

# Practices and Competencies – Evidence from an Adult Literacy Survey in Germany

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## Abstract

Basic competencies like reading and writing skills are seen as the necessary fundament for independent and far-reaching social participation. The proportions of adults who only have low reading and writing skills differ from country to country. However, even in highly developed countries there are larger proportions of adults who perform low in literacy assessments. The second German literacy survey “LEO 2018” confirms this observation. About 12.1% of the German speaking adult population (aged 18–64) has remarkable difficulties in reading and writing. In comparison to the first round of the survey which was carried out in 2010 the proportion of low literate adults in Germany is declining. This contribution refers to results of the current survey, offers possible explanations for the trend between 2010 and 2018, describes the composition of the low-literate subpopulation and discusses the main predictors for low literacy. Unlike most former surveys, the LEO survey 2018 also gathered information about literacy related practices in different fields of life (finance, digital, health, and politics). Adults who have difficulties with reading and writing on average perform most literacy related practices less often.

Keywords: Adult Literacy, Large Scale Assessment, Literacy Practices, Adult Basic Education

## 1 Introduction

Reading and writing are basic competencies which are seen as the fundament for independent and far-reaching social participation. Since the 1990s it is well-known that even in highly developed countries there are large proportions of adults who have serious difficulties in reading and writing. Educational policy reacted differently to these results. For instance, as a reaction to the results of the “International Adult Literacy Survey (IALS)” (OECD & Statistics Canada 2000), England launched the “Skills for Life strategy” (BIS 2004), which was announced in 2001 by former Prime Minister Tony Blair. In 2013 the fight against illiteracy was proclaimed a “grande cause nationale” (national priority) in France (Jeantheau 2015, p. 177). In 2016 the “National Decade for Alphabetization and Basic Education” (Nationale Dekade für Alphabeti-

sierung und Grundbildung) was launched in Germany by the Federal Ministry for Education and Research (BMBF) and the federal states (BMBF & KMK 2016). A major research project in the National Decade is the second Level One Survey “LEO 2018 – Living with low literacy”. It is a follow up survey on the “leo. – Level-One Study” from 2010 (Grotlüschen & Riekmann 2011), but extends its scope beyond measuring reading and writing skills to include a broader understanding of literacy. Both surveys are cross-sectional studies. The literacy proficiency scores in 2010 and 2018 are linked and therefore comparable.

LEO 2018 combines an assessment module with an extensive questionnaire regarding literacy-related *practices* and domain-specific *basic competencies*. The objective is not only to examine the literacy skills of adults in Germany, but also to look into the connection between (low) literacy skills and the frequency of performing certain literacy-related practices (e.g. writing in social networks or reading health-related documents) as well as self-reported basic competencies in four domains. LEO 2018 aims to widen the focus from an assessment of reading and writing skills to a broader understanding of literacy as (social) practices; following the works of Street (e.g. 1995) and Gee (e.g. 1991)

In this article, by presenting central results of the survey, we want to answer two questions:

1. What has changed since 2010 when looking at the total numbers and the composition of the group of low-literate adults as well as the predictors for low literacy skills?
2. Are low-literate adults less likely to perform literacy related practices?

## 2 Literacy in and outside of large-scale assessments

At the turn of the millennium, the “Programme for International Student Assessment (PISA)” raised the awareness of reading and writing skills. The survey had an enormous influence on educational policy in the years following the survey (Sjøberg 2018). However, literacy assessment on a large scale did not start with PISA. It was in 1994 when the “International Adult Literacy Survey (IALS)” compared the reading skills of adults in eight countries in the first round (OECD & Statistics Canada 2000). The effects of IALS on the educational policy in the participating countries differed. Reports on IALS and its consequences were published for England and Wales (Brooks 2011), Scotland (St. Clair 2011), the USA (Pugsley 2011), Canada (Rubenson 2011), Australia (Mendelovits 2011) and Norway (Gabrielsen 2011). The history of the “rise of international large-scale assessments” (Addey, Sellar, Steiner-Khamsi, Lingard, & Verger 2017) continued with the “Adult Literacy and Lifeskills Survey” (ALL) (OECD & Statistics Canada, 2005) and more recently with the “Programme for the Assessment of Adult Competencies (PIAAC)” (OECD 2013). Grek (2010) elaborates the role of international organizations in this development – especially the role of the Organization for Economic Cooperation and Development (OCED). Trends between

these surveys have been reported by Desjardins (2017). Comparing IALS and PIAAC, he states that literacy proficiency at the population level has stagnated or declined slightly in most countries.

Addey et al. (2017) interpret the development of large-scale assessments as a broader shift in assessment culture since the 1990s. They point to the importance of data for educational policy to compare performance and conclude:

“International large-scale assessments have become an important element of global governance in education by joining up the measurement of educational performance and reinforcing the view that comparison of this performance is important for economic and education policy making.” (Addey et al. 2017, p. 435)

Hamilton, Maddox and Addey (2015) view the growing dominance of large-scale assessments (LSA) or international large-scale assessments (ILSA) critically. They question the translation of the complexities of reading and writing into quantitative descriptions. Additional concern about PIAAC regards the very strong focus on economic aspects and employability (Evans 2015; Rubenson 2019, p. 304).

Meanwhile, in three rounds of assessments, PIAAC has reached 39 countries. The Sustainable Development Goals defined by UNESCO create the need for monitoring of learning progress all over the world. The possibilities for monitoring are discussed in the context of the “Global Alliance for Monitoring Learning (GAML)” (Hanemann 2019, p. 255, footnote). A further global expansion of ILSAs is therefore on the agenda. An expansion is also discussed in the context of PISA, called PISA for Development (OECD 2016).

PIAAC reported that in the 24 countries that were analyzed in the first round of the survey an average of 15.5% of the adults had low literacy skills; indicated by PIAAC levels 1 or below. For Germany, PIAAC reported a proportion of 17.5%, significantly higher than the OECD average (OECD, 2013, p. 63). Besides the international surveys, a number of national surveys produced results on adult basic competencies – for example the “English Skills for Life survey” (BIS 2011; Williams 2003) and the French IVQ (ANLCI 2005, 2012; Jeantheau 2007, 2012). First results on low-literate adults in Germany were published in 2011 (Grotlüschen & Riekmann 2011). A second round of the LEO survey was conducted in 2018. First results were published in May 2019 (Grotlüschen, Buddeberg, Dutz, Heilmann & Stammer 2019). The results of this survey – LEO 2018 – are in the center of this paper.

While there are only few longitudinal surveys on adult skills (e.g. Germany: “National Educational Panel Survey (NEPS)”, Blossfeld, Roßbach, & Maurice 2011 or USA: “Longitudinal Study of Adult Learning (LSAL)”, Reder 2012) it is possible to report the reading and writing skills of adults over time by comparing the results of cross-sectional surveys over time (for France cf. Jeantheau 2015). As the German dataset of IALS had technical weaknesses and Germany did not participate in ALL, until now, there was no trend to be reported regarding low literacy over time.

The current dominance of large-scale assessment surveys might obscure the fact that literacy research is not just assessment. In fact, literacy research is diverse

and contested. A wide field of research follows mainly qualitative approaches. A lot of this work can be associated with the New Literacy Studies (NLS). Authors from the NLS argue that literacy is not a unique set of cognitive skills, which can be defined universally or measured in decontextualized tests. They define literacy as diverse social practices. Brian Street formulated the opposition between an autonomous model (measurable skill) and an ideological model (social practice) of literacy (e.g. 1995, 2003). The social practices approach implies that literacy differs between different social contexts, between regions, and between individuals. Practices can be observed in qualitative research approaches.

By comparison, in quantitative research there is usually only little concern about practices. PIAAC implemented questions about reading and writing practices (also mathematical and computer related practices). In PIAAC these practices are called “skills use” (Reder 2017). Based on PIAAC data a correlation between skills and practices has been reported (OECD 2013, p. 214). The LSAL (Reder 2012) also reports this correlation. It seems that higher skill proficiencies go hand in hand with higher frequencies of skill use.

### 3 Conceptual basis and survey design

Large-scale surveys carry a strong impact on definitions and understandings about literacy. In the context of the LEO surveys a system of so-called Alpha Levels is used to indicate the proficiency levels of reading and writing skills. Thus, low literacy means that a person masters literacy to the degree of single letters (Alpha Level 1), individual words (Alpha Level 2) or short sentences (Alpha Level 3) but fails when attempting to read or write continuing text – even short texts (Grotlüschen, Riekmann, & Buddeberg 2014, pp. 57–58). LEO 2018 uses the term “low literacy” or “low-literate adults” – always with regard to the dominant way of reading and writing – dominant literacy – in Germany. In LEO 2010, the term “functional illiteracy” had been used. This term was the central term in the discussion in Germany since the 1970s. It has been criticized for being stigmatizing and unsuitable for working in adult education (Steuten 2014) and is therefore no longer used by LEO 2018.

Taking into account practices, the survey widened the focus from a narrow understanding of literacy (as reading and writing skills) to a wider approach regarding literacy as social practice in certain domains. LEO 2018 chose several areas of life regarded crucial for social participation (Grotlüschen et al. 2019). These areas (digital, political, health-related, financial) are also at the focus of the current German campaign on literacy and basic skills (National Decade for Alphabetization and Basic Education). For these fields a number of newly developed questions on practices was implemented into the questionnaire. This adaption of practices into a large-scale quantitative survey follows the objective to learn more about vulnerability and social exclusion that may accompany low literacy. Low reading and writing skills in general go along with less frequent use of these skills (without claiming for unidirectional

causality). But is this general observation true for specific practices in different areas of daily life? As published before, existing deficit-oriented stereotypes about low skilled adults can be put into question using large scale data (Grotlüschen, Riekmann, & Buddeberg 2015).

The data base for LEO 2018 is a representative sample of 7,192 German speaking adults aged between 18 and 64 years. The sample includes persons living in private households and speaking German well enough to follow the approximately 60-minute interview (including the assessment). The base sample includes 6,681 persons and is supplemented by an additional sample of 511 persons with low levels of formal education.

The sample is weighted using iterative proportional fitting, taking into account demographic and socio-economic indicators (e.g. federal state, gender, age, employment status, formal education) to correct biases in the sample. This allows us to make statements about the population defined above. Data collection, data preparation and weighting were implemented by Kantar Public in Munich.

The interviews were carried out as a household survey in the form of a computer-assisted personal interview (CAPI). The first module of the survey consists of an extensive questionnaire about various aspects of the respondent's life situation. All questions of the questionnaire are read out loud to the interviewees, all answers are written down by the interviewers.

The second module is a paper-based assessment with items to test for reading and writing skills. These items are to be solved and written down by the respondents without any assistance by the interviewers. The items are calibrated using Item Response Theory (IRT) and linked between LEO 2010 and 2018. A latent regression model was used for population modelling and nearly all variables measured by the questionnaire served as covariates. Ten plausible values were drawn to obtain proficiency scores.

## 4 Findings

This section first presents general findings about the number of low-literate adults and about the development since 2010. The subsequent section presents results regarding the composition of the low-literate subpopulation followed by multivariate results regarding the predictors for low literacy. Finally, results regarding literacy related practices are presented.

### 4.1 Literacy skills results in Germany 2018 and 2010

About 12.1% of German-speaking adults aged between 18 and 64 years have low reading and writing skills (indicated by Alpha Levels 1, 2 and 3). This relates to a number of 6.2 million adults (see table 1). The majority of these 6.2 million adults achieves Alpha Level 3.

**Table 1:** German-speaking adult population (aged 18–64) classified by Alpha Level (2018) (Source: Hamburg University, 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)

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

Compared to 2010 the proportion of low-literacy adults declined from 7.5 million in 2010 to 6.2 million. This represents a decrease of 2.4 percentage points from 14.5 % in 2010 to 12.1 % in 2018 (see table 2). This change is statistically significant (t-test,  $p < 0.01$ ). No significant changes occur among alpha-levels 1 and 2, which represent a small number of cases. Among the higher alpha-levels the changes are statistically significant: A significant decline occurred regarding alpha-levels 3 and 4 while a significant increase occurred regarding skills above alpha-level 4. A similar development was reported for the two Skills for Life surveys in England (BIS 2011, p. 2).

**Table 2:** German-speaking adult population (aged 18–64) classified by Alpha Level, comparing 2010 and 2018 (Source: Hamburg University, 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)

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 %	100 %	

This decline cannot be traced back to effects of educational policy regarding adult education, or more precisely the effects of adult education policy are very limited. It appears as an effect of a changing social composition. An increased number of adults is employed compared to 2010. The average years of schooling among adults aged between 18 and 64 have constantly risen in the last decades. With the eldest age

group having left the sample (who is now between 65 and 73 years) this becomes visible in the sample (reported similar for France cf. Jeantheau 2015, p. 181). A larger share of adults reached higher formal school qualifications.

An entropy balancing procedure (Hainmueller 2011, p. 30) was carried out in order to compare the two samples from 2010 and 2018. This statistical method is used to weight the sample of one survey against a second survey. It can then be shown which change would have occurred if the sample composition of 2018 would have applied to 2010 as well. Specifically, the population composition regarding employment, educational attainment, first language, and age cohort were included in the modelling. The entropy balancing shows that there would not have been a remarkable decline between LEO 2010 and 2018 if these compositional changes had not occurred.

## 4.2 Composition of the low-literate subpopulation

The composition of the subpopulation of 6.2 million adults with low literacy skills did not change fundamentally compared with 2010. The following section displays this composition regarding gender, age group, first language, formal education, and employment status. The tables therefore do not refer to the entire sample ( $n = 7,192$ ) but to the low-literate subsample ( $n = 867$  in the weighted dataset).

*Gender:* Among the 6.2 million low-literate adults are more men than women. About 58.4% are men while 41.7% of the low-literate population are women. The proportions differ only slightly (and not significantly) from the values in 2010.

*Age groups:* About 19.5% of the low-literate adults are between 18 and 29 years old. The middle birth cohorts (aged 30–39) include 23.7% of the low-literate adults while adults older than 50 years make up a proportion of 56.9% of low-literate adults. These results correspond to results from PIAAC (OECD, 2013).

*First language<sup>1</sup>:* Only persons participated in the interviews who have mastered the German language well enough that they could follow a survey in the German language. Therefore, immigrants without sufficient command of German have not been interviewed. All results relate to reading and writing skills in German. About 52.6% (3.3 million) of the low-literate adults grew up in German speaking family environments. Around 47.4% (2.9 million) initially learned another language. The change compared to 2010 is not statistically significant. Research results indicate that literacy skills in one language can serve as an important facilitator for learning to read and write other languages (Dünkel, Heimler, Brandt, & Gogolin 2018). Participants in LEO 2018 were asked to assess their (written) language skills in languages they understand or speak. About 77.8% of those with another language of origin who struggle with reading and writing in German state that they read and write even complex texts in this language.

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1 First language or the language of origin refers to languages acquired by people during their childhood. This refers to languages that are used daily in the family and in the environment of a child and which he or she acquires through this language contact. It may be one language, but it may also be two or more languages. The concept of origin does not refer to a geographical origin, but to a family origin.

*Educational qualifications:* About three quarters of the low-literate adults have reached some form of school-leaving qualification. Most of these (40.6 %) reached school-leaving certificates on the level of lower secondary school. However, nearly one quarter of low-literate adults (22.3 %) do not have any form of school-leaving qualification.

The survey captured additional information about participation in adult education. International surveys like the Adult Education Survey (AES) show that the lower the formal qualification, the less likely is participation in adult education (Bilger & Strauß, 2017, p. 46). In line with this state of research the LEO survey shows that adults with low literacy skills participate less than the national average. 28.1 % of adults with low literacy skills took part in any type of continuing education activity in the last twelve months before the survey. Participation rates have stagnated since 2010. The participation rate of the adult population as a whole is about 46.9 % in 2018. German adult education centers (Volkshochschulen) report a rising but still very low participation in classes regarding reading and writing and other basic skills (Reichart, Huntemann & Lux 2019, p. 47). According to the LEO survey participation in adult education classes which explicitly focus on adult *basic education* and *literacy* is very low. Only 0.7 % of low-literate adults participate in this type of classes.

*Employment status:* Unemployment is higher among low-literate adults than in the overall population. 12.9 % of low-literate adults are unemployed, a decrease compared with 2010 (16.7 %). The majority of low-literate adults (62.3 %) is employed. The share increased from 56.9 % in 2010.

Low-literate adults state that they are less satisfied with their overall situation at work. On a scale reaching from 0 (very dissatisfied) to 10 (very satisfied), low-literate adults rate at 6.7 while the entire employed population would rate at 7.6 (statistically significant difference,  $p < 0.01$ ). Low-literate adults as well report concerns about job security. 23.0 % of adults with low reading and writing skills report that they are worried about possibly losing their jobs. This proportion is twice as high as among the total working population (11.8 %).

### 4.3 Predictors for low literacy

Based on the dataset of the first survey, a multivariate regression analysis showed that low formal education (or school dropout), a first language different from German, being unemployed and the educational background in the family show strong effects on the level of literacy. These effects however do not necessarily imply causalities. Compared to these factors, gender and age are of minor relevance (Grotlüschen, Riekmann & Buddeberg 2012, pp. 40–42). The selection of the independent variables relates to prior research which especially indicates the role of formal education and employment (Bynner & Parsons 1997, pp. 36–40), parent's education (Bynner & Parsons 1998, p. 8) and first language (OECD 2013, p. 125). Results from the new survey confirm these prior findings (see table 3).



**Table 3:** Regression results with literacy level as dependent variable, 2010 and 2018 (Source: University of Hamburg, LEO 2018 – living with low literacy; leo. – Level One Study 2010 (Grotlüschen, Riekman & Buddeberg, 2012). Base: German-speaking adults (aged 18–64), n = 7,192 (2018), n = 8,436 (2010), weighted. Reference: male, 40–49 years, middle level of school degree, at least on parent with middle school degree, first language German, employed)

	2010	2018
<b>Intercept (scale from 0 to 100)</b>	52.2	54.1
<b>formal education (reference: middle)</b>		
no certification	–9.5***	–7.2***
low degree	–3.8***	–4.3***
<b>parent's education (reference: middle)</b>		
no certification	–4.0***	–6.3***
low degree	–1.5***	–1.6***
<b>first language (reference: German)</b>		
other first language	–8.4***	–11.3***
<b>employment status (reference: employed)</b>		
unemployed	–2.9***	–3.2***
<b>gender (reference male)</b>		
female	+2.6***	+2.6***
<b>age (reference: 40–49)</b>		
50–64	–0.8**	–0.9*
30–39	n.s.	–1.0**
18–29	n.s.	–1.2**

Significance: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Not having learned German as the first language in one's childhood (thus having to learn German as a second or foreign language later in life) shows the strongest correlation with the literacy level when controlled for the other independent variables. Having left school early without reaching a certification or with a low certification also shows strong effects on the literacy level, as well as being unemployed. As PIAAC (OECD, 2013, p.113) had shown, the correlation between the literacy level and the educational level of the parents is among the strongest predictors in the participating countries. The LEO results confirm these findings.

#### 4.4 Literacy related practices in different fields of daily life

Literacy practices are diverse and dependent on their contexts (Barton & Hamilton 2000, p. 8). One objective of LEO 2018 is to look at practices of low-literate adults related to reading and writing. Do adults with low literacy perform certain literacy prac-

tices, how often do they perform these practices, and do they compensate their low literacy by performing more non-written practices? Practices can be related to different fields of everyday life. This section presents results from a selection of practices from four domains of everyday life: digital, financial, health-related and political.

Participants have been asked how often they exercise certain practices. The offered response scales are comparable to PIAAC (Reder 2017). Table 4 displays the proportion of adults who perform certain practices regularly. This means that they perform the respective practice either at least once a week or (regarding other question types) answered “often” or “quite often”.

**Table 4:** Proportion of adults performing domain specific practices at least once a week, low-literate adults compared with the total population (Source: University of Hamburg, LEO 2018 – living with low literacy. Base: German-speaking adults (aged 18–64), n = 7,192, weighted)

	Low-literate adults	Total population
<b>Digital practices</b>		
Regularly write emails	35.9%	63.7%
Regularly send voice messages	39.1%	37.4%
Regularly write in social networks	23.5%	19.4%
Regularly read in social networks	41.8%	41.4%
<b>Financial Practices</b>		
Frequent use of online banking <sup>2</sup>	40.6%	65.3%
Frequent use of bank transfer forms	42.3%	25.1%
<b>Health related practices</b>		
Frequently check dosage instructions in pharmaceutical packaging	55.8%	68.7%
Frequently check with your doctor or pharmacist for signs of illness	60.5%	62.0%
<b>Political practices</b>		
Regularly read a newspaper (print or online)	44.5%	63.2%
Regularly watch the news (on TV or online)	82.6%	84.4%

*Digital practices:* Digitalization is a process which fundamentally changed the lives of most people all over the world. This process was widely discussed with the perspective of a digital divide. This discussion moved forward from the perspective of having access to digital technology to a perspective of the competent use of digital technology (Millard, 2015).

2 This question was only given to people who had previously stated that they had access to the internet (n = 6,645).

Low-literate adults engage in most written digital practices less frequently than the entire adult population. 35.9% of low-literate adults write emails regularly (population average: 63.7%). The difference is smaller regarding the use of short messages (SMS, WhatsApp etc.) instead of email. Looking at the frequency of sending voice messages (a mostly oral practice) we do not find this difference. Low-literate adults send voice messages more often than the total population. The difference is small but it points to a common trend. Differences between low-literate adults and the adult population in the application of practices become smaller or disappear if the practice is mostly (conceptually) oral. These practices therefore can be seen as strategies of compensating difficulties with reading and writing. Reading or writing in social networks are exceptions to this general trend: low-literate adults read and write in social networks at least as often as the entire population.

*Financial practices:* Dealing in a competent way with financial questions is a fundamental skill required in modern societies. The responsibility for doing so has largely been transferred from the state to the individual (Davies, 2015). Developments in the banking sector with an increasing role of online-banking show that aspects of digitalization also have a strong influence on other aspects of daily life. About two thirds of the entire adult population use online-banking regularly, whereas low-literate adults use online banking less frequently (40.6%). Low-literate adults fill out bank transfer forms more frequently than the general population (42.3% compared to 25.1%). We conclude that practices that require the use of technical devices (apps or websites) appear more difficult for low-literate adults. Moreover low-literate adults are more likely to look for support when confronted with forms or documents, e.g. filling out bank transfer forms at home together with the partner or asking for assistance from a bank clerk.

*Health related practices:* These practices point at another aspect regarding literacy practices. When confronted with an unfamiliar pharmaceutical, less adults with low literacy look up the dosage instructions in pharmaceutical packaging than in the general population (55.8% compared to 68.7%). When speaking with a doctor or pharmacist about symptoms of diseases and discussing how to treat these signs (a non-text-based but face to face practice) nearly no difference can be found. Differences occur when reading and writing is required. They diminish where alternative practices can be applied. Low-literate adults report on lower average health status than the general population.

*Political practices:* Keeping oneself informed about politics can be seen as an important foundation for political participation. A relatively high percentage of adults read a newspaper (print or online) at least once a week (63.2%). Among low-literate adults this share is significantly lower (44.4%). Differences disappear when asking for a practice which is not based on reading and writing: 82.6% of low-literate adults and 84.4% of the population watch news on TV or online at least once a week. Low-literate adults are therefore not uninformed in general, but prefer non-written media.

## 5 Discussion

The number of adults with low literacy has declined between 2010 and 2018. The figures refer to adults between 18 and 64 years and reading and writing in German. The number of participants in reading and writing classes is still very low (although increasing over the years). Even if participation in second chance schooling or in German classes for immigrants is taken into account, the extent of participation is still relatively small. The lower number of adults with low literacy cannot simply be attributed to these classes. The decline should be seen as a result of a cohort effect and a composition effect. Older adults with averaged less years of schooling left the sample and the rate of unemployment is lower in 2018 compared to 2010, offering more reading and writing opportunities to newly employed adults. Migration to Germany did seemingly not counteract this positive development. Summing up, the decline is not primarily a result of adult education policy but can be seen as the results of labor market policy, educational policy regarding schools and immigration policy (by systematically offering learning possibilities for migrants).

The composition of the group of low-literate adults did not change fundamentally compared to 2010. Among the 6.2 million adults with low literacy, we find more men than women, more older adults than younger adults and more adults who learned German as their first language. The majority of low-literate adults who learned another language than German as their first language has high competencies in reading and writing in their first languages. The results therefore support prior findings regarding stereotypes about low-literate adults (Grotlüschen, Riekmann, & Buddeberg 2015). One of the common stereotypes about low-literate adults is that most of them dropped out of school early. As about 75 % of low-literate adults graduated school the survey results show the opposite. Another common stereotype about low-literate adults is that they are mostly unemployed and dependent on social benefits. Again, the survey results show a different picture: Employment rate among low-literate adults has increased to 62.3 % from 2010 to 2018.

Nevertheless, results on literacy related practices give hints towards lower use of these practices and therefore can be interpreted as indicators for partial exclusion. Multivariate analysis regarding specific practices will still have to be performed and published. The objective was to widen the focus from what people can (assessment) to what people do in their daily lives (practices). Referring to most practices there is a correlation between reading and writing skills and reading and writing practices. This is in line with results from PIAAC (OECD 2013) and with practice engagement theory (Reder 1994). Practices which require reading and writing can either be substituted by oral practices or they can be managed with assistance (e.g. of family members, colleagues or bank personnel, cf. Buddeberg 2019). Although reading and writing in social networks is based on reading and writing skills this type of communication does not systematically exclude low-literate adults.

## 6 Conclusion

The German National Decade for Alphabetization and Basic Education has a strong focus on reading and writing. Reading and writing surely is an important field of work in Adult Basic Education but the findings reported in this paper support an additional way of looking at literacy. By widening the focus from a narrow understanding to a broader approach on literacy as social practices, the results of LEO 2018 show the importance of domain specific literacies and practices (e.g. health or financial literacy). Literacy – in the sense of reading and writing skills – is embedded into these practices (Reder 2017). While the Literacy as Social Practice approach might quickly become common sense in international discussions, it is a relatively new aspect in the German discourse on literacy – especially in quantitative research.

Considering the extensive questionnaire, the data and findings presented in this paper show only a glimpse of LEO 2018. Further research is required and multivariate analyses must be carried out to elaborate on the connection between literacy skills and practices. We also would like to invite quantitative and qualitative researchers to take a look at the questionnaire<sup>3</sup> and make use of it for their own research.

## References

- Addey, C., Sellar, S., Steiner-Khamsi, G., Lingard, B., & Verger, A (2017). The rise of international large-scale assessments and rationales for participation. *Compare: A Journal of Comparative and International Education*, 47 (3), pp. 434–452. <https://doi.org/10.1080/03057925.2017.1301399>
- ANLCI – Agence Nationale de la Lutte contre l’Illettrisme (2005). *Illiteracy: The Statistics: Analysis by the National Agency to Fight Illiteracy of the IVQ Survey conducted in 2004–2005 by INSEE*. Lyon, France.
- ANLCI – Agence Nationale de la Lutte contre l’Illettrisme (2012). *Mieux connaître les personnes confrontées à l’illettrisme en France: Première mesure de l’évolution du phénomène à l’aide de l’enquête Insee Information et Vie Quotidienne de français*.
- BIS Department for Education and Skills (2004). *Skills for Life – the national strategy for improving adult literacy and numeracy skills. Delivering the vision 2001–2004 (No. SFL/DTV0104)*. London.
- BIS Department for Business Innovation and Skills (2011). *2011 Skills for Life Survey: Headline Findings*. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/623399/11-1367-2011-skills-for-life-survey-findings.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/623399/11-1367-2011-skills-for-life-survey-findings.pdf) (Access on: July 30th 2019).
- Barton, D., & Hamilton, M. (2000). Literacy Practices. In: Barton, D., Hamilton, M. & Ivanič, R. (Eds.). *Literacies. Situated literacies: Reading and writing in context*, pp. 7–15. London: Routledge.

3 An English version of the questionnaire is available at: <https://blogs.epb.uni-hamburg.de/leo/files/2019/05/LEO-questionnaire.pdf>

- Bilger, F., & Strauß, A. (2017). Beteiligung an non-formaler Weiterbildung. In: Bilger, F., Behringer, F., Kuper, H. & Schrader, J. (Eds.): *Weiterbildungsverhalten in Deutschland 2016: Ergebnisse des Adult Education Survey (AES)*, pp. 25–55. Bielefeld: wbv Media.
- Blossfeld, H.-P., Roßbach, H.-G. & Maurice, J. von (Eds.) (2011). *Education as a lifelong process. The German National Educational Panel Study (NEPS) (Zeitschrift für Erziehungswissenschaft Sonderheft, Bd. 14)*. Wiesbaden: VS.
- Brooks, G. (2011). *A tale of IALS's influence (or not) in the UK*. Available at: [www.centreforliteracy.qc.ca/sites/default/files/Brooks\\_England\\_Country\\_Story.pdf](http://www.centreforliteracy.qc.ca/sites/default/files/Brooks_England_Country_Story.pdf) (Access on: July 30<sup>th</sup> 2019).
- Buddeberg, K. (2019). Supporters of low-literate adults. *International Journal of Lifelong Education*, p. 1–13. Published online: [www.tandfonline.com/doi/full/10.1080/02601370.2019.1600059](http://www.tandfonline.com/doi/full/10.1080/02601370.2019.1600059) (Access on: July 30<sup>th</sup> 2019).
- Bundesministerium für Bildung und Forschung (BMBF) & Kultusministerkonferenz (2016): *Grundsatzpapier zur Nationalen Dekade für Alphabetisierung und Grundbildung 2016–2026. Den funktionalen Analphabetismus in Deutschland verringern und das Grundbildungsniveau erhöhen*. Available at: [www.alphadekade.de/files/01\\_Grundsatzpapier-zur-Nationalen-Dekade-Alphabetisierung-und-Grundbildung\\_final.pdf](http://www.alphadekade.de/files/01_Grundsatzpapier-zur-Nationalen-Dekade-Alphabetisierung-und-Grundbildung_final.pdf) (Access on: July 30<sup>th</sup> 2019).
- Bynner, J. & Parsons, S. (1997). *It doesn't get any better: The impact of poor basic skills on the lives of 37 year olds*. London: Basic Skills Agency.
- Bynner, John & Parsons, S. (1998). *Use it or lose it?: The impact of time out of work on literacy and numeracy skills: Basic Skills Agency*.
- Davies, P. (2015). Towards a framework for financial literacy in the context of democracy. *Journal of curriculum studies*, 47(2), pp. 300–316. <https://doi.org/10.1080/00220272.2014.934717>
- Desjardins, R. (2017). Is literacy and the practice of literacy on the decline? In: Teodoro de Matos, A., d'Oliveira Martins, G. & Hanenberg, P. (Eds.). *The Future Within Reach*, pp. 761–766. Lisbon: Catholic University of Portugal.
- Dünkel, N., Heimler, J., Brandt, H. & Gogolin, I. (Eds.) (2018). *Mehrsprachigkeitsentwicklung im Zeitverlauf. Ausgewählte Daten und Ergebnisse*. Hamburg: Mimeo.
- Evans, J. (2015). Interpreting International Surveys of Adult Skills. In: Hamilton, M., Maddox, B. & Addey, C. (Eds.). *Literacy as numbers: Researching the politics and practices of international literacy assessment*, pp. 53–72. Cambridge, United Kingdom: Cambridge University Press.
- Gabrielsen, E. (2011). *IALS in Norway: Country Report*. Available at: [www.centreforliteracy.qc.ca/sites/default/files/Gabrielsen\\_NorwayCountryStory.pdf](http://www.centreforliteracy.qc.ca/sites/default/files/Gabrielsen_NorwayCountryStory.pdf) (Access on: July 30<sup>th</sup> 2019).
- Gee, J. P. (1991). Socio-Cultural Approaches to Literacy (Literacies). *Annual Review of Applied Linguistics*, 12, pp. 31–48. <https://doi.org/10.1017/S0267190500002130>
- Grek, S. (2010). International Organisations and the Shared Construction of Policy “Problems”: Problematisation and Change in Education Governance in Europe. *European Educational Research Journal*, 9 (3), pp. 396–406. <https://doi.org/10.2304/eeerj.2010.9.3.396>

- Grotlüschen, A., Buddeberg, K., Dutz, G., Heilmann, L. M. & Stammer, C. (2019). *LEO 2018: Living with low literacy. Hamburg*. Available at: <http://blogs.epb.uni-hamburg.de/leo/files/2019/05/LEO-2018-first-results.pdf> (Access on: July 30<sup>th</sup> 2019).
- Grotlüschen, A. & Riekmann, W. (2011). *leo. – Level One Study. Literacy of adults at the lower rungs of the ladder: Press brochure*. Available at: <http://blogs.epb.uni-hamburg.de/leo/files/2011/12/leo-Press-brochure15-12-2011.pdf> (Access on: July 30<sup>th</sup> 2019).
- Grotlüschen, A., Riekmann, W. & Buddeberg, K. (2014). Functional Illiteracy in Germany. In: Hinzen, H. & Knoll, J. H. (Eds.). *Lifelong Learning and Governance. From Programming to Action - Selected Experiences from Asia and Europe*, pp. 55–67. Vientiane, SD.
- Grotlüschen, A., Riekmann, W. & Buddeberg, K. (2012). Hauptergebnisse der leo. – Level-One Studie. In: Grotlüschen, A. & Riekmann, W. (Eds.). *Alphabetisierung und Grundbildung: Vol. 10. Funktionaler Analphabetismus in Deutschland: Ergebnisse der ersten leo. – Level-One Studie*, pp. 13–53. Münster: Waxmann.
- Grotlüschen, A., Riekmann, W. & Buddeberg, K. (2015). Stereotypes versus Research Results Regarding Functionally Illiterate Adults. Conclusions from the First German Level-One Survey and the Learner Panel Study. In: Grotlüschen, A. & Zimper, D. (Eds.). *Literalitäts- und Grundlagenforschung*, pp. 105–122. Münster: Waxmann.
- Hamilton, M., Maddox, B. & Addey, C. (2015). Introduction. In: Hamilton, M., Maddox, B. & Addey, C. (Eds.). *Literacy as numbers: Researching the politics and practices of international literacy assessment*, pp. xiii-xxx. Cambridge, United Kingdom: Cambridge University Press.
- Hainmueller, J. (2011). Entropy Balancing for Causal Effects: A Multivariate Reweighting Method to Produce Balanced Samples in Observational Studies. *SSRN Electronic Journal*. Published online: <https://doi.org/10.2139/ssrn.1904869> (Access on: July 30<sup>th</sup> 2019).
- Hanemann, U. (2019). Examining the application of the lifelong learning principle to the literacy target in the fourth Sustainable Development Goal (SDG 4). *International Review of Education/Internationale Zeitschrift für Erziehungswissenschaft*, 65 (2), pp. 251–275.
- Jeantheau, J.-P. (2007). Low levels of literacy in France. First results from IVQ Survey 2004/05, Focus on the ANLCI-Module. In: Knabe, F. (Ed.). *Wissenschaft und Praxis in der Alphabetisierung und Grundbildung*, pp. 41–58. Münster: Waxmann.
- Jeantheau, J.-P. (2015). IVQ 2011. What lessons can be drawn from the evolution of the state of adult literacy in France? In: Grotlüschen, A. & Zimper, D. (Eds.). *Literalitäts- und Grundlagenforschung*, pp. 177–196. Münster: Waxmann.
- Mendelovits, J. (2011). *A slow burn: the impact of IALS in Australia: Country Report*. Available at: [www.centreforliteracy.qc.ca/sites/default/files/Mendelovits\\_A%20slow%20burn.pdf](http://www.centreforliteracy.qc.ca/sites/default/files/Mendelovits_A%20slow%20burn.pdf) (Access on: July 30<sup>th</sup> 2019).
- Millard, J. (2015). The Digital Divide and the Global Post-2015 Development Debate. In: Andreasson, K. (Ed.). *Public Administration and Public Policy. Digital Divides: The New Challenges and Opportunities of e-Inclusion*, pp. 3–26. Hoboken: Taylor and Francis.

- OECD (2013). *OECD Skills Outlook 2013: First Results from the Survey of Adult Skills*. Paris. Available at: [https://www.oecd.org/skills/piaac/Skills%20volume%201%20\(eng\)--full%20v12--eBook%20\(04%2011%202013\).pdf](https://www.oecd.org/skills/piaac/Skills%20volume%201%20(eng)--full%20v12--eBook%20(04%2011%202013).pdf) (Access on: July 30<sup>th</sup> 2019).
- OECD (2016). *Making Education Count for Development*. Available at: <https://doi.org/10.1787/9789264255449-en> (Access on: July 30<sup>th</sup> 2019).
- OECD & Statistics Canada. (2000). *Literacy in the Information Age: Final Report of the International Adult Literacy Survey*. Available at: [www.oecd.org/edu/skills-beyond-school/41529765.pdf](http://www.oecd.org/edu/skills-beyond-school/41529765.pdf) (Access on: July 20<sup>th</sup> 2019).
- OECD & Statistics Canada (2005). *Learning a Living. First results of the Adults Literacy and Life Skills Survey*. Ottawa, Paris: OECD.
- Pugsley, R. (2011). *IALS in the US: A Rippling Impact on Literacy Policy*. Available at: [www.centreforliteracy.qc.ca/sites/default/files/Puglsey\\_US.pdf](http://www.centreforliteracy.qc.ca/sites/default/files/Puglsey_US.pdf) (Access on: July 30<sup>th</sup> 2019).
- Reder, S. (1994). Practice-Engagement Theory: A Sociocultural Approach to Literacy Across Languages and Cultures. In: Ferdman, B. M., Weber, R.-M. & Ramirez, A. G. (Eds.). *SUNY series, literacy, culture, and learning. Literacy across languages and cultures*, pp. 33–70. Albany: State University of New York Press.
- Reder, S. (2012). *The Longitudinal Study of Adult Learning: Challenging Assumptions*. Available at: [www.centreforliteracy.qc.ca/sites/default/files/CFLRsrbBrief\\_Chllngng\\_Assmptns.pdf](http://www.centreforliteracy.qc.ca/sites/default/files/CFLRsrbBrief_Chllngng_Assmptns.pdf) (Access on: July 30<sup>th</sup> 2019).
- Reder, S. (2017). *Adults' Engagement in Reading, Writing and Numeracy Practices*. Available at: [http://pdxscholar.library.pdx.edu/ling\\_fac/22](http://pdxscholar.library.pdx.edu/ling_fac/22) (Access on: July 30<sup>th</sup> 2019).
- Reichart, E., Lux, T. & Huntemann, H. (2019). *Volkshochschul-Statistik. 56th edition, working year 2017. DIE survey*. Bielefeld: wbv.
- Rubenson, K. (2011). *An examination of IALS and its influence on adult literacy in Canada: Country Report*. Available at: [http://www.centreforliteracy.qc.ca/sites/default/files/Rubenson\\_Canada.pdf](http://www.centreforliteracy.qc.ca/sites/default/files/Rubenson_Canada.pdf) (Access on: July 30<sup>th</sup> 2019).
- Sjøberg, S. (2018). The power and paradoxes of PISA: Should Inquiry-Based Science Education be sacrificed to climb on the rankings? *Nordic Studies in Science Education*, 14 (2), pp. 186–202. <https://doi.org/10.5617/nordina.6185>
- St. Clair, R. (2011). *Groundhog Day? The 2009 re-run of the 1996 IALS in Scotland: Country Report*. Available at: [www.centreforliteracy.qc.ca/sites/default/files/St\\_Clair\\_GroundhogDay.pdf](http://www.centreforliteracy.qc.ca/sites/default/files/St_Clair_GroundhogDay.pdf) (Access on: July 30<sup>th</sup> 2019).
- Steuten, U. (2014): Literalität und Stigma. In: *Hessische Blätter für Volksbildung*, (64) 2, pp. 125–135.
- Street, B. (1995). *Social literacies: Critical approaches to literacy in development, ethnography, and education. Real language series*. London, New York: Longman.
- Street, B. (2003): What's "new" in New Literacy Studies? Critical approaches to literacy in theory and practice. *Current Issues in Comparative Education*, 5 (2), pp. 77–91.
- Williams, J. (Ed.) (2003). *The Skills for Life survey: A national needs and impact survey of literacy, numeracy and ICT skills*. London: TSO.



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