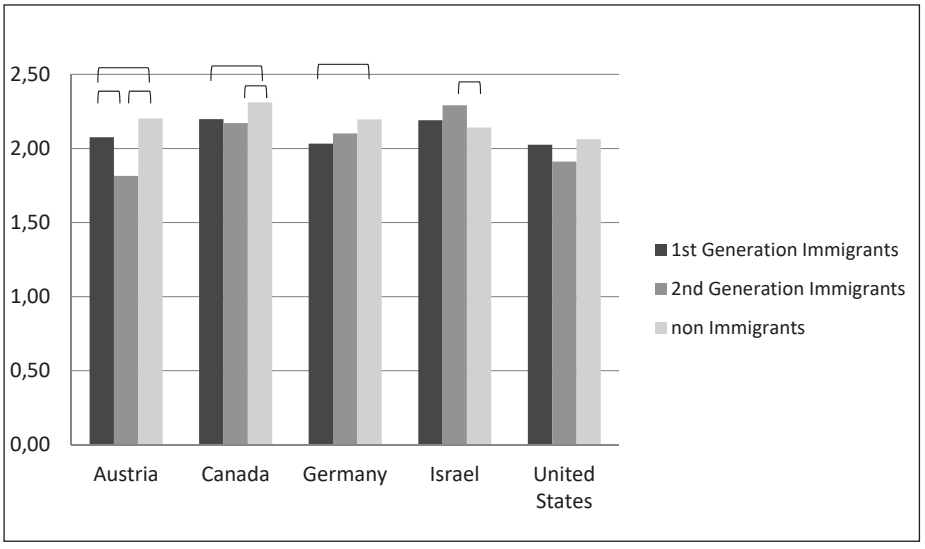

Fig. 3: "Social trust" (Other people take advantage of you) by country and migration generation (I_Q07b); brackets indicating significance at a 5%-level.

Non-Immigrants report higher social trust than Immigrants

As Figures 2 and 3 show, both migrant subpopulations report more often that they trust only few people or they think others take advantage of them. In most of the northern countries, immigrants show lower agreement to the statements on social trust than non-immigrants (differences are not significant in Germany, but at least for one of the migrant groups in Austria, Canada and the USA they are).

Both migrant populations in Austria report significantly lower social trust than non-immigrants, with second-generation migrants trusting not only significantly less than non-immigrants, but also less than the first generation. This pattern is repeated in the second variable on social trust. In Israel, the second generation of immigration seem to score higher than non-immigrants. However, when split between Jewish and Arab populations, data shows that this is not true for Jewish non-immigrants. While they show a higher social trust than both generations of migration, Arab non-immigrants score even lower than the first generation of immigration(see table 4).

Tab. 4: Means of political efficacy, social trust and volunteering in Israel

Means (Israel)	**Non 1st or 2nd generation of immigration: Arab pop. only**	**Non 1st or 2nd generation of immigration: Jewish pop. only**	**2nd generation of immigration**	**1st generation of immigration**
Political efficacy (I_Q06a)	2.35	2.61	2.55	2.57
Social trust (I_Q07a)	1.95	2.62	2.47	2.28
Social trust (I_Q07b)	1.73	2.50	2.27	2.19

Canada and Germany show significantly higher agreement by one or both groups of immigrants, indicating they fear more often others might take advantage of them. While differences on "trusting only few people" are significant in the USA, they are non-significant on "others taking advantage". Mistrust seems to be equally distributed across migrants and non-migrants.

Germany and Austria integrate few migrants into volunteering

Looking at volunteering in the different countries, again, the gaps between the Austrian and German migrant and non-migrant subpopulations show quite clearly, that migrants of the first generations participate less in volunteering. In all countries, the first generation of immigration issignificantly less likely to be integrated into

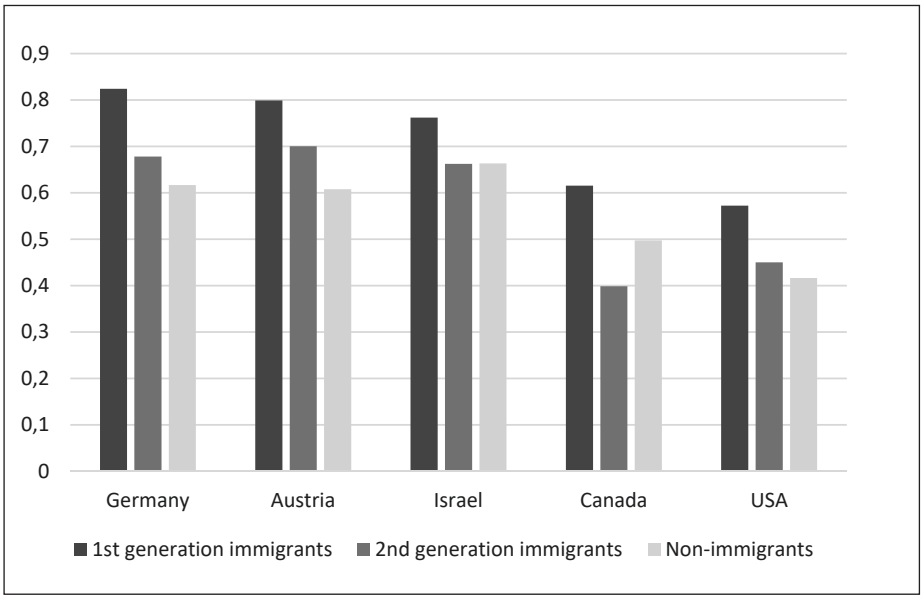

Fig. 4: "Volunteering" by country and generation of immigration (I_Q05a).

volunteering. For the second generation, this is (except in Canada and the USA) still the case, but lesser so (differences are not significant).

Description of results (recently arrived migrants)

A good indicator for the impact of integration might be a comparison of recently arrived migrants with earlier arrived migrants. The numbers of cases restrict the interpretation, as the cases of recent immigrants in Israel (n=33) and Germany (n=55) are low.

Earlier migrants feel less politically efficient than non-immigrants

Figure 5 shows inconsistent patterns across countries, which is often non-significant. However, with the exception of Canada, the earlier migrants do report significantly less political efficacy than non-immigrants do. Newcomers do not differ neither from earlier migrants nor from non-immigrants, but this may often be due to low numbers of cases except for Canada (see above). Small and non-significant differences and high overall scores in Canada indicate migrants and non-migrants equally feel heard by the government.

Social trust of newcomers higher

Social trust is less common among migrants to Canada, Israel and the USA than among non-migrants. in Austria and Germany the difference is non-significant.

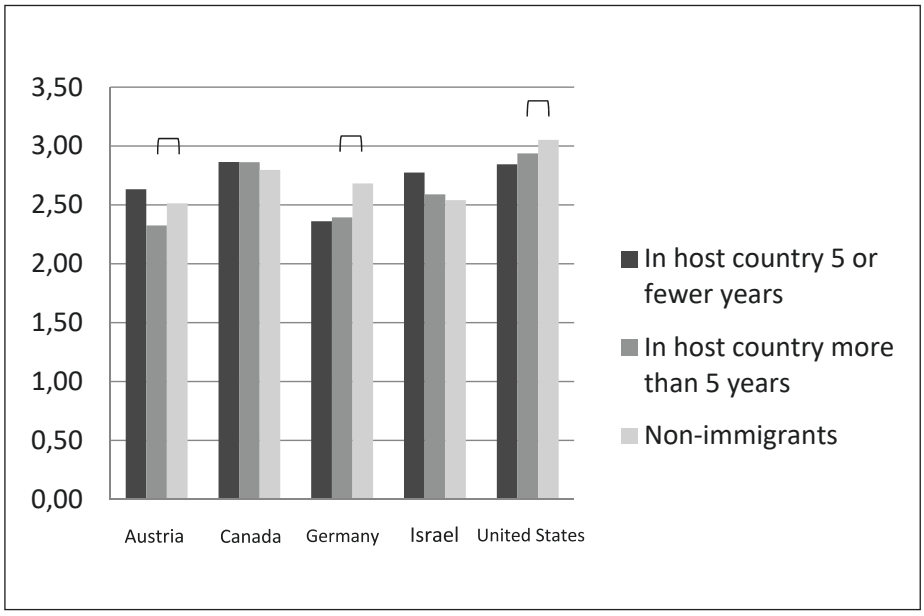

Fig. 5: "Political efficacy" by country and year of arrival (I_Q06a); brackets indicating significance at a 5%-level.

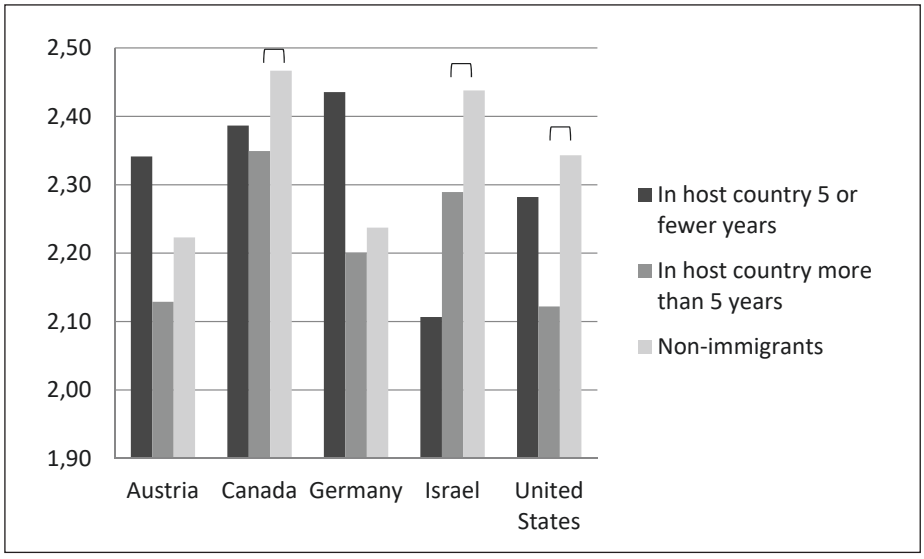

Fig. 6: "Social trust" (Trust only a few people) by country and year of arrival (I_Q07a); brackets indicating significance at a 5%-level.

Comparing recent arrivals to earlier arrivals, a first glance indicates that trust is substantially lower with those who are more than five years in their host country, but none of the comparisons regarding recent arrivals is significant (Figure 6).

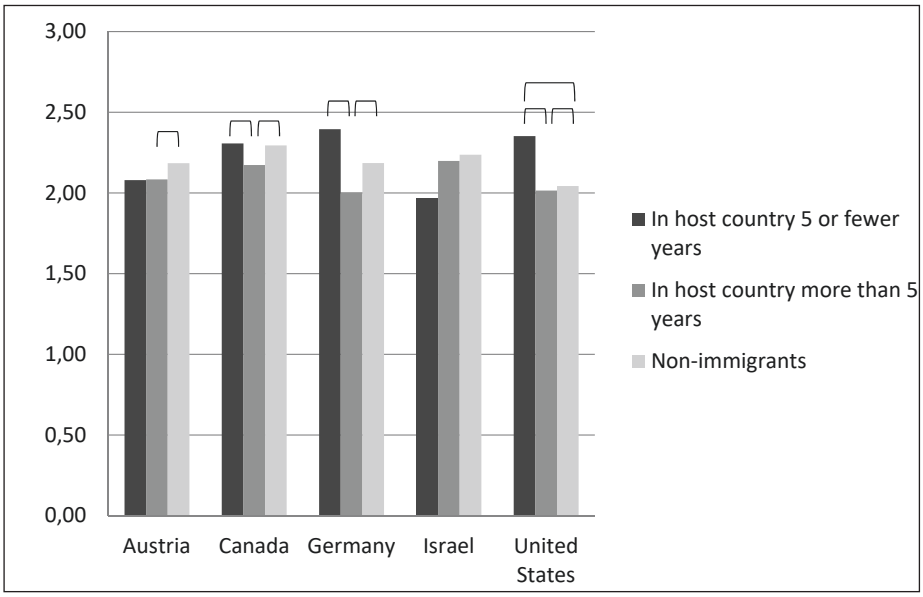

Fig. 7: "Social trust" (Other people take advantage of yu) by country and year of arrival (I_Q07b); brackets indicating significance at a 5%-level.

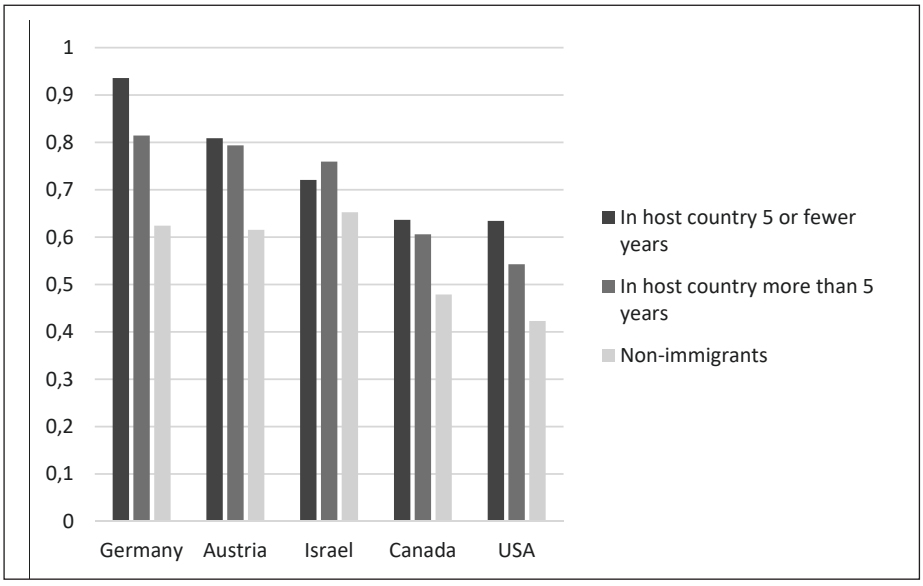

Fig. 8: "Volunteering" by country and year of arrival (I_Q05a).

Trust of newcomers to Austria and Germany seems to exceed the scores for non-immigrants, and the gaps between new and earlier migrants here is substantial, but still non-significant, presumably because of low numbers of cases. Canadian data are

more reliable, here the non-significant difference between early and recent arrivals shows for both similar values of trust into others.

Integration into volunteering over time

It seems, countries gradually integrate new immigrants into volunteering, but they still participate significantly less than non-immigrants.

Discussion: Socio-political participation

The overall research question was: Do migrants feel heard and acknowledged in terms of political participation, social trust and volunteering? The operationalization took into account two subpopulations (first versus second generation and recent versus earlier migrants) and compared them with non-migrants. The variables used were political efficacy, social trust and volunteering, as integration is not only about how non-migrants perceive the newly arrived, but also about whether the migrants feel they have a place. This is understood as a relevant part of adult educations' responsibilities and as an indicator for a successful inclusion of migrants into systems of adult education. The indicators are rough and show highly socially dependent response behaviour. In addition, migration is largely a phenomenon of 'the young'. In 2010, 35% of children below the age of six, 32% of adolescents up to age 15, and 26% of 15–20 year olds had a 'migration background' (Statistisches Bundesamt 2010), which could affect the comparison.

Political efficacy

In Austria and Germany, while the first generation seems to feel unheard, second-generation immigrants and the non-immigrants equally feel heard. Second generations in Canada and USA exceed the natives in their political inclusion. They receive citizenship rights by birth, but in contrast to non-immigrants they grow up with their parents' stories of migration, maybe from non-democratic countries and sometimes even living as undocumented migrants, so this might have an influence.

Israel, in contrast, shows on first sight a stunningly different pattern, but looking at the unique history and migration policy and taking into account the great differences between Jewish and Arab subpopulations it shows a devastating differentiation between these two groups – a differentiation that even exceeds the lesser feelings of inclusion of newly arrived migrants.

Social trust

Feelings of low social trust among migrants can be interpreted as an indication of a non-welcoming atmosphere in a country and thus low socio-political integration.

Findings show that in many cases, non-immigrants report higher social trust than immigrants do. Recent migrants in Austria even arrive with high social trust, while those who spent more than five years in the country are less trustful. Either the more recent groups in the five years before data collection in 2012 bring higher trust to Austria or the trust when entering the country was high and got lost after five years in Austria. This may be due to strong Austrian right-wing populism. In that case, results should be similar for countries that had similar public right-wing party election results. Populism was relevant in Germany in 2012 as well, but it did not express as much in a political party as in Austria.

In all four northern countries, immigrants in 2012 report low social trust and fear others may take advantage of them. The question does not differentiate whom the interviewees trust, people may also think of others inside their subpopulation when they answer – migrants may trust migrants, in that case. That does not say whether they trust or mistrust non-migrants or local authorities.

Volunteering

In the case of volunteering, the immigration societies (Canada, Israel, USA) are also societies with higher traditions of charity and volunteering. Germany and Austria integrate lesser migrants into volunteering than the before-mentioned countries.

The second generation participates more than the first. This may be, because in some countries, volunteering is a regular part of the school curriculum and the second generation attends school in the host country. The first generation participates little, some reasons may be their intense struggle to learn the language and make a living (so there is not enough time left for volunteering). Another reason can be seen in the socio-cultural and charity organizations' social barriers towards migrants (Bremer & Kleemann-Göhring 2015). Less participation is interpreted here as fewer possibilities to participate, not as lower readiness to contribute. Overall, integration into volunteering takes some time in all countries, the question is, how many generations it takes to equal the non-immigrants.

Conclusion: Unheard migrant voices

Immigration policies were rather different when data collection took place (presidents or chancellors: Austria 2012: Faymann (SPÖ), Germany 2012: Merkel (CDU), US 2012: Obama (Democrats), Israel 2016: Netanyahu (Likud). Countries that did not understand themselves as immigration countries for a long time, do not necessarily fail to integrate migrants, but they integrate them less intensely into the socio-political sphere of politics, society and volunteering. Even though in many cases integration into the labour market and housing may be most urgent, the hosting societies have to provide better access to their (socio-political) institutions and organizations.

Migration is a phenomenon that can be analysed by generations. Another approach is to distinguish the first generation by years of arrival. They need access to socio-political activities, as their interests and rights are affected by national policies. Earlier migrants sometimes have good reasons to fear new immigrants and some of them may do so. Earlier migrants may be reluctant to welcome refugees, indicating that no one helped *them* with food and clothes, no welcome groups and volunteers cared for them, when they arrived decades ago. Recent data show that earlier generations of migrants compete with recent migrants and refugees (Brückner et al. 2017). They compete for the same language courses and type of jobs. Newer migrants may be ready (or forced) to work for lower wages, pay more for inadequate housing and are more ready to learn the language, study and establish a new life as fast as they can.

Thus, all generations of migrants need to make their voices heard, whether as official citizen with voting rights or not. If Adult Education offers citizenship projects, migrants should not only be seen as victims of international division of labour or discrimination in the host countries. They are participants in the political landscape who have the right to express their political view, needs and fears, whatever they might be.

The country comparison shows how different the countries handle immigration and integration – each country according to their political landscape, self-perception, and their own history of migration as well as national and social conflicts. Israel shows a gradual inclusion over time regarding immigrants, but also a structural exclusion of the Arab population. Austria and Germany seem to find it more difficult to make migrants feel heard or to integrate them into volunteer work. Canada, a country with quite restrictive immigration rules, shows a possible model of giving immigrants a place. However, findings are quite inconsistent and interpretations are difficult. Further research to explain country variation as well as variation among generations and historical situation of arrival is necessary.

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6. Beyond literacy and language provision

Socio-political participation of migrants and large language minorities in five countries from PIAAC R1/R2[1]

Anke Grotlüschen, Svetlana Chachashvili-Bolotin, Lisanne Heilmann & Gregor Dutz

Introduction

In many countries, adult education and training attempts to contribute to a high standard of democratic socio-political participation (Milana & Nesbit, 2015). High participation is seen as an indicator of a stable democracy and social cohesion (Rosanvallon, 2013). However, not all subpopulations benefit equally from these educational efforts or feel that they can participate and 'have a say'. Their voices remain unheard, even if they speak up, as Spivak (1994) claimed with her famous question 'Can the subaltern speak?'[2]

Improving participation is one of the aims of adult education. Desjardins (2017) shows for eight countries that adult education systems provide citizenship education, general education and literacy and language provision. This aims to improve the socio-political participation of a country's overall population and integrate migrant subpopulations.

Prior research on socio-political participation, which will be explored in detail in the literature review, has not yet exploited the possibilities of the current Program for the Assessment of Adult Competencies (PIAAC). This international program provides data on literacy competences as well as a fair proxy of socio-political participation, based on the variables of political efficacy and volunteering. It allows for cross-country comparisons.

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2 The idea of the 'subaltern' refers to oppressed social classes. The postcolonial theorist Spivak uses this term, the Marxist roots of which can be seen in the works of the Italian communist, Antonio Gramsci.

Earlier research on socio-political participation (based on PIAAC data as well) only focuses on literacy (Grotlüschen, 2017). Thus far, research has shown that those who perform lowest in terms of literacy also display poor socio-political participation (Grotlüschen, 2017). People with low levels of literacy, however, remain the only subpopulation, whose socio-political participation has been examined.

Other subpopulations, such as migrants, have not been analysed regarding their socio-political participation in the context of literacy. Socio-demographic controls and skill controls have also not yet been tested. The previous research on low literacy and socio-political participation only discusses participation in the context of the official language of the country and the respective literacy levels in this language.

Migrants and large language minorities need further analysis. This paper looks at their chances for socio-political participation. It further compares these results across five countries that were chosen because of their variety (Austria, Canada, Germany, Israel, USA).

Definition of socio-political participation

Socio-political participation is defined in this paper as a combination of feelings of being heard in the political realm and as participation in social activities such as volunteering. It captures one's involvement with governments, non-governmental organizations, trade unions, political parties, or similar structures.

Definitions of the subpopulations

Migrants are here defined as first-generation migrants, who have migrated themselves, or as second-generation migrants, with two migrant parents. Large language minorities are only specified in countries with more than one official language and refer to the smaller language groups.

Selection of countries

For this study, five OECD countries were chosen in order to analyse the perceived socio-political participation of migrants and minorities. The selection was first limited to those OECD countries who have welcomed most migrants in the past few years (Grogger & Hanson, 2011; United Nations, 2013, p. 23). Second, among said OECD countries, those with differing migration policies were selected.

The US and Canada are said to have differing migration policies (Rose et al., 2019). US legislation focused on family reunification, while Canada was known for their work-related immigration policy (Howard, 1980). The EU focuses on family reunification but allows free movement within the EU. Germany and Austria were chosen from the various EU countries because of our deep knowledge of their language, literacy policies and PIACC results (Rammstedt, 2013; Statistik Austria,

2013). The inclusion of Israel in this study, made possible by an Israeli coauthor, allows for very interesting contrasts. Israel received roughly one million

Russian Jews after 1990 and allowed them to obtain citizenship rights as well as Hebrew literacy provision and language provision. So, for this study, the focus is on the US, Canada, Austria, Germany and Israel.[3]

After specifying these countries, it became obvious that it does not make sense to treat 'non-migrants' as a homogeneous group. Two cases of large, non-migrant language minorities can be specified based on the data: the French language in Canada and Arabic in Israel. Thus, the case of large language minorities will be displayed separately. The term minority is used in a strictly quantitative way, based on the number of speakers of a language in a state. It is not meant that these speakers would find themselves facing (dominant) language majorities in all parts of their lives. Of course, Arabic and French is spoken as a majority language in certain areas of the Canadian or Israeli state. However, the common characteristic here is that the amount of speakers is smaller than the amount of Anglophones in the state of Canada and Hebrews in the state of Israel. The reason to specify large language minorities is that otherwise the non-immigrants would have been treated as a homogeneous group, which is perhaps possible in Canada, but does not capture realities in Israel.

Migration in US, Canada, Austria, Germany and Israel

Migrant policies manage the composition of migrant subpopulations (influx) and play an important role in the integration and participation (integration) of these subpopulations.

Policies regarding the integration of migrants expand beyond matters of housing, employment and health – they also include adult education for socio-political participation (Desjardins, 2017). Countries perform differently in the integration of migrants (e.g., Schleicher, 2013), but for a comparison, the varying composition of migrants must be taken into consideration. Migrants who are educated, young and skilled may find it easy to participate (Gensicke & Geiss, 2010). Those who are less educated, older and who come to reunite with their family may face higher barriers for socio-political participation (Gensicke & Geiss, 2010).

This leads to the discussion of policies regarding the influx of migrants. They generate a different composition of the country's migration subpopulation in terms of age, gender, education and employment. Influx policies can be conceptualized in multiple ways. The UN report on international migration policies (United Nations, 2013) distinguishes between permanent migration, temporary migration, migration for family reunification and highly skilled migration.

The more recent OECD figures use the categories of employment, family, humanitarian and free movement. Other bodies add the category of migration of co-ethnics for historical reasons (Helbling, 2013), which is relevant for Germany and

3 Some findings were discussed previously with scholars from the US and Canada.

Israel, but is not available in comparative data. To investigate the size of specific inflows, we therefore use the OECD's 2017 International Migration Outlook (Table 1).

Overall, the distribution of migrants varies, with high numbers of migrants going to Canada for reasons of employment, especially caregiving (OECD, 2017, p. 176). Germany and Austria receive migrants from Eastern-European countries because of the EU's free-movement policy. The US has the largest proportion of migrants moving for reasons of family reunification (71.8% in 2015); Canada receives 58.6% of their migrants for family reunification; in the EU, family reunification counts for 10–12% of total immigration. Overall, family reunification is much higher in Canada and the US than in Europe.

Three out of our five countries have migrant populations that account for between 13% and 19% of the total population, while Canada (20.3%) and Israel (22.5%) see relatively larger migrant populations. Israel does not provide differentiated data, but the data indicate that the Former Soviet Union, France and the US are the most important countries of origin. It can be assumed that migrants come to Israel for co-ethnic, religious and historical reasons, with most of them being Jews. Israel also receives migrants, for reasons of employment, from countries such as Nepal, Sri Lanka and the Philippines (OECD, 2017, p. 198).

Tab. 1: Influx of migrants, 2015.

Categories of inflow as percentage of total inflow	**Austria**	**Canada**	**Germany**	**Israel**	**US**
Employment	5.2	28.2	4.0	n/a	6.5
Family	10.2	58.6	12.0	n/a	71.8
Humanitarian	15.3	13.2	20.9	n/a	14.5
Free movement	68.9	...	62.3	n/a	…
Others	0.4	0.0	0.9	n/a	7.2
Total	100.0	100.0	100.0	n/a	100.0
Three most important countries of origin (2005)	Syria, Afghanistan, and Romania	Philippines, India, and China	Syria, Romania, and Poland	*FSU, France, and US	Mexico, China, and India
Three most important countries of origin (2005–2014)	Germany, Romania, and Hungary	India, China, and Philippines	Poland. Romania, and Bulgaria	FSU, France, and US	Mexico, China, and India
Immigrants as percentage of the total population (2015)	18.7	20.3	14.2	22.5	13.5

Data compiled from OECD International Migration Outlook (OECD, 2017);
*FSU: Former Sovjet Union; Free movement does not apply to all countries, indicated as '…'

The commonalities of the countries are large: All have ageing societies and try to attract skilled workers, especially caregivers, from Asia and Eastern Europe. They all allow for work migration and have policies to assist with family reunification. Canada's high level of employment migration is different from that of the US, but Austria and Germany cover this issue via their free-movement policies, that mostly consists of employment migration. Canada's level of family reunification is three times higher than that of Austria's and Germany's. Larger differences appear between Canada and the US, as the US has relatively low influx based on

skill-focused employment legislation (6.5%, Table 1). Israel, however, is a completely different case, mainly due to historical reasons. We conclude here that:

(a) countries differ in influx legislation, and
(b) this leads to differences in migrant composition, e.g. in terms of age, education and employment,
(c) the migrant composition has effects on the chances of integration into sociopolitical participation.
(d) In order to compare the integration policies without the interference of influx legislation, the regression models will have to control for the migrant composition, so that
(e) the findings have no (strong) relation to influx policies anymore.
(f) This allows the question whether the findings then relate to integration policies, regardless of influx policies.

Moreover, all five countries under consideration apply integration policies that contain language and literacy provision as well as vocational, professional and citizenship education (Desjardins, 2017; Kastner, 2016). The relevance of these policies for employment and socio-political participation will become clear in this study.

Non-immigrant minorities in Canada and Israel

Two of the countries under consideration have two official languages and linguistic populations that are large and non-migrant, but still smaller than the majority language group. We only compare those language minorities who speak one of the official languages thus and are large enough to be represented in the PIAAC dataset (i.e., French speakers in Canada and Arabic speakers in Israel).

Canada's population consists of 36 million people; 4.9% of the population identify with Canada's indigenous people, including First Nation, Inuit, or M_etis people.[4] Today, roughly 21% of Canada's population speak French as their first language, and 57% of the population speak English as their first language (Statistics Canada, 2017). Thus, the PIAAC in Canada was implemented in these official languages (English

4 These terms do not cover all possible terms and are not accepted by all peoples under consideration.

and French). Out of these two official languages, the statistical minority consists of those who speak French as their first language.

Language policies vary between the Canadian provinces, but all provinces provide government services in both languages. However, not all French-Canadians live or grew up in Quebec, and not all of them took the PIAAC test in their first language (Statistics Canada, 2013b). In total, 22.6% of all respondents in Canada completed the test in a language that was different to their native language. This is well above the OECD average of 9.4% and differs strongly between provinces (Statistics Canada, 2013a, p. 37).

Israel's population comprises roughly eight million people; of these, approximately 75% are Jewish, roughly 21% are Arabs and 4% are 'others' (Israel Central Bureau of Statistics, 2016a, 2016b).[5] Arabs have lived in the region for generations, mostly in rural communities and villages (Semyonov & Lewin-Epstein, 2011). They were granted Israeli citizenship with the establishment of the Israeli state in 1948, but until 1966 their rights were suspended in practice, and they were ruled by a military administration. This policy was justified as a security measure against a potentially hostile population (Shafir & Peled, 2002). Since the establishment of the Israeli state, no Arab party has been permitted to be a full partner in a government coalition (Al-Haj, 2004). In terms of every aspect of social stratification, Arabs are

at a disadvantage when compared to Jews. These disadvantages can be attributed largely to socio-economic discrimination and should be understood within the context of the Arab–Israeli conflict (Semyonov & Lewin-Epstein, 2011).

Socio-political participation

What do we know so far about the socio-political participation of migrants and minorities? Overall, earlier findings show that migrants, minorities, people with low socio-economic status (Bremer & Kleemann-Göhring, 2015; Calmbach & Borgstedt, 2012), and low literacy skills (Bremer & Pape, 2017; Grotlüschen, 2017)) have been excluded from participation in the socio-political realm.

The first concept used here to indicate socio-political participation in a host country is political efficacy. The rational choice theory (Becker, 1993) behind this term assumes that a strong belief in efficacy gives rational reason for a lot of activity in the political realm (Vetter, 1997). Recent publications challenge the assumption of rationality by finding that strong feelings concerning a group's political situation have an impact on political participation (Magni, 2017).

5 The Israeli Central Bureau of Statistics collapses data from religion and from areas of origin as follows: 'The tables also present population groups: Jews, Arabs and Others. 'Arabs' includes Moslems, Arab Christians and Druze. 'Others' includes non-Arab Christians, and not classified by religion in the Ministry of the Interior' (Israel Central Bureau of Statistics, 2010, p. 28).

Theories of social practice assume that (political) activity is embedded in broader social practices and habitus of the individual and community (Bourdieu, 1972).

Overall, the work of this study is deeply rooted in practice theory. However, within this context, we only focus on the perceived efficacy and not on the (rational or practical) consequences of this perception.

The other relevant theoretical question is whether the concept that operationalizes political efficacy captures political activity in an appropriate way. The statement, as specified in the methods and data section of this article, states that people like me don't have any say in what the government does. This represents a narrow definition of political participation, as it only focuses on a representative institution (the government). This definition presents political participation only in terms of voting and passively knowing the basics of representative democracies (the functioning of government and parliament; the separation of legislative, executive and judicial powers; a basic knowledge of the various political parties and the voting process). This narrow and formal approach is problematic, as it represents the political expression of the well-educated subgroups of society but not the political expressions of the lower social classes (Bremer, 2012). The definitions of political expression of the higher social classes are applied to lower social classes.

Survey data can then be misinterpreted in a sense that lower classes would be politically disinterested. To avoid this misinterpretation, a wider understanding of political participation (Bremer, 2012) would provide several forms of political participation for all aspects of society. Calmbach and Borgstedt report that adolescents from lower social classes have a strong sense of injustice (Calmbach & Borgstedt, 2012), thus being much more politically involved than adolescents from higher social classes. Other forms of political participation, such as discussions with neighbours and colleagues, protest camps, unannounced demonstrations, or boycotting, are not captured in the statement people like me don't have any say in what the government does.[6] To avoid any misinterpretations, we will, therefore, not interpret any subpopulation with low statistical values in the above mentioned statement as being disinterested in political participation, but we claim that there are mechanisms of social exclusion.

According to earlier research on political efficacy, policy feedback (Hern, 2017) on activities such as demonstrations or petitions plays a role in explaining the variance of perceived political efficacy (Hern, 2017). Perceived political efficacy can also be a result of political participation (Serek, Machackova, &Macek, 2017).

Thus, low political efficacy is as an effect of low participation. From this perspective, subpopulations with low statistical values in their perceived political efficacy can be understood as being excluded from political participation, because political participation would raise their feelings of efficacy.

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6 This is despite the fact that earlier findings indicate that political efficacy correlates with unorthodox protest forms such as boycotting or occupying public areas (Vetter, 1997).

The second concept, volunteering, asks about any voluntary work undertaken, including unpaid work for a charity, political party, trade union, or other nonprofit organization. This does not cover the activities carried out informally in neighbourhoods and among families (Grotlüschen, 2017). This approach does not report on whether people engage in helping others, as this often takes place in more casual contexts. Again, we will not interpret low scores in volunteering as signifying disinterest or a lack of altruism.

Major surveys regularly highlight the number of adults who volunteer, that migrants are underrepresented (Schmiade, Vogel, Lux, & Simonson, 2014), and that literacy is very important (Grotlüschen, 2017). However, researchers also claim that habit and self-selectivity affect volunteering (Kleemann-Göhring & Epstein, 2016).

This gives us reason to interpret low scores in volunteering as a combination of exclusion from social and political organizations as well as self-exclusion.

Methods and datasets

Overall, this perspective of socio-political participation and exclusion has not yet been analysed in terms of internationally comparative large-scale assessments. This is now possible with the PIAAC dataset (OECD, 2016).

The existing PIAAC research that focuses on socio-political participation explores the social outcomes of literacy, numeracy and problem-solving competences (Government of Canada, 2018). This approach mostly theorizes socio-political participation as a result of proficiency, according to the theory of the wider benefits of learning (Bynner, Schuller, & Feinstein, 2003; Schuller, 2017). We would now like to change the perspectives of previous studies, from those who benefit from their literacy competences to those who are vulnerable to exclusion in the socio-political realm. This leads to the research question of this paper: Do migrants and large language minorities report lower opportunities of socio-political participation than those who belong to the language majority, and how does this vary across countries?

For our analysis, we used the PIAAC Public Use Files. Country data was merged, prepared and analysed with SPSS and the IEA's IDB Analyzer.

Independent variables: Migration and large language minority

The unweighted number of cases of immigrant generations (first, second with two migrant parents, non-immigrants, non-immigrant with one foreign-born parent) in the PIAAC dataset is displayed in Table 2. The figures show that the generation of immigration (IMGEN) variable consists of enough cases for all countries under consideration.

The non-immigrants in Canada and Israel consist of two subpopulations (French and English speakers in Canada, Arabic and Hebrew speakers in Israel). In order to obtain an approximation of the language subpopulations, we used the test language variable.

In a case where the test language for a Canadian resident was French, and a resident was a non-migrant, they were understood to belong to the language minority. Even though Canadians had the choice between English and French in their test languages, and even though some did choose test languages other than their home languages (as the PIAAC data shows in Table 3), it can be assumed that minorities would not want to be tested in a language they are unfamiliar with.

Based on our data, statements concerning other non-immigrant minorities or local differences are not possible and would require further analyses. This is the same for Israel. In this case, the test language was Arabic, and if the person was non-immigrant, they would be understood to belong to the language minority. The Israeli test was also offered in Russian, but the Russian-speaking subpopulation in Israel does not belong to the non-immigrant population.

Tab. 2: Numbers of cases by generation of immigration (IMGEN).

	1st generation immigrants	2nd generation immigrants	Non 1st or 2nd generation immigrants	Non-immigrant and one foreign-born parent	Not stated or inferred/ Missing	Sum
Austria	666	160	3797	384	123	5130
Canada	4837	996	19068	1590	192	26683
Germany	648	335	3732	619	313	5647
Israel	987	1083	2520	704	244	5538
US	604	195	3852	214	145	5010

Tab. 3: Language cases and percentage of language used at home vs. test language.

Test Language	Total (non-immigrant population)	Home language same as test language (%)
Canada	19.043	93.3
Majority Language (English)	14.160	91.8
Minority Language (French)	4.883	97.6
Israel	2.520	92.3
Majority Language (Hebrew)	1.250	85.2
Minority Language (Arabic)	1.270	99.4

Dependent variables: Political efficacy and volunteering

As previously mentioned, political efficacy and volunteering are the dependent variables in this study. Table 4 presents the questions that have been asked in the interviews. The following subsection describes the use of socio-demographic variables and skill-related variables.

Control variables: Socio-demographic and attainment variables (model 2)

The PIAAC measured age in five-year categories. We transformed this into a continuous variable, using the midpoint of each group. Gender was coded '1' for women and '0' for men.

The variables of education and employment indicate attainment. Education was measured by the highest diploma received by the respondent. This was then transformed into two dummy variables: non-academic tertiary education and academic tertiary education. The comparison group was elementary and secondary education. Employment status was coded '1' for employed and '0' for unemployed and out of the labour force.

Control variable: Skill variable (model 3)

The PIAAC data includes three types of skills: literacy skills, numeracy skills and skills of problem-solving in technology-rich environments. Due to a high correlation (Hanushek, Schwerdt, Wiederhold, & Woessmann, 2015) between the skill measurements in the PIAAC, we focus on literacy skills only. The results are represented on a 500-point scale, ranging from 0 to 500 (see also OECD, 2016).

Multivariate linear regression models

Differences in socio-political participation can be described by contingency tables; however, the question arises as to whether the socio-demographic compositions of migrants and non-migrants account for the differences. Thus, linear regression analyses were carried out, controlling for the socio-demographic variables of age and gender as well for the attainment variables of education and employment. This relies on recent claims of a strong comeback of linear probability models (Breen, Karlson, & Holm, 2018, p. 49).

Tab. 4: Variables from PIAAC background questionnaire.

Operationalization of socio-political participation	**Variable**	**Range**
Political efficacy (measure of influence on government)	"People like me don't have any say in what the government does."	1–5 (agree to strongly disagree)
Volunteering (extent of volunteering activity)	"In the last twelve months, how often, if at all, did you undertake voluntary work, including unpaid work for a charity, political party, trade union or other non-profit organization?"	1–5 (never to every day)

The regression was done in order to see whether migrant generations still significantly differ from non-migrants (Table 5). In some countries, non-migrants use two official languages (French and English in Canada, Hebrew and Arabic in Israel). Thus, the minority language (French, Arabic) was also controlled. In Tables 2 to 4, we present the parameter estimates of linear regressions related to (a) political efficacy and (b) volunteering. The parameter estimates are standardized regression coefficients, thus allowing for a better comparison of variables of varying scales. We ran the same models for all dependent variables separately for each country. Our first model (model 1) included only the migration and minority variables. Socio-demographic variables were added to the second model (model 2), and our last model (model 3) included literacy skills. As the PIAAC skills are tested only in official languages, this model includes immigrants' command of the (or one) official language of the country of destination.

Findings

The research question explores to what extent immigrants and large language minorities report less socio-political participation. We display the multivariate findings according to the two core variables in three models and five countries.

Political efficacy: Literacy and language matter

The regression model on political efficacy as described above explains less than 10% of the variance in most countries.

When literacy proficiency was added to the model, the immigrant generations in most countries no longer differed significantly from non-migrants. Literacy increases the adjusted explained variance (adjusted R-squared), differing by country.

In four countries (Austria, Canada, Germany and the US), the first generation of immigrants were significantly less likely than the linguistic majority group to perceive themselves as politically efficacious (see model 1). Only in Israel was the difference between the first-generation immigrants and the linguistic majority insignificant. In all countries, and in contrast to the first generation of immigrants, the second generation with both parents born abroad indicated, as often as the linguistic majority, that they do feel heard by their government. Moreover, in the US, second-generation immigrants scored significantly higher than the linguistic majority regarding political efficacy.

In Canada and Israel, both countries with linguistic minorities, significant differences in political efficacy were found in favour of the linguistic majority.

In other words, the linguistic majority-groups (English speakers in Canada and Hebrew speakers in Israel) are significantly more likely to feel politically efficacious than the linguistic minority-groups.

Adding socio-demographic variables to our regression (see model 2) revealed that group differences in each country remained the same. Education (especially

Tab. 5: Results of the regression on political efficacy: Do migrants and language minorities feel less politically efficacious than non-migrants and language majorities?*

	Austria			Canada			Germany			Israel			US		
	M1	**M2**	**M3**	**M1**	**M2**	**M3**	**M1**	**M2**	**M3**	**M1**	**M2**	**M3**	**M1**	**M2**	**M3**
First generation of immigrants	-0.04	-0.05	n.s.	-0.04	-0.05	n.s.	-0.08	-0.07	n.s.	n.s.	n.s.	n.s.	-0.04	-0.04	n.s.
Second generation of immigrants	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	0.04	0.04	0.04
Native language minority					-0.23	-0.22				-0.08	-0.06	-0.04			
Age: continuous		-0.08	-0.05		-0.05	-0.02		-0.08	n.s.		-0.08	-0.06		n.s.	0.03
Gender (female)		n.s.	n.s.		0.03	0.03		n.s.	n.s.		n.s.	n.s.		0.06	0.07
Employment status: employed (vs. unemployed & out of the labour force)		n.s.	n.s.		n.s.	n.s.		n.s.	n.s.		n.s.	n.s.		n.s.	n.s.
Education: non-tertiary (vs. secondary)		0.10	0.07		n.s.	n.s.		0.09	0.05		n.a.	n.a.		n.s.	n.s.
Education: tertiary (vs. secondary)		0.18	0.13		0.14	0.08		0.18	0.10		0.13	0.10		0.16	0.09
Literacy			0.16			0.15			0.21			0.09			0.15
R2	0	4%	6%	0	7%	9%	0	5%	8%	0	2%	3%	0	4%	5%
N	5130	5130	5130	26683	26683	26683	5365	5365	5365	5538	5538	5538	5010	5010	5010

*Linear regression analysis on political efficacy (IDB Analyzer); M1 = model 1 without control variables, M2 = model 2 without literacy, M3 = model 3 controlling for literacy; *p < .05; beta values (standardized regression coefficients), n.s. = not significant

tertiary) increased the level of political efficacy, whereas the effect of employment status was found to be insignificant. Significant gender differences (in favour of women) were found only in two countries (Canada and the US), while in the other three countries, these differences were insignificant. In every country except for the US, younger populations felt more political efficacy than older ones.

After controlling for literacy skills (see model 3), we found that the initial differences between the first generation of immigrants and the linguistic majority disappeared, whereas the differences between the linguistic majority and the linguistic minority only decreased slightly but remained significant. In all five countries, the effect of literacy skills was positively correlated with political efficacy. The fit values in all three models were less than 10%, indicating the influence of other variables, such as socio-economic status, habits, or personal political interest, on socio-political participation.

Volunteering: Literacy and language skills

The findings are again displayed according to three models (Table 6). Our first model (model 1) shows that in all five countries, the first generation of immigrants is significantly less likely to participate in volunteering than non-migrants. In contrast to the first generation of immigrants, only in Austria and Israel did the second generation with two migrant parents indicate significantly fewer volunteering tendencies as the non-migrant majority. Moreover, in Canada, the second-generation with two migrant parents reported significantly higher activities in volunteering than the non-migrants.

In addition, in both countries with linguistic minorities (Canada and Israel), the significant differences in volunteering confirm what has been established in terms of political efficacy: Linguistic majority groups are significantly more likely to volunteer than linguistic minority groups.

Adding socio-demographic variables to our regression (see model 2) revealed that the group differences for the first generation remained the same in all countries. The effects of the second generation disappeared in Canada (from positive effects to non-significant difference) and in Israel (from negative effect to nonsignificant difference). The effects of linguistic minorities stay the same.

Tertiary education has a positive effect in all countries; employment status has a positive effect in Austria and the US. When education and employment status is controlled, women volunteer significantly less in Austria but significantly more in Canada and the US. In Israel and Germany, these differences were insignificant. Age effects vary, being significantly positive in Austria, significantly negative in Canada and Israel, and non-significant in the other countries.

Controlling for literacy skills (see model 3) does not change the initial differences for the first generation. This is the same across all five countries. The negative effects for the second generation with both parents born abroad stay the same in Austria and remain absent in Israel, as seen in model 2. Minority effects in Canada

Tab. 6: Results of regression for volunteering: Do migrants and language minorities volunteer less than non-migrants and language majorities?*

	Austria			Canada			Germany			Israel			US		
	M1	**M2**	**M3**	**M1**	**M2**	**M3**	**M1**	**M2**	**M3**	**M1**	**M2**	**M3**	**M1**	**M2**	**M3**
First-generation immigrants (vs. non-immigrants)	-0,14	-0,14	-0,12	-0,12	-0,14	-0,10	-0,13	-0,12	-0,09	-0,11	-0,10	-0,09	-0,09	-0,09	-0,06
Second-generation immigrants	-0,04	-0,03	-0,02	0,03	n.s.	n.s.	n.s.	n.s.	n.s.	-0,04	n.s.	n.s.	n.s.	n.s.	n.s.
Native-language minority				-0,13	-0,13	-0,12				-0,13	-0,13	-0,11			
Age: continuous		0,06	0,08		-0,02	n.s.		n.s.	0,05		-0,05	n.s.		n.s.	n.s.
Gender (female)		-0,12	-0,12		0,07	0,07		n.s.	n.s.		n.s.	n.s.		0,05	0,05
Employment status: employed (vs. unemployed & out of the labour force)		0,03	0,03		-0,02	-0,03		n.s.	n.s.		-0,05	-0,06		0,03	n.s.
Education: non-tertiary (vs. secondary)		0,05	0,03		n.s.	n.s.		0,10	n.s.		n/a	n/a		0,05	n.s.
Education: tertiary (vs. secondary)		0,08	0,06		0,12	0,06		0,04	0,05		0,08	0,05		0,19	0,14
Literacy			0,07			0,15			0,13			0,07			
R2	0	5%	5%	0	4%	0 6%	0	3%	4%	0	3%	3%	0	5%	6%
N	5130	5130	5130	26683	26683	26683	5365	5365	5365	5538	5538	5538	5010	5010	5010

*Linear regression model analysis on political efficacy (IDB Analyzer); M1 = model 1 without control variables, M2 = model 2 without literacy, M3 = model 3 controlling for literacy; $p < .05$; beta values (standardized regression coefficients), n.s. = not significant

and Israel decrease minimally but are still negative and significant. Again, literacy skills are positively correlated with volunteering, as they are with political efficacy.

The fit values in all three models remain below 10%, indicating the influence of other variables on socio-political participation, such as socio-economic status, habitus, or personal-political interest, as mentioned before.

Discussion: Socio-political participation of migrants and minorities

The overall research question asks whether immigrants and large language minorities report lower political participation than other people in their countries of destination.

Limitations

This analysis uses derived variables that capture the second generation of immigrants differently than several national statistical offices (e.g. Statistics Canada, DESTATIS, Statistik Austria). In these data, second generation migrants are those born in the country, where both parents are migrants. All others were excluded from the analysis. Findings may vary if this is re-organised.

Moreover, both dependent variables (political efficacy and volunteering) represent rather formal views of socio-political participation. Inclusion may be found in informal political activities and especially in informal volunteering, e.g. helping neighbours and family members. We therefore claimed in the literature review that low involvement in the socio-political realm is due to mechanisms of (self-)exclusion, and must not be misinterpreted as to low altruism or interest in politics.

Summary of findings

The operationalization considered subpopulations (first- and two-migrant-parent-second- generation immigrants as well as large language minorities) and compared them with non-migrants. The regression analysis then also accounted for the language minorities in Canada and Israel (model 1). The variables used were political efficacy and volunteering. Both indicate socio-political participation. Controls consisted of socio-demographics, education and employment (model 2) as well as skills (model 3).

Table 7 focuses on the most sophisticated model (model 3) across all five countries, with two variables and two subgroups under consideration. The overall results show that exclusion from socio-political participation (feeling less politically efficacious) is relevant for immigrants. This is mostly due to lower socio-economic status overall as well as to lower literacy in the hosting countries' official languages. After controlling for this, the differences in political efficacy for migrants become non-significant.

Tab. 7: Overview of findings, Model 3.

Country	Austria		Canada		Germany		Israel		US	
	Political efficacy	Volunteering	Political efficacy	Volunteering	Political efficacy	Volunteering	Political efficacy	Volunteering	Political efficacy	Volunteering
First-generation immigrants	n.s.	neg.	n.s.	neg.	n.s.	neg.	n.s.	neg.	n.s.	neg.
Large language Minorities			neg.	neg.			neg.	neg.		

However, the exclusion from volunteering is quite visible in these findings. Even after controlling for age, gender, education, employment and literacy skills, first-generation immigrants show significantly lower inclusion in volunteering activities.

Moreover, language minorities of a large size find themselves excluded in both situations (political efficacy and volunteering), regardless of whether their language is officially accepted in their country. Findings are robust across countries, as expected. Differences in influx policies disappear when migrant composition is controlled for.

Conclusions

As the findings show, education and literacy skills in the official language are relevant for the socio-political participation of migrants and large languageminorities. On average, migrants, and in some cases, minorities, have lower formal education levels and literacy skills in the official language than nonmigrants or language majorities.

Policy implications: Beyond literacy and language provision

Overall, literacy and language provision matter for migrants' perceived sociopolitical inclusion. However, adult education has to go beyond literacy and language provision and encourage more people to make their voices heard in the sociopolitical realm (Heinemann, 2018). Regarding volunteering, a more active and integrative policy could be applied to the organisations (Heinemann, 2014).

Furthermore, these groups might need to see themselves represented in volunteering and in the political system in order to promote their socio-political participation. In both cases of linguistic minorities, despite being large and officially acknowledged, socio-political exclusion is robust and has strong effects; literacy and language provision cannot change this. For Israel, it can be assumed that speakers of Arabic feel excluded because of their lack of representation and influence in Israel's political system. For Canada, interview studies may help to create an improved un-

derstanding of the reasons and causalities of the socio-political exclusion of speakers of the French language.

Areas of further research: Language minorities and indigenous peoples

This analysis only took into consideration migrant generations that are sufficiently large and well-distributed to be counted in representative household surveys. This does not take into consideration recent refugees who arrived after the PIAAC data collection. The design and data of this analysis does not use the Canadian PIAAC Scientific Use File, which would allow for the examination of indigenous and aboriginal peoples (First Nations, Inuit and M_etis) and French-speaking people in more detail. It is desirable to replicate the analysis for at least the Canadian language-minorities and different language policies in Canadian provinces.

An interesting comparison could also take into consideration the Maori in New Zealand. Moreover, splitting the first generation by first language will strengthen the body of research, at least in countries with large influx from same-language areas.

Theoretical implications: Unheard voices

To conclude, all generations of migrants and all language minorities may want to make their voices heard, whether as official citizens with voting rights or in another capacity. However, findings show that for their voices to be heard, they need to speak the language of the country they are in.

This is in line with the theoretical assumptions of new literacy studies (Street, 1992). The dominant language of the majority (Barton & Hamilton, 2003) will be heard more easily in the socio-political realm, while those who speak different languages or handle multiple languages and literacies will find it more difficult to be heard by the dominant language-majority (Grotlu¨ schen, 2017).

The postcolonial theorist Gayatri Chakravorty Spivak (1994) posed the question 'Can the subaltern speak?' She argues that living conditions and education exclude marginalized groups from being able to speak up and demand their rights. Even when they do so, dominant discourses prevent them from being heard. This highlights the fact that political participation and having a voice is relevant for all people, and it is important to make 'unheard voices' (Doron, Gal, Shavit, & Weisberg-Yosub, 2011) heard. Free speech and being heard in this speech are human rights, applying not only to dominant groups of society but also to diverse and especially vulnerable subpopulations (Hirschberg & Papadopoulos, 2016). For dominant groups, it is often difficult to notice the marginalization of others, as their own privileges remain invisible to them (Kimmel, 1993).

Adult education should, therefore, go beyond literacy, language provision and training aimed at employment. Citizenship projects, where migrants and minorities are participants in the political landscape and as citizens who have the right to express their political views, needs and fears, are highly relevant.

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7. PIAAC and the South – is southering the new othering?

Global expansion of dominant discourses on adult literacy[1]

Anke Grotlüschen & Klaus Buddeberg

Introduction

The last decades have witnessed the growth in importance of international large-scale assessment studies (ILSA). Evidence based policies call for large datasets, which allow analysing differences between and within countries regarding educational achievements. The discussion about the sustainable development goals (SDG) by the United Nations reinforces the need to measure skills. The authors of this paper themselves are in charge of a national assessment survey and intensively used the datasets of the Programme for the International Assessment of Adult Competencies (PIAAC) for secondary analyses in the last years. We take the high degree of attention towards international large-scale assessments as the starting point to reflect about another aspect of PIAAC. This contribution refers to the regional distribution of the assessment. Looking at the three rounds of the survey one might observe a regional expansion. Participating countries in the first round were mainly located in the geographical North. Meanwhile there is a still small but growing number of countries in the southern part of the globe in PIAAC rounds 2 and 3 (OECD, 2019, p. 19).

Critical positions on ILSA state that literality should not only be understood as a measurable construct, but even more importantly as a social practice. They also point out that competence measurement might promote deficit views of groups and countries (Evans, 2015; Gorur, 2015). In fact, the current discourse about literacy and about basic competencies is far from being oriented towards emancipatory aspects as Freire captured these terms (Freire, 2014). At the same time, the careful analysis

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1 First published at RELA European Journal for Research on the Education and Learning of Adults: Anke Grotlüschen & Klaus Buddeberg (2020): PIAAC and the South – Is Southering the new Othering? Global Expansion of Dominant Discourses on Adult Literacy, *European Journal for Research on the Education and Learning of Adults,* DOI: 10.3384/rela.2000-7426.rela9214, journal homepage: http://www.rela.ep.liu.se/index.asp, link to this article: https://doi.org/10.3384/rela.2000-7426.rela9214. Reprinted with the kind permission of RELA.

of large datasets can even help to relativize common deficit-oriented stereotypes (Grotlüschen, Riekmann, & Buddeberg, 2015).

Our paper poses the question of whether the danger of labelling groups by stereotypical images can also occur regarding countries or regions, especially regarding countries from the South. We want to investigate whether PIAAC – and this might relate to other international surveys as well – unwillingly reinforce inadequate assumptions about 'South' in a process we want to call 'southering'. Therefore we examine different aspects of data collection and display of findings. However, it is by no means our intention to claim that such processes, which we describe by the term southering, are carried out intentionally. Rather, we want to name aspects in which stereotyping can take place and which therefore require particularly careful handling of data records.

Theoretical framework: South and othering

To pursue this question we will first outline the position of PIAAC in the context of literacy research. We secondly explore the question of what can be understood as 'the South' beyond geographical concepts. Finally, we propose the concept of 'southering' as a term, which on the one hand can be related to Said's concept of "othering" and on the other hand to questions of the global South.

Literacy research and PIAAC

One of the first prominent large scale assessments regarding adult skills was the *International Adult Literacy Survey* (IALS) (OECD & Statistics Canada, 2000) in the 1990s. It was followed by the *Adult Literacy and Life-skills Survey* (ALL) (OECD & Statistics Canada, 2005) and most recently by the *Programme for the International Assessment of Adult Competencies* (PIAAC) (OECD, 2013a). The involvement of international organizations like the OECD has been discussed (Ydesen & Grek, 2019) as well as their growing influence on national educational policies (Grek, 2010). As a result ILSAs have become the currently most important tool in research on adult competences (Addey, 2018; Gorur, 2015; Hamilton, 2018). In PIAAC literacy is defined as 'the ability to understand, evaluate, use and engage with written texts to participate in society, to achieve one's goals, and to develop one's knowledge and potential' (OECD, 2013a, 59). This notion of literacy also implies that literacy is a measurable set of skills. Assessment relies on a hierarchical competence model. Definitions and techniques to investigate literacy stem from northern conventions.

Even critical positions recognize the strengths of ILSAs, in particular the reduction of complexity and an easier understanding of differences between countries and regions (Gorur, 2015). The transformation of a complex fact like literacy into numbers (Hamilton, Maddox, & Addey, 2015) however carries the danger of simplification. Since the early 1990s (Street, 1992), the critical discussion on literacy became more and more visible as the 'New Literacy Studies' (NLS). Different approaches,

implementing the New Literacy Studies' ideas, have been used for national studies, e.g. in Scotland (St. Clair, Tett, & MacLachlan, 2010) and Morocco (Erguig, 2017), but they remain the minority compared to repeated French, English and German national studies (Grotlüschen & Riekmann, 2011; Harding, 2011; Jonas, 2012;).

The single and internationally comparable notion of literacy as a consequence results in uniform narratives. Addey warns that literacy research via comparative large-scale assessments becomes a 'single story'[2], meaning that the definition becomes self-evident and cannot be scrutinized anymore.

The dominance of large-scale surveys in general and of PIAAC in particular appears to expand from high-income countries in the first round of PIAAC (mainly northern countries) to middle-income countries in the following rounds 2 and 3 (mainly southern countries).[3] Taking into account OECD's efforts to develop a PISA assessment for low- income countries (PISA for Development, Kaess, 2018), we might take this expansion to the 'South' as a general trend for assessment surveys.

The South

In his article 'The West and the Rest', Stuart Hall (1995), claims that 'west' might sound geographical, but is a concept rather than a natural category. One example for the conceptual character of a geographical issue is the so-called 'Brandt line'. Until the early 1990s, the 'first' and 'second world' used to be the western and eastern side of the iron curtain, all other countries being labelled the 'third world'. A commission led by the former German chancellor Willy Brandt tried to overcome the East-West controversy and to reach a more objective description of different parts of the world. The report suggested a line (the Brandt line) according to gross domestic product per capita, that mostly follows the latitude of the 30th degree North (Wionczek, 1981; Kaess, 2018). Figure 1 displays the Brandt Line, which indicates a North-South division. This division explicitly does not refer to Australia and New Zealand. Despite their geographical position, the two countries in discourse as a whole always belonged to the 'North' (Magallanes, 2015) not necessarily including their indigenous populations.

Referring to Martinez the notion about the South relies on conventions: 'By convention, the bottom half of a map is South' (2012). Maps have not always been oriented this way. The word 'orientation' points to the Orient (Jerusalem), and not the North. Famous maps between 800 and 1500 AC were round and flat, had Jeru-

2 Addey referred to Chimamanda Adichie, a novelist born in Nigeria, who gave a TED about `single stories': www.ted.com/talks/chimamanda_adichie_the_danger_of_a_single_story. Adichie clarified how 'single stories' are spread by repeating only one paradigm.

3 The participating countries in the three rounds are displayed in a world map presented at the launch of PIAAC results from round 3 in autumn 2019: www.slideshare.net/OECDEDU/skills-matter-additional-results-from-the-survey-of-adult-skills.

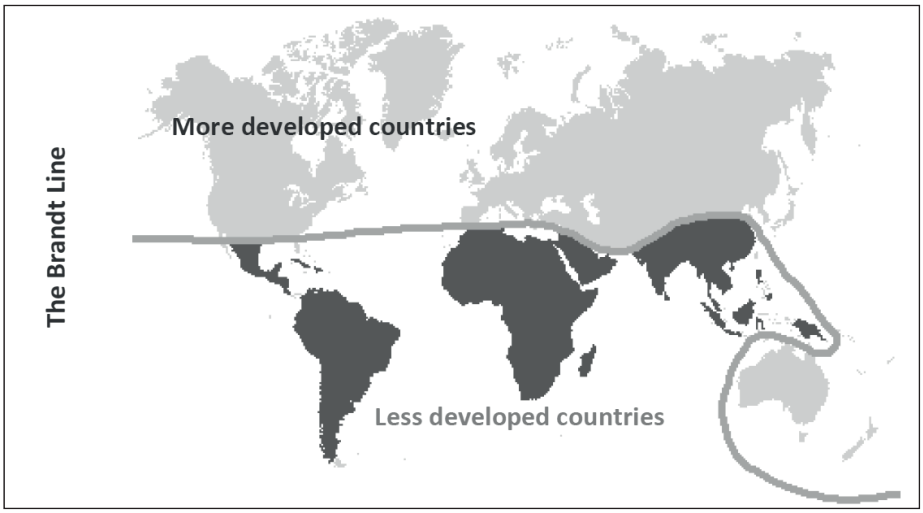

Fig. 1: The Brandt Line (Royal Geographical Society, www.rgs.org)[4]

salem in the centre, Asia in the top area, Europe down left and Africa down right. The first compasses were invented in China. They pointed to the South (Needham 1962, p. 229).

There are also discussions about the type of projections used in geographical maps. The well-established Mercator projection leads to an optical reduction of Africa and South America and to an optical valorisation of Europe, North America and Asia (Hruby, Chico Avelino, & Montoya Ayala, 2016). In education, maps mainly play a role in geography. A South-African textbook on critical literacy however also deals with maps in the context of perception of social and global reality. A specific task is 're-drawing the world to challenge maps based on Europe as the centre of the world' (Janks, Dixon, Ferreira, Granville, & Newfield, 2014, p. 147).

A very pronounced position taking the South out of the context of physical geography is formulated in the journal 'Global South'. Sparke states that 'South is everywhere, but always somewhere' (2007). According to discourse analyses of 'Global South', North and South have different connotations, e.g. freedom, urbanity and order for the North, the subaltern, rurality and chaos for the South (Pagel, Ranke, Hempel, & Köhler, 2014).

A further – quite extreme – position is not based on empirical data. It still shows a different position in discourse. It is supported by the artist and transgender activist Paul Beatriz Preciado who states that 'the South is not an existing, given place, but a gendered, sexualized, and racialized myth' (Preciado, 2017, p. 1).

4 Figure is retrieved from Royal Geographical Society (www.rgs.org), whereas the wording in the figure can not be changed. Therefore, it is important to note that what is here called 'less developed countries' are often called 'developing countries' in the public discourse.

Scholars from the discipline of political geography also state that South is not a geographically clear region. Instead, South might also be interpreted as something spatially different. It can be related to areas within nations and carry certain ascriptions. Jansson refers to 'internal orientalism' within the USA (2003, p. 293). With regard to the North and South in the USA, Jansson explains:

> This discourse consists of a tradition of representing the American South as fundamentally different from the rest of the United States, and an important strand of this tradition involves construing 'the South' as a region where racism, violence, intolerance, poverty and a group of other negative characteristics reign. In contrast, 'America' is understood as standing for the opposite (Jansson, 2005, p. 265).

From othering to southering

In the late 1970s, Edward Said published his work on orientalism and the constructs of the 'east' and the 'other' (1978). He used the term 'othering' to clarify how the west imagines and discriminates the orient. Stuart Hall explicitly referred to Said's work when reflecting about 'the West and the rest' (Hall, 1995). Othering is also applied for discourses on migration. (Castro Varela, 2015).

Another discourse about othering appears in the current discussion on sustainable development goals, initiated by the United Nations (Hanemann, 2019). From a decolonizing perspective, this might be seen as an answer within the system of violent modernity (Andreotti, Stein, Ahenakew, & Hunt, 2015; Andreotti, Stein, Pashby, Susa, & Amsler, 2018). According to Andreotti et al. 'modernity's shine is articulated in ways […] that the very existence of the shiny side requires the imposition of systematic violence on others' (2018, p. 23).

Jansson identifies the ascription of the 'south' as a 'spatial other'. By using the term internal orientalism, he explicitly refers to Said's concept. More recently, Jansson's used the term 'southering'. He reflects on 'the structure of the internal orientalist discourse about "the South" (which I will call "southering")' (Jansson, 2017, p. 131). In this contribution we will use the term 'southering' in order to analyse processes which might result from international measurement of competences.

Corpus for the analysis: PIAAC data exploration tools and country reports

This paper relies on official publications and the data analysis tools provided by the OECD. Scholars focus on the mass media discourse after publication of first and second round of PIAAC results (Hamilton, 2018; Hamilton, Maddox, & Addey, 2015; Yasukawa, Hamilton, & Evans, 2016). The mass media discourse after the second round shows some interesting specifics, especially on Singapore and Greece. Hamilton shows that despite very similar results the development in Singapore is interpreted as a positive trend of educational achievements, while for Greece in-

capable educational policy and dependency from the European North is reported (Hamilton, 2018). Even though the empirical findings are more or less the same, the overall narratives of a successful, (neo-)liberal Asian economy and an unsuccessful, southern European economy dominate the discourse.

One of the tools that addresses mass media and a larger public is the International Data Explorer (IDE), provided by OECD and Educational Testing Service (ETS). This free online tool leads to fast results for most questions that can be answered with basic descriptive statistics. The IDE also allows generate interactive maps based on PIAAC data. The discussion of maps produced by the IDE follows the question whether the maps support southering procedures.

The second source of information that is comparable across countries consists of PIAAC Policy Briefs or Country Notes for specific countries[5]. The PIAAC overall reports (OECD, 2013a, 2016a, 2019) do not cover the country details and not all countries produced exhaustive country reports. Questions arise, whether there is a country report produced by the national project managers and their teams and if there are differences regarding structure and content.

Findings: Southering by PIAAC

The techniques displayed here are taken from the PIAAC system, but probably might apply for many other large-scale assessments as well. We do not assume that any of the authors or people in charge intends to discriminate or disconnect countries or populations. Our focus is to investigate how influential the tools are, that shape the process and influence the discourse.

Southering by literacy definitions

PIAAC rounds include more and more countries. For the international comparison, the definition of literacy has to be globally agreed, which referring to Addey (2018) leads to a 'single story' with all the consequences of northern definitions being applied to southern countries (also: Richards, 2014). The notion of literacy not only concerns high-income countries, but also becomes global. The process has a tendency to fix terms for global monitoring, e.g. the new PISA competence domain global competence (Schleicher, 2016). Two recent discourse analyses show the very Western character of this approach (Ledger, 2018; Grotlüschen, 2018).

5 OECD provides country specific material online: www.oecd.org/skills/piaac/newcountryspecificmaterial.htm. Specific reports used for this article are part of the reference list.

Southering by assessment instruments

Assessment surveys technically base on item development, translation procedures, scoring rules, scaling and background models. Some of the instruments and procedures are available for further research (e.g. the STEP initiative by the World Bank using PIAAC items or the LEO-PIAAC linking study (Grotlüschen, Buddeberg, Dutz, Heilmann, Stammer, 2019). However the reproduction of surveys requires very specialised knowledge. Hamilton states that an 'industry of workshops' to train scholars for secondary analyses travels around the world (Hamilton, 2018).[6] Countries from the Global South therefore might feel under pressure either to buy the standard instruments from the northern organizations or to start a long-term capacity-building process to gain their own knowledge.

More recent global processes like the UN Sustainable Development Goals and the requirement of monitoring the achievements generate additional time pressure (through monitoring, reporting and comparison). The consequence is a lack of time for new, globally agreed definitions, theories and instruments. If there is no time for developing own processes the countries and international organisations have to 'borrow' definitions, procedures, instruments from existing surveys. Doing so they confirm the dominance of the North, even if none of the experts and organisations would vote for it, if there were enough time. Time pressure in global procedures might be seen as a technique of southering[7].

Southering by country income

The OECD works with high and middle-income countries. The World Bank offers classifications by Gross National Income[8].

- Low-income countries are almost completely African (plus Haiti, Afghanistan, and North Korea).
- Low middle-income countries include several formerly Soviet Union countries,
- e.g. Ukraine, Moldavia, Kyrgyz Republic, and Tajikistan.
- Some Upper middle-income Countries (e.g. Mexico, Thailand) did participate in PIAAC.
- The high-income countries consist of roughly 100 countries out of which 23 (round 1) plus 7 (round 2) plus 5 (round 3) participated in PIAAC.

6 Consequently, the implementation of tests and the interpretation of the final test scores are difficult. This is a common feature with many international comparative investigations, e.g. IEA's TIMSS, PIRLS, ICILS, ICCS and OECD's PISA.

7 We owe this insight to Camilla Addey, who expressed it at an expert meeting on monitoring the Sustainable Development Goals 4.6 (literacy and numeracy).

8 https://datahelpdesk.worldbank.org/knowledgebase/articles/906519

PIAAC will presumably expand further among the high-income countries and maybe a few middle-income countries, but – due to the high costs of the survey – not in the low- income countries. Both PIAAC and PISA are currently developed towards an easier and less costly version, which can be administered by middle- and low-income countries. The line between rich and poor countries becomes visible again. High income countries are able to afford PISA, the low-income countries might use PISA for Development (Kaess, 2018).

Southering by league tables

Results of international surveys usually display results in tables, which place the high performing countries on top and low performing countries at the bottom. This type of table is often called 'league table'. In total 24 countries participated in the first round of PIAAC (2008-2013)[9]. In the second round (2012-2016) other OECD member states (Chile, Greece, Israel, New Zealand, Slovenia, Turkey) and other partners (Jakarta/Indonesia, Lithuania, Singapore) entered the survey. Round 3 (2016-2019) was conducted in Ecuador, Hungary, Kazakhstan, Mexico, Peru and a second time in the United States.

Italy, Greece and Spain participated in the first (Italy, Spain) or second round (Greece). For Spain (OECD, 2013b) and Italy (OECD, 2013c), the country notes report their position at the lowest end of the literacy scale, but these notes do not report OECD averages. Instead comparisons are made with reference to the averages of the other participating countries in Round 1. 'Adults in Spain show below-average proficiency in literacy and numeracy compared with adults in the other participating countries.' (OECD, 2013b, p. 2).

From Round 2 on, comparisons consequently report OECD averages (see the Greek report: OECD, 2016b). Chile, Israel and Turkey participated in round 2. All three countries perform clearly below the OECD average and find themselves at the bottom of the table. Wording and reporting is strictly comparative, both cross-national as well as intra-national (e.g. younger versus older subpopulations). Doing so 'South' is created and confirmed between and within European countries. The OECD is geographically widespread and creates its own internal South, mostly not for geographical reasons but according to literacy proficiency as measured with northern instruments and definitions.

The way tables with results are organized changed slightly between PIAAC round 1 and 2. Countries, which entered the survey in the second round, are displayed in a

9 Those countries were Australia, Austria, Canada, Czech Republic, Denmark, England, Estonia, Finland, Flanders (Belgium), France, Germany, Ireland, Italy, Japan, Korea, Netherlands, Northern Ireland, Norway, Poland, Slovak Republic, Spain, Sweden and the United States. Cyprus and the Russian Federation participated as partner states (i.e. non OECD members).

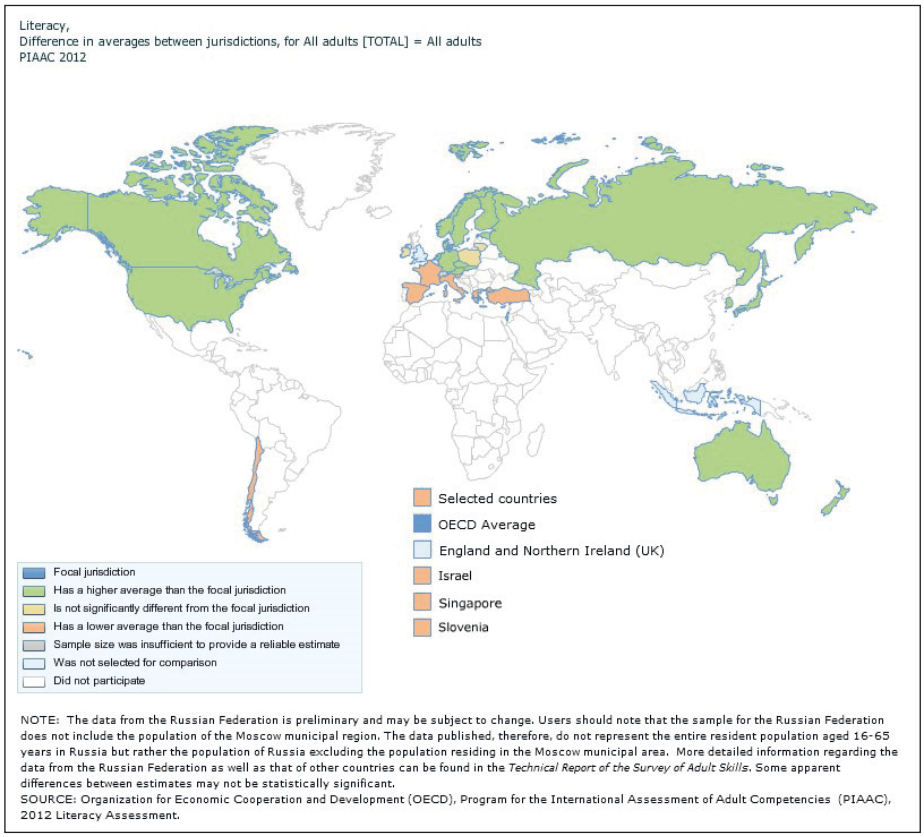

Fig. 2: Map produced with the IDE, based on PIAAC data (focal jurisdiction: OECD average)

different colour to be identified easily. Compared to the black-coloured countries of Round 1, most of the new countries are visibly at the bottom (South) of all rankings.

Southering by maps

Another way to display survey results are interactive maps. By using the International Data Explorer, maps and charts are easy to produce. Figure 2 shows a map automatically generated using the online tool.

The legend of the map shows that the focal jurisdiction in this case is the default jurisdiction, namely the OECD average. This value serves as a benchmark. All other countries appear as significantly above (green) or below (red) the focal value. Countries in which the literacy performance does not differ significantly from the average are sketched out in yellow. The map shows that all new countries from Round 2 (e.g. Chile, Greece, Israel, Turkey, Singapore) turn into red colour (significantly below average) while most Anglo-American countries turn to green colour (significantly above average). The time of entering PIAAC matters. The Northern high-income

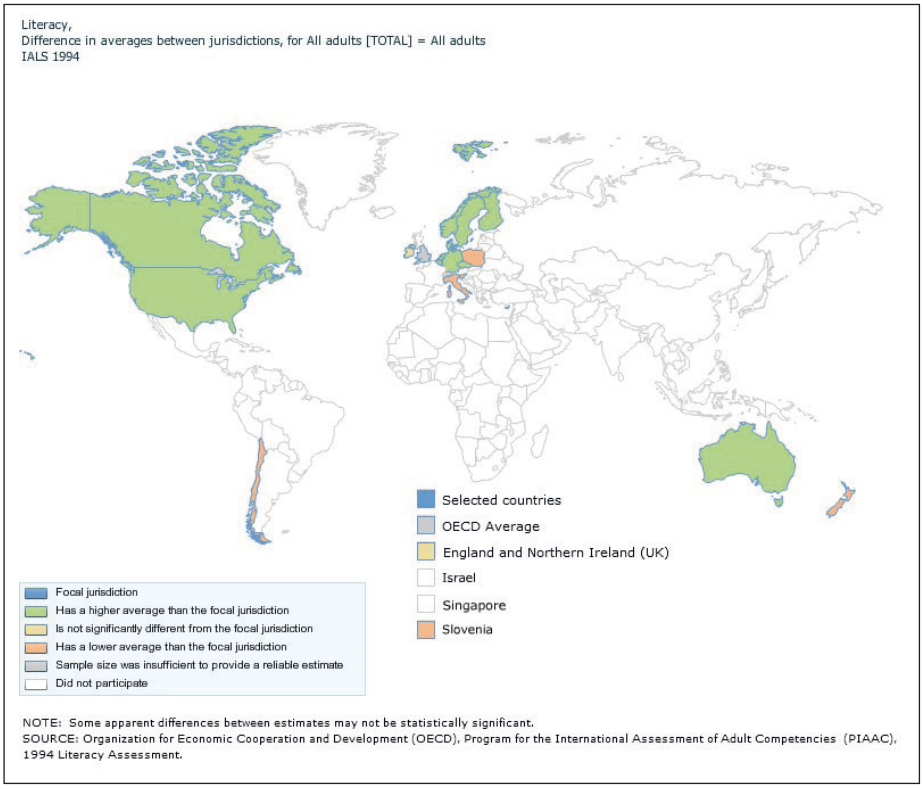

Fig. 3: Map produced with the IDE, based on IALS data (no OECD average available, focal jurisdiction: Average of all participating countries)

countries are the early adopters, they started PIAAC, developed the definitions and instruments, they defined the scale and levels and they still are the majority in the participating countries. Consequently, their proficiencies have a strong statistical impact on the averages. The early adopters form the benchmark. The newcomers interpret their results in relation to this benchmark.

The countries involved in adult large-scale assessment differ quite a lot from the International Adult Literacy Survey (IALS) to the Adult Literacy and Lifeskills survey (ALL) and later to PIAAC. The earlier International Survey of Adult Skills (IALS) with its data collection in the 1990s can also be used as a base for the maps and tables. The OECD did not execute IALS – unlike PIAAC. Therefore, no OECD average can be reported. Figure 3 shows a map based on results from IALS.

The focal legislation in figure 3 is the average of the selected countries, i.e. the countries marked with colours in the map. Still, the North-South divide is easily visible: North America and Northern Europe, together with Australia, perform above average and are highlighted in green. Different from in PIAAC, the performance of New Zealand in the mid-nineties was below average, so it is coloured in red. New

Zealand seems to have undergone a process from underneath the average to above the average between IALS and PIAAC.

The maps representing PIAAC results clearly indicate that in large areas there had been no PIAAC assessment so far. However, in history there has been a number of local and nation-wide assessments in different countries of the world, from Cuba to Kenya, from the early 1960s to most recent surveys. These initiatives must remain invisible in this form of visual representation.

Southering by extra sections and additional variables

PIAAC includes assessment in literacy, numeracy and problem solving in technology rich environments (PS TRE). While in all countries the literacy and the numeracy test was carried out, some countries skipped the problem-solving test, among them Spain, Italy, France and Cyprus (OECD, 2016b, p. 55). In recent country reports[10] there are information about the share of adults in these four countries who opted out of the computer-based assessment of literacy and numeracy and who decided to take the paper-based test instead. This proportion might be a good proxy for reporting low computer skills. Still it separates the non-test-taking countries visibly from those who booked the full arrangement.

Besides the different modules of PIAAC (literacy, numeracy, problem solving) participating countries could add country specific variables into the background questionnaire. The survey is based on an international background questionnaire that allows general international comparison. To a certain extent, countries can add variables of national interest. This gives a certain insight on how important some questions are for a country. In some countries additional variables were included into the interviews, e.g. religion (in Israel), region of origin or skin colour (in the USA).

In several countries from Round 2, religion plays a more important role than in most countries from round 1. Muslim shares of the population can roughly be estimated as follows in some of the Round 2 countries: Turkey (99%) (Auswärtiges Amt, 2019), Indonesia (87%) (BPS – Statistics Indonesia, 2012), Singapore (14%) (Department of Statistics, Ministry of Trade & Industry, Republic of Singapore, 2015). The Arab population in Israel is about one fifth of the inhabitants (20%) (Israel Central Bureau of Statistics, 2016). As religion has not been a variable in Round 1, the display of league tables and comparisons regarding religion to an OECD average is not possible. Countries with complex religious conflicts like Israel will use the data for internal comparison. Israel even oversampled the orthodox Jews (Charedim) and can draw conclusions based on the different educational systems offered to the different religious subpopulations.

The questionnaire for the assessment in the United States contained an extensive set of variables on health information seeking behaviour and on health and health

10 e.g. the report on Singapore: www.oecd.org/skills/piaac/Skills-Matter-Singapore.pdf

literacy, as well as on participation in adult basic education. Moreover, questions about skin colour and the region of origin were included (see table 1).

Tab. 1: PIAAC: Additional questions in the USA

	Are you Hispanic or Latino? Which of the groups on this card describes your Hispanic or Latino origin? Choose one or more
01	Mexican, Mexican American, or Chicano
02	Puerto Rican or Puerto Rican American
03	Cuban or Cuban American
04	Central or South American
05	Other Hispanic or Latino background

	Which of the groups on this card best describes you? Choose one or more
01	White
02	Black or African American
03	Asian
04	American Indian or Alaska Native
05	Native Hawaiian or other Pacific Islander

Source: PIAAC Background Questionnaire, retrieved from https://nces.ed.gov/surveys/piaac/final_en_bq.htm

In case the interviewee confirmed that he/she is Hispanic or Latino, the interviewer asked for a very detailed specification. Furthermore, the overall sample of US interviewees was asked whether they would call themselves White, Black or African American, Asian, American Indian or Alaska Native or Hawaiian. The sample sizes in PIAAC are more or less 5,000 people, out of which a substantial group may be Hispanic, while shares of the subgroups will be too small to allow representative conclusions. Furthermore, the questionnaire connects the questions with people of colour which are different from 'white' people. Findings on literacy by skin colour will probably show the majority of the marginalized, underprivileged, less educated and less prestigious darker subpopulations end at the bottom of the table.

Summary: PIAAC and the South

Findings show, how South is created and re-produced by the presentation of PIAAC results in several ways. The authors would like to point out once again that this is not an intentional procedure, but a side effect of general data analysis. Southering can occur because of the time pressure resulting from supranational agreements which is pushing the less developed countries to adopt techniques and procedures already available by the North. This implies the 'export' of northern definitions and instruments to the South: All definitions and test instruments are used for OECD countries and further partner countries. They also influence the worldwide Global Alliance for Monitoring Learning (UIL/UIS/OECD).

The presentation of rankings or league tables where bottom equals low proficiency compared to OECD average leads to positions of most non-OECD countries below average and thus in the 'South' of the table. This occurred also to southern European geographical areas, e.g. Spain, France, Greece or Italy. In a similar way the production of maps with South at the bottom, coloured in red, connects low performance with southern countries. In addition, the maps can give the impression that there is no literacy research beyond the countries depicted there, thus ignoring earlier tests and campaigns, e.g. the Cuban Literacy Campaign 1961.

The presentation of extra sections for countries, which do not want to afford all parts of the tests and the production of smaller versions of the tests for low- and middle-income countries (e.g. PISA for Development) reinforce the separation between high-income and low-income countries. An intra-national South might be produced by focusing sociodemographic variables, such as religion or skin colour. The subpopulations perceived as 'non-whites' and the book religions claimed as non-Christian may undergo a process of southering within their societies.

Discussion: Southering as new Othering?

To participate in international educational surveys has a number of advantages for the countries in question. Empirical evidence can help to implement educational programs, support the useful allocation of investments and – in the case of PIAAC – rise the awareness towards adult education – the education sector that generally receives far less attention than early childhood education or school education.

The strategy of awareness rising proved to be successful in some cases, like in Germany (Grotlüschen, 2013), in other countries these expectations have been disappointed (Elfert & Walker, 2018; Smythe, 2018a, 2018b). Rising awareness however also can lead to rising expectations which adult education alone cannot fulfil. Government programs address participants with courses on literacy, install accounting procedures and fund further research. We would suggest that the idea of bringing every single person onto an arbitrarily defined literacy level does not meet the realities of societies. Living with low literacy is possible, especially with a strong connection to a socially supportive group of family, neighbours, colleagues and friends (Buddeberg, 2019).

Another domain regularly covered in large-scale assessment, is numeracy. Like the approach of literacy as a social practice (Barton, Hamilton & Ivanič, 2000), Yasukawa and colleagues discuss numeracy as a social practice (Yasukawa, Rogers, Jackson & Street, 2018). The approach of decolonizing mathematics is discussed by Nicol and Luneta in South African Soweto (2018). Approaches like these reconsider local knowledge and de-universalizes mathematics. This argument supports the findings in this article. The local or regional practices of literacy can hardly be covered by large-scale surveys, because these surveys for technical reasons have to apply universal definitions and instruments and cannot capture specific regional practices and competences.

This leads back to the question of North and South. We would not claim to renew the well-established terminology of *othering* with a newer and narrower concept. Othering remains a concept that helps uncovering processes of hegemonic discourse, of establishing and maintaining power and of devaluating knowledge. Othering discriminates people, populations, subpopulations and regions by defining them as different from the dominant Northern discourse and from Northern knowledge. We thus use *southering* as a subconcept of *othering*, being narrower in terms of the geographical construct, but still pointing at the enormous relevance of the discourse to establish and maintain Northern hegemony throughout the world.

Hegemonic scientific discourses take place in the global realm of educational assessment, and we subsume them as contributing to a process of southering. Even institutions, which intend to follow emancipatory pathways, like UNESCO institutes and their counsellors, are involved in this procedure. The monitoring of the Sustainable Development Goals gives reason closely to observe its directions and discourses[11].

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8. The narrative of 'equality of chances' as an approach to interpreting PIAAC results on perceived political efficacy, social trust and volunteering and the quest for political literacy[1]

Anke Grotlüschen

Introduction

National strategies for literacy[2] have often been launched as an answer to large-scale assessments, like the Programme for the International Assessment of Adult Competencies (PIAAC) or the German Level-One Survey (LEO). The strategies focus on employment and employability, workplace and family literacy. Literacy is a value on its own, without needing legitimization via employability. Indeed, the Austrian scientist Ribolits points out that literacy is relevant for humanistic reasons and also potentially enables people to act in a non-alienated, emancipated way (Ribolits, 2009). The economic argument, however, is not the only one driving national strategies for literacy. As the French economist Thomas Piketty (2014) and the French philosopher Pierre Rosanvallon (2013) discuss (see below), societies are losing their cohesion. Financial and social inequalities and the narrative of equal chances may lead to the instabililty of democracies. By not addressing countries as economies but as democracies, the attention shifts remarkably.

Therefore this article discusses what empirical data tell us about political and social participation among low and highly skilled adults. Thus it fuels the discussion

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2 In this case we understand literacy as literacy competence in terms of the Programme of the International Assessment of Adult Competencies (PIAAC), because we want to use PIAAC data for the analysis. Our reflection of the controversy on literacy relies especially on the New Literacy Studies (Grotlüschen, Heinemann & Nienkemper, 2009).

whether national strategies for literacy should have a broader approach, including both employability and citizenship as their aim, instead of prioritizing employment.

As the current databases do not offer variables on literacy and political participation, this analysis will draw on variables about literacy and political efficacy[3] from the current PIAAC survey (Rammstedt, 2013). Feelings of political efficacy are not the same as real political participation, but they correlate (see below). Further indicators will be social trust and volunteering.

Descriptions of adults with low skills, detailed in four chapters (work and family, reading skills, literacy practices and participation in adult education) have recently been published by the OECD (Grotlüschen, Mallows, Reder & Sabatini, 2016). This article complements these recently published chapters by focusing on the three variables political efficacy, social trust and volunteering and by comparing low-literate adults with high-literate adults across the countries participating in PIAAC. The statistical method followed the above mentioned publications' scheme. The literacy scale has been divided into low literacy competence, defined here as 'below 225 points on the PIAAC scale', which equals PIAAC level one and below – and high literacy competence, defined as 'above 375 points on the PIAAC scale', which equals PIAAC level four and above. The first round data have been used (all countries' datasets, data collection from 2012) with the statistical software 'Stata' and the 'PIAAC repest module' co-developed by Francois Keslair from OECD. This module allows for fully taking into consideration all ten plausible values for the literacy variable as well as the sample weights.

Crosstabulations have been calculated between literacy levels and the three variables political efficacy, social trust and volunteering. Low literate and high literate subgroups then are compared and compiled into a graph showing results on international level. The significance is expressed by standard errors. While the graphs show all results, the interpretation of results in this article only refers to statistically significant differences.

Because of the large sample even small differences of a few percent points are significant in PIAAC. Controlling for sociodemographics and performance variables like education and employment would definitely reduce the correlation and show how strong the influence of literacy is onto *political efficacy, social trust or volunteering* – if the influences of education and others are kept aside (which would be a causal relation that would require strong theoretical background – and which obviously is too linear to meet the reality).

But this is not the research question here – the question is to describe the low-literate population in contrast to high-literate adults with literacy being a result of formal education as well as literacy practices and many other factors.

The reason to crosstabulate literacy instead of formal education (as it is reported in regular surveys on volunteering and youth, see below) is that the current political

3 See below for the theoretical concept of political efficacy and for the PIAAC theoretical framework.

attention focuses low-literate adults and not low formally educated adults. Thus it makes sense to use the literacy variable even if it has a high correlation with education.

It was decided to fully report all countries' results in the graphs but focus on three special countries in the interpretation. The reason is twofold. On the one hand, an interpretation needs sound knowledge about the political system and its recent development which would take much longer discussion and explanation than is provided here. On the other hand, the three countries in focus experienced shifts to the right wing in their political landscape shortly after the PIAAC data collection and the shifts were discussed in mass media with high concern. Meanwhile, many other countries face the same problem (or always had before). But this was not yet clear when this article was computed and the shifts now take with more and more distance to the year of data collection (2012). Thus, three countries are selected here: Germany newly saw right wing populism in the streets as well as a new political party at the same time when the borders were open for refugees in September 2015. France had strong Front National results in regional elections in December 2015. Poland voted for a nationalist government in October 2015. All this took place in or close before this article was compiled. Thus, the interpretation of results keeps a special look onto these three countries.

Workforce literacy programs versus basic civic education: the German case

Via the Level-One Survey, published in 2011, it became clear that more than seven million German adults (14,5% of the adult population aged 18–64) read and write on a level that equates the international UNESCO definition of functional illiteracy (Grotlüschen & Riekmann, 2012). Follow-up programs funded by the federal ministry of education, the federal laender and the European commission prioritize literacy programs addressing the workforce and their needs in the workplace.

The international PIAAC survey confirmed the results: According to PIAAC, 17,5% of German adults aged 16- 64 belong to reading literacy competence level I and below, the international average being 15,5% (OECD, 2013; Rammstedt, 2013). The description of this level does not equal the LEO descriptions, so this subpopulation should not be called *functionally illiterate* – for this article, we will consider this subpopulation as *adults with low literacy skills*. Still, there are substantial concerns about this group, and these concerns drive the development of national strategies and educational programs to improve adult literacy.

This article focuses on the relevance of basic civic education for adults with low literacy skills, whether they are excluded from political participation and how the theoretical explanations for differences in political and social participation of population subgroups have developed. Therefore the research question is:

- Do adults with low literacy skills agree less often on feelings of political efficacy and social trust than adults with high literacy skills?
- Do they engage less often in volunteering than adults with high literacy skills?

If so, it may be discussed whether low-literate adults' higher agreements to feelings of political efficacy and engagement were desirable (actually political efficacy can be performed by joining extremist groups as well which is not desirable from the standpoint of democratic states). It is also relevant to take into consideration whether national literacy strategies then also should focus on the theoretical and practical improvement of basic civic education.[4]

To answer these questions, the following sections will analyse recent theoretical approaches which give the three variables a broader sense and meaning. The approaches do not follow the rational-choice approach, partly underlying the PIAAC theoretical framework (OECD, 2011), but substantially exceed the idea of a 'homo economicus'. We prefer a recent French philosophers' discussion of a 'homo reciprocans' (see below, Rosanvallon, 2013).

Economic inequalities (Piketty) and their ideological legitimization via the narrative of equal chances (Rosanvallon)

Current assumptions about the situation of economies and societies – especially in the U.S.A. and France – are strongly influenced the most recent publications in political sciences and economics. Highly relevant discussions have followed the publication of Capital in the 21st Century by French economist Thomas Piketty (Kaufmann, & Stützl, 2015; Piketty, 2014). Piketty analysed tax data over two centuries and concluded: Firstly, capital grows faster than income – his famous formula 'r > g' (revenue exceeds growth) receives some criticism, especially because of the database. Although interesting, this first conclusion is not so relevant for this article, so I do not discuss it further.

Secondly, Piketty concludes that the economic gaps in France and the US have increased since the 1980s, after having decreased for roughly 200 years because of revolutions, democratic developments, war and socio-political change. Piketty's second conclusion can be confirmed at least for Germany from regular reports on poverty and wealth [*Armuts- und Reichtumsberichte*][5].

4 A rather well known construct can be seen in the international approach of basic, critical political education which relies on Oskar Negt's notion of societal competences Zeuner (2013). This approach led to an international project under the leadership of Christine Zeuner (Dvorak, Zeuner, & Franke, 2005). So far, the relationship between Basic Education (Grund-Bildung) and Basic Competence (Grund-Kompetenz) seems rather unclear.

5 Retrived from: www.armuts-und-reichtumsbericht.de

Piketty suggests global tax policies as well as higher taxation of the richest sections of societies (Kaufmann, & Stützle, 2015). His core focus is the 'equality of distribution', pointing at financial and economical inequalities.

While Piketty has been much discussed in the US since 2014, he was known much earlier in France for his analyses. The trade-unionist and scientist at the Collège de France, Pierre Rosanvallon, uses Piketty's results as a starting point for his theoretical approach in *Society of Equals* (Rosanvallon, 2013).

Rosanvallon uses the economical '(in)equality of distribution' and asks about the legitimization of this kind of (in)equality in modern societies. He asks about the assumptions about communities and relations which allow inequality to be understood as fair. A core narrative in modern societies seems to be the idea of 'equality of chances'. This narrative assumes that economic distribution is fair, as long as all members of a society have the same chance to climb the socioeconomic ladder by relying on their own performance and thus qualify for the income they receive. According to Rosanvallon, the model has three consequences (2013):

> Firstly, the idea of equality of chances delegitimizes instruments that rearrange economic possessions such as taxes, social insurances and social benefits. Thus, unsuccessful individuals are interpreted as responsible for their lack of success and income (blaming the victim), while at the same time non-meritocratic, structural effects and exclusions from labour markets or respected societal positions become invisible. (pp. 303–304)

Secondly, the idea of equality of chances has no upper limit for an annual income that can legitimately be received because of high performance. This may even lead to accepting spectacular forms of income, as long as it is taken for granted that the income relates to individual performance (ibid). Even CEO incomes that sometimes exceed more than two hundred times the income of an average employee (cf. Mishel & Davis, 2015) seem to be legitimate in this narrative.

The third aspect is the lower limit of what people need to be able to live in a society. Charity and humanity become the legitimation of defining the minimum social benefit, but not solidarity among members of a states' population (ibid, p. 304). This also means that social benefits can always be lowered or cut – and those who receive them feel ashamed about their status. Andrea Liesner, a Hamburg-based educational researcher, quotes Stéphane Hessel (Indignez-vous!) and states that average indignation in Germany is not focused on the *cutting* of social benefits, but the fact that some social benefits still remain, stating benefits would lead to passivity and lack of discipline amongst those who receive them (Liesner, 2012, p. 59).

Equality of chances is an idea and a narrative, but the real distributions follow many other aspects, like family background and social heritage.[6] The consequences of this nonfulfillment of the narrative lead to *dismissed reciprocity* (2013, p. 325),

6 Early studies show that the core selection mechanism in the German educational system, the transition to different school types after grade 4, is much more influenced

which I will understand here as *disengagement from solidarity*. Reciprocity is part of a larger theory of equality in Rosanvallon's approach. The three parts of a theory of equality consist of singularity, reciprocity and communality which he suggests for a better legitimation of the distribution of income. But as this paper does not use the complete sociological theory of Rosanvallon, the other aspects are not discussed here.

The reason for this disengagement is – according to Rosanvallon – the assumption that balanced participation on the one hand and the common refusal of free-riding are no longer the moral bases of the majority in contemporary societies. In exaggerated terms, upper, middle and lower classes would each have their own reasons to disengage by thinking the others do not show solidarity anymore:

- Celebrities and the super rich face the temptation to quit their country and pay tax in other (cheaper) areas of the world, if they do not feel they belong to their country anymore.
- Recipients of benefits experience disrespect and disdain (Verhöhnung, Butterwegge, 2015) of their status, instead of receiving solidarity from others towards their social group and ask themselves whether they would do better to adapt to the stereotypes that are told about them and in fact avoid controls and become deviant.
- Middle classes wonder whether they are the only ones sticking to the rules between those who might be avoiding taxation and those they assume to receive more benefits than they should. In case middle classes then fight back, their aims are to attack political and economic elites and as well as refugees or migrants.

The political consequences of low solidarity and reciprocity may well fuel the rise of populism as Rosanvallon states:

> In sociological terms, the crisis of reciprocity is reflected in the malaise of the middle and working classes. Members of these groups who are employed see themselves as doubly penalized: their situations are not bad enough to receive the benefits of the welfare state, yet they are not wealthy enough to enjoy the fiscal and other advantages available to the rich. Politically, their resentment has fueled the rise of the extreme right in Europe. Extreme right-wing parties have capitalized on frustrations due to the diffuse feeling that reciprocity has broken down, directing their fire at both the privileged elite and immigrants said to be taking advantage of the taxpayers' generosity (Rosanvallon, 2013, p. 275).

This line-up of three social classes struggling with each other for solidarity and distribution of chances and economic goods (as provided by Rosanvallon) is not yet complete. According to Jacques Rancière's „Disagreement" (Rancière, 2002), there are always groups that do not even have the opportunity to negotiate, as they are

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by parents' socioeconomic status than by the performance of the student (Lehmann, Peek, & Gänsfuß, 1997).

not recognized as members of society. Rancière points at the fact that politics does not happen among those who sit at the table, but only when poor (2002, p. 26), illegitimate groups start claiming their rights. He states that it is especially the poor who benefit from politics (whether precarious workers, benefit recipients, teenage parents, workers in monotonous jobs or retired people who cannot live from their pension alone).

Rancière concludes that this is why poverty has been denied by dominant, prevailing groups for centuries (2002, p. 27). Politics start to happen when the part that has no part (*Anteil der Anteillosen*) finds their names and language, claims their part[7] and step by step gets recognized as a legitimate part of society and solidarity.

Silke Schreiber-Barsch used this approach with regard to participation in adult education (Schreiber-Barsch, 2009), while Nora Sternfeld used it for overall educational and transformative procedures (Sternfeld, 2009). Earlier works by Rancière focus on citizenship (1992/2007) have been used by Vandenabeele, Reyskens & Wildemeersch to challenge mainstream concepts of active citizenship and lifelong learning (2011, p. 193).

A subgroup of adults that in recent times left their invisibile position in industrialized societies is the so-called group of functionally illiterates[8] or – in less stigmatising terms – adults with low literacy skills.

Sociopolitical disengagement: PIAAC variables

Adults on PIAAC competence level I and below (adults with low literacy skills or lowliterate adults) are the focus of national literacy strategies. To describe them and their sociopolitical engagement or disengagement, it is better to use literacy variables than formal education or socio-economic status for two reasons: First, formal education does not necessarily guarantee sufficient literacy competences through-

7 When middle classes start claiming that refugee homes should not be built in their neighbourhood, the lack of a *voice* that would be *heard* by powerful groups becomes clear. Refugees' possibilities to make a claim are not verbal – they consist of self-vulnerating actions like starting fires in their own camps, going on hunger strikes, risking dangerous flight routes and vulnerating practices like stitching up ones' own lips.

8 Labeling groups of people always contains the dialectics of homogenizing and essentializing the group according to a single characteristic and thus reducing them to the label. On the other hand, the claim for compensation cannot be made without precise distinctions between those who have a right to receive compensation and those who do not. This dilemma cannot be overcome by more euphemistic (politically correct) words. It must be taken into consideration each time a group is characterized. A common approach is to distinguish between the *person* and the *issue* (low-literate adults) instead of making the issue a label (low-literates).

out the adult lifespan. Second, adults without formal education can easily have a good literacy proficiency, especially in reading.[9]

Thus, we use literacy (as definied in the narrow way according to international largescale assessments like PIAAC) in order to look closer at the subpopulation which is addressed by the „Literacy Decade" (2015-2025) in Germany.

We assume that the tendency to disengage from a solidaritarian society may be higher for low-literate adults than for high-literate adults. This is specified as:

(1) low feelings of "political efficacy"
(2) low expression of "social trust" and therefore
(3) less voluntary work than high-literate groups.

All three aspects (political and social engagement or disengagement and consequently high or low readiness for volunteering) operationalize the theories discussed above. But we do not focus on lower, middle or upper classes: This article focuses on literacy, not class (even if both correlate).

The variables used in PIAAC need some specification. PIAAC is an economic survey based on human-capital and rational-choice theories. The latter seem to be the theoretical base to the variables political efficacy and social trust, even if the theoretical framework only mentions very few aspects of the theoretical discussion underlying the variables.[10] Literacy and Education is said to predict economic outcomes as well as wider benefits on all sections of life:

There is good empirical evidence that education not only affects labour market outcomes but is also a strong predictor of outcomes in other life domains. The [background questionnaire, AG] includes indicators of family formation (…), health (…), voluntary work (…), political efficacy (…) and social trust (OECD, 2011, p. 46).

The assumptions about political efficacy and social trust rely on the idea of rational choices (*homo oeconomicus*), which mean humans vote or act socially as long as they think this makes sense because either it has an effect (political efficacy) or social acts will be reciprocated by others (social trust). Rational choice theories have often been criticized, mostly because they cannot explain altruism, friendship, morals, co-operation or solidarity in larger, functionally differentiated societies. Contemporary criticism comes from Pierre Rosanvallon, who prefers the idea of a *homo*

9 Roughly 80% of those considered to perform on a level called functional illiteracy hold a school qualification. The definition of functional illiteracy corresponds with UNESCO-Definitions: "A person is functionally literate who can engage in all those activities in which literacy is required for effective functioning of his group and community and also for enabling him to continue to use reading, writing and calculation for his own and the community's development" (sources and discussion: deleted for anonymity.

10 The framework then points at the work by Tom Schuller and Richard Desjardin's who, under the idea of rational choice approaches, stand for the approach of Wider Benefits of Learning.

reciprocans (2013, p. 319–320), who belongs to others and does not only individually or cognitively make rational decisions. In line with Rosanvallon, I prefer to interpret the PIAAC variables and results from the theoretical standpoint of reciprocal relations which make a society relevant for its members.

Rosanvallon also clarifies his position by stating that a lack of social cohesion allows the Nouvelle Droite (contemporary right-wing populism) to expand and use the feelings of disengagement for introducing their egoistic ideology.

The variables therefore have a connection with each other and can be read as indicators giving information about the democratic stability of societies and the dangers of right wing populists making use of social instability.

I will now check the variables with the PIAAC dataset and compare international and intra-national results. Data have been computed because of a Thematic Report "Adults with Low Skills", which was initiated by the OECD and has recently been published as OECD Education Working Paper 131 (deleted for anonymity). All countries have been included and all computations have been carried out with weighted datasets and plausible values, using the PIAAC repest module for the Stata software (designed by Francois Keslair, OECD). The English version of the questions reads as follows:

- Volunteering: "In the last 12 months, how often, if at all, did you do voluntary work, including unpaid work for a charity, political party, trade union or other non-profit organization?"[11]
- Political Efficacy: "People like me don't have any say about what the government does."[12]
- Social Trust: "There are only a few people you can trust completely."[13]

The analysis has been carried out by country and by literacy level. The results of the OECD partners Cyprus and Russia are shown in the graphs but will not be interpreted. Interpretation focuses on the OECD countries.

11 I_Q 05f About yourself – Cultural engagement – Voluntary work for non-profit organizations. Answers: Never, Less than once a month, Less than once a week but at least once a month, At least once a week but not every day, Every day.

12 IQ06a About yourself – Political efficacy – No influence on the government, Answers: Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly disagree.

13 IQ 07a About yourself – Social trust – Trust only few people, Answers: Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly disagree. The Variable "IQ 07b About yourself – Social trust – Other people take advantage of me" has not been used here, because it is part of a construct made of two variables (IQ07a, IQ07b), which tests social trust. As the others are not constructs but merely single variables (IQ05, IQ06) it felt fairer to use one variable each and not two for social trust, one for political efficacy and one for volunteering.

Findings by country and literacy level

The analysis tries to describe the subpopulations of low-literate adults compared to highliterate adults and specified by country. This does *not* mean literacy is the cause for political efficacy, social trust or volunteering. The question is how people with low literacy skills act and feel in their societies and how this differs from high-literate adults.

Further discussion may take place and clarify whether the gaps should be seen as a reason for offering possibilities for political and social participation for them, including adult education.

Findings and discussion: Adults performing at literacy level I and below assume they have little political efficacy

Political Efficacy has to be understood as one's own feeling of having the capacity to understand politics enough to participate, and as the feeling of responsiveness of governments. The question has been operationalized negatively, asking about a lack of influence on governments. Critics state this might be a narrow definition of politics, as it is reduced to governments, political institutions and elections, while many other expressions of political activities – like demonstrations, petitions, ecological awareness, struggles against class, gender and race inequalities are left out of this definition.

Roughly two thirds of the German population at or below literacy Level I (65%) assume not to be able to influence their government. The gap between low and high-literate adults (23%) is rather large (more than 40 percentage points) and larger than the gaps of all other countries.

A closer look at Poland and France, two large but historically very different neighboring countries, shows interesting differences. While Germany has a large gap in 2012 (when the data was gathered), the northeastern neighbor Poland finds better feelings of political efficacy in the low subpopulation (59%) and worse for high-literate adults (31%). Poland changed their economic system to capitalism and their government to a democracy in an ongoing process in the 1980s. Four years later a nationalist government took over, but the data represent the situation in 2012.

Geographically on the southwestern side, France faces nearly three quarters of lowliterates agreeing to the statement of feeling politically ineffective (73%). More striking, however, is the group of roughly 56% of the high-literate adults feeling disengaged from their government, this figure being the highest of all participating countries in 2012. Neither French conservative nor French socialist governmental actions seem to convince the contemporary French population of their political efficacy: Politics obviously disconnects with voters.

The international results are robust and confirm the Mathew Effect, which is known for *formal education*, holding true for *literacy competence* as well. All countries' lowliterate populations report lower political efficacies than the high-literate

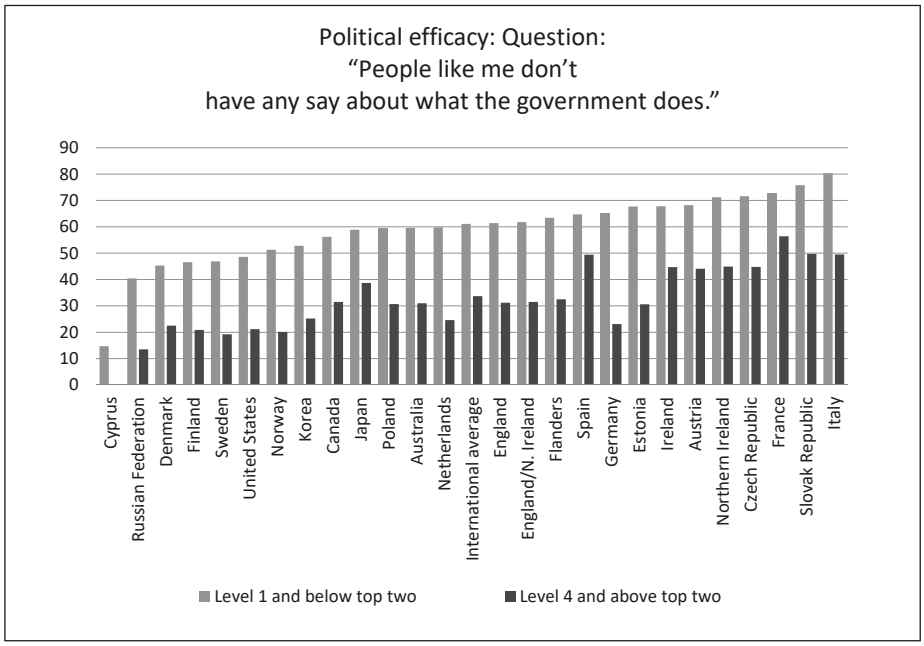

Fig. 1: Political efficacy (top two negative answers) by literacy levels and country (Source: PIAAC, 2012 data).

adults. These data do not mean low-literate adults are to be blamed for. The explanation by German political scientist Christoph Butterwegge seems more convincing: precarious groups and lower classes vote less often than others. So politicians, who depend on voters, organize their activities towards middle classes (Butterwegge, 2015). Therefore, the most precarious groups actually do not receive any response from their politicians, and thus the statement of being politically ineffective is simply true. This does not mean low-literate adults were politically uninterested; they still may protest or enjoy satirical shows. And they also may feel understood by nationalist and populist agitators – which is an expression of political thoughts and wills as well, even if it has nothing in common with democracy, solidarity or social cohesion.

Findings and discussion: Adults performing at literacy level I and below express low social trust

Social trust is – for this analysis – an indicator representing the social cohesion of societies, as Rosanvallon claims. The question of whether to trust not only one's government but also other members of society is – as explained above – most important for legitimizing monetary distributions within these societies. In case middle classes suspect upper classes of avoiding taxation and lower classes of illegally receiving more benefits than they have a legal right to, the middle classes feel ex-

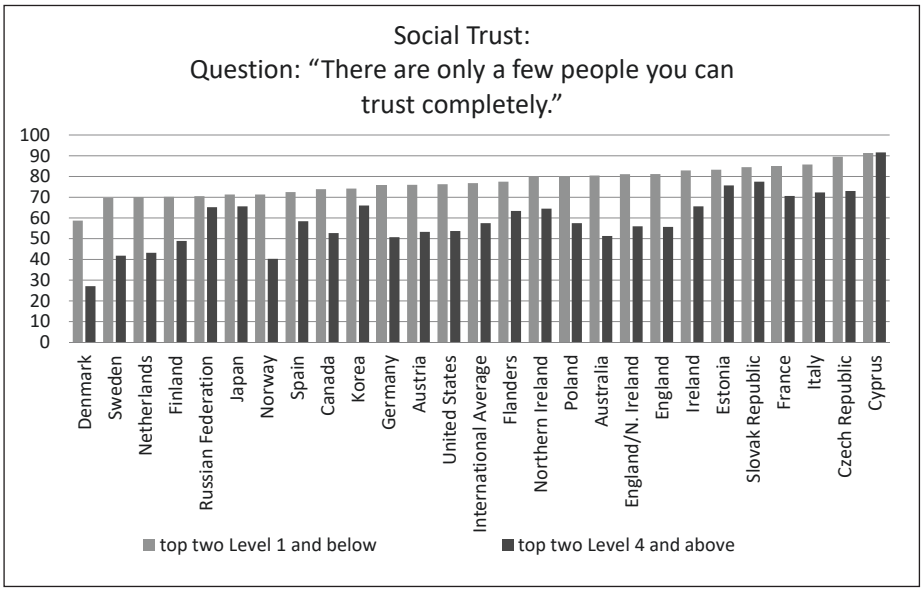

Fig. 2: Social trust (top two negative answers) by literacy level and country (Source: PIAAC 2012 data).

ploited by others who do not stick to the rules. This would increase the tendency of social disengagement and a loss of solidarity.

Compared to other countries, Germany can build upon a rather good structure of social trust. Real solidarity seems to be most widespread in the Nordic countries, with the lowest values for mistrust for both high and low-literate adults.

The international comparison shows again that Germany has quite a large gap between high and low-literate subpopulations and their feelings of social trust (25 percentage points). However, in contrast to the other Nordic countries, Norway has the largest gap, with 30 percentage points. This surprising position in the *international* comparison could perhaps be explained by the recent extreme right terrorist act (Utoya, 2011), but this does not explain the large gap *within* Norwegian society.

Some 80 percent of low-literate Polish adults express social mistrust. This is higher than in Germany (76%) but lower than in France (85%).[14] Rosanvallon, who explained his theories on a lack of social cohesion based on French and American history, can thus be confirmed for the case of France. The U.S.A. in the year 2012 does not show similarily severe difficulties regarding social trust (76% low-literate adults vs. 53% high-literate adults), but still a considerable number of low-literate adults seem to disconnect with their society. This may have become much worse in the past four years since the data were collected. Intra-national gaps are in all cases much larger than the international differences.

14 All differences are statistically significant.

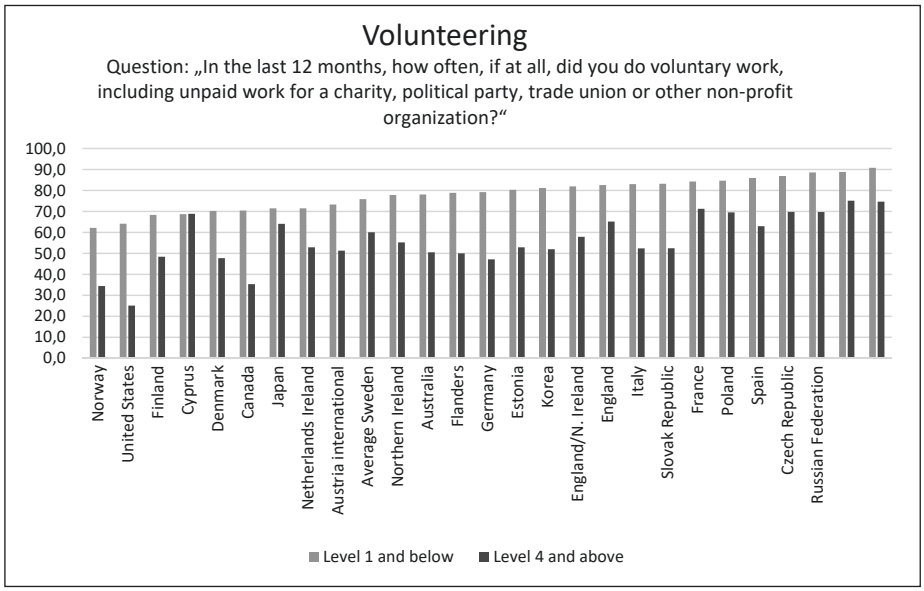

Fig. 3: Volunteering (answer: never) by literacy level and country (source: PIAAC 2012 data). Differences between Germany and Poland/France are significant. Differences between Poland and France are not significant.

Findings and discussion: adults performing at literacy level I and below participate less in volunteering

Low feelings of social trust and political efficacy will be mirrored in lesser engagement for the society and community. It can be assumed that low-literate adults participate less often in non-governmental, non-profit organizations.

It is important to keep in mind that inclusion and exclusion play a role here. Lower formal education or a migration background correlate with low integration in social organizations in Germany (Albert, Hurrelmann, & Quenzel, 2015). Literacy is not necessarily the most relevant factor. We also cannot conclude that low-literate adults are responsible for less volunteering, as they are sometimes smoothly excluded from nonprofit organizations by dominant, well-educated groups.

Furthermore, the welfare regime of the economies and societies respectively is a relevant factor. The question as to whether social security is guaranteed by social law and transfer, or whether it has to be provided by the citizens themselves, does have an impact on the readiness to participate in voluntary work and engage for others in need.

In fact, the two extremes, the traditionally neo-liberal, Anglo-American states, with their charity approach on the one hand, and the sociodemocratic Nordic countries, with guaranteed social welfare on the other can be found side by side in the higher ranks of the table. Roughly two thirds of low-literate adults state that they never volunteer (Norway: 62%, USA: 64%), or looked at the other way around, roughly one third do participate in voluntary work. At the other end of the scale,

we find France (86%) and Poland (87%), indicating that only some 13 or 14% of their low-literate populations get in touch with voluntary activities.

Of Germany's low-literate adults, some 81% state that they never volunteered, compared to high-literate adults, where about half of the group (52%) never entered non-profit organizations. The mechanisms of self-exclusion and external exclusion are not only relevant with regard to employment but also in non-profit organizations, as well as in global and local community activities. The findings are robust across countries.

Adults performing at level IV and above are most often found volunteering in the US, Norway, Canada, Australia, Denmark and Finland. We assume that Anglo-American societies with a more neoliberal tradition, who give responsibility for social aid to charity and volunteering structures, mix in the ranking with more egalitarian sociodemocratic welfare regimes, which offer public services (and therefore need less volunteering) but also face less social exclusion in their non-profit organizations. The findings for the level I and below subpopulations and the level IV and above subpopulations are quite similar to each other.

Further discussion with regard to contemporary right-wing populism

Calls for more civic education always become louder when populist, xenophobic and similar groups and parties are founded or elected. Civic education – especially for adults – cannot solve these problems alone, but it is still a relevant factor for prevention and for throwing light onto simplifying populist mechanisms and worldviews. Faced with the increasingly louder voice of nationalism in the political arena, this would seem to be quite necessary these days.

However, by way of an explanation for nationalism and right-wing world views, often a special pattern is reproduced, claiming that economic losers, high unemployment, lack of perspectives for youth, low education and feelings of exclusion would lead to xenophobia (Heitmeyer, 2002). These explanations are tempting, but they ignore the fact that populists who act willingly to spread their right-wing ideology and try to recruit members for their movement or parties from such socioeconomic losers are needed. Thus, Heitmeyer's unpolitical interpretation of neofascist activities in Germany has been fundamentally criticized (Dierbach, 2010).

Sociological indicators, like an increasing divide between incomes, as well as the delegitimization of social transfers, which are shown above, can only be interpreted as the soil where neofascist or populist, xenophobic or nationalist seeds can grow. But it always needs people who willingly want to spread their right-wing ideology. Indeed, socially losing groups may equally feel attracted to left-wing approaches like Syriza or Podemos, who may listen to their needs and bring them to the political arena. That is the reason why political or civic education can be successful.

Furthermore, the Leipzig Surveys on the *economic middle classes* and the *political centre* (so-called „Mitte-Studien", Decker et al., 2016) point at the fact that right-

wing populism becomes dangerous *when* and *because* it is accepted by the middle and center of societies.

But nevertheless, the decrease of social cohesion always shows up a paradox regarding the lower classes and their participation in elections. Butterwegge (2015) argues: People who belong to lower classes or receive social benefit are underrepresented in elections, that is, many of them do not vote. Politicians then learn that lower classes seldom vote, so acting towards their needs would not result in winning elections – as a consequence, politicians care more for the middle classes and their claims and disregard the lower classes. If this assumption is true, lower classes, receivers of benefits as well as the low-literate among them were quite right in assuming they do not have any say in what the government does.

Conclusions: Relevance of political literacy and basic civic education?

Conclusions here rely on two aspects of the article. The *theoretical* discussion informs about the mechanisms of material spread of income (Piketty) and its legitimization (Rosanvallon) in current societies – and their impact on different classes within the social distribution. The *empirical* results about adults and their feeling of *political efficacy* and *social trust* as well as their participation opportunities in *voluntary activities* show large gaps between low-literate and high literate adults in all countries.

The question as to whether all social classes can influence their societies' politics and whether governments and societies can rely on a certain degree of social cohesion and solidarity, seems highly relevant in times of refugees and migrants coming to Europe or at least trying to do so. Disengagement and decreasing solidarity, as Rosanvallon states, develop because of the feeling of having too little influence on the government. The narrative of equal chances delegitimizes taxation and social benefit and leads to conflicts regarding the spread of income and capital. Each social class can have the feeling that the other social classes take too much out of the commons and give back too little:

- At the top end of the social hierarchy, spectacular cases of tax avoidance, extreme CEO incomes and corruption are reported.
- Those who receive social benefit are shamed (by governments!) as unemployed *lazybones*[15] or migrants only *simulating their will to integrate*[16] into German society.

15 Former German Chancellor Gerhard Schröder (social democrats) claimed in 2001, job agencies should show more strictness against those unemployed who are unwilling to work. The tabloid press (BILD) quotes him stating "There is no right to laziness in our society".

16 Vice Chancellor Sigmar Gabriel (social democrats) stated at a press conference in April 2016 concerning the new immigration law (SZ 15.4.2016) Germany would not

- Parts of the middle classes try to keep together what they understand as theirs, protecting it against others by voting for populist parties and fighting against elites and migrants.

The core question is whether these activities are carried out by a few people (and just made visible via mass media) within a solidarity society, or whether these few are already the majority. The parts of a society who agree to fund social benefits through their taxes are rather relevant for welfare regimes. The findings about political efficacy, social trust and volunteering thus can be read as indicators, pointing at the quality of social cohesion and solidarity in western societies.

For the question of literacy and its correlation with political efficacy, social trust and volunteering, the findings confirm the thesis that all three indicators show lower results for subpopulations with low literacy skills. This is confirmed by qualitative research recently carried out in Germany with low-literate adults (cf. Pape 2011). This situation is dissatisfying for democratic societies with a tax-paid social welfare system. But it is also dissatisfying because the results can be interpreted as rather fewer possibilities for political participation for low-literate adults. Feelings of political efficacy correlate with taking political action (both in conventional ways, like voting, as well as in unorthodox ways, like the blockading of crossroads or public areas), as the political scientist Angelika Vetter shows (1998, p. 34 et seqq.). Relatively small parameter values for political efficacy – which can be shown for low-literate adults in all participating OECD countries – indicate restricted possibilities for political participation.

This brings us back to the question asked at the beginning of this paper: if less participation in employment and work life, a higher risk of exclusion from the labor market, and low incomes in menial jobs are a reason to start programs on workforce literacy, shouldn't the findings of this analysis lead to a discussion on political literacy? Shouldn't the terms (political literacy, civic education, basic civic education) be discussed and didactical approaches be offered?

Apart from this sociological reason for political literacy provision, several scholars claim for an emancipatory approach anyway (cf. Ribolits, 2009, p. 175 et seqq.) – without needing any statistical base for this, the starting point is normative, not empirically driven. The idea is that basic education cannot only help people *adapt* to social realities, but also has to make an effort to teach people to understand and *change* the situation. Mere adaptation would lead to defensive learning, as German learning theorist Klaus Holzkamp states (1993), which appears in combination with unreflected *learning reluctancies* (Lernwiderstände, Faulstich, & Bayer, 2006). On the other hand, expansive learning (Holzkamp, 1993) aims at an expansion of one's own sovereignty, both in material as well as in immaterial terms (deleted for anonymity).

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want "Integration simulators" ("Integrationssimulanten"), he meant refugees who would only pretend they would want to integrate.

This would lead to adults who learn to clarify their interests, claim them and expand the areas where they can decide according to their values, interests and needs. This may be decisions about work and leisure time, for and against starting a family, long-term job security, knowledge of trade unions, tariffs and rights as workers, better income and affordable housing – all these aspects being more or less material improvements of one's life. But expansive learning may also lead to better participation and embeddedness in political structures, in non-profit organizations, in better quality of friendships and personal relations as well as better understanding of contemporary aspects of life by reading weblogs or newspapers – just to name some examples for immaterial outcomes of expansive learning, especially with regard to political literacy.

Thus it is from both perspectives (sociological and emancipatory) quite relevant ton offer political literacy and workforce literacy side by side, instead of giving one of them full attention and neglecting the other. But it will be necessary to develop didactical settings for civic education that really attract low-literate adults by allowing them to clarify their interests and needs and to articulate them – and this may include the deconstruction of the narrative of equal chances – and find legitimizations for solidarity which understand and scrutinize the dominant neo-liberal ideology.

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Part III:
Understanding the power relations of literacy and participation

9. Alphabetisierung von Geflüchteten

Die *Zusatzqualifikation Alphabetisierung,* der *Alphabetisierungskurs* des Bundesamts für Migration und Flüchtlinge und der *Deutsch-Test für Zuwanderer*

Jana Wienberg & Anke Grotlüschen

Die Herausforderung: Rekonstruktion der Ereignisse seit September 2015

Im Herbst 2015 überschlagen sich die Ereignisse, der Bürgerkrieg in Syrien treibt Flüchtende über die Balkanroute nach Norden, in den Ländern an der Außengrenze der Europäischen Union tritt die ohnehin latent gärende Überlastung der Asylsuchenden-Infrastruktur nunmehr deutlich zutage und in der Folge wird das Dublin-System von deutscher Seite ausgesetzt. Dadurch können Flüchtende über innereuropäische Grenzen ohne Kontrollen weiterziehen. Die Sorgen vor Überlastung auch der deutschen Infrastruktur entkräftet Bundeskanzlerin Merkel mit den berühmt gewordenen Worten „Wir schaffen das". Wenige Wochen später errichtet Ungarn einen Grenzzaun und lässt Flüchtende auf dem Budapester Ostbahnhof unversorgt ausharren. Es entsteht der „March of Hope" – ein Fußmarsch über europäische Autobahnen, auf dem Weg zur österreichischen Grenze ebenso wie zur dänischen Grenze. Schließlich werden innereuropäische Grenzkontrollen eingeführt, das Dublin-System wieder in Kraft gesetzt und der so genannte „Türkei-Deal" sorgt für Grenzsicherung auf türkischer Seite. Flüchtende stecken in Griechenland unter nervenaufreibenden Bedingungen fest.

Dieses Narrativ – Syrienkrieg, Balkanroute, March of Hope – ist relativ bekannt und scheint die Zahl der Geflüchteten seit 2015 zu erklären. Doch schon zuvor waren Flüchtlinge in erhöhter Zahl über das Mittelmeer nach Europa gelangt. Bei genauem Hinsehen wird offenbar, dass sich die Rechtslage zur Sicherung der europäischen Außengrenzen bereits vor 2015 grundsätzlich verändert hat. In der von der Bundeszentrale für politische Bildung vertriebenen Zeitschrift *Aus Politik und Zeitgeschichte* erscheinen 2015 Erklärungen, die über das Syrien-Narrativ hinausgehen: Das bis 2014 praktizierte System der Grenzsicherung beinhaltete Abschiebungen in Staaten, in denen Flüchtende mit Menschenrechtsverletzungen zu rechnen hatten. Zudem wurden Boote auf dem Mittelmeer abgedrängt, anstatt sie aus Seenot zu retten. Das EU-Parlament verschärfte auf Druck von Menschenrechtsorganisationen 2014 die Regeln für den Umgang mit Flüchtlingsbooten (Gerson 2015, S. 46). Seit-

dem wird anerkannt, dass für europäische Grenzschutzorgane die Grund-, Menschen- und Flüchtlingsrechte auch außerhalb des EU-Territoriums gelten (Gerson 2015, S. 48). Die Rechtslage wird somit als deutlich verändert eingeschätzt: „Verboten ist nunmehr, Boote bewusst abzudrängen, oder durch intendierte Manöver eine Umkehr zu erwirken. Fischer, die in Seenot geratene Flüchtlinge retten, müssen nicht mehr mit einer Strafverfolgung rechnen. Und während die Rettungseinsätze zuvor auf bloßer Freiwilligkeit basierten, wurde die Pflicht zur Hilfe nunmehr auf die Agentur selbst übertragen" (Gerson 2015, S. 47).

Diese Entwicklung hatte die erhöhten Flüchtlingszahlen auf der Mittelmeerroute zur Folge und sie wird dazu führen, dass sie weiterhin in Italien, Spanien und Griechenland eintreffen werden. Sie sind wiederum nach dem Dublin-System innerhalb Europas zu verteilen.

In Deutschland reagierte das Innenministerium und demzufolge das Bundesamt für Migration und Flüchtlinge mit der Öffnung der Integrationskurse für *Geflüchtete mit guter Bleibeperspektive*. Ende 2016 richtet zudem die Bundesagentur für Arbeit sogenannte „Einstiegskurse" zum Erwerb der deutschen Sprache ein, sie dienen als Propädeutikum vor dem Integrationskurs. Einstiegskurse verlangen keine nachweisbare Qualifikation oder Zulassung der Lehrenden oder Kursträger. Der Bundesrechnungshof moniert die Qualität der Kurse im Jahr 2017 (Bundesrechnungshof 2017).

Demgegenüber ist die Integrationskursstruktur weiterhin an die Regularien des Bundesamts für Migration und Flüchtlinge gebunden. Ausgesetzt wird allerdings die Zusatzqualifikation, die für die Ausbringung von Integrationskursen mit Alphabetisierung (BAMF-Alphabetisierungskurse) erwartet wird. Diese so genannte Zusatzqualifikation Alphabetisierung (ZQA) wird ist nicht in hinreichendem Maße angeboten, um die zugleich steigende Anzahl von BAMF-Alphabetisierungskursen innerhalb des BAMF-Integrationskurssystems zu bewältigen.

Die Frage, wie gut das deutsche Integrationskurssystem dieser Aufgabe gewachsen ist und wie es unter den neuen Bedingungen funktioniert, lässt sich schwer beantworten. Einige Annäherungen sind jedoch empirisch fundiert möglich. Die Forschungsfragen richten sich somit auf die *Qualifizierung der Lehrenden*, die *Verlagerungen im Integrationskurssystem* selbst und auch die *Prüfungserfolge der Teilnehmenden*. Professionalität ist im Ausnahmezustand nicht uneingeschränkt zu erwarten. Die steuerungsrelevante Frage ist jedoch, welche Teilbereiche funktionieren und an welchen Stellen Nachbesserungsbedarf aufweisen. Dazu wird hier eine datengestützte Beschreibung des Integrationskurssystems vorgelegt, die auf eigenen Erhebungen in der „Zusatzqualifikation Alphabetisierung", auf der Integrationskursgeschäftsstatistik sowie auf der Teststatistik der Prüfungsinstitution telc beruhen.

Herausforderung: Anteil der Geflüchteten mit Alphabetisierungsbedarf

Es scheint noch relativ schwierig, die Bedarfe an Alphabetisierung und Zweitschriftunterricht sicher abzuschätzen. Die Befragung von IAB, BAMF und SOEP (2016) (Brückner et al. 2017, S. 6) weist auf 44 Prozent arabischer Erstsprache hin. Die Autor/inn/en schätzen den Anteil des (funktionalen) Analphabetismus auf rund 8 Prozent (Brückner et al. 2017, S. 7). Sie definieren wie folgt: „Primäre AnalphabetInnen sind Personen, die weder in ihrer Muttersprache noch einer etwaigen offiziellen Landessprache sowie in Englisch und Französisch schreiben und lesen können; funktionale Analphabeten sind Personen, die sämtliche mit Skalenniveau abgefragte Sprachen im Schreiben und Lesen „eher schlecht" oder „gar nicht" beherrschen" (ebd). Bei etwa einer Million Geflüchteten (von denen wohlgemerkt nicht alle einen Rechtsanspruch auf einen Integrationskurs haben) kommt man somit rechnerisch auf einen Bedarf von etwa 80.000 Personen. Demgegenüber ist der Anteil der Bestandsmigrant/inn/en mit Alphabetisierungsbedarf laut LEO-Studie auf rund 3 Millionen Menschen zu beziffern. Auch zeigt die wachsende Zahl der BAMF-Alphabetisierungskurse, dass doch ein sehr dringender Bedarf vorliegt.

Bewältigung der Herausforderung: Rolle der Volkshochschulen und Bildungsträger

Die Volkshochschulen haben verschiedene Wellen von Kursangeboten zu Flucht und Flüchtlingen ausgebracht (Käpplinger 2017). Sie bieten sich – neben anderen Bildungsträgern – zur Krisenbewältigung an, monieren jedoch auch die erkennbare Zunahme von freien Trägern in diesem Segment. Die Angebote unterliegen einem engen Kontrollsystem durch das BAMF. Nicht nur die verschiedenen Integrationskursarten, sondern auch die Zusatzqualifikation zur Integrationskurslehrkraft (ZQ) als auch die Zusatzqualifikation Alphabetisierung (ZQA) müssen als Konzept durch das BAMF akkreditiert werden. Sämtliche Lehrpersonen werden einzeln zugelassen und auch die Teilnehmenden werden nach Bewerbungsverfahren durch BAMF zugelassen. Die ZQA- Angebotsstruktur besteht bundesweit aus derzeit sieben Zentren, eines davon befindet sich in Hamburg mit einer Jahreskapazität von etwa drei Durchgängen zu je 16 Teilnehmenden. Von den nunmehr insgesamt 80 Teilnehmenden liegen Befragungsdaten vor. Darüber hinaus publiziert das BAMF regelmäßig Integrationskursgeschäftsstatistiken, denen der Aufwuchs und die Verteilung von Integrationskursen zu entnehmen ist. Hier wird auch die Bestehensquote der Deutsch-Tests für Zuwanderer publiziert. Genauere Analysen nach mündlicher und schriftlicher Deutschkenntnis sind aufgrund der Datensätze des DTZ-Prüfungsanbieters telc möglich. Diese drei Datenquellen werden in den folgenden Abschnitten ausgewertet.

Forschungsfrage 1: Die Qualifizierung des lehrenden Personals für die Integrationskurse mit Alphabetisierung

Für die vom BAMF finanzierten Integrationskurse mit Alphabetisierung (BAMF-Alphabetisierungskurse) stellen nicht die Mehrheit der Kurse dar, aber sie nehmen sukzessive zu (siehe unten). Für diese Kurse ist grundsätzlich eine Qualifizierung (ZQA) notwendig, die gegenwärtig ausgesetzt ist. Nichtsdestotrotz ist die Nachfrage erheblich höher als das Angebot. Von den sieben Standorten, die die ZQA ausbringen, ist einer am Zentrum für wissenschaftliche Weiterbildung der Universität Hamburg angesiedelt. Das Einzugsgebiet der Teilnehmenden reicht von Flensburg bis Braunschweig und von Sylt bis Berlin. Die Befragung umfasst sieben Kurse (2016 und 2017), von denen einer in Berlin angeboten wurde. Die Befragung wurde als Vollerhebung angelegt, zugelassen werden konnten maximal 112 Personen, die Erhebung umfasst 94 Fragebögen (84 Prozent).

Sozialstruktur der Teilnehmenden der Zusatzqualifikation Alphabetisierung (ZQA)

71 Prozent der Teilnehmenden sind weiblich, 29 Prozent sind männlich. Frauen sind insofern überproportional vertreten, jedoch befinden sich in den hier betrachteten Zusatzqualifikationen auch fast dreißig Prozent Männer.

Gut ein Drittel der Befragten sind zwischen 36 und 45 Jahren alt, gefolgt von jeweils rund zwanzig Prozent der zwei älteren Kohorten. Bemerkenswert ist, dass rund 7 Prozent der Teilnehmenden mit über 65 Jahren in den BAMF-Alphabetisierungskursen unterrichten oder unterrichten wollen (Tabelle siehe Anhang).

Gefragt wurde außerdem nach der Berufserfahrung mit drei Auswahlkategorien. Die Berufserfahrung ist allerdings nicht mit der Unterrichtserfahrung im Integrationskurssystem gleichzusetzen. Offensichtlich wird die ZQA mehrheitlich (52 Prozent) von den wenig berufserfahrenen, angehenden Lehrkräften genutzt. Ein weiteres Drittel ist hingegen über zehn Jahre berufstätig, während die Mittelkategorie mit nur knapp 12 Prozent der Befragten belegt ist.

Die Auswertung der Beschäftigungsart mit drei vorgegebenen Kategorien (unbefristet, befristet, freiberuflich/Honorarbasis) erzeugte ein weiteres, für die Weiterbildung nicht ungewöhnliches Ergebnis: Jeweils rund 3 Prozent der Befragten geben an, sowohl in beruflichen Vertragsverhältnissen (befristet bzw. unbefristet) zu stehen als auch freiberuflich zu unterrichten. Unbefristete Arbeitsverhältnisse stellen die Minderheit dar (11 Prozent), ebenso befristete Verträge (26 Prozent), dem gegenüber ist die Normalität im Integrationskursbereich immer noch die Freiberuflichkeit (57 Prozent).

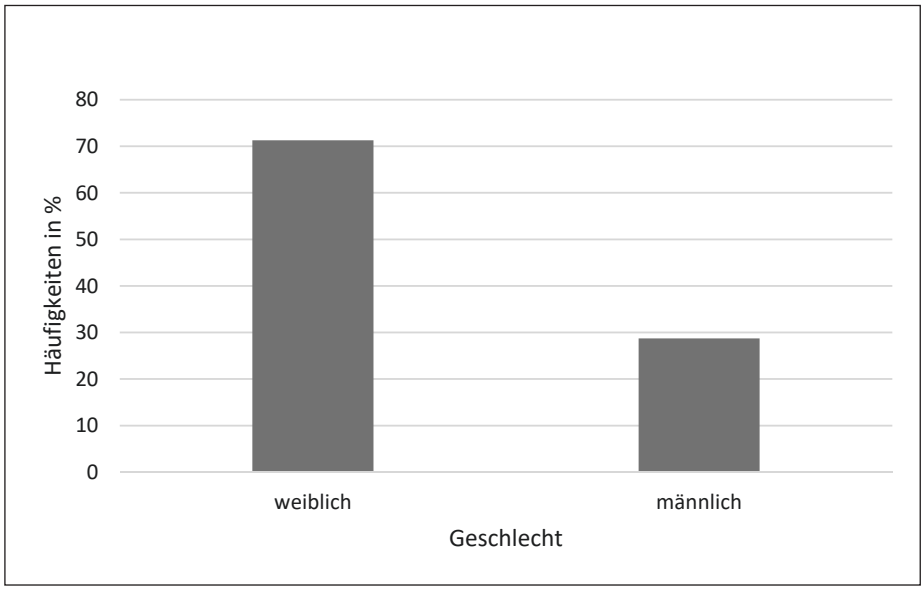

Fig. 1: Häufigkeiten (in Prozent) der Geschlechter unter den befragten Personen

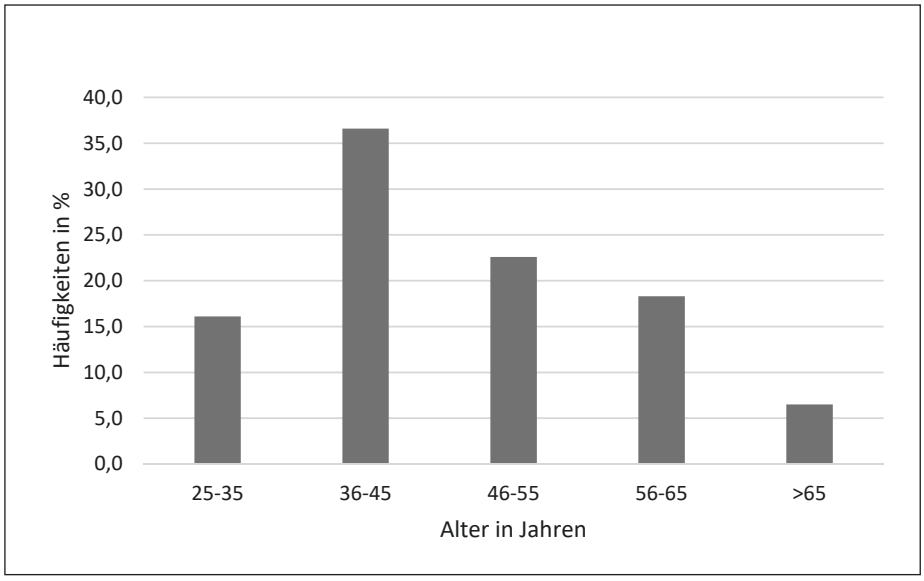

Fig. 2: Häufigkeit (in Prozent) der verschiedenen Altersgruppen unter den befragten Personen

Qualität der Zusatzqualifikation Alphabetisierung (ZQA)

Die Frage, wie gut sich die Kurse und Module aus Teilnehmenden-Sicht darstellen, wurde mit Hilfe von 14 Fragen mit jeweils fünfstufiger Antwortmöglichkeit erfasst.

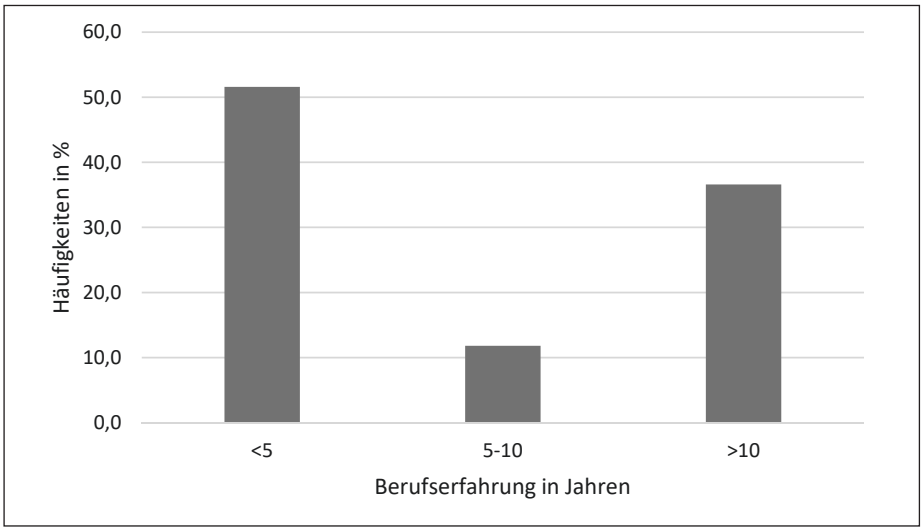

Fig. 3: Häufigkeit (in Prozent) nach Berufserfahrungsgruppen (in Jahren) unter den befragten Personen

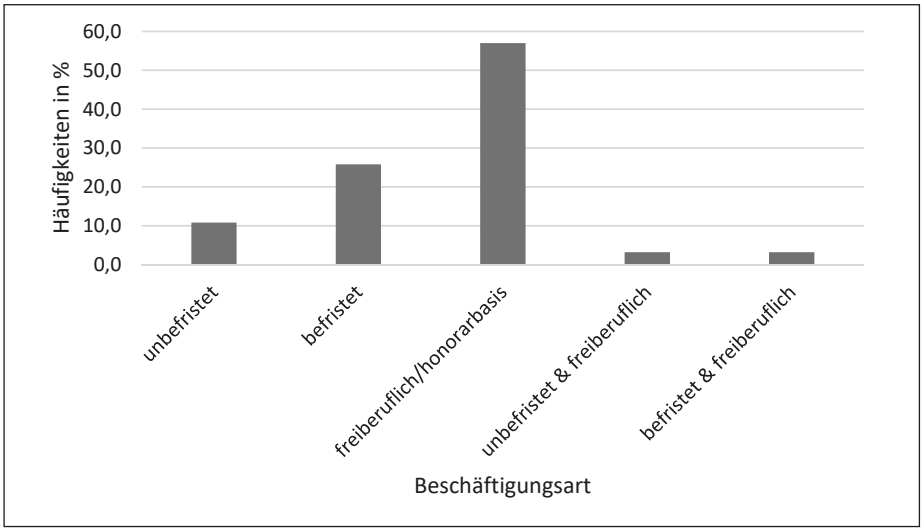

Fig. 4: Häufigkeit (in Prozent) nach Beschäftigungsart unter den befragten Personen

Die Fragen befinden sich im Anhang, sie folgen wesentlich dem an Universitäten verbreiteten HILVE II – Fragebogen. Zur Verdichtung der Analyse wurden die Fragen zu einer Zufriedenheitsskala zusammengefasst, die Reliabilität der Skala (Cronbach's Alpha) liegt dabei bei gerundet 0,8. Die Skala stellt somit eine zuverlässige Messung dar. Der Skalenmittelwert liegt bei 4,01 mit einer Standardabweichung von 0,54 auf einer Skala von 1 bis 5. Die Verteilung ist erheblich rechtsschief, weicht also positiv vom Skalenmittelwert ab. Das ist nicht unüblich für die Evaluation von

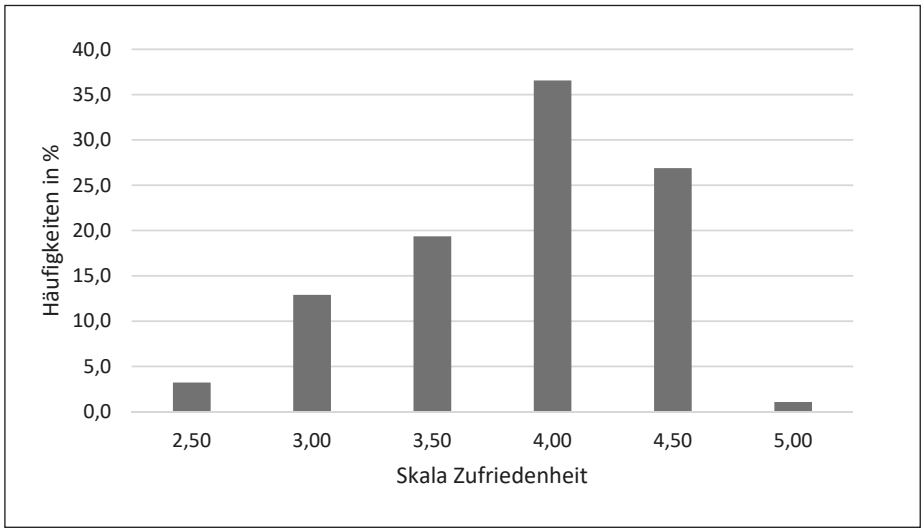

Fig. 5: Häufigkeit (in Prozent) der Zufriedenheitswerte unter den befragten Personen

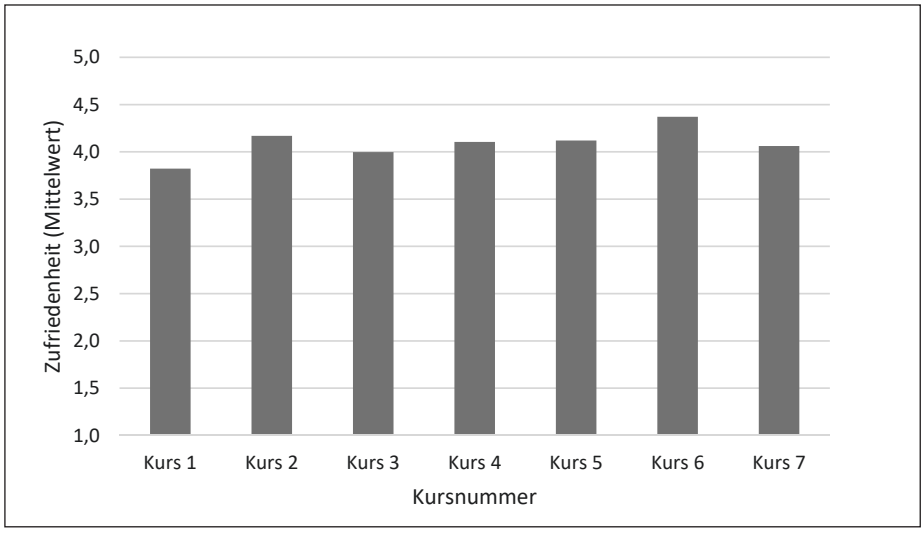

Fig. 6: Zufriedenheit (Mittelwert) nach Kursnummer

Lehrveranstaltungen, bei denen eine positive Verzerrung aufgrund sozialer Erwünschtheit des Antwortverhaltens angenommen werden muss.

Die Zufriedenheit hätte – nach Einschätzung der beteiligten Lehrenden – im ersten Durchlauf aufgrund der noch lebhaften Willkommenskultur höher ausfallen können, mit dann absinkender Zufriedenheit aufgrund der zunehmenden Normalisierung des Geschehens. Dies ist jedoch nicht erkennbar, vielmehr steigen die Zufriedenheitswerte im Kurs 6 an und fallen im Kurs 7 (der den Mittelwert von 4,07 auf 4,01 senkt). Im qualitativen Teil wird die Praxiserfahrung der Lehrenden

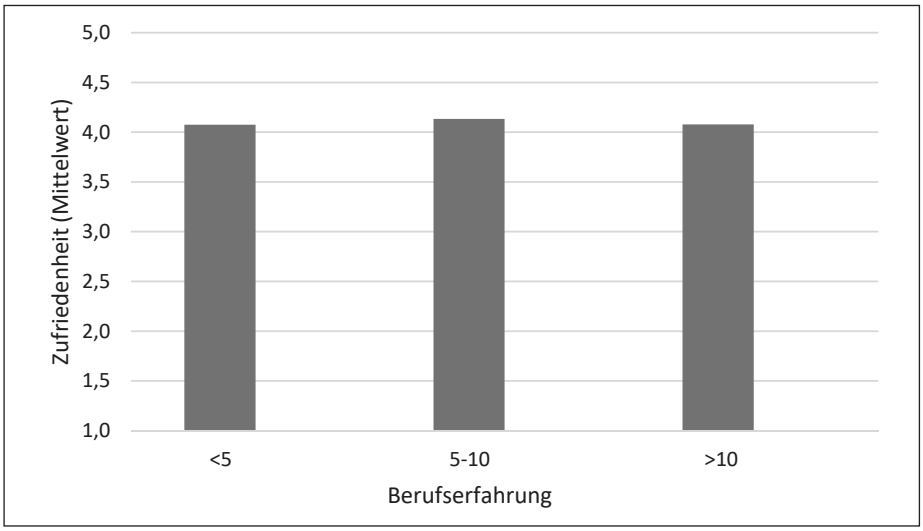

Fig. 7: Zufriedenheit (Mittelwert) nach Berufserfahrung (in Jahren)

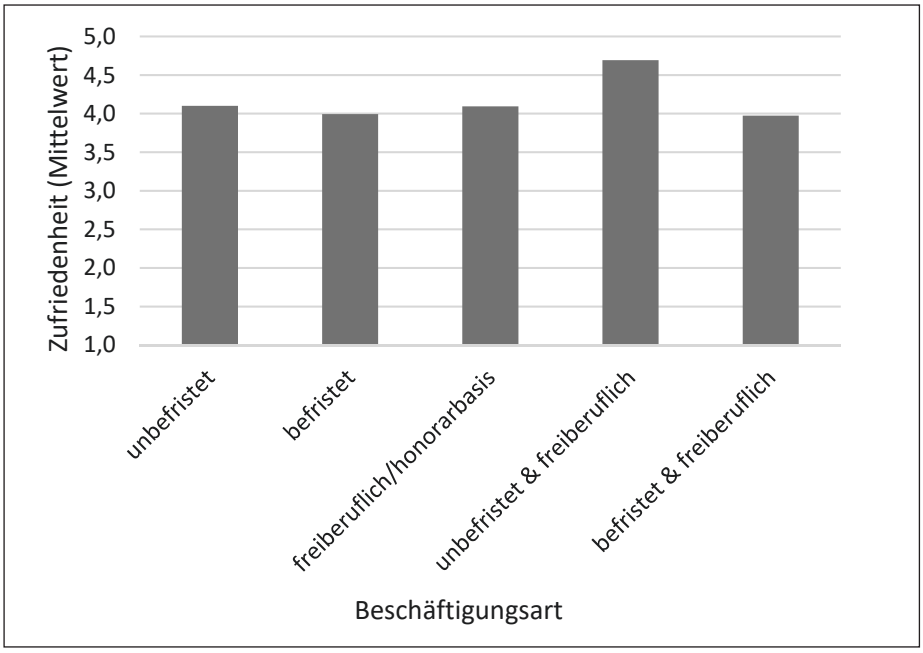

Fig. 8: Zufriedenheit (Mittelwert) nach Beschäftigungsart

im Kurs 6 hervorgehoben. Im Kurs 7 musste aufgrund beruflicher Veränderungen der vorhergehenden Lehrkräfte teilweise neu gewonnenes Lehrpersonal eingesetzt werden.

Hinsichtlich der Berufserfahrung ist zu berücksichtigen, dass viele Teilnehmende zwar bereits umfangreiche Unterrichtserfahrung im Deutschunterricht berich-

ten, dass diese Erfahrung sich jedoch nicht auf den Bereich der Sprachanfänger/inn/en und noch seltener auf den Bereich der Alphabetisierung erstreckt.

Eine Variation der Zufriedenheitswerte nach Berufserfahrung bleibt aus. Es ist möglich, dass die Erfahreneren mit den Kursen zufrieden sind, weil ihre Kenntnisse in den Kursgruppen hohe Wertschätzung erhalten – und dass die Jüngeren oder weniger Erfahrenen diese Erfahrungen gern in Anspruch nehmen. In allen Modulen wurde – gemäß den Rückmeldungen der ZQA-Lehrkräfte – der Diskussionsfreude der Gruppen umfassend Raum gewährt. Hohe berufliche Erfahrung kann zudem eine höhere Relevanz des Stoffs erzeugen, zugleich durch geringeren Bedarf an originärem didaktischem Wissen einhergehen. Die Variation nach Beschäftigungsverhältnis weist sodann erwartungskonform hohe Zufriedenheitswerte der unbefristet Beschäftigten mit und ohne freiberufliche Zusatztätigkeit auf.

Insgesamt ist die unter höchster Belastung aller Beteiligten entstandene Struktur zumindest soweit tragfähig, dass sie von den Teilnehmenden als zufriedenstellend angesehen wird. Das ist vermutlich noch immer dem relativ hohen Ethos für die Integration von Geflüchteten geschuldet. Der Deutschunterricht spielt hier eine wesentliche Rolle. Dafür nehmen Lehrende, Zentrum für Weiterbildung und Teilnehmende durchgehend Samstags- und Sonntagsunterricht in Kauf. Durch die ausgesetzte Anforderung der ZQA-Zertifikate ist der Nachfragedruck im Jahr 2018 nunmehr gesunken.

Forschungsfrage 2:
Der Bedarf und die Struktur der BAMF-Alphabetisierungskurse

Das Material für die folgende Analyse ist durchgehend den Integrationskursgeschäftsstatistiken des Bundesamts für Migration und Flüchtlinge entnommen, hierbei wird überwiegend der Abfragestand vom 5. Oktober 2017 verwendet, so dass die Daten noch das erste Halbjahr 2017 wiedergeben. Bei einigen Trendaussagen werden zusätzlich die Statistiken aus den Jahren 2016 und 2015 verwendet. Das Kursangebot des BAMF enthält verschiedene Kursarten, von denen der „Allgemeine Integrationskurs" mit knapp zwei Dritteln der Kurse (64,4%) den größten Anteil verzeichnet. Dem folgt der Alphabetisierungskurs mit gut einem Viertel der Kurse (25,9%). Der Anteil der Alphabetisierungskurse stieg im Vergleich zu 2016 um rund 10 Prozentpunkte an. Anfang 2017 wurde zudem der Integrationskurs für Zweitschriftlernende eingeführt (3,2%). Die Teilnahmezahlen pro Jahr – über alle Kurse – liegen im Jahr 2016 bei rund 340.000 und im ersten Halbjahr 2017 bei rund 166.000 Teilnehmenden, steigen also nach wie vor an (im Zehnjahreszeitraum von 2005–2015 wurden insgesamt 1.310.071 Teilnehmende verzeichnet, das entspricht rechnerisch einem Jahresdurchschnitt von 131.007 Personen). Das Integrationskurssystem ist insofern noch immer von Überlast gekennzeichnet und die Kurskapazitäten werden weiterhin ausgeweitet. Das betrifft besonders die Alphabetisierungs- und Zweitschriftlernenden-Kurse.

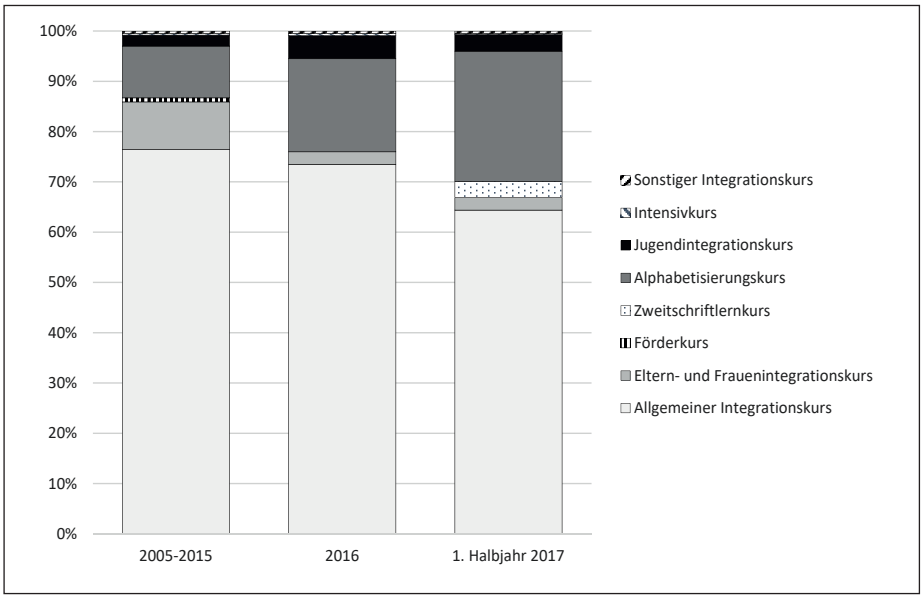

Fig. 9: Neue Kursteilnehmende nach Kursarten (Bundesamt für Migration und Flüchtlinge (BAMF) 2017)

Betrachtet man die begonnenen Integrationskurse (hier nicht zu verwechseln mit den neuen Kursteilnehmenden) nach Bundesländern, wird die erhebliche Ungleichverteilung erkennbar, die auf die unterschiedlichen Einwohnerzahlen, aber auch auf die vorhandenen Kapazitäten zurückzuführen ist. Weiterhin ist die Verteilung von Allgemeinem Integrationskurs sowie Alphabetisierungs- und Zweitschriftlernenden-Kurs unterschiedlich. In den fünf neuen Bundesländern liegen die Alphabetisierungsanteile stellenweise erheblich höher als in den alten Bundesländern (Sachsen-Anhalt: 98 von 114 Kursen, Thüringen: 95 von 117 Kursen). Geht man davon aus, dass die Alphabetisierungskurse sich überproportional oft an Geflüchtete richten, würden diese Bundesländer somit ihr Integrationskursangebot überhaupt erst etablieren, seit sie in nennenswertem Umfang Geflüchtete versorgen. In allen Bundesländern ist zudem deutlich, dass die neuen Kurse in erheblichem Anteil auf den Alphabetisierungsbedarf reagieren. Bemerkenswert ist zudem, dass die Kursform für Zweitschriftlernende aus dem Stand – von Februar bis Juni 2017 – den dritten Platz unter den Kursformen belegt, noch vor den Jugend- und Elternkursen.

In der Tat sind die neuen Kursteilnehmenden überproportional oft Neuzugewanderte, die durch die Ausländerbehörde in die Kurse entsandt werden. Im Jahr 2016 lag ihre Quote bei den neuen Teilnehmenden bei rund 45%, sie sank in 2017 auf gut 39%. Dies liegt am Statuswechsel der Asylsuchenden, die nunmehr – im weiteren Verlauf des Verfahrens – durch die Grundsicherung (ALG II) versorgt werden (hier stieg die Quote von 14% auf 24%). Waren also in den Jahren 2005 bis 2015 die Altzugewanderten die größte Teilnehmendengruppe, ist derzeit eine Verschiebung zu den Neuzugewanderten zu erkennen.

Begonnene Integrationskurse
im ersten Halbjahr 2017
nach Bundesländern und Kursarten

	Allgemeiner Integrationskurs	Alphabetisierungskurs	Eltern- und Frauenintegrationskurs	Förderkurs [1]	Intensivkurs [1]	Jugendintegrationskurs	Zweitschriftlernerkurs [2]	sonstiger Integrationskurs [3]	Insgesamt	
	absolut	absolut	absolut	absolut	absolut	absolut	absolut	absolut	absolut	prozentual
Baden-Württemberg	864	379	23		5	31	52	3	1.357	13,0%
Bayern	742	342	51		5	19	15	5	1.179	11,3%
Berlin	515	226	34			21	23	5	824	7,9%
Brandenburg	100	61				3	10	1	175	1,7%
Bremen	105	48	6				6	1	166	1,6%
Hamburg	233	127	10			6	7		383	3,7%
Hessen	623	260	24	1	3	25	27	3	966	9,2%
Mecklenburg-Vorpommern	69	29			2	1	9		110	1,1%
Niedersachsen	501	260	2			7	35	1	806	7,7%
Nordrhein-Westfalen	1.406	899	88		5	135	76	2	2.611	24,9%
Rheinland-Pfalz	286	182	3		1	53	28		553	5,3%
Saarland	78	56	1		1	6	14		156	1,5%
Sachsen	260	143	3			6	6		418	4,0%
Sachsen-Anhalt	114	98		1		1	14		228	2,2%
Schleswig-Holstein	202	78	2			6	5		293	2,8%
Thüringen	117	95				1	9		222	2,1%
Unbekannt [4]	15	2	1				1		19	0,2%
Insgesamt	**6.230**	**3.285**	**248**	**2**	**22**	**321**	**337**	**21**	**10.466**	100,0%

1) Erfassung der Kurstypen Förder- und Intensivkurse seit 08.12.2007.
2) Erfassung seit 14.02.2017.
3) z.B. Integrationskurs für Gehörlose.
4) Kurs ist keinem Bundesland zuordenbar.

Fig. 10: Kursarten nach Bundesländern (Bundesamt für Migration und Flüchtlinge)

Die Zahlen der ausgegebenen Teilnahmeberechtigungen (219.990) liegen allerdings deutlich über den Neuteilnehmenden (165.000 im ersten Halbjahr 2017, (Bundesamt für Migration und Flüchtlinge (BAMF) 2017), S. 2). Davon sind 42% an Neuzugewanderte und 24% an Altzugewanderte vergeben worden, gefolgt von 27% aus dem ALG II-Segment. Hinter der aufgrund der neuen Kursteilnahmen konstatierten Verschiebung steht also weiterhin ein hoher Druck an Kursberechtigten, die noch nicht in Kursplätze eingemündet sind. Dieser Druck verlagert sich weiterhin zu neuzugewanderten Kursberechtigten. Es ist insofern zu fragen, ob die Versorgung von Altzugewanderten derzeit unter dem Druck der Geflüchteten abgedrängt wird.

Die neuen Kursteilnehmenden setzen sich im ersten Halbjahr 2017 folgerichtig auch wesentlich aus Syrien, Irak, Afghanistan, Iran und Eritrea zusammen. Dabei

Tabelle 2

Neue Kursteilnehmer
in den Jahren von 2005 bis 2016 und im ersten Halbjahr 2017
nach Statusgruppen

	2005 bis 2015		2016		1. Halbjahr 2017		Insgesamt	
	absolut	prozentual	absolut	prozentual	absolut	prozentual	absolut	prozentual
Neuzuwanderer nach § 4 I 1 Nr. 1 IntV (bestätigt durch Ausländerbehörde)	435.901	33,0%	152.159	44,8%	65.364	39,4%	653.424	35,8%
davon verpflichtet nach § 44 a I 1 Nr. 1 AufenthG [3)]	*353.717*		*136.819*		*60.653*		*551.189*	
Spätaussiedler nach § 4 I 1 Nr. 2 IntV (bestätigt durch Bundesverwaltungsamt)	51.041	3,9%	2.981	0,9%	1.497	0,9%	55.519	3,0%
Altzuwanderer/EU-Bürger/Deutsche [3)] nach § 4 I 1 Nr. 3 IntV (zugelassen durch BAMF)	636.751	48,3%	136.842	40,3%	54.638	32,9%	828.231	45,4%
davon Deutsche (§ 44 IV 2 AufenthG) [1)]	*64.176*		*2.155*		*1.016*		*67.347*	
ALG II-Bezieher nach § 4 I 1 Nr. 4 IntV (verpflichtet durch Grundsicherungsträger) [2)3)]	138.876	10,5%	46.022	13,6%	39.950	24,1%	224.848	12,3%
Altzuwanderer nach § 4 I 1 Nr. 5 IntV (verpflichtet durch Ausländerbehörde)	56.502	4,3%	1.574	0,5%	984	0,6%	59.060	3,2%
TLA Verpflichtete nach § 4 I 1 Nr. 6 IntV [4)]					3.564	2,1%	3.564	0,2%
Insgesamt	**1.319.071**	100,0%	**339.578**	100,0%	**165.997**	100,0%	**1.824.646**	100,0%
zuzüglich Kurswiederholer	170.186		25.418		24.185		219.789	

1) Seit Mitte des Jahres 2007 können auch integrationsbedürftige Deutsche zu einem Integrationskurs zugelassen werden.
2) Träger der Grundsicherung für Arbeitssuchende. Seit Mitte des Jahres 2007 können diese neben den Ausländerbehörden auch Personen zur Kursteilnahme verpflichten.
3) In den Statusgruppen "verpflichtete Neuzuwanderer nach § 44 a I 1 Nr. 1 AufenthG", "verpflichtete ALG II-Bezieher nach § 4 I 1 Nr. 4 IntV" sowie "zugelassene Altzuwanderer/EU-Bürger/Deutsche nach § 4 I 1 Nr. 3 IntV" sind auch 45.982 Personen enthalten, die bereits im Status eines Asylbewerbers oder eines Geduldeten nach § 60a II 3 AufenthG sowie eines Ausländers nach § 25 V AufenthG eine Zulassung gem. § 44 IV S. 2 Alt. 2 AufenthG erhalten haben (es findet keine Doppelerfassung statt).
4) Seit Anfang des Jahres 2017 können Integrationsbedürftige vom Träger der Leistungen nach dem Asylbewerberleistungsgesetz zur Teilnahme verpflichtet werden.

Fig. 11: Neue Kursteilnehmende (Bundesamt für Migration und Flüchtlinge (BAMF) 2017)

hat Afghanistan aufgrund des Abschiebestopps seine Position in der Rang-Abfolge erheblich verbessert, im Jahr 2016 konnten Zugewanderte aus Afghanistan deutlich weniger von Integrationskursen profitieren.

Die Kursangebote wurden und werten in erheblichem Ausmaß von Volkshochschulen ausgebracht. Für die Verschiebungen in der Trägerlandschaft werden hier jedoch die Jahre 2015, 2016 und das erste Halbjahr 2017 verglichen. Es zeigen sich bei allen Trägern erhebliche Steigerungen der Kursteilnehmenden-Zahlen. Bei den VHSn steigen die Werte von 2015 nach 2016 von 67.719 auf 112.604 Teilnehmende. Die betrieblichen oder überbetrieblichen Aus- und Fortbildungsstätten steigern ihre Teilnehmendenzahlen von rund 6.000 auf fast 20.000. Bei Sprachschulen und freien Trägergruppen sieht die Lage ähnlich aus. Verdoppelungen oder Verdreifachungen des Angebots sind insofern nicht selten.

Tabelle 5

Neue Kursteilnehmer
im Jahr 2016 und im ersten Halbjahr 2017
nach den häufigsten Staatsangehörigkeiten

Rang		2016 absolut	2016 prozentual	2016 Rang	1. Halbjahr 2017 absolut	1. Halbjahr 2017 prozentual
1	Syrien	159.422	46,9%	1	64.963	39,1%
2	Irak	27.687	8,2%	2	16.886	10,2%
3	Afghanistan	4.237	1,2%	11	9.210	5,5%
4	Iran	13.207	3,9%	5	7.882	4,7%
5	Eritrea	17.512	5,2%	3	6.667	4,0%
6	Rumänien	13.360	3,9%	4	6.053	3,6%
7	Bulgarien	10.657	3,1%	7	4.931	3,0%
8	Polen	11.213	3,3%	6	4.167	2,5%
9	Somalia	1.849	0,5%	21	4.083	2,5%
10	Türkei	6.440	1,9%	8	3.202	1,9%
	sonstige Staatsangehörige	71.013	20,9%		36.456	22,0%
Summe		336.597	99,1%		164.500	99,1%
zuzüglich Spätaussiedler*		2.981	0,9%		1.497	0,9%
Insgesamt		**339.578**	100,0%		**165.997**	100,0%
nachrichtlich EU-Staaten**		60.350	17,8%		26.723	16,1%

** ohne Deutschland (vgl. Tabelle 6).

Fig. 12:
Neue Kursteilnehmende nach Staatsangehörigkeit (Bundesamt für Migration und Flüchtlinge (BAMF) 2017)

Tabelle 8

Neue Kursteilnehmer
im ersten Halbjahr 2017
nach Trägerarten

	1. Halbjahr 2017 absolut	1. Halbjahr 2017 prozentual
Ausl. Organisationen	825	0,5%
Arbeiterwohlfahrt (AWO)	3.394	2,0%
Betr./überbetr. Aus-/Fortbildungsstätte	10.330	6,2%
Bildungswerke/-stätten	16.024	9,7%
Deutsch-ausl. Organisationen	1.532	0,9%
Evangelische Trägergruppen	4.467	2,7%
Freie Trägergruppen	12.268	7,4%
Initiativgruppen	10.793	6,5%
Internationaler Bund	3.852	2,3%
Katholische Trägergruppen	4.082	2,5%
Kommunale Einrichtungen	366	0,2%
Sprach-/ Fachschulen	32.735	19,7%
Volkshochschulen (VHS)	55.977	33,7%
Sonstige Trägergruppen	9.352	5,6%
Insgesamt	**165.997**	100,0%
zuzüglich Kurswiederholer	24.185	

Fig. 13:
Neue Kursteilnehmende nach Trägerarten (Bundesamt für Migration und Flüchtlinge (BAMF) 2017)

Tabelle 8
Neue Kursteilnehmer
im Jahr 2016
nach Trägerarten

	2016	
	absolut	prozentual
Ausl. Organisationen	1.873	0,6%
Arbeiterwohlfahrt (AWO)	6.308	1,9%
Betr./überbetr. Aus-/Fortbildungsstätte	19.956	5,9%
Bildungswerke/-stätten	32.545	9,6%
Deutsch-ausl. Organisationen	4.151	1,2%
Evangelische Trägergruppen	8.336	2,5%
Freie Trägergruppen	22.848	6,7%
Initiativgruppen	22.398	6,6%
Internationaler Bund	7.934	2,3%
Katholische Trägergruppen	8.574	2,5%
Kommunale Einrichtungen	427	0,1%
Sprach-/ Fachschulen	72.713	21,4%
Volkshochschulen (VHS)	112.604	33,2%
Sonstige Trägergruppen	18.911	5,6%
Insgesamt	**339.578**	100,0%
zuzüglich Kurswiederholer	25.418	

Fig. 14: Neue Kursteilnehmende nach Trägerart 2016 (Bundesamt für Migration und Flüchtlinge (BAMF) 2016)

Tabelle 8
Neue Kursteilnehmer
im Jahr 2015
nach Trägerarten

	2015	
	absolut	prozentual
Ausl. Organisationen	1.222	0,7%
Arbeiterwohlfahrt (AWO)	4.306	2,4%
Betr./überbetr. Aus-/Fortbildungsstätte	6.210	3,5%
Bildungswerke/-stätten	14.541	8,1%
Deutsch-ausl. Organisationen	2.732	1,5%
Evangelische Trägergruppen	4.925	2,7%
Freie Trägergruppen	8.971	5,0%
Initiativgruppen	13.964	7,8%
Internationaler Bund	5.359	3,0%
Katholische Trägergruppen	4.565	2,5%
Kommunale Einrichtungen	123	0,1%
Sprach-/ Fachschulen	38.693	21,6%
Volkshochschulen (VHS)	67.719	37,7%
Sonstige Trägergruppen	6.068	3,4%
Insgesamt	**179.398**	100,0%
zuzüglich Kurswiederholer	21.197	

Fig. 15: Neue Kursteilnehmende nach Trägerarten 2015 (Bundesamt für Migration und Flüchtlinge (BAMF) 2015)

Allerdings zeigen die Werte auch Verschiebungen in der Angebotslandschaft. Die prozentualen Anteile am Kursgeschehen zeigen Zugewinne gegenüber Verlusten am Markt der Integrationskurse. Zugewinne von mehr als einem Prozentpunkt verzeichnen die Ausbildungsstätten, Bildungswerke, Freien Trägergruppen und Sonstigen Trägergruppen. Verluste zeigen sich bei der Arbeiterwohlfahrt, den Initiativgruppen, dem Internationalen Bund, Den Sprachschulen sowie den Volkshochschulen. Die anderen Anbieterangeile bleiben relativ konstant.

Forschungsfrage 3: Die Prüfungserfolge der Teilnehmenden nach Deutsch-Test für Zuwanderer (DTZ)

Leider weist die Integrationskursgeschäftsstatistik nur wenige Variablen aus, wenn es um die Prüfungsleistungen der Teilnehmenden geht. Weitere Auswertungen wären möglich, unterliegen aber der Freigabe durch das BAMF. Diese konnte für den hier vorgelegten Beitrag nicht erwirkt werden. Es fehlen insbesondere Auswertungen über den Kurstyp und die Bestehensquoten. Nimmt man die Rückmeldungen der angehenden Kursleitungen aus der ZQA ernst, so ist das Curriculum in der vorgegebenen Zeit nicht umsetzbar. Auch ist das BAMF-Alphabetisierungscurriculum

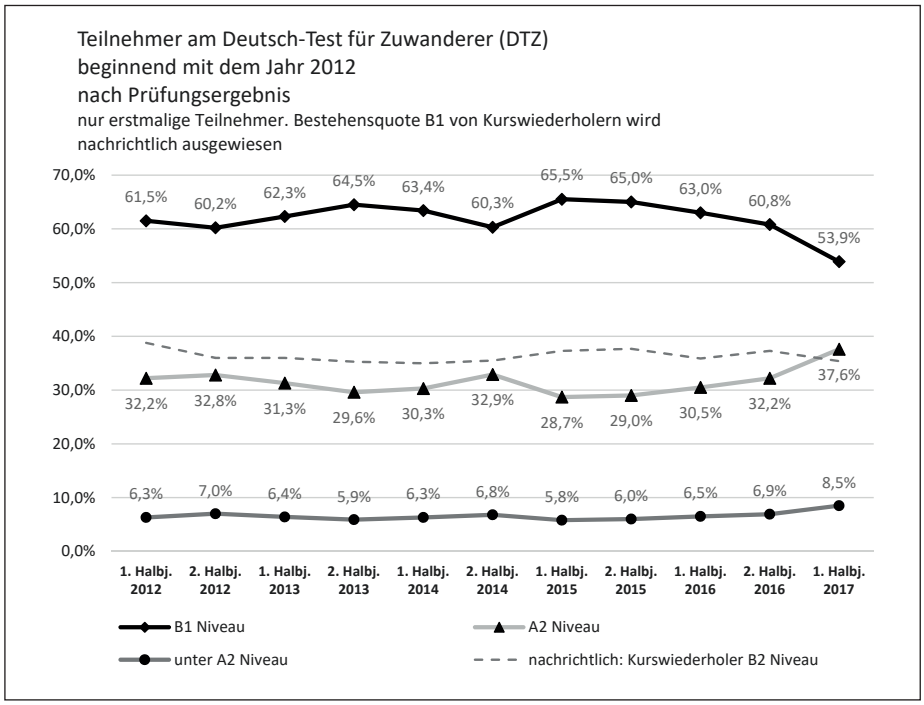

Fig. 16: Teilnehmende am Deutsch-Test für Zuwanderer (DTZ) (Bundesamt für Migration und Flüchtlinge (BAMF) 2017)

wesentlich auf das Erreichen des Niveaus A2 ausgerichtet, nicht auf das Niveau B1. Insofern wäre es schon für die Lehrkräfte sinnvoll zu wissen, welche Bestehensquoten hier realistisch sind. Weiterhin fehlen Auswertungen nach Herkunftsland, die wenigstens eine faire Annäherung an die Frage der Kenntnis der lateinischen Schrift ermöglichen würden. Auch hier fehlen leider die nötigen Angaben. Es bleibt insgesamt festzuhalten dass die Bestehensquoten auf dem Niveau B1 seit 2015 konstant absinken, und zwar um inzwischen mehr als zehn Prozentpunkte.

Die Bestehensquoten des Orientierungskurstests bzw. des seit 2013 verwendeten Tests „Leben in Deutschland" sind ebenfalls gesunken. Sie lagen von 2009 bis 2016 bei rund 92% bis 93% und liegen im ersten Halbjahr 2017 erstmalig bei 91%, die Zahl der Prüflinge ist dabei von rund 70.000 (2009) auf über 130.000 (2016) Personen angestiegen (Bundesamt für Migration und Flüchtlinge (BAMF) 2017), S. 15).

Diskussion: Erhöhte Aufmerksamkeit für die Alphabetisierung von Zugewanderten notwendig

Bei aller beeindruckenden Dynamik der Reaktion auf die Flucht nach Deutschland ist derzeit der Gesamterfolg der Sprachkursversorgung noch nicht hinreichend gesichert. Der zu über siebzig Prozent von Frauen ausgeübte Beruf der „Integrationskurs-Lehrkraft" setzt sich für die zusätzlich qualifizierten Alphabetisierungskurs-

Lehrkräfte fort, bei weiterhin 60 Prozent freiberuflicher Betätigung. Der Einsatz nicht zertifizierter Kräfte (noch ohne die ZQA) ist dabei nicht hilfreich.

Die im BAMF-Alphabetisierungskurs vorgehaltenen Stundenvolumina führen bei der neu zugewanderten Klientel seltener zum Prüfungserfolg als bei den zuvor unterrichteten Bevölkerungsgruppen. Das kann darauf zurückzuführen sein, dass 44 Prozent der Geflüchteten Arabisch als ihre erste Sprache angeben (Brückner et al. 2017, S. 6) – wenn diese Gruppe in der Schule weder Englisch noch Französisch gelernt hat, ist ihr die lateinische Schrift fremd. Sinnvoll ist für diese Zielgruppe die Neukonzeption von Kursen für Zweitschriftlernende.

Besonders deutlich ist jedoch auch, dass selbst ein erfolgreicher Alphabetisierungskursbesuch nicht notwendig sicherstellt, dass die deutsche Schriftsprache (lesend oder schreibend) hinreichend beherrscht wird. Hier sind Übergänge in das Regelsystem der Alphabetisierung geboten, und zwar ab dem Niveau A2, denn das Niveau B1 wird lediglich von 54% der Integrationskursteilnehmenden erreicht und für die verbleibenden 46% der Teilnahmeberechtigten (die höchstens A2 erreicht haben) gibt es nach dem Integrationskurs kein direkt anschließendes allgemeinbildendes Sprach- oder Schriftsprach-Angebot.

Immerhin aber ist das relativ gut professionalisierte System des Zuwanderungsgesetzes geschützt vor Mitnahmeeffekten und Fehlinvestitionen, wie sie der Bundesrechnungshof gegenüber den Einstiegskursen der Bundesagentur für Arbeit moniert hat. Der Zuzug von Flüchtenden ist weiterhin zu erwarten, da sich die Rechtslage zugunsten der Flüchtenden geändert hat. Auch bei Einsetzen einer wie auch immer zu benennenden Zuwanderungsbegrenzung wird daher davon auszugehen sein, dass es regelmäßigen weiteren Zuzug geben wird, nicht zuletzt aus Gebieten, in denen die lateinische Schrift nicht verbreitet ist. Darüber hinaus ist auch der bisherige, 2011 in der LEO-Studie (Buddeberg und Riekmann 2012) festgestellte Bestand an Migrant/inn/en mit Alphabetisierungsbedarf in der deutschen Schriftsprache zu berücksichtigen.

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Anhang

Statistiken

		Geschlecht	Alter	Berufserfahrung	Beschäftigungsart
N	Gültig	94	93	93	93
	Fehlend	1	2	2	2

Geschlecht

		Häufigkeit	Prozent	Gültige Prozente	Kumulierte Prozente
Gültig	weiblich	67	70,5	71,3	71,3
	männlich	27	28,4	28,7	100,0
	Gesamt	94	98,9	100,0	
Fehlend	keine Angabe	1	1,1		
Gesamt		95	100,0		

Alter

		Häufigkeit	Prozent	Gültige Prozente	Kumulierte Prozente
Gültig	25-35	15	15,8	16,1	16,1
	36-45	34	35,8	36,6	52,7
	46-55	21	22,1	22,6	75,3
	56-65	17	17,9	18,3	93,5
	>65	6	6,3	6,5	100,0
	Gesamt	93	97,9	100,0	
Fehlend	keine Angabe	2	2,1		
Gesamt		95	100,0		

Berufserfahrung					
		Häufigkeit	Prozent	Gültige Prozente	Kumulierte Prozente
Gültig	<5	48	50,5	51,6	51,6
	5-10	11	11,6	11,8	63,4
	>10	34	35,8	36,6	100,0
	Gesamt	93	97,9	100,0	
Fehlend	keine Angabe	2	2,1		
Gesamt		95	100,0		

Beschäftigungsart					
		Häufigkeit	Prozent	Gültige Prozente	Kumulierte Prozente
Gültig	unbefristet	10	10,5	10,8	10,8
	befristet	24	25,3	25,8	36,6
	freiberuflich/ honorarbasis	53	55,8	57,0	93,5
	unbefristet & freiberuflich	3	3,2	3,2	96,8
	befristet & freiberuflich	3	3,2	3,2	100,0
	Gesamt	93	97,9	100,0	
Fehlend	keine Angabe	2	2,1		
Gesamt		95	100,0		

Universität Hamburg
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FAKULTÄT
FÜR ERZIEHUNGSWISSENSCHAFT

Teilnehmerbefragung (ZQ-Alpha)

Liebe(r) Teilnehmer(in),

bitte nehmen Sie sich wenige Minuten Zeit, um den folgenden Fragebogen zu beantworten. Der Fragebogen ist **anonym**. Anhand Ihrer Antworten werden wir Ziele ableiten und Maßnahmen ergreifen, um unser Weiterbildungsangebot Ihren Wünschen und Bedürfnissen anzupassen!

Vielen Dank im Voraus
Dr. Jana Wienberg

Geschlecht ☐ weiblich ☐ männlich ☐ divers

Alter ☐ >25 ☐ 25-35 ☐ 36-45 ☐ 46-55 ☐ 56-65 ☐ >65

Berufserfahrung ☐ <5 ☐ 5-10 ☐ >10

Art der Beschäftigung ☐ unbefristet ☐ befristetet ☐ freiberuflich/honorarbasis

Beurteilung	trifft völlig zu	trifft eher zu	teils, teils	trifft eher nicht zu	trifft gar nicht zu
Bewertung des Lehrgangs					
Die Inhalte haben meinen Erwartungen entsprochen.					
Die Inhalte waren an meinen Bedarfen orientiert.					
Die Dauer der einzelnen Themenblöcke war angemessen.					
Die Qualität der Lehrgangsunterlagen war sehr gut.					
Seminarkonzeption und -gliederung					
Die inhaltlichen Lernziele des Seminars waren klar formuliert.					
Die Themen der einzelnen Seminarsitzungen waren logisch miteinander verbunden ("roter Faden").					
Auf alle Themenbereiche wurde ausreichend eingegangen.					
Praxisbezug und Aktualität					
Die vermittelten Inhalte wiesen einen guten Bezug zur Praxis auf.					
Die dargebotenen Bereiche hatten mit dem Thema des Lehrgangs wenig zu tun.					
Das Erlernte werde ich bei meiner Tätigkeit auf jeden Fall anwenden.					
Lerngewinn					
Aus meiner Sicht war das Seminar auf jeden Fall wertvoll, da sich mein Wissen/meine Fähigkeiten deutlich verbessert haben.					
Viele Themen wurden zu oberflächlich behandelt.					

Beurteilung	trifft völlig zu	trifft eher zu	teils, teils	trifft eher nicht zu	trifft gar nicht zu
Ich denke, dass sich für mich durch das Seminar nichts verändern wird.					
Ich bin jetzt gut vorbereitet, das Erlernte anzuwenden.					
Aus ihrer Praxissicht: Wie gestaltet sich der Umgang mit Diversität in Lerngruppen?					
Bei zunehmender Diversität gestaltet sich die Lernorganisation und Integration in/von Lernteams sehr schwierig.					
Ich schätze die Relevanz im Umgang mit Diversität der Lerngruppen gering ein.					
Ich sehe die Vielfalt der Herkünfte, sozialen Hintergründe, Wertorientierungen und Lebenswelten eher als hinderlich in den Lerngruppen an.					

Aus ihrer Praxissicht: Welche Ausprägung übt einen erheblichen Einfluss auf die Diversität in Lerngruppen aus?

Beurteilung	gar nicht	gering	teils, teils	stark	sehr stark
Geschlecht/Gender					
Alter/Generation					
Ethnizität/Nationalität					
Soziale Herkunft					
Sprache					
Religion/Weltanschauung					
Ausbildung/Bildungsstand					

Aus meiner Sicht wären folgende zusätzliche Unterstützungsleistungen/-angebote im Umgang mit Diversität in Integrations-Alpha-Kursen erforderlich…:

a) Teilnehmerebene_____
_____
_____

b) Dozenten/innen-Ebene (Professionalisierung, Weiterbildung):
_____
_____
_____

Abschließendes Allgemeinurteil: Vorschläge und Bemerkungen zu ZQA

Was waren aus ihrer Sicht die bedeutendsten Schwächen des ZQA-Lehrgangs?

1. _____ Modul:_____
2. _____ Modul:_____
3. _____ Modul:_____

Was waren aus ihrer Sicht die bedeutendsten Stärken des ZQA-Lehrgangs?

1. _____ Modul:_____
2. _____ Modul:_____
3. _____ Modul:_____

10. LEO 2018 – living with low literacy

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LEO 2018

Conducted in 2018, the second Level One Study (LEO 2018) assesses the reading and writing skills of the German-speaking adult population (aged 18–64) and reports on these using a differentiated scale for the lower levels of reading and writing proficiency, referred to as Alpha Levels. This study provides an update on the results of the 2010 LEO Level One Study (Grotlüschen & Riekmann 2012).

The aim of this investigation is to quantify the extent of the phenomenon of low literacy skills among adults today. Compared with the preceding study, it focuses more on specific questions of participation, everyday practices and skills in various spheres of life:

- *Digital* practices and basic skills
- *Financial* practices and basic skills
- *Health* practices and basic skills
- *Political* practices and basic skills
- Text-related practices in the context of *work, family* and *everyday life*
- Literacy skills in the context of *continuing education*
- Literacy skills in the context of *immigration* and *multilingualism*

This brochure primarily reports on findings concerning text-related practices. Appropriate space will be given to the specific basic skills in the full report of results published at the end of the project.

Scope of the study

LEO 2018 is based on a random sample of adults living in private households in Germany, aged between 18 and 64. The net sample size comprised 6,681 people. This was supplemented with an additional random sample of 511 people from the lower levels of education. People were only included in the study if their command of German was sufficient to follow an approximately one-hour-long interview. The sample was weighted based on key socio-demographic data taken from the German Microcensus.

After answering a set of standardized questions about various aspects of their background, the interviewees then completed a skills test comprising reading and

writing exercises. All 7,192 subjects were given an initial assessment test. On average, respondents took nearly twelve minutes to complete the tasks. Participants who only achieved a small number of correct answers in the first set of test exercises were given additional, simpler tasks from a more detailed test batch. The average time taken to complete this second set of questions was seven minutes.

The interviews were carried out by the polling institution Kantar Public as computer-assisted personal interviews (CAPIs).

Literacies and low literacy

In the tradition of new literacy studies (Street 2003), literacy is seen as a social practice that varies from context to context, indeed from person to person. However, these various different literacies are not all awarded the same level of social value. In German, orthography reforms and the Duden dictionary record written language conventions, thus providing a specific definition of what "literacy" means. Government institutions, schools and universities are bound to the use of this literacy. As such, society has come to view these conventions as being the supposedly "correct" or legitimate form of literacy (see Street 2003, Grotlüschen 2011). A skills test was used in LEO 2010 and LEO 2018 to measure this socially-determined concept of literacy – hereinafter referred to as the dominant concept of literacy.

The term low literacy indicates that a person is, at best, able to read and write simple sentences. According to the classification system used in the LEO survey, the lower levels of reading and writing proficiency correspond to Alpha Levels 1–3 (see Grotlüschen & Riekmann 2012 for a more detailed description of the Alpha Levels).

- *Alpha Level 1* corresponds to literacy skills at *letter level*. In Germany, it is very rare for someone to only be able to read at the level of individual letters.
- *Alpha Level 2* corresponds to literacy skills at *word level*. People with skills at this Alpha Level are able to read or write individual words, but are unable to work at sentence level. Even common words are often read or written letter for letter.
- *Alpha Level 3* corresponds to literacy skills at *sentence level*. People with skills at this Alpha Level are able to read or write single sentences, but are unable to work with continuous texts, even if they are brief.

Low literacy – as defined by the LEO 2018 concept of literacy outlined above – comprises these three Alpha Levels. Individuals who fall into these three categories are restricted in terms of their autonomous participation in various aspects of daily life due to their limited reading and writing skills. For example, they might not be able to read simple written instructions at work.

- *Alpha Level 4* indicates a noticeably high frequency of errors in writing and spelling, even when using common and simple vocabulary. Individuals do not have sufficient command of spelling conventions as taught at primary level.

The definition of literacy set out in publications for the National Decade for Literacy and Basic Skills places particular emphasis on the relationship between written language and the minimum requirements of social participation. Low literacy is often operationalized using the term "functional illiteracy":

"Functional illiteracy is when an adult's reading and writing skills are lower than the minimum required and assumed necessary in order to fulfil the respective social requirements. […] If a person is unable to read and correctly extract one or more pieces of information contained directly within a simple text and/or if their writing skills are of a comparable level." (Egloff et al. 2011, translation by the authors)

The term "functional illiteracy" is considered stigmatizing and not suitable for use within the context of adult education. Furthermore, experience gained since the publication of the LEO Level One Study (2011) has shown that the term can be misleading as it requires a great deal of explanation and is not well-suited to international discussion (see Steuten 2014). In consideration of this, LEO 2018 uses the terms "low literacy" and "adults with low literacy skills", always in relation to the dominant concept of literacy in Germany.

By gathering in-depth information about social (text-related) practices and skills, LEO 2018 allows a more detailed investigation of social participation and exclusion.

Literacy skills results and trends in Germany 2018

In 2018, 12.1% of German-speaking adults were found to have a low level of proficiency in reading and writing. Compared with the results of the LEO Level One Study carried out in 2010, this represents a decrease of 2.4 percentage points. This change is statistically significant ($p<0.01$). This means that, extrapolated to the whole population, there are still approximately 6.2 million adults in Germany with low literacy skills (2010: 7.5 million).

Tab. 1: German-speaking adult population (aged 18–64) classified by Alpha Level (2018)

Literacy level	Alpha Level	Percentage of adult population	Number (extrapolated)
Low literacy	Alpha 1	0.6%	0.3 million
	Alpha 2	3.4%	1.7 million
	Alpha 3	8.1%	4.2 million
	Alpha 1–3	12.1%	6.2 million
Frequent spelling errors	Alpha 4	20.5%	10.6 million
	Above Alpha 4	67.5%	34.8 million
Total		100.1%	51.5 million

Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64), n=7,192, weighted, any deviations from 100% or from total figures are due to rounding.

Comparison with the first LEO Level One Study (2010)

2010 was the first time that detailed data was gathered about the lower levels of literacy proficiency. Recent figures show a positive change – compared with 2010, the number of adults with low literacy skills has fallen from 7.5 million to 6.2 million.

Tab. 2: German-speaking adult population (aged 18–64) classified by Alpha Level, comparing 2010 and 2018

Alpha Level	2010 percentage	2018 percentage	Significance of change
Alpha 1	0.6%	0.6%	Not significant
Alpha 2	3.9%	3.4%	Not significant
Alpha 3	10.0%	8.1%	Significant (p<0.01)
Alpha 1–3	14.5%	12.1%	Significant (p<0.01)
Alpha 4	25.9%	20.5%	Significant (p<0.01)
Above Alpha 4	59.7%	67.5%	Significant (p<0.01)
Total	100.1%	100.1%	

Source: Universität Hamburg, LEO 2018 – living with low literacy; leo. – Level One Study 2010. Base: German-speaking adults (aged 18–64), n=7,192 (2018), n=8,436 (2010), weighted. Deviations from 100% are due to rounding.

What is the composition of the sub-population of adults with low literacy skills?

The following chapter explores the profile of the sub-population of 6.2 million adults with low literacy skills. The figures therefore do not refer to the whole sample of 7,192 adults, but instead to the sub-group of adults with low literacy skills (n=867 in the weighted data set). Results are presented according to gender, age group, first language, educational qualifications, employment status and marital status.

The pie charts in this chapter illustrate the composition of the group of adults with low literacy skills, e.g. what percentage of adults with low literacy levels are men and how many are women?

Gender

More men than women are classed as having low literacy skills (58.4%). In 2010, 60.3% of adults with low literacy were men and 39.7% were women. The changes seen compared with 2010 are not statistically significant (Figure 1).

Age group

Adults over the age of 45 account for the larger proportion of adults with low literacy skills (figure 2). The two oldest age groups (born 1953–1962 and 1963–1972) make up 46.9% of adults with low literacy skills. 22.9% of adults with low literacy skills be-

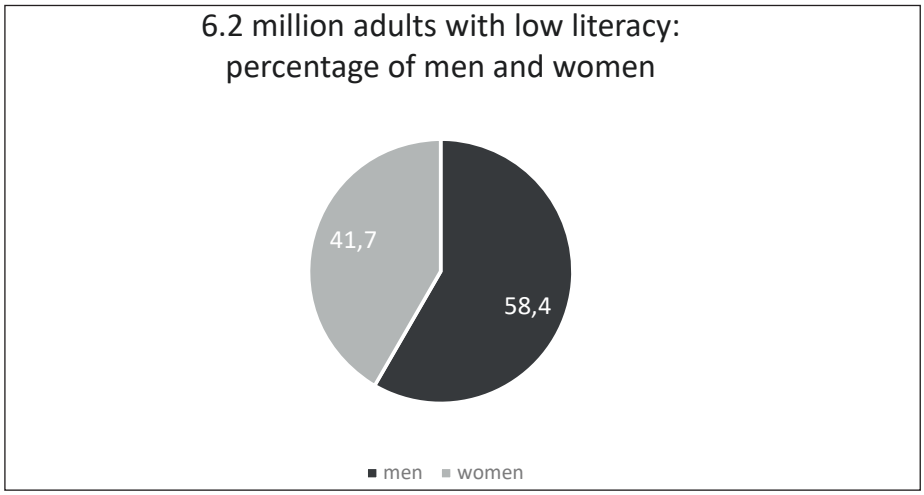

Fig. 1: Gender of adults with low literacy skills (Alpha Levels 1–3) (2018)
Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64) with low literacy skills, n=867, weighted. Deviations from 100% are due to rounding.

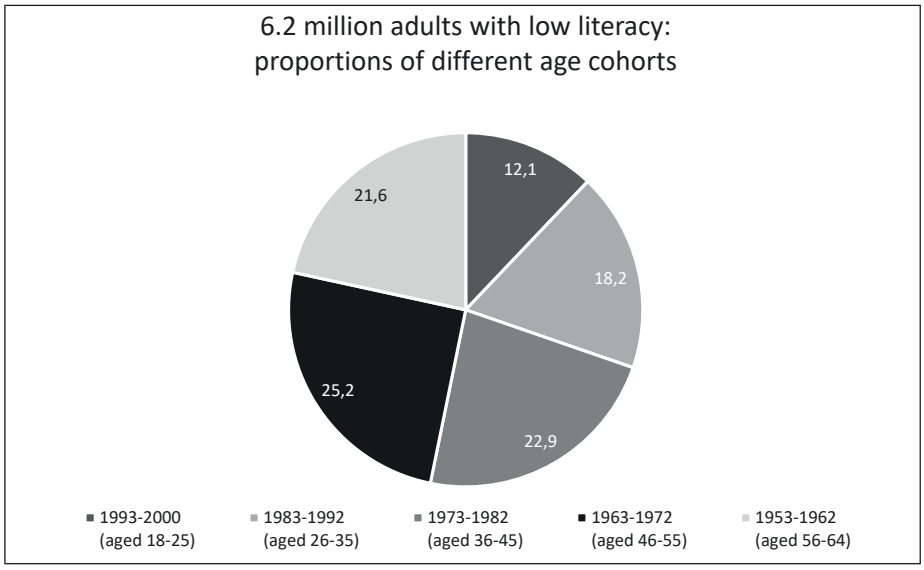

Fig. 2: Adults with low literacy skills (Alpha Levels 1–3) by age group (2018).
Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64) with low literacy skills, n=867, weighted.

long to the middle age group (born 1973–1982); at the time of the survey, they were between 36 and 45 years old. The remaining 30.2% of adults with low literacy skills belong to the two younger age groups, born 1983–1992 and 1993–2000. At the time

of the survey, these individuals were between 18 and 35 years old. These percentage shares have not changed significantly compared with 2010.

First language

The term "first language" is used to refer to the language(s) that an individual acquires during childhood. That is, languages that are used on a routine basis within the family and the child's home environment and which the child acquires through this language contact. This might be one language, but can also be two or more languages. This is not necessarily an indication of where an individual has come from in geographical terms, but of their family background instead.

Interviews were only carried out with people who had a sufficient level of spoken German to be able to follow an interview conducted in German. Non-native speakers without the requisite level of spoken German were not included in this study.

"In terms of the situation in Germany, this can be specified as follows: children from immigrant families grow up using the language of where their family comes from, it is not uncommon for this to be more than one language. German is then introduced as the majority language, at the latest, when the child leaves their parent's home to go to school or kindergarten." (Gogolin & Krüger-Potratz 2010:12, translation by the authors)

Figure 3 shows that, of the 6.2 million adults with low literacy, 3.3 million (52.6%) grew up in German-speaking family environments. Approximately 2.9 million (47.4%) learnt a language other than German as their first language. This means that more than half of all adults with low literacy skills in Germany learnt German during childhood. In 2010, 58.1% of people in this group spoke German as their first language, while 41.9% spoke a different language as their first language. This change from 2010 is not statistically significant.

In LEO 2018, interviewees were asked to give an assessment of their (written) language skills for the languages that they were able to understand or speak. Of those adults with low literacy skills in German who learnt a different language as their first language, 77.8% of them stated that they were able to read and write complex texts in their first language (Figure 4). Research results indicate that writing skills in one language can be a positive predictor for the ability to learn another written language (Dünkel, Heimler, Brandt & Gogolin 2018).

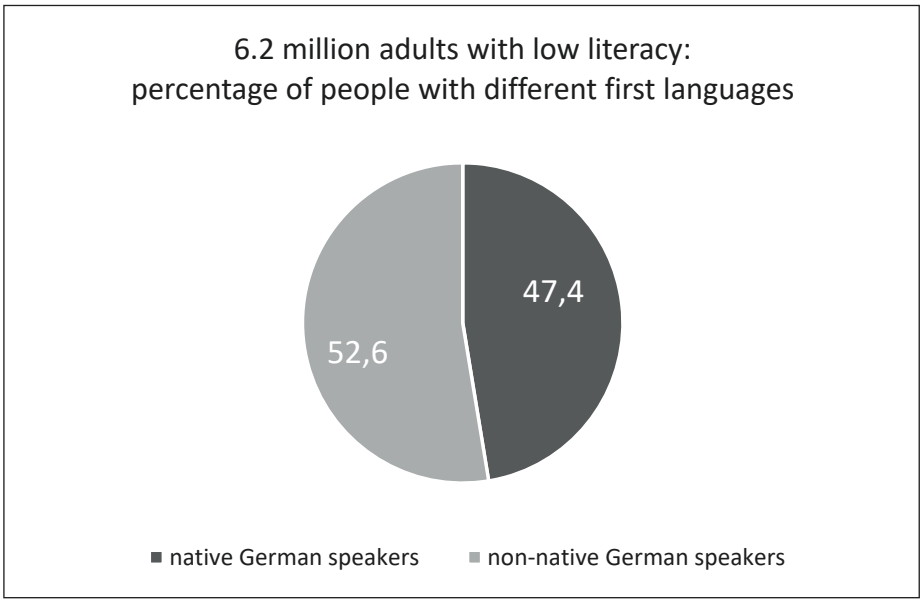

Fig. 3: Adults with low literacy skills (Alpha Levels 1–3), showing the percentage of people with German as their first language and people with a different first language (2018). Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64) with low literacy skills, n=867, weighted.

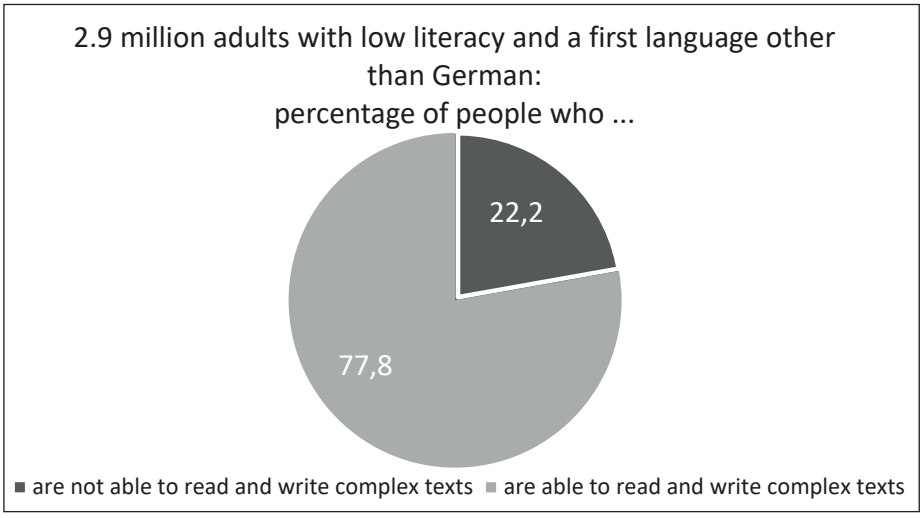

Fig. 4: Self-assessment by adults with low literacy (Alpha Levels 1–3) and a first language other than German of their ability to read and write complex texts in this language. Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: Adults (aged 18–64) with low literacy skills in German, who did not learn German as their first or only first language, n=523, weighted.

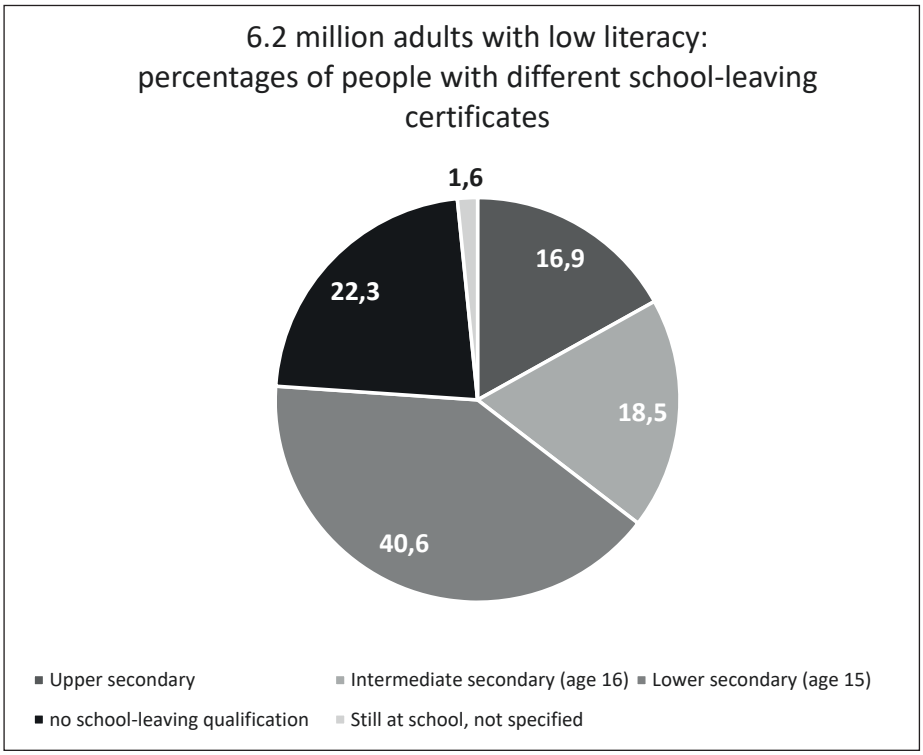

Fig. 5: School-leaving qualifications of adults with low literacy skills (Alpha Levels 1–3) (2018). Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64) with low literacy skills, n=867, weighted. Deviations from 100% are due to rounding.

Educational qualifications

76% of all adults with a low level of reading and writing proficiency (Alpha Levels 1–3) have achieved some form of school-leaving qualification (2010: 80.1%). Most of these (40.6%) have a school-leaving certificate from a Hauptschule, Volksschule (lower secondary school up to age 15) or comparable equivalent (2010: 47.7%). This development is statistically significant. 22.3% of adults with low literacy skills do not have any form of school-leaving qualification (2010: 19.3%). A further 1.6% of adults with low literacy skills are still enrolled at school or did not provide any information about their school-leaving qualifications (2010: 1.8%) (Figure 5).

Employment status

62.3% of adults with low literacy skills are employed (2010: 56.9%). Within the total population of Germany, 75.5% of people are employed (2010: 66.4%). 12.9% of adults with low literacy skills are unemployed (2010: 16.7%). Currently, the unemployment rate for the overall population of Germany is 5% (2010: 7.6%). In addition to this,

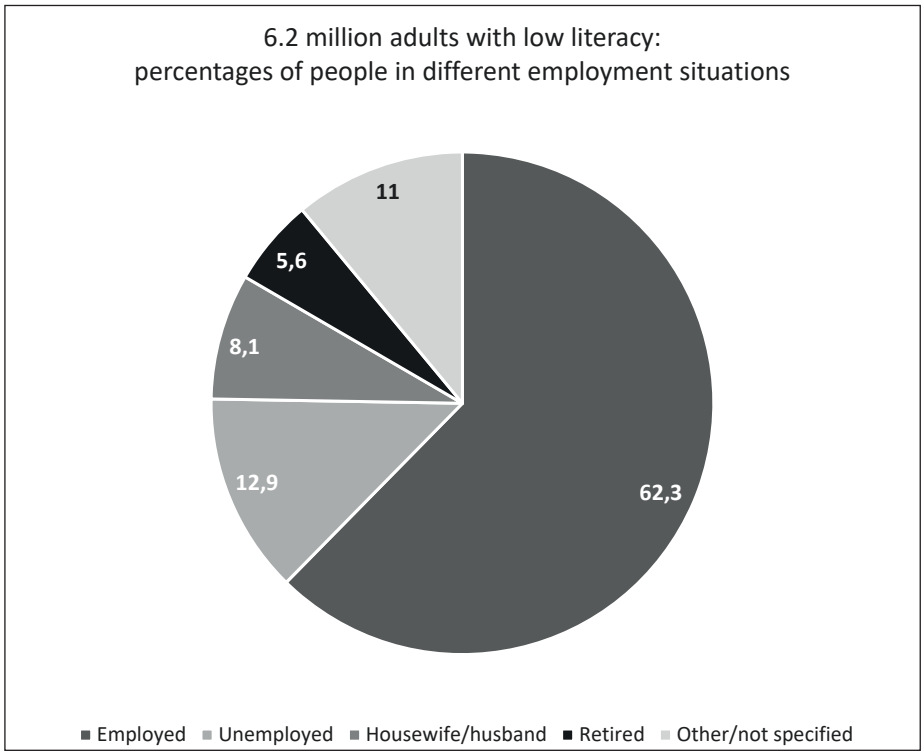

Fig. 6: Employment status of adults with low literacy skills (Alpha Levels 1–3) (2018). Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64) with low literacy skills, n=867, weighted. Deviations from 100% are due to rounding.

8.1% described themselves as housewives or househusbands (2010: 9%). At a national level, 3.4% of adults are in this category (2010: 6.3%). The changes of proportions among adults with low literacy skills compared with the figures from 2010 are not statistically significant (Figure 6).

Marital status

At 54.2%, married people make up the largest sub-group of all adults with low literacy skills (2010: 61.8%). A further 30.7% are single (2010: 27.2%) and 12.2% are divorced (2010: 8%). The changes in proportions compared with 2010 are not statistically significant. These percentages are also very similar to relevant proportions in the total population: 55% are married (2010: 61.2%), 33.3% are single (2010: 30.1%) and 9.3% are divorced (2010: 6.6%) (Figure 7).

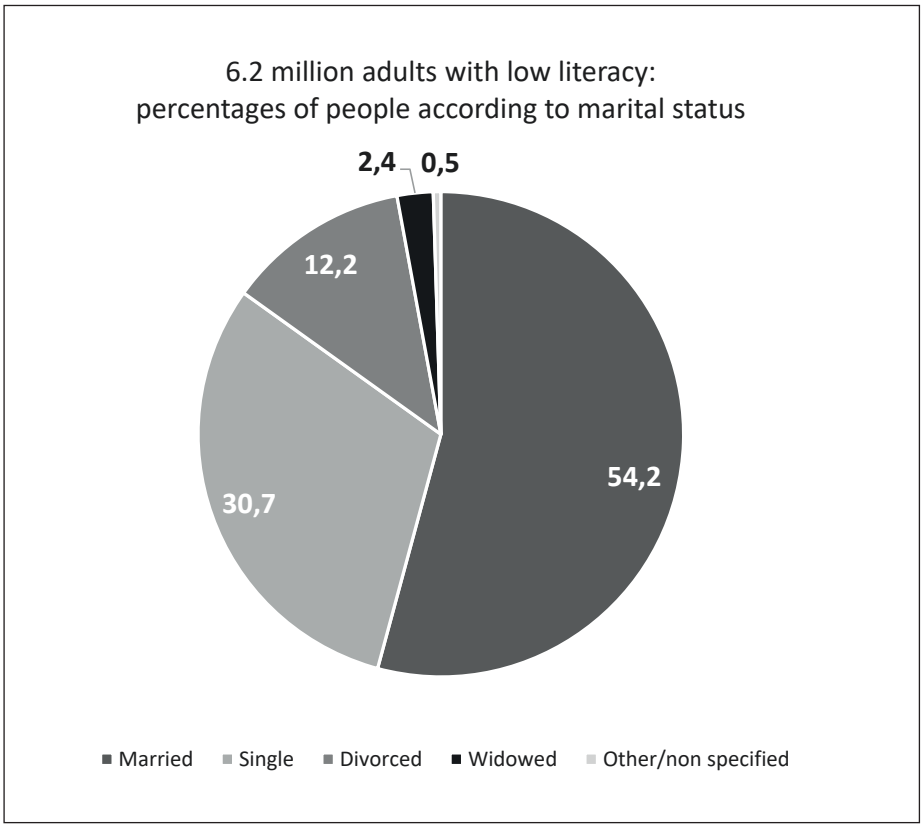

Fig. 7: Marital status of adults with low literacy skills (Alpha Levels 1–3) (2018). Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64) with low literacy skills, n=867, weighted.

What is the percentage of adults with low literacy skills within various different population groups?

12.1% of the total German-speaking adult population were found to have a low level of reading and writing proficiency (Alpha Levels 1–3). This chapter presents the sub-population of adults with low literacy skills as a percentage of specific population groups (e.g. men or women, employed or unemployed). Additional information has been recorded about the topics of work, family and education.

The bar charts in this chapter depict the percentage of adults with low literacy skills within a certain group, e.g. what proportion of men and women have low literacy skills? The charts show the percentage of people with skills assessed at Alpha Levels 1–3, Alpha Level 4 and above Alpha Level 4 for both 2010 and 2018. Significant changes are highlighted within the charts.

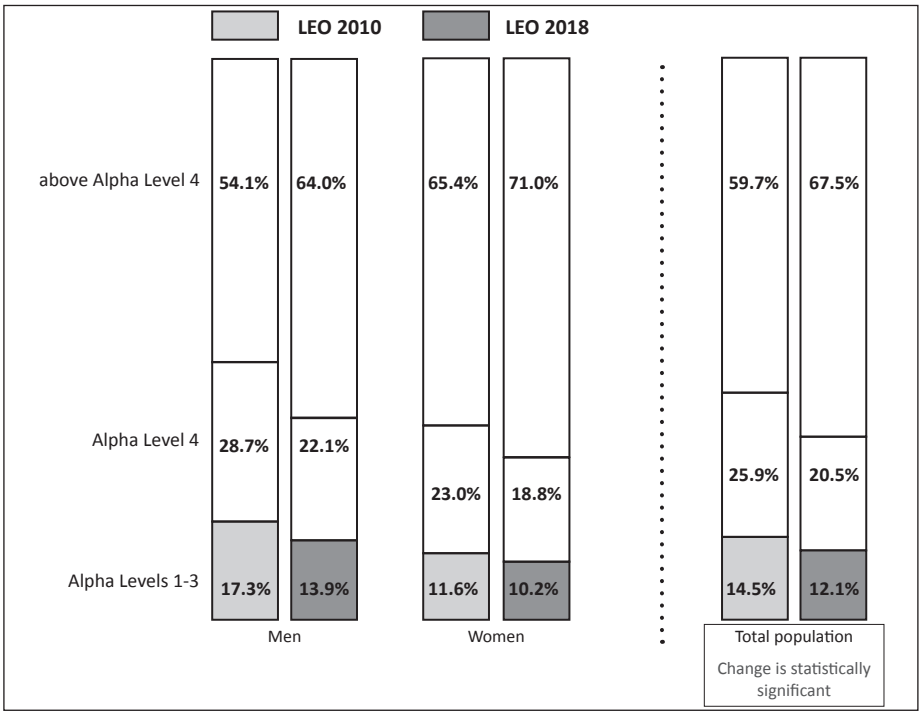

Fig. 8: Percentage of adults with low literacy skills (Alpha Levels 1–3) within groups sorted by gender, comparison between 2010 and 2018. Source: Universität Hamburg, LEO 2018 – living with low literacy; leo. – Level One Study 2010. Base: German-speaking adults (aged 18–64), n=7,192 (2018), n=8,436 (2010), both data sets are weighted. Deviations from 100% are due to rounding. Percentages of men and women in the 2018 weighted sample: men 50.7% (2010: 50.6%); women 49.3% (2010: 49.4%).

Gender

The percentage of men classified as having low literacy skills is higher than that of women. According to this survey, 13.9% of men were found to have a literacy proficiency level that ranked in the three lowest Alpha Levels. For women, this percentage share was 10.2%. In both cases, the percentages have fallen compared with the 2010 survey, when the reading and writing skills of 17.4% of men and 11.6% of women were within Alpha Levels 1–3. These changes are not statistically significant (Figure 8).

Age groups

The percentage of adults with low literacy skills is lower than the national average among the younger age groups (those born 1993–2000 and 1983–1992); in 2018, it was found to be just under 11% for both of these age groups. The highest percentage of

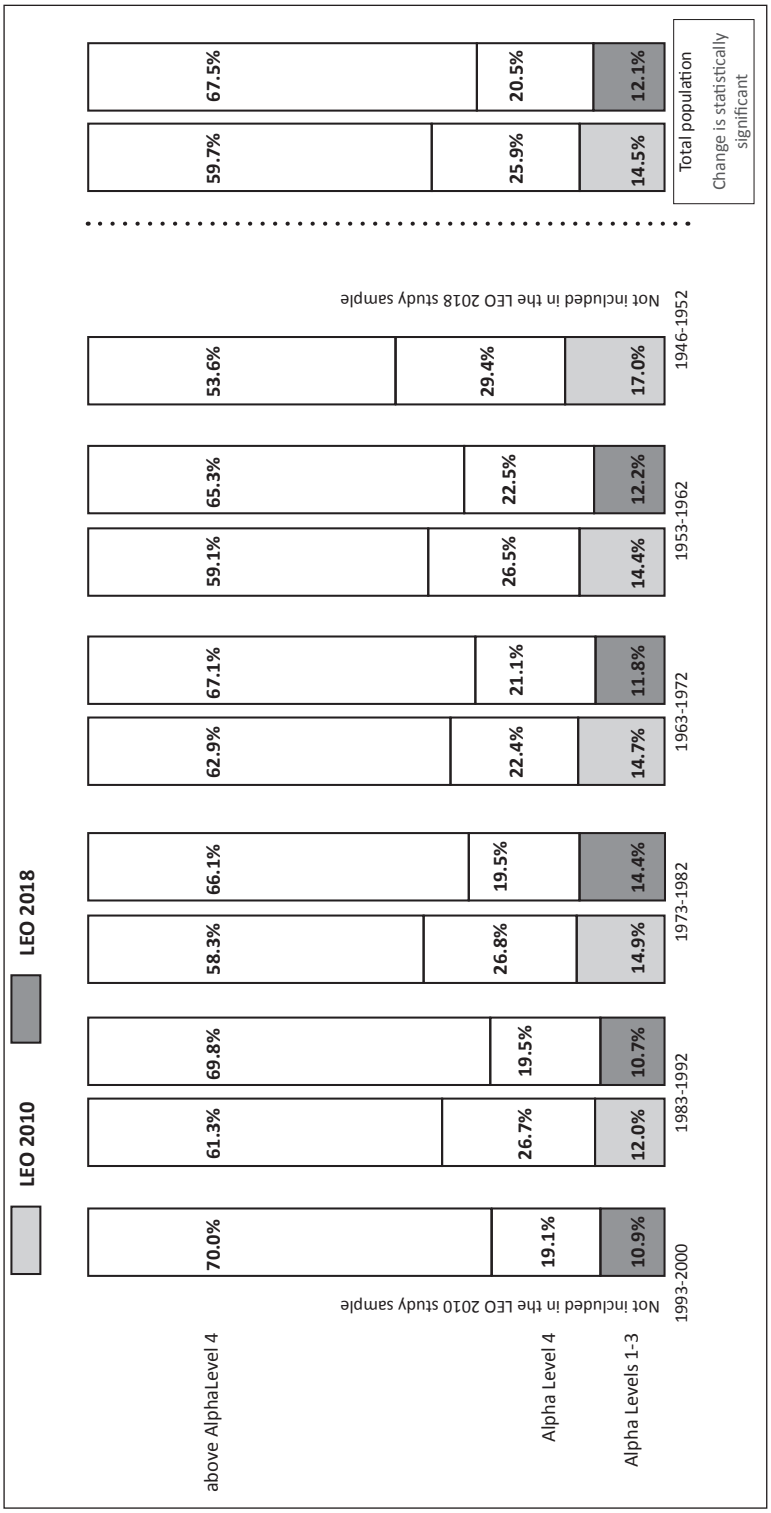

Fig. 9: Percentage of adults with low literacy skills (Alpha Levels 1–3) within different age groups, comparison between 2018 and 2010. Source: Universität Hamburg, LEO 2018 – living with low literacy; leo. – Level One Study 2010. Base: German-speaking adults (aged 18–64), n=7,192 (2018), n=8,436 (2010), both data sets are weighted. Deviations from 100% are due to rounding. Percentages of each age cohort in the 2018 weighted sample: 1993–2000: 13.3% (2010: not included); 1983–1992: 20.4% (2010: 19.2%); 1973–1982: 19.1% (2010: 18.9%); 1963–1972: 25.7% (2010: 26.4%); 1953–1962: 21.5% (2010: 23.4%); 1946–1952: not included in the 2018 sample (2010: 11.9%).

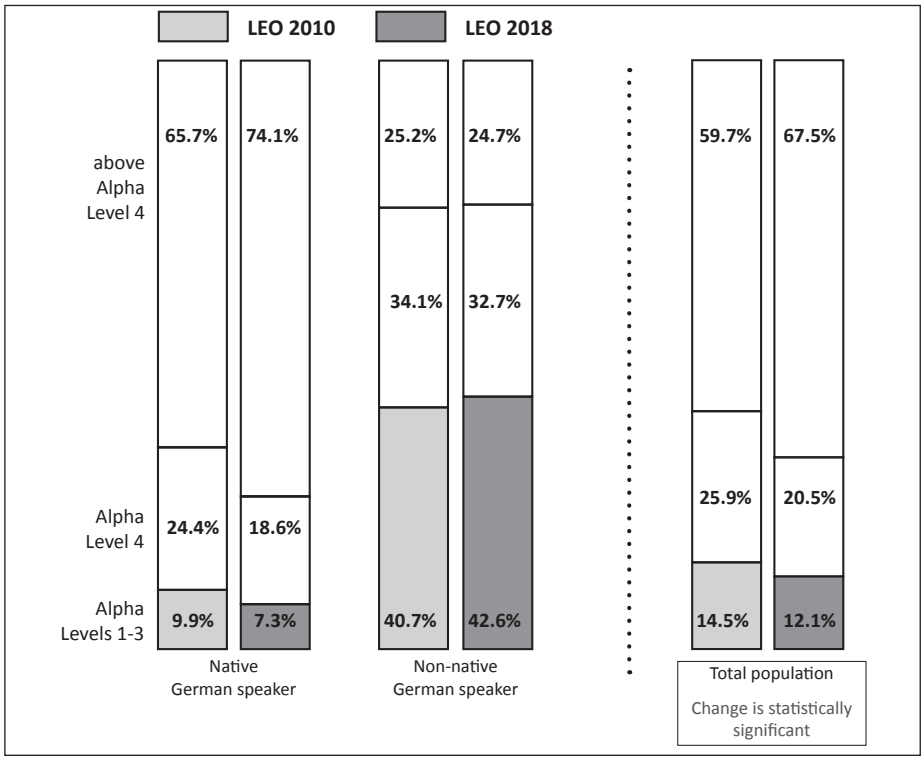

Fig. 10: Percentage of adults with low literacy skills (Alpha Levels 1–3) within groups sorted by first language, comparison between 2018 and 2010. Source: Universität Hamburg, LEO 2018 – living with low literacy; leo. – Level One Study 2010. Base: German-speaking adults (aged 18–64), n=7,192 (2018), n=8,436 (2010), both data sets are weighted. Deviations from 100% are due to rounding. Percentage of people with different first languages in the 2018 weighted sample: first language German: 86.6% (2010: 85.1%); first language other than German: 13.4% (2010: 14.9%).

adults with low literacy skills was found among those born between 1973 and 1982. Compared with the data from 2010, the percentage shares have fallen in varying amounts for each age group. These decreases are not statistically significant (Figure 9).

Age groups: In order to compare the percentage shares of adults with low literacy skills in both studies, the sample set was divided into groups according to their year of birth (age cohorts). Comparable data is not available from both studies for the youngest or the oldest age groups. At the time of the 2010 survey, the cohort born 1993–2000 was still too young to be included in the sample of 18–64 year olds, whilst the cohort born 1946–1952 was already over 64 years old by the time of the 2018 survey. It should be noted that the groups were not the same age during the two surveys. For example, those born between 1973 and 1982 were 28–37 years old during the LEO 2010 survey. By the time of the second survey, members of this group were between 36 and 45 years old. However, the two studies did not interview

the same people as would be done in a longitudinal study, instead, each study was based on separate sample groups.

First language

When comparing the percentages of people with a low level of reading and writing proficiency (Alpha Levels 1–3), there are clear differences between those who learnt German as their first language during childhood and those who did not learn German until later in life. Of all adults who speak German as their first language, 7.3% have low literacy skills in German written language (2010: 9.9%), whilst for those who speak a different language as their first language, 42.6% have low literacy skills in German written language (2010: 40.7%). The changes in the proportions of adults with low literacy skills compared with LEO 2010 are not statistically significant (Figure 10).

Qualifications and continuing education

A strong correlation was found between the level of educational qualification achieved and a person's reading and writing skills. Whilst 12.1% of all interviewees were found to have low proficiency in reading and writing, attaining Alpha Levels 1–3 (2010: 14.5%), this percentage was considerably higher – 21.5% – among those who only achieved a Hauptschule qualification, the lowest form of school-leaving certificate available in Germany (2010: 23.1%). More than one in two people (54.5%) without any form of school-leaving qualification have low literacy skills (2010: 59%). The changes for individual groups between 2010 and 2018 are not statistically significant (Figure 11).

The idea behind lifelong learning is that education does not finish upon achieving a school-leaving certificate (see Kleinert 2014 and Iller 2017 for more about the link between participation in continuing education and formal education). The LEO survey therefore also captures information about participation in continuing education. As was also seen in 2010, participation in continuing education by adults with low literacy skills is lower than the national average – just 28.1% of adults with low literacy skills took part in any type of continuing education activity in the last twelve months (2010: 28%)[1]. Participation rates have stagnated since 2010. In contrast, 46.9% of all adults have taken part in some form of continuing education in the last twelve months (2010: 42%).

Participation in continuing education courses that focus on basic education and literacy is very low. Only 0.7% of adults with low literacy skills were found to participate in such kinds of education. This corresponds with statistics from

1 In LEO 2010, the definition of adults with low literacy skills that was used to calculate participation rates in continuing education was based on a different set of methodological principles than those used in 2018. There are therefore limitations to the comparability of the continuing education data for LEO 2010 and LEO 2018.

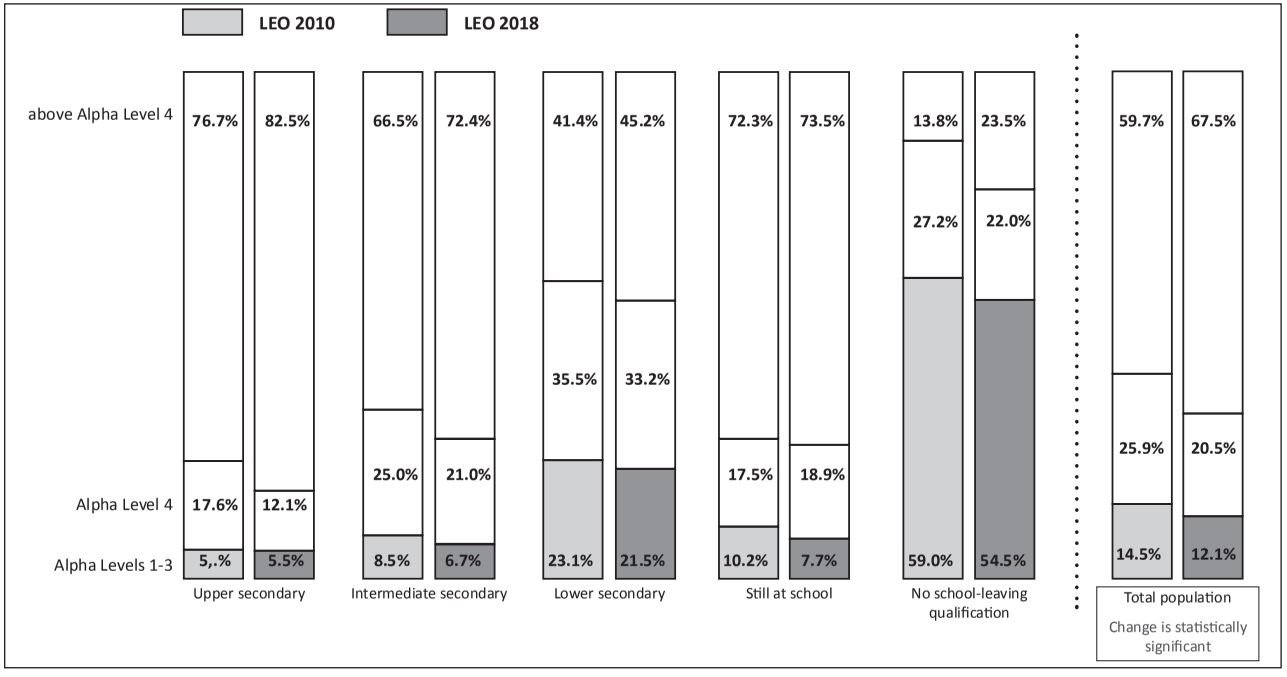

Fig. 11: Percentage of adults with low literacy skills (Alpha Levels 1–3) within groups sorted by educational qualification. Source: Universität Hamburg, LEO 2018 – living with low literacy; leo. – Level One Study 2010. Base: German-speaking adults (aged 18–64), n=7,192 (2018), n=8,436 (2010), both data sets are weighted. The response category "Not specified" is not included in the diagram. Deviations from 100% are due to rounding. Percentage of each level of educational qualification in the 2018 weighted sample: Abitur or equivalent upper secondary qualification: 37.2% (2010: 31.4%); Mittlerer Schulabschluss or equivalent intermediate secondary qualification: 33.5% (2010: 32.3%); Hauptschulabschluss or equivalent lower secondary qualification: 22.8% (2010: 29.9%); still at school: 1.4% (2010: 0.9%); no school-leaving qualification: 4.9% (2010: 4.7%); not specified: 0.2% (2010: 0.8%).

Germany's adult education centres concerning low attendance figures for basic education and literacy-related courses (Reichart, Huntemann & Lux 2019:47). The proportion of adults with low literacy skills participating in continuing education is therefore considerably higher than participation in literacy courses alone.

It can also be seen that adults with low literacy skills participate less frequently in work-related adult education activities. This segment of the population is more likely to be employed in simple ancillary work in fields with limited opportunity for further training, e.g. the construction industry (Destatis 2017:32). In addition to individual effects, industry-specific effects also play an important role here.

The majority of adults with low literacy skills have a generally positive attitude towards continuing education recommendations – 59.7% stated that they would follow the recommendation of their superiors to take part in a non-compulsory training course. For the total German population, this percentage share was 65.8%.

Among the reasons mentioned for participating in continuing education, work-related reasons were most important for adults with low literacy skills: 56.9% said that the main reason they took part in their most recent training course was to improve their performance at work, while 37.4% said they wanted to improve their career prospects. The third most important reason given was to acquire skills for daily life, which was mentioned by 36.9% of adults with low literacy skills (Table 3).

Tab. 3: The three reasons for undertaking training most frequently cited by adults with low literacy (multiple answers permissible), showing percentages according to Alpha Level and of the overall population

	Alpha 1–3	**Alpha 4**	**Above Alpha 4**	**Total population**
To improve performance at work	56.9%	60.2%	62.7%	61.9%
To improve career prospects	37.4%	36.3%	31.8%	32.9%
To acquire skills for daily life	36.9%	37.1%	36.9%	36.9%

Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64) who have taken part in at least one form of continuing education activity in the last twelve months, n=3,372, weighted.

Tab. 4: The three reasons for not undertaking training most frequently cited* by adults with low literacy skills (multiple answers permissible), showing percentages according to Alpha Level and of the overall population

	Alpha 1–3	**Alpha 4**	**Above Alpha 4**	**Total population**
No time due to work commitments	16.8%	18.9%	19.2%	18.7%
No time due to family obligations	16.1%	19.7%	21.7%	20.3%
Other personal reasons	14.9%	14.7%	18.5%	17.0%

Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64) who have not taken part in any continuing education activity in the last twelve months, n=3,820, weighted.

* The response category "None of the above" was mentioned most frequently by all groups, however it is not depicted here due to a lack of informative value.

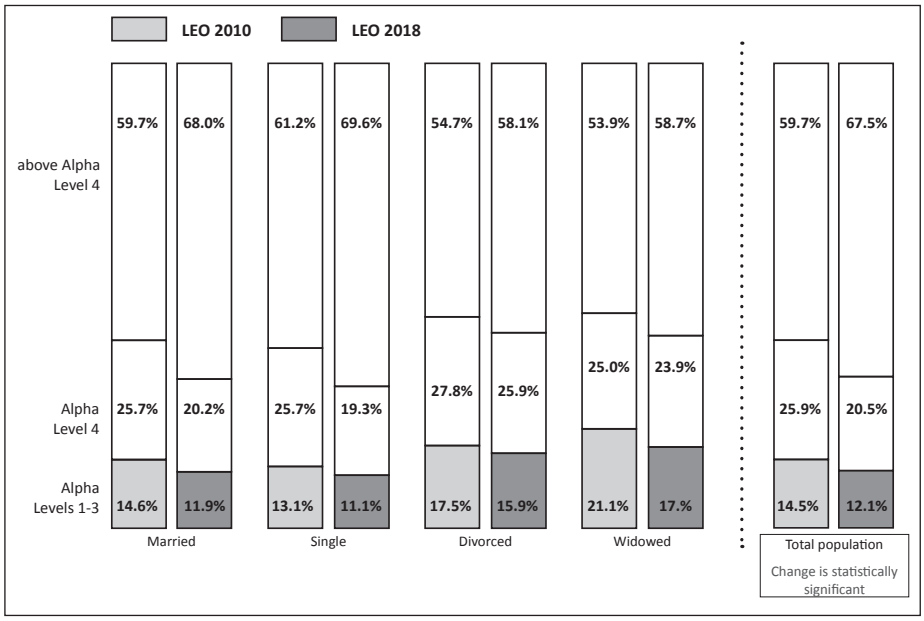

Fig. 12: Percentage of adults with low literacy skills (Alpha Levels 1–3) within groups sorted by employment status, comparison between 2018 and 2010. Source: Universität Hamburg, LEO 2018 – living with low literacy; leo. – Level One Study 2010. Base: German-speaking adults (aged 18–64), n=7,192 (2018), n=8,436 (2010), both data sets are weighted. The remaining response categories and cases in which no information was provided are not shown in the diagram. Deviations from 100% are due to rounding. Percentage shares of different employment situations in the 2018 weighted sample: employed 75.5% (2010: 66.4%); unemployed 5% (2010: 7.6%); housewife/househusband 3.9% (2010: 6.3%); on parental leave 2.3% (2010: 2%); retired 4.4% (2010: 4.8%); unable to work 1.3% (2010: 1.3%); in training/education 6.3% (2010: 10.4%); other/not specified 1.4% (2010: 1.2%).

The most important reason for not taking part in continuing education activities was a lack of time: 16.8% of adults with low literacy skills mentioned work commitments, while 16.1% mentioned family obligations as obstacles. "Other personal reasons" that were not further specified were mentioned by 14.9% of people with low reading and writing proficiency.

Employment status

At 10%, the proportion of adults with low literacy skills among the working population is lower than in the total adult population (12.1%). Meanwhile, at 31.4%, their share in the unemployed population is higher than the national average. The same is also true for the smaller group of those unable to work (31.4%). Compared with 2010, the percentages have risen for the two groups of those unable to work and those who class themselves as housewives/househusbands, while they have fallen

for the other employment categories. The decrease seen in the 'Employed' category is statistically significant (Figure 12).

Of all adults with low literacy skills who are in employment, 45.5% are employees, 40.1% are workers, 7.2% are in marginal employment and 6.3% are self-employed. Considerable differences can be seen when comparing these figures with the national averages, particularly in terms of the numbers of workers and employees. The total working population is made up of 62.1% employees, 14.8% workers, 10.4% self-employed and 5.3% in marginal employment (Table 5).

Tab. 5: Employment status by Alpha Level

	Alpha 1–3	**Alpha 4**	**Above Alpha 4**	**Total population**
Marginal employment (mini-job, limited to €450/month or in temporary employment with a maximum of 50 days work/year)[2]	7.2%	5.8%	4.9%	5.3%
Worker	40.1%	21.8%	9.2%	14.8%
Employee	45.5%	59.0%	65.3%	62.1%
Civil servant (including judges and members of the armed forces)	0.4%	2.8%	9.3%	7.1%
Self-employed	6.3%	10.1%	11.0%	10.4%
Unpaid family worker	0.3%	0.2%	0.1%	0.2%
Not specified	0.2%	0.4%	0.2%	0.2%
Total	100.0%	100.0%	100.0%	100.0%

Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults currently in employment (aged 18–64, not including trainees and interns), n=5,546, weighted. Deviations from 100% are due to rounding.

The vast majority of jobs require at least a basic level of proficiency in reading and writing (see Solga 2013, based on the results of the PIAAC survey). At the same time, work has a diverse range of functions – it generates income, provides a sense of purpose and is considered a status symbol. An overwhelming majority (86.2%) of the overall population stated that work was important for them as it gave them a sense of belonging. Agreement is as high as 87.5% among adults with low literacy skills. For the majority of the employable population, money was not the only incentive to work. 70.5% of the overall population said that they would be happy to work even if

2 The category of people in marginal employment was newly included in the 2018 LEO survey, analogous to the Adult Education Survey (AES). This differentiation was not implemented in LEO 2010. There are therefore limitations to the comparability of the data from LEO 2010. The definition and assignment of the categories 'workers' and 'employees' is subject to change, as is the recording of these categories in the German Microcensus. Caution is therefore advised when interpreting these results.

they did not need the money. In contrast, 59.7% of adults with low literacy skills said that they would still go to work even if it were not financially necessary (Table 6).

Tab. 6: Agreement with statements of opinion about work by Alpha Level ("Agree completely" or "Agree somewhat")

	Alpha 1–3	Alpha 4	Above Alpha 4	Total population
Work is important because it gives you a sense of belonging.	87.5%	85.9%	86.1%	86.2%
I would still be happy to work, even if I did not need the money.	59.7%	67.6%	73.3%	70.5%

Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64), n=7,192, weighted.

The vast majority of the working population stated that they receive recognition in the workplace for the work they do – regardless of their Alpha Level. Thus, 74.8% of the total working population felt they received recognition from their superiors at work. At 71.5%, a similar level of agreement is also seen among working adults with low literacy. However, when it comes to their own prospects of promotion, clear differences can be seen between Alpha Levels. In total, 71.2% of the working population felt that their own prospects of promotion were commensurate to their effort and performance. However, only 62.6% of working adults with low literacy said that they agreed with this statement (Table 7).

Tab. 7: Agreement with statements about the workplace by Alpha Level ("Agree completely" or "Agree somewhat")

	Alpha 1–3	Alpha 4	Above Alpha 4	Total population
I receive the recognition that I deserve from my superiors or managers at work.	71.5%	73.7%	75.5%	74.8%
When I consider my effort and achievement at work, I think that my personal prospects to advance in my job are appropriate.	62.6%	69.9%	72.8%	71.2%

Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64) who are employed, n=5,578, weighted.

Adults with low literacy skills are less satisfied with their overall situation at work (Figure 13). On a scale from 0 (very dissatisfied) to 10 (very satisfied), the average satisfaction rating for adults with low literacy skills is 6.7 while the average rating for the total population is 7.6. The difference between adults with low literacy skills and those with a higher degree of proficiency is statistically significant ($p<0.01$).

Concerns about job security are much higher among adults with low literacy skills than in the total working population. 23% of people with low literacy stated that they were worried about losing their jobs, whilst only 11.8% of the total working population expressed concern about their job security. Furthermore, 57.9% of adults

with low literacy said that it would be difficult for them to find a new job of equal value or standing. This view was shared by 47.2% of the overall working population (Table 8).

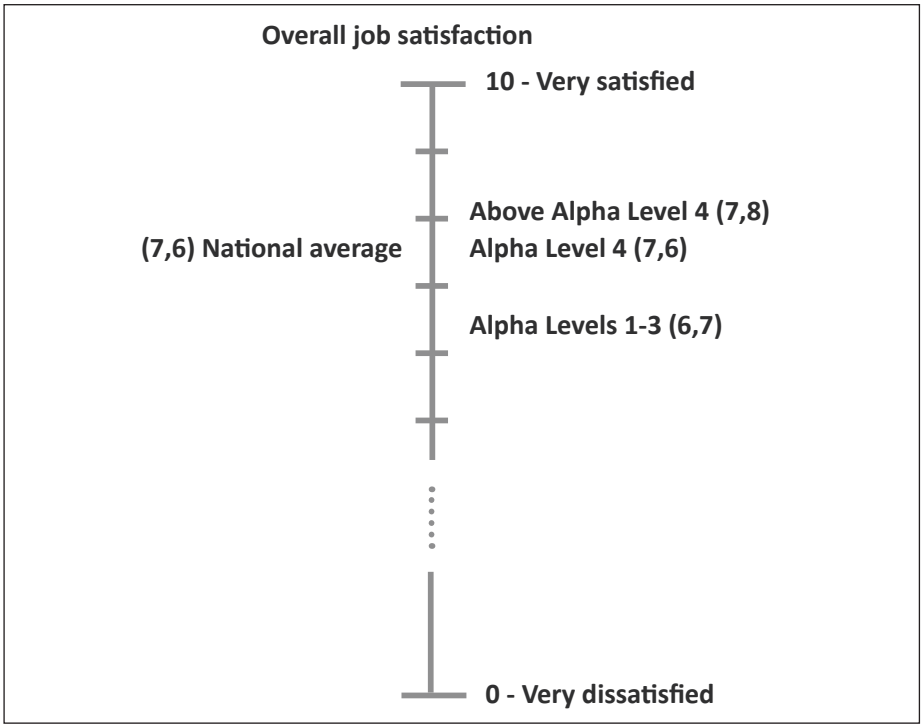

Fig. 13: Job satisfaction by Alpha Level. Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64) who gave a response to this question, n=6,941, weighted. People who did not give a response (n=250) were not included in the calculations.

Tab. 8: Statements about job security by Alpha Level

	Alpha 1–3	Alpha 4	Above Alpha 4	Total population
Difficulty finding a new job equivalent to the current or most recent job ("Quite difficult" or "Difficult").	57.9%	49.1%	44.7%	47.2%
I am worried about losing my job.	23.0%	13.1%	9.9%	11.8%

Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64) who have been employed in the last twelve months, n=6,813; German-speaking adults (aged 18–64) currently in work, n=5,578, both weighted.

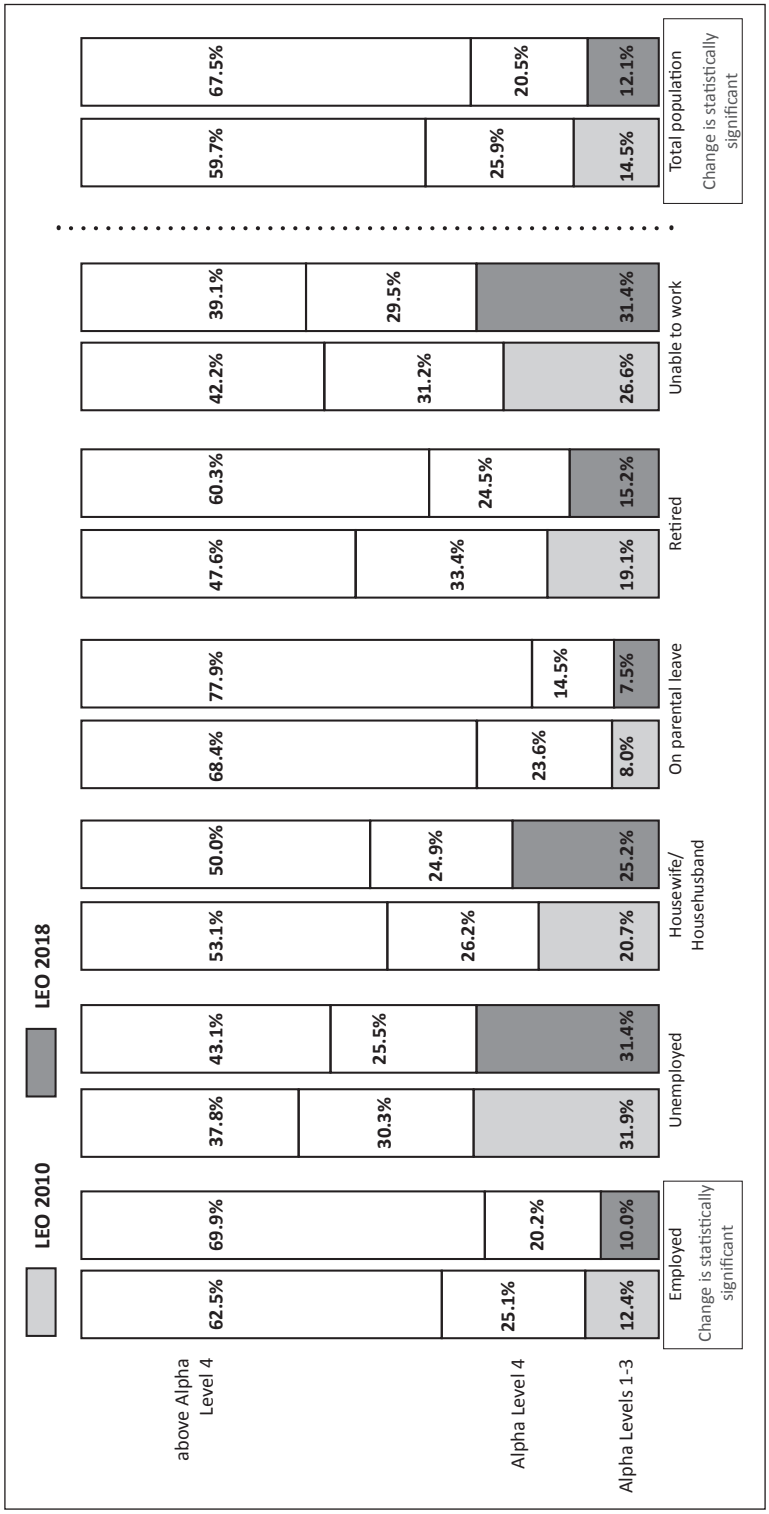

Fig. 14: Percentage of adults with low literacy skills (Alpha Levels 1–3) within groups sorted by marital status, comparison between 2018 and 2010. Source: Universität Hamburg, LEO 2018 – living with low literacy; leo. – Level One Study 2010. Base: German-speaking adults (aged 18–64), n=7,192 (2018), n=8,436 (2010), both data sets are weighted. The response categories "Other" and "Not specified" are not shown in the diagram. Deviations from 100% are due to rounding. Percentages of adults in the 2018 weighted sample by marital status: married: 55% (2010: 61.2%); single: 33.3% (2010: 30.1%); divorced: 9.3% (2010: 6.6%); widowed: 1.7% (2010: 1.7%); other or not specified: 0.8% (2010: 0.4%).

Family and living situation

Among the groups of married people and single people, the percentages of adults with low literacy skills are slightly lower than the national average, at 11.9% and 11.1% respectively. Percentage shares among divorced people and widowed people are higher than the national average at 15.9% and 17.4% respectively (Figure 14).

Differences between the Alpha Levels in terms of marital status are minor. Table 9 shows that the proportions of all marital status categories are roughly the same for adults with low literacy skills as for the overall population. For example, 51.4% of adults with low literacy skills are married and living with their spouse; within the total population, 53.1% fall into the same category. The differences in percentages compared with LEO 2010 are not statistically significant.

Tab. 9: Marital status by Alpha Level

	Alpha 1–3	**Alpha 4**	**Above Alpha 4**	**Total population**
Married, living together with spouse	51.4%	52.4%	53.6%	53.1%
Married, living separately from spouse	2.7%	1.7%	1.8%	1.9%
Single	30.7%	31.4%	34.3%	33.3%
Divorced	12.2%	11.7%	8.0%	9.3%
Widowed	2.4%	1.9%	1.4%	1.7%
Other	0.4%	0.5%	0.7%	0.6%
Not specified	0.2%	0.3%	0.2%	0.2%
Total	100.0%	100.0%	100.0%	100.0

Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64), n=7,192, weighted. Deviations from 100% are due to rounding.

63.6% of adults with low literacy skills have a partner (married or unmarried). Among the total population, the percentage of people who are in a relationship is slightly higher at 69.9%. 60.6% of adults with low literacy skills live in the same household as their partner (total population: 66.3%) (Table 10). The differences in percentages compared with LEO 2010 are not statistically significant.

Tab. 10: Relationships and living situations by Alpha Level

	Alpha 1–3	**Alpha 4**	**Above Alpha 4**	**Total population**
Lives together with partner	60.6%	64.2%	68.0%	66.3%
Does not live together with partner	3.0%	3.2%	3.8%	3.6%
Not in a relationship	36.3%	32.4%	28.0%	29.9%
Not specified	0.1%	0.2%	0.2%	0.2%
Total	100.0%	100.0%	100.0%	100.0%

Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64), n=7,192, weighted.

Independent of relationship status, 20.9% of adults with low literacy skills live by themselves. The national average for people living in single-person households is slightly lower at 16.9% (Table 11). The differences in percentages compared with LEO 2010 are not statistically significant.

Tab. 11: Household size by Alpha Level

	Alpha 1–3	Alpha 4	Above Alpha 4	Total population
Alone	20.9%	18.5%	15.6%	16.9%
In a household with multiple people:	79.1%	81.4%	84.3%	83.1%
2 people	27.9%	30.5%	32.7%	31.7%
3 people	20.1%	22.8%	23.3%	22.8%
4 people	17.4%	17.4%	20.0%	19.2%
5 or more people	13.7%	10.6%	8.3%	9.4%
Not specified	0.0%	0.1%	0.1%	0.1%
Total	100.0%	100.0%	100.0%	100.0%

Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64), n=7,192, weighted. Deviations from 100% are due to rounding.

In terms of the number of children within a household, there are only minor differences between adults with low literacy skills and the total population, both with regard to the presence of children and the number of children within a household. Just over a third of all households include children (Table 12).

Tab. 12: Number of children (aged 0–17) per household by Alpha Level

	Alpha 1–3	Alpha 4	Above Alpha 4	Total population
No children	62.0%	65.3%	64.0%	64.0%
1 child	16.3%	17.6%	18.3%	17.9%
2 children	13.9%	12.0%	13.7%	13.4%
3 children	5.6%	3.3%	3.2%	3.5%
4 or more	2.2%	1.7%	0.8%	1.1%
Not specified	0.0%	0.1%	0.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%

Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64), n=7,192, weighted. Deviations from 100% are due to rounding.

The concept of family literacy has become increasingly prominent within the field of literacy research. This approach focuses on promoting the development of reading and writing skills in the family environment. Repeated positive experiences of reading within the family help to foster children's literacy skills (McElvany, Becker & Lüdtke 2009).

Parents who have low literacy skills spend less time reading to their children than parents with a higher level of literacy. Overall, 44.8% of parents indicated that they read to their children (up to the age of twelve) on a daily basis. In contrast, 30.7% of parents with low literacy said that they read to their children every day (Table 13). It was not asked which language was being used for this activity. Looking at picture books together was also classed as reading together.

Tab. 13: Time spent reading aloud to children by Alpha Level

	Alpha 1–3	**Alpha 4**	**Above Alpha 4**	**Total population**
At least once a day	30.7%	39.6%	49.5%	44.8%
At least once a week	28.6%	23.6%	25.9%	25.8%
Less than once a week	15.4%	12.6%	8.2%	10.1%
Never	20.5%	21.7%	13.8%	16.3%
Not specified	4.8%	2.6%	2.6%	2.9%
Total	100.0%	100.1%	100.0%	100.0%

Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64) with children under 12 years old at home, n=1,909, weighted. Deviations from 100% are due to rounding.

Reading and writing skills are required for a wide range of household tasks. But who takes care of household paperwork? Previous findings have suggested that written tasks are often delegated to people with a higher level of literacy, particularly within family relationships (for more on the issue of delegation see Egloff 1997).

Table 14 shows that a majority of 69.9% of adults with low literacy skills deal with paperwork themselves (multiple answers permissible). For the total population, this value is 81.4%. Around a third of adults said that their partner took care of all written correspondence. The sub-group of adults with low literacy skills hardly differs from the national average in this respect.

Tab. 14: Who takes care of household paperwork by Alpha Level (multiple answers permissible)

	Alpha 1–3	**Alpha 4**	**Above Alpha 4**	**Total population**
Myself	69.9%	77.7%	84.6%	81.4%
My partner	37.3%	37.6%	38.5%	38.2%
Another member of the household	9.6%	7.8%	8.0%	8.2%

Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64), n=7,192, weighted.

Text-related practices

It is often assumed that a low level of proficiency in reading and writing can lead to social exclusion. In order to investigate this connection, the LEO Study set out to take a differentiated look at life with low literacy by exploring text-related and non-text-related practices in various aspects of daily life. In so doing, it can be seen whether low literacy really does lead to social exclusion or whether it is still possible for adults with low literacy skills to participate in the areas of life in question. In order to capture literacy-related practices, questions were asked about how often participants carried out certain activities in their daily lives.

Literacy and mobility

Choices regarding modes of transport reveal clear differences between Alpha Levels. Compared with the overall population (23.2%), a larger proportion of adults with low literacy skills (31.1%) use public transport regularly (at least once a week). Overall, private motorized transport is regularly used by 77.9% of the population, however, 57.5% of people with low literacy regularly use a car, motorbike or moped (Table 15). The data does not allow any inferences to be made regarding the reasons behind this lower degree of motorization, e.g. costs, environmental arguments or possession of a driving licence.

Tab. 15: Regular use of different modes of transport by Alpha Level ("Daily" or "At least once a week")

	Alpha 1–3	Alpha 4	Above Alpha 4	Total population
Car, motorbike, moped	57.5%	76.6%	82.0%	77.9%
Bicycle	29.6%	39.4%	47.0%	43.3%
Public transport, e.g. local buses, trains and ferries	31.1%	22.9%	22.0%	23.2%

Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64), n=7,192, weighted.

Adults with low literacy skills frequently use ticket machines to buy their tickets (20.6%) or buy them when on-board the transport (21.5%). Ticket machines are also the most popular method of buying tickets for the total population (25.5%). Used by 16.9% of the overall population, the second most popular method for buying public transport tickets is to buy them online or using a specific app. Only 7.3% of adults with low literacy skills frequently go online or use an app to buy their travel tickets (Table 16).

Tab. 16: Frequently used methods of buying travel tickets by Alpha Level ("Often" or "Quite often"), multiple responses permissible

	Alpha 1–3	Alpha 4	Above Alpha 4	Total population
Online or with an app	7.3%	12.7%	19.7%	16.9%
Ticket machine	20.6%	22.6%	27.3%	25.5%
When on board the transport	21.5%	14.3%	13.8%	14.9%
Over the counter or at the travel centre	12.1%	11.8%	10.1%	10.7%

Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64), n=7,192, weighted.

Literacy and digital practices

Use of information and communication technologies (ICT): Internationally, adults in Germany typically have a comparatively low level of IT proficiency (Wicht, Lechner & Rammstedt 2018). Are adults with low reading and writing skills at a particularly high risk of not being able to keep pace with the digital transformation? Digital practices are far too diverse to provide a straightforward answer to the question of whether adults with low literacy skills use ICT less than those with higher levels of literacy. There are indeed some areas in which less frequent usage could be identified. These included the regular (i.e. daily or weekly) use of computers with internet access or writing emails. In contrast, only minor differences were found in terms of the use of web-enabled smartphones or tablets, and the sending of short text messages (e.g. WhatsApp, SMS).

Furthermore, there are also some digital practices that adults with low literacy skills use more than the average adult population. These include the regular use of voice messages or video calls and the regular use of social media (e.g. Facebook or Instagram) (Table 17). Thus, many people with low literacy skills are frequently presented with reasons to read and write. However, it is important to note that the item "Writing in social media" can cover both the composition of longer texts and posting "Likes" or short statements.

When looking at practices that do not focus on communication, but on finding information, it was found that adults with a lower level of literacy use ICT services less frequently. This is reflected in the use of the internet to search for addresses and route descriptions. 43.7% of the total population use the internet to search for this type of information, whereas 36.7% of adults with low literacy use the internet for this purpose. When searching for information about a range of different topics (health, hobbies, parenting, computing), 50.0% of the overall population regularly use the internet for their searches compared with 41.7% of adults with low literacy.

Tab. 17: Regular use of digital media by Alpha Level ("Daily" or "At least once a week"). Percentages of people sorted by Alpha Level and the national average.

	Alpha 1–3	Alpha 4	Above Alpha 4	Total population
Regularly use a computer with internet access	55.4%	75.5%	89.7%	82.7%
Regularly use a smartphone or tablet	78.0%	86.6%	92.2%	89.4%
Regularly write emails	35.9%	53.7%	71.7%	63.7%
Regularly write short messages (e.g. WhatsApp, SMS)	70.3%	82.5%	90.1%	86.2%
Regularly send voice messages	39.1%	38.9%	36.6%	37.4%
Regularly make video calls	19.1%	15.8%	12.6%	14.1%
Regularly read posts on social media	41.8%	43.6%	40.6%	41.4%
Regularly write own posts on social media	23.5%	19.6%	18.6%	19.4%

Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64), n=7,192, weighted.

Literacy and financial practices

Responsibility for household finance-related tasks: The aspect of financial literacy has become increasingly significant within the discussion of basic education (Tröster & Mania 2013). Financial literacy forms the basis for being able to successfully manage finance-related tasks. 76.9% of all adults take on responsibility for dealing with household finance-related tasks. This allocation of responsibilities is largely independent of reading and writing ability.

Carrying out bank transactions: The way in which people pay their bills or make bank transfers has changed substantially, not least due to the recent move towards online banking. Making payments via online banking is particularly well-established among adults with a higher degree of literacy (Table 18). People with low literacy skills are much more likely to carry out their transactions in the more traditional way using paper forms and are therefore more affected by the closure of local bank branches.

Reasons given for not using online banking can be split into three groups: a lack of necessity, concerns about security and a lack of technical competence. In general, the aspect of competence, i.e. that the use of online banking is perceived as too difficult, only plays a secondary role. However, adults with low literacy skills mentioned it three times more often (22.2%) than the overall population as an obstacle to using online banking.

Searching for information: When faced with making a major purchase, people of all literacy levels use brochures, catalogues or advice from friends and family to a similar extent. However, a clear difference can be seen in the use of the internet as a source of information. 48.5% of adults with low literacy skills said that they often

Tab. 18: Frequently used payment practices by Alpha Level ("Often" or "Quite often"). Percentages of people sorted by Alpha Level and the national average.

	Alpha 1–3	Alpha 4	Above Alpha 4	Total population
Frequent use of bank transfer forms	42.3%	31.6%	20.2%	25.1%
Frequent use of online banking[1]	40.6%	58.6%	71.1%	65.3%
Frequent use of in-branch bank transfer terminals	20.8%	23.9%	20.3%	21.2%

Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64) who have their own bank account, n=6,933, weighted. 1 The option of online banking was only given to people who had previously stated that they had access to the internet (n=6,645).

or quite often used the internet to find information. This percentage is considerably higher for the total German population at 69.1%.

Literacy and political practices

Many political practices require literacy skills in order to obtain comprehensive information about political issues or to express political opinions in writing. However, to date, political practices have only played a secondary role in skills studies. The link between literacy and political participation has therefore not been explored sufficiently. By capturing information about political practices in LEO 2018, it is now possible to examine the areas where adults with low literacy skills are excluded from participating in political life in greater detail.

Finding information about political events: Clear differences can be seen regarding the percentage of people who read the newspaper (in paper form or online), with only 23.6% of adults with low literacy skills stating that they read the newspaper on a daily basis compared with 41.9% of the total population. Differences are less pronounced when looking at the consumption of television and online news programmes. This non-text-related practice is carried out on a daily basis by 61.7% of participants with low literacy skills and 62.3% of the total population.

However, other non-text-related practices reveal greater differences. Only 34.6% of adults with low literacy skills (total population: 55.4%) discuss current political news with friends or family once a week or more. Likewise, involvement in voluntary work is also lower. As a percentage of the total population, 19.0% of participants stated that they did voluntary work at least once a month, compared with 7.1% of participants with low literacy skills.

Tab. 19: Engagement in political practices. Percentages of people sorted by Alpha Level and the national average.

	Alpha 1–3	Alpha 4	Above Alpha 4	Total population
Read a newspaper every day (print or online)	23.6%	38.7%	46.1%	41.9%
Watch the news every day (on TV or online)	61.7%	65.3%	61.4%	62.3%
Discuss current political news with friends or family at least once a week	34.6%	50.2%	60.7%	55.4%

Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64), n=7,192, weighted.

Voting practices: Participation in elections not only depends on voters being able to develop informed political opinions, but also on them being able to read and correctly fill out a ballot paper. Only 62.2% of German citizens with low literacy skills indicated that they always or usually exercised their right to vote. This percentage is much higher for the overall German population, reported at 87.3%. It can thus be seen that adults with low literacy skills make less frequent use of their right to vote.

Literacy and health practices

Various studies have revealed large deficits in the health literacy skills of the German population. Recent findings have confirmed a link between health literacy and general literacy skills (Schaeffer, Vogt, Berens & Hurrelmann, 2016). The data from this study means it is now possible to take a closer look at this and other correlations between low literacy skills and the ability to engage with health information and services. The following section highlights some of these practices.

Pharmaceutical information leaflets: Taking medication is an important aspect of preventive health care and disease management. Pharmaceutical packaging can represent an important source of information about correct dosages, particularly when taking new medications. Even if pharmaceutical information leaflets tend to include complex information, obtaining specific information about drug dosages constitutes a relatively straightforward task.

Nevertheless, clear differences can be seen in the responses to the question of whether or not participants check their medication packaging when taking a new type of medicine to find out when and how often they need to take it. While 68.7% of the total population stated that they did this often or quite often, only 55.8% of people with low literacy said that they frequently or quite frequently checked the packaging leaflet to find out this information. However, it is not possible to make any assertions about the language in which the leaflet is read.

Tab. 20: Frequent referral to pharmaceutical packaging to check dosage information when taking new medication ("Often" or "Quite often). Percentages of people sorted by Alpha Level and the national average.

	Alpha 1–3	Alpha 4	Above Alpha 4	Total population
Frequently check dosage instructions in pharmaceutical packaging	55.8%	63.6%	72.6%	68.7%

Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64), n=7,192, weighted.

Health-related paperwork: Filling out health-related paperwork represents another text-based element in the context of disease prevention and health care. 70.7% of the total population stated that they had recently been confronted with forms and paperwork, e.g. when receiving medical care, at hospital, in care facilities or for their health insurance provider. Among people with low literacy, this percentage share was 61.7%. In total, of all the participants who stated that they filled out health-related paperwork, 85.0% said that they completed the forms themselves. Only 58.6% of people with low literacy who had been confronted with such forms said that they dealt with them without any additional support. Again, it is not possible to make any assertions about the language in which the health-related paperwork was filled out.

Tab. 21: Completion of health-related paperwork by Alpha Level.

Percentage of people within each Alpha Level who stated that they filled out health-related paperwork…	Alpha 1–3	Alpha 4	Above Alpha 4	Total population
… by themselves	58.6%	80.4%	90.2%	85.0%
… with some help sometimes	27.6%	15.7%	8.2%	11.7%
… always with help	13.2%	3.2%	1.1%	2.8%
Not specified	0.6%	0.7%	0.5%	0.5%
Total	100.0%	100.0%	100.0%	100.0%

Source: Universität Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64) who stated that they had recently needed to fill out health-related paperwork, n=5,217, weighted.

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11. Literacy level I and below versus literacy level IV and above

International results regarding participation in adult education[1]

Anke Grotlüschen

1. Adult education and training on literacy level one and below

Adult eduction and training provide opportunities to develop or maintain cognitive skills needed both at work and in everday life. Knowledge about the kind of training used by those performing on the PIAAC literacy scale on Level I and below is relevant for policy makers and practitioners who want to tailor their supply structures towards their needs. Following the publication of the results of largescale assessments, several countries realized that the share of the population on Level I and below was much higher than thought. Many launched programs or strategies to improve their populations' skill levels. There is growing concern that those who were left behind in initial schooling and vocational education participate less than average in adult education as well. Some countries set out benchmarks[2] for participation rates with regard to formal and non-formal adult education and training. All findings in this paper, which are not quoted from other publications, have been computed in a common publication project with the OECD Paris under the lead of William Thorn, published as Education Working Paper 131 (Grotlüschen et al. 2016). Analyses were mostly made with the STATA software and the PIAAC repest module, covering the complete dataset. This paper mostly relies on results that have not been published in the common report. The report focuses Level I and below because this cut-off is the main reference in Europe (EU High Level Group of Experts on Lit-

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1 First published at Zeitschrift für Weiterbildungsforschung: Grotlüschen, A. (2016): Literacy level I and below versus literacy level IV and above. International results regarding participation in adult education, *Zeitschrift für Weiterbildungsforschung*. DOI: 10.1007/s40955-016-0068-7, journal homepage: https://www.springer.com/journal/40955, link to this article: https://doi.org/10.1007/s40955-016-0068-7. Reprinted with the kind permission of Springer Nature.

2 The German government wants 50% of the population to participate in adult education and training and wants the low educated to reach participation rates of some 30%. The reference survey is the Adult Education Survey, carried out every three to five years.

eracy 2012). Adult education and training is defined according to the Classificaton of Learning Activities (European Commission and Eurostat 2006).[3]

The focus in this article lies on the subpopulations on PIAAC literacy or numeracy *Level I and below* and their relation to adult education and training, to informal learning at work and learning strategies. The literacy Level I and below subpopulation is 15.5% of the adult population (international average). Roughly a third of the low literate do participate in adult education, which is seen as unsatisfactory in several countries. To improve this situation, the research questions are:

- Do formal or non-formal formats attract larger shares of the low literate subgroup?
- Which formats are interesting for the subgroup, e. g. workshops, individual lessons or e-learning?
- How does the subpopulation work and which kinds of workplace support training activities?
- What is the role of informal learning at work?
- What are the reasons for participation and non-participation?
- Is there more demand than provision or vice versa? Is training needed, are jobs challenging?
- Do Level I and below subpopulations use learning strategies? Is there a need to improve these?

Three international adult education surveys, which are the *European Adult Education Survey* (AES), the EU *Labor Force Survey* (EU LFS) and the *Continuing Vocational Training Survey* (CVTS) regularly point to socio-demographic differences including initial education and clearly indicate that adult education depends on employment (Kaufmann and Widany 2013). Most of the variables' impact decreases if employment is controlled. Raw figures indicate that differences seem to decrease in order of their appearance to public awareness. Gender differences have lessened and partly vanished, age differences are decreasing, migration differences haven't decreased so far but may do so soon. Class differences – defined by formal education, employment and income – have not decreased.[4]

Several national literacy surveys focus literacy and numeracy Level I according to their own definitions and methodology. The French case shows that literacy rises while numeracy skills decline in the population (Jonas 2012). The *English Skills for*

3 Literacy-related nonrespondents have not been excluded. The international averages include all participating countries. Calculations have been carried out with the Stata PIAAC Repest Module (Francois Keslair, OECD) which includes weights and plausible values.

4 Multivariate analyses with data of the AES show that gender differences are not significant once employment is controlled for, age differences remain significant for the 50+ and migration effects remain significant for the youngest cohort of migrants aged 18 to below 30 (Kuper et al. 2013).

Life surveys in 2003 and 2011 also shifted the awareness from literacy towards numeracy (DfES 2003; BIS *Department for Business Innovation and Skills* 2011).

The German survey LEO integrated reading and writing and pointed at the problem that most Level I difficulties consist in writing, not in reading (Grotlüschen and Riekmann 2012). International literacy research claims that the Level I and below subpopulation is on average neither unemployed nor "foreign-born", as a major European consortium points out in their report (EU High Level Group of Experts on Literacy 2012).

PIAAC shows differences between subpopulations of 24 countries. As the OECD Skills Outlook reports, the likelihood of participating in adult education and training (OECD 2013, p. 209) varies according to Level of literacy proficiency.

2. Adult education and training – general results

Participation rates in adult education and training do not necessarily translate into outcomes; however, they are a good indicator for lifelong learning activities in a country and have a long research tradition. According to PIAAC, the overall participation rates with regard to formal and non-formal adult education and training differ substantially. In some countries, over 70% of the population participate regularly in lifelong learning (OECD 2013). Across all countries, it is the high skilled population that participate more in formal and non-formal adult education.

With a focus on the low-skilled population only, the average is 31.3%; the highest participation rates reach nearly 50% of the subpopulation in Norway, some 44% in Denmark and more than 42% in Sweden. The lowest participation rates are found in Poland, the Slovak Republic and Italy. The large range of the data – from 14 to 49% – shows that countries can learn from well performing entities.

The reason for varying participation is not only to be seen in educational policies. Participation rates correlate with employment (see above). The countries under consideration have very different labor markets. The unemployment rates in the three countries with the highest overall participation rates are all below 10% of the population (Norway: 3.2%, Sweden 8.0%, Denmark 7.5%; cf. Rammstedt 2013, p. 211).

The German survey on the low-skilled population (*Level-One Survey LEO*, Grotlüschen and Riekmann 2012) shows comparable results regarding the participation rates (LEO: 28% of the low-skilled population participate in non-formal adult education and training). From LEO, it is known that the majority of courses focus on forklift or truck driving licences, work security issues, welding licences or – for immigrants – German language courses (Bilger 2012). All these areas are subject to regulation and law and the attendees of these courses are usually obliged to participate.

2.1 Selectivity and efficacy

The question of whether adult education and training is efficient or not is relevant for funding and provision strategies. When access to training is non-selective, it is likely that progress will be slower and show less impact than when access is selective and thus allows only the better performers among a subpopulation (e. g. the unemployed) to enter the learning group.

When funders expect training providers to demonstrate the effects of training, providers tend to select participants more carefully and prefer to train those that have greater chances of performing well. This so-called "creaming effect" is quite well known and often criticized by practitioners. In this type of situation, all parties, the funders, the participants and the suppliers face something of a dilemma. Funding strategies, for example, may emphasize both efficacy and non-selectivity, i. e. the targeting of the most in need (i. e. those least likely to succeed). Correlations between *training participation* and *(literacy) performance* based on cross-sectional data always represent the outcome of the combined effects of selection and efficacy.

The raw regression coefficient from literacy onto formal and non-formal training is 26.2 points (international average). If socio-demographic and educational variables[5] are controlled for, the regression coefficients decrease substantially from 26.2 points on the PIAAC scale to 6.2 points (international average). This indicates that the relation between literacy and training is mostly influenced by education, employment and socio-demographics and that only a small effect remains, representing at the same time the *selectivity* and *efficacy* of adult education according to forms of learning.

2.2 Participation gaps by forms of learning (formal, non-formal, informal)

The forms of adult education show very different participation rates. The gaps between low and high skilled subpopulations also differ with regard to the form of learning. The gap between low-skilled population and high skilled population by forms of learning is:

- Formal Adult Education and Training: Participation rates 9.1% versus 18.4%.
- Non-formal Adult Education and Training: Participation rates 27.1% versus 66.6%.
- Informal Learning at Work (employed only): Proportion of those with highest agreement (top two): 36.0% on Level I and below versus 36.9% on Level IV and above.

5 The values are controlled for age, gender, employment status, education, parents' education, self-reported health status, test language and native language and ICT use at home.

The PIAAC-index "Learning at Work" combines agreements to statements about *keeping up to date* or *learning by doing*. The overall distribution of agreement to the statements was divided into five percentiles so the percentages show the shares of people belonging to the percentiles. Among the low-skilled, 19% belong to highest quintile (which means these 19% agree nearly fully (80 to 100%) with the statements on learning at work). The *top two quintiles* add up to roughly one third of the low-skilled population who most clearly agree with the question on whether they learn at work.

The gaps within formal adult education and non-formal education are large compared to learning at work among the working low-skilled population. This is usually discussed as a highly selective entry into non-formal education. The small gap regarding learning at work is possibly caused by the reduced subpopulation of only those who work. This leads to the conclusion that the selectivity is mostly caused by participation in the labor market.

The international comparison shows that the overall gaps differ between countries (Fig. 1). Both the shares of Level I participants as well as the gaps between high and low literate participants are interesting starting points for further comparative research.

3. Non-formal adult education and training

The overall gaps lie between the low and high skilled populations, not between the countries. Averages show that some 27% of the low-skilled population participates in non-formal education while more than 66% of the high skilled does so. For Numeracy, the shares are 28 and 66% respectively. Evidence shows a strong influence of the workplace for non-formal training enrolment (the influence of the workplace on participation in adult education and training is well known in adult education research and has been repeatedly confirmed [CEDEFOP-European Center for the Development of Vocational Training 2010; Kaufmann et al. 2014; Friebel et al. 2000; Brüning and Kuwan 2002; Kuper et al. 2013]).

3.1 More training hours on level I than on higher levels

According to PIAAC, low performing adults (Level I and below) who participate in non-formal education receive more training hours than high performing adults (Level IV and above) who participate in non-formal education. The training volume shows that the mean for Level I performing adults lies at some 150 hours (international average for literacy performance) while this is 10 hours less on Level IV/5 and another 20 hours lower on Level II and III. The distribution is bimodal. It does not include formal education. An explanation for this could be the long-term course programs provided by job agencies for the Level I population as well as the language programs for migrants recently arrived.

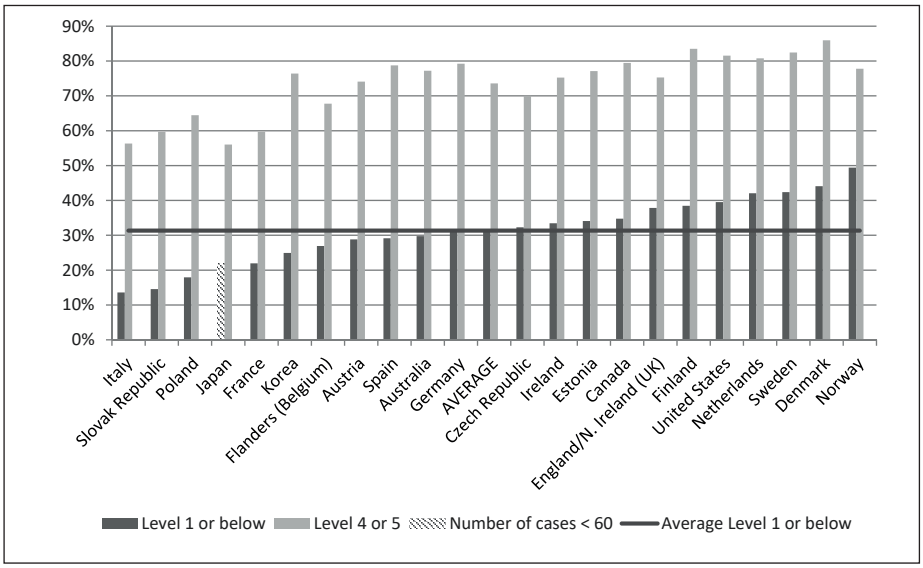


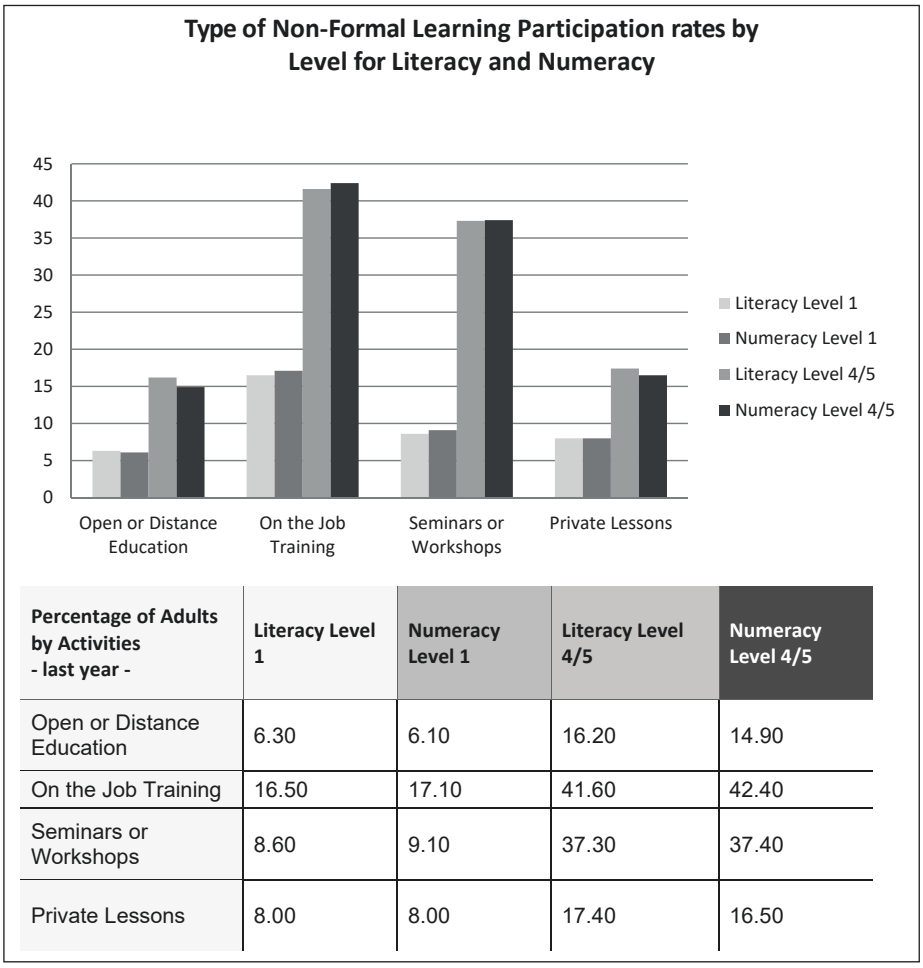
Fig. 1: Participation in formal or non-formal Adult Education and Training in the past 12 months (FNFAET12) by Level 1 or below vs Level 4 or 5 (Int.Av=31,3%) (source: Survey of Adult Skills (2012), international averages)

The distribution by country shows that the peaks are on different Levels. In several northern European countries, the duration is highest on Level I, in England and Northern Ireland it is not significantly different by Level. Other countries like Korea and Spain have peaks on Level IV and above. In Australia, Poland and the US the Levels II or III receive the highest amount of training hours, but this does not necessarily differ significantly from the neighbouring Levels.

3.2 Participation by type of non-formal learning

Non-formal education consists of seminars and workshops, private lessons and open or e-learning formats. The index is made up of these four variables. The gap between the low and high skilled population is quite well known. Supposedly the causality behind the correlation runs in both directions: high performers have fewer problems entering adult education, and adult education helps to maintain or improve their skills.

Being low-skilled in *literacy* or *numeracy* affects the chances of participation in non-formal adult education only slightly. The pattern stays the same. The *types of non-formal adult education* differ widely, with on the job training and seminars or workshops being more attractive and accessible than e-learning or private lessons. This differs across countries and Levels as can be seen in the OECD report (Grotlüschen et al. 2016). The country-specific participation rates by *type of non-formal education* show a large variety in provision and demand for non-formal education.



Percentage of Adults by Activities - last year -	Literacy Level 1	Numeracy Level 1	Literacy Level 4/5	Numeracy Level 4/5
Open or Distance Education	6.30	6.10	16.20	14.90
On the Job Training	16.50	17.10	41.60	42.40
Seminars or Workshops	8.60	9.10	37.30	37.40
Private Lessons	8.00	8.00	17.40	16.50

Fig. 2: Percentages of Participation by Literacy and Numeracy Level and by Type of Non-Formal Education

The post-Soviet countries that recently changed their systems do not show a common pattern (i. e. not offering seminars or focusing on distance learning).

Fig. 2 demonstrates the importance of on the job training and the wide access gap in seminars and workshops. The smaller types of non-formal learning (open and distance learning and private lessons) have higher participation rates in northern countries than elsewhere. *Seminars and workshops* hint at an adult education system with public and commercial training institutions that are accessible to all who fulfil the conditions for the training offer. All countries seem to have this infrastructure for Level IV and above performers. But several countries do not find Level I and below performers in their seminars and workshops.

3.3 Non-formal education by types of employment

As employment seems to be very influential for participation in adult and continuing education, a closer look at the type of employment is provided. The majority of performers at Level I and below do not feel challenged enough in their jobs (international average: 77%, see below), even at their very low literacy skill Level. That indicates monotonous workplaces. On the other hand, the skills available do not seem to match the requirements for all of the workplaces, as roughly a fourth to a third of the Level I and below performers express their need for more training (international average: 28%, see below).

Certain features of jobs are associated with greater chances of participating in non-formal training. Overall, low-skilled individuals working in *skilled occupations*, in the *public sector*, in more *stable employment contracts* and in jobs that have *requirements for tertiary qualifications*, have higher rates of participation in nonformal education and training. In addition, low-skilled workers in jobs that involve *greater flexibility* for the employee have higher rates of training participation.

3.3.1 Quality of employment correlates with participation in adult education

While the impact of employment on formal and non-formal learning is clear, there are differences within the employed sections of the low-skilled population as well. Depending on which qualification a job would require nowadays, the share of participants rises significantly. Blue collar and elementary occupations lead to less further education than white collar jobs and skilled occupations. Job satisfaction and participation also correlate positively and significantly. The causality remains unclear. It may lie in the job itself as a third factor influencing both satisfaction and participation rates as well as in the satisfying effects of adult education.

3.3.2 Less flexible jobs correlate with low adult education participation rates

The workplace itself can be monotonous and dependent on other peoples' decisions, as well as flexible and to a certain extent subject to one's own decisions and influence. Deciding on the sequence of your tasks or the speed and rate of work indicates some influence and independence at the workplace, but monotony is the everyday reality for more than a third of the Level I and below subgroup, compared to some 20% of the overall population. Low flexibility seems to reduce the likelihood of further education as the participation rates decrease from roughly 46 to roughly 36%.

Some 42% of the Level I and below employees have the opportunity to decide what time they start work and when they leave (compared to 53% in the overall population). This kind of individual control over working hours might be necessary to attend courses and seminars and correlates positively with participation.

3.3.3 Security of employment correlates with participation in adult education

In case the working subpopulation of the low-skilled is employed in the public sector, their rates of participation in adult education are significantly higher (55%) than in the private sector (38%). While stable and fixed term contracts do not differ in terms of participation rates (44%), the agencies and temporary employment opportunities offer significantly lower chances for adult education (29%). The decrease of company size (as reported by the interviewees) does not lead to activities with regard to further education among the low-skilled population (participation rate: 44%). Expanding companies offer more opportunities to their staff (52%). Perhaps they face more training needs because of newly employed staff that needs initial inhouse training.

4. The difficulties to get access to training

The share of low-skilled people who expressed an interest in training mostly report that the reasons for not starting are lack of support, being busy with work and family issues and the costliness of the training. Those who did participate state doing their job better as the most relevant reason. On the other hand, being obliged to attend training is a crucial factor for participation as well. This reveals *paradox effects* of jobs as the core reason for training and – at the same time – being busy at work as the core hindering factor.

4.1 Training wanted, but not started

Among the low-skilled population we find between 4 and nearly 30% who wanted training, but did not start. The international average is 17.1%, for the numeracy low-skilled population it is 17.7%. The highest shares with more than one quarter of the numeracy low-skilled population agreeing to the statement (training wanted) are in the USA (28.1), Sweden (25.8), Denmark (25) and Ireland (24.5). This changes slightly if literacy is used for the definition of the subpopulation, with Sweden, USA, Ireland and Spain ranking highest. Within the high skilled population the average is 35.9% (literacy) and 34.2% (numeracy). In nearly all countries, the proportion of those who reported wanting training but not starting ranges from a quarter to nearly half of the high skilled population. The USA has the highest values, with more than 50.5% in both domains (literacy and numeracy).

The large differences between the low-skilled populations' relatively low values and the high skilled populations' values between 20 and 50% show that this is more than a social desirability effect. Activating these sections of the subpopulation would double the figures of adult education participation among the low-skilled population for many countries.

4.2 Reasons for non-participation within the low-skilled population

Work, family and numerous non-specified reasons (other) are reported to be the most hindering factors, followed by financial issues, structural barriers, not meeting the criteria and unforseen circumstances. This is followed by one in five persons facing or anticipating financial problems in connection with adult education and training. Even if sometimes the course is free of charge, people assume it must cost something, because they are already used to having to pay everywhere (cf. Heinemann 2014).

Time constraints are mentioned as a strong barrier. But as we know from qualitative research, this might be an escape category: people tend to report time issues; but the non-reported, hidden reason is that they see no thematic relation between the training and their everyday challenges (Grotlüschen 2003).

Regarding the unspecified reasons (other), this indicates either people cannot tell what kept them from starting or they have reasons which are not covered by the answer options. Early research found that *time, money and lack of connections* was the famous formula for non-participation in the 1960s (Strzelewicz et al. 1966).

From the new century on, fear of being too old or too unprepared are reported according to the theory and research on "social fields" (Barz and Tippelt 2004) or with regard to non-participants and never-participants (Schröder et al. 2004).

Four types of abstinence have been classified (Bolder and Hendrich 2000) and the development of thematic interest has been distinguished into phases (Grotlüschen 2010). Postcolonial and intersectional approaches have also been used to pinpoint migrant women's reasons for learning, suggesting the importance of "citizenship capital" (Heinemann 2014).

4.3 Reasons for participation within the low-skilled population

The international averages[6] show that "doing the job better" and "improving career prospects" is ticked by more than 45% of those low-skilled who participate in adult education. Another 20.9% state they were obliged to participate. The threat of losing the job is not an issue. This might mean that the jobs are secure or that adult education would not change the job situation anyway. Amongst unqualified or low qualified adults the latter idea is common (Grotlüschen and Brauchle 2004; Schiersmann 2006).

4.4 Job requirements: not challenged enough or needing more training

The variables used here are controversially discussed as the measurement of skills mismatch (Perry et al. 2014). But the question in this section is not the mismatch between skills and jobs, the question is whether and how low performers engage in

6 If the distribution is split by country, the categories often have less than 60 cases.

further education. Level I and below performers might find themselves in monotonous workplaces where they are not challenged enough and therefore have neither the opportunity nor the need for informal learning activities at work. Those who do not feel challenged enough are some 77% of the literacy Level I and below population (international average), ranging from nearly 88% in Germany to 63% in Finland, Japan being an outlier with 28%. Being insufficiently challenged and having very low literacy skills allows the conclusion that the workplaces under consideration require rather few skills. Similarily, the underchallenged 86% of the Level IV/V performers will be interpreted as low requirements for highly performing employees.

In case the Level I and below performers enter more qualified jobs and find themselves equipped with fewer skills than required, this should lead to the necessity of training. One would expect that the lower the skills, the higher the need for training would be. Some 28% on Level I and below say they need more training, while this figure increases slowly but steadily up to 36% of the Level IV/V performers.

On Level I and below, 77% feel underchallenged while 28% need training. The latter will either try to get non-formal training or start to improve their skills informally. The following section shows that a quarter up to a third of them reports learning at work every day.

4.5 Learning strategies and adult education

Six items form an indicator called "Learning Strategies". The index is abbreviated as "Readiness to Learn" in the questionnaire. The theoretical discussion is published in the Conceptual Framework underlying the Background Questionnaire (OECD 2011, p. 18), but some of the indicators are not available in the final questionnaire anymore, so the direct link between theoretical idea in 2011 and the published index in 2013 remains unclear. Results should be interpreted carefully.

The overall result shows an international pattern where Asian countries versus post-Soviet and Western countries seem to differ. This may be a cultural pattern underlying the self-reported answers.

Bivariate correlations between learning strategies and participation rates are low (in this case computed via the IDB Analyzer Software and with SPSS). The international averages turn out to be:

- 0.11 for formal adult education (s.e. < 0.00, range from 0.04 in the Czech Republic to 0.19 in Estonia).
- 0.14 for non-formal education (s.e. < 0.00, range from 0.08 in Norway to 0.21 in Estonia).
- 0.21 for informal learning at work (s.e. < 0.00, range from 0.13 in Korea to 0.30 in Austria).

Learning strategies of the Level I and below subpopulation have rather small correlations with their participation in adult education and learning. This is striking and may need further investigation.

The theoretical approach sketched out in the conceptual framework of the background questionnaire would suggest that learning strategies, which form an index based on the theory of metacognition, should be quite influential for learning (OECD 2011). On the other hand, this might differ between *learning outcomes* and *participation rates*.

5. Summary of findings

Adult education and training is on the rise in the long-term view but in all countries it is divided according to competence and qualification. PIAAC confirms the well-known Matthew Effect, but the gaps differ between countries. Countries with high shares in training participation among the low literate subpopulation tend to be the countries with low unemployment rates. The composition of literacy Level I and below also differs substantially as well as countries' supply structures for recently arrived migrants.[7]

Training duration does not necessarily confirm the Matthew Effect. The international average shows that Level I and below performers receive more training hours if they enter adult education. This differs considerably across countries. PIAAC allows study of the relation between proficiency and adult education by controlling the other predictors. The causality is two-directional: the more literate parts of the population receive easier access to adult education and training (selectivity) while those who attend adult education and training preserve and improve their literacy proficiency (efficacy). Findings indicate that countries perform rather differently in this respect. The types of supply – formal, non-formal, informal – also show quite different results in this combination of selectivity and efficacy. Non- formal learning has the strongest positive relation with literacy, while informal learning is negatively associated with literacy. That means literacy Level I and below performers agree that the learning required for their job takes place at work. Regarding the forms of provision, the results show very little formal adult education and training, the average rate being below 10% (range 3 to 18%) compared to more than 18% within Level IV and above performers and more than 30% Level I participation rate in non-formal learning. It could be worth communicating to the target group which pathways are open after initial formal education, where they lead to and what kind of support structures exist.

Non-formal learning is easier to access for low literate adults. The type of non-formal education matters (e-learning and private lesson sversus on the job training or seminars). Job quality, flexibility and security seem to be relevant as well.

7 See David Mallows' findings in Grotlüschen et al. (2016).

- The quality of employment, sketched out with the variables *qualification requirement, position* and s*atisfaction*, correlates slightly, but significantly positive with non-formal learning opportunities. Monotonous jobs can lead to a decrease in skills.[8]
- The flexibility of work, understood as the possibility to make decisions on the *sequence of tasks,* about *how to do your work*, about *speed* and how to organize *working hours* within a day, correlates differently with participation rates. Here high and medium flexibility correlates most with the participation in non-formal leraning.
- A third subsection of indicators were selected to hint at the feeling of security of employment with regard to *contract stability*, the *increase or decrease of the company* as well as the *public or private sector* of employment: Higher stability seems to improve participation rates even if only the employed subpopulation of Level I and below is taken into consideration.

These three subsections were conducted with the employed among the literacy Level I and below. The differences between qualified and unquailified positions, flexible and monotonous jobs and more or less feeling of job security are significant, but remain small. On average, 66% of the low literate adults are employed, this is the majority, but still below average.[9]

Practitioners from companies and training institutions also state that the target groups under consideration do not necessarily show a large demand for training, but PIAAC data show that it could be possible to engage more low performers in learning.

- On average, 17% of the literacy Level I and below report they wanted training in the past 12 months but did not start. This differs substantially by country (4 to 28%). The rate is much lower than among highly literate adults.
- Reasons for non-participation are lack of time because of family and job commitments as well as the cost. "Other" remains a large category.
- Reasons for participation are mostly job related (do my job better, job promotion). Upskilling to prevent job loss does not seem to be relevant for this population.

Overall, workplace requirements drive people to upskill and at the same time being busy at the workplace prevents people from finding the time to do this. This paradox holds throughout domains and Levels.

The data represent two characteristics of low literate meeting high or low expectations at work. Monotonous workplaces and never having to learn at work

8 See Stephen Reder's findings in Grotlüschen et al. (2016).

9 See David Mallows's findings for more details about employment and family status within the subpopulations and compared to the average adult populations in Grotlüschen et al. (2016).

correspond for a large part of the target group. Some 77% of the Level I and below subpopulation feels underchallenged at work (compared to 86% of the Level IV and above). This reflects monotonous and unqualified workplaces.

On the other hand those low literate groups who find themselves in qualified jobs agree they need training and this is confirmed by their activity in learning at work. Some 28% agrees to need further training. Those in need of training or upskilling receive it at work.

Active learning strategies are widespread even amongst the low-skilled. The majority of the low-skilled population has to be considered at least partly as capable of and interested in learning or using learning strategies. But there is a minority of low literate and numerate adults who even do not use the most widespread techniques, e. g. 18.5% of the low-skilled population very rarely search for additional information. Learning strategies have significant, but low bivariate correlation effect sizes with learning at work, non-formal adult education and formal adult education, indicating that those ready to learn do not necessarily end up in doing so.

6. Conclusions and recommendations

As a whole, *stereotypes* about literacy or numeracy Level I and below parts of the populations contain assumptions about how willing and capable this group is with regard to further adult education and training. The answer is the same than in the other chapters of the OECD Thematic Report "Adults with Low Proficiency" (Grotlüschen et al. 2016), even if the picture is more difficult to see. The overall average participation rate is 46%, the average literacy Level I and below participation rate is at 31.3%. The assumption that none of the affected would continue to learn is therefore false. Roughly one third does so. That is much more than those who arrive in literacy provision.

Provision is often focused around the *domain* of reading and writing. But participation in adult education within this group will often focus how to handle machines, vehicles or techniques, care for safety regulations, or how to use most recent healthcare approaches. Language and literacy is not the reason why people attend these seminars and national strategies should focus on overall participation in adult education, not on literacy provision only.

In case lifelong learning is accepted as an appropriate strategy for adopting changes in technology and globalization, countries often raise awareness by *benchmarking* participation rates they want to reach. By benchmarking overall participation rates one could also benchmark for the low literate or numerate, for example to reach at least the international average in participation. If more than 30% of the subgroup participates in adult learning and another 17% wanted but didn't start, the

range between those two figures is the area where benchmarks could be placed. It could be interesting to collect benchmarks throughout the participating countries.[10]

Formal, non-formal learning and learning strategies are – on average – positively associated with *proficiency* with small positive effect sizes, indicating that the more proficient enter adult education and preserve or improve their skills. The question whether adult education and training provision can influence proficiency has to be addressed with longitudinal data. But from PIAAC data it is already clear that the contemporary approaches' impact does not exceed a few points on the PIAAC scale.

Countries have to look carefully at their training provision and continue to improve the access to formal and non-formal training as well as the quality. The latter also raises the question of professional adult education trainers and their payment.

Informal learning at work, which is less selective than other forms, could be used as a starting point for more strategic pathways for upskilling, new combinations of informal access and pathways to more formal, broadened, long-term and certified further education seem to take the best out of both approaches: access via informal learning, efficacy via non-formal and formal learning.

General information about lifelong learning at the end of *compulsory school* could be of vital importance as this is the last stage where "those out of reach" can be reached systematically. This might also mean that either teacher education has to include knowledge about lifelong learning opportunities or guidance institutions have to be available that can be visited in the last school year.

Employment requires and fosters non-formal learning and it is a barrier because of the lack of time. The findings point at a large demand of training that is hindered by time constraints and costliness. Overall, workplace requirements drive people to upskill and at the same time being busy at the workplace prevents people from finding the time to upskill as well. This *paradox* holds throughout domains and levels.

In case work requires learning, the Level I and below group seems to match it, perhaps because the skills available are not enough to meet job demands. Still the amount of non-learning employees on literacy Level I and below seems remarkable.

This may be caused by jobs with very low requirements and therefore the risk for the workforce to lose skills by not using them. *Exposure* to demanding tasks is a relevant motivator for both informal and non-formal learning.

Last, but not least, *learning strategies* show that literacy Level I and below groups do have a considerable set of strategies to get by, but the extent of use is not as large as among the more proficient adults and they do not lead to course participation. In case learning strategies are agreed as an important part of lifelong learning activity,

10 Lisbon program benchmark (12% participation rate in the last 4 weeks according to Lifelong Learning ad hoc module), the High Level Group of Literacy Experts (maximum of 15% share of the population performing on Level I and below) or benchmarks based on the AES (German average aim: 50% participation rate in the last 12 months and 30% average within the low educated).

the policy makers and practitioners could take into consideration to explicitly train these strategies and raise awareness for them.

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