LITERACY IN DENMARK

COUNTRY REPORT
SHORT VERSION

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Lifelong Learning Programme

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1 Introduction

This report on the state of literacy in Denmark is one of a series produced in 2015 and 2016 by ELINET, the European Literacy Policy Network. ELINET was founded in February 2014 and has 78 partner organisations in 28 European countries[1]. ELINET aims to improve literacy policies in its member countries in order to reduce the number of children, young people and adults with low literacy skills. One major tool to achieve this aim is to produce a set of reliable, up-to-date and comprehensive reports on the state of literacy in each country where ELINET has one or more partners, and to provide guidance towards improving literacy policies in those countries. The reports are based (wherever possible) on available, internationally comparable performance data, as well as reliable national data provided (and translated) by our partners.

ELINET continues the work of the European Union High Level Group of Experts on Literacy (HLG) which was established by the European Commission in January 2011 and reported in September 2012[2]. All country reports produced by ELINET use a common theoretical framework which is described here: "ELINET Country Reports – Frame of Reference"[3].

The Country Reports are organised around the three recommendations of the HLG´s literacy report:

- Creating a literate environment
- Improving the quality of teaching
- Increasing participation, inclusion (and equity[4]).

Within its two-year funding period ELINET has completed Literacy Country Reports for all 30 ELINET member countries. In most cases we published separate **Long Reports** for specific age groups (Children / Adolescents and Adults), in some cases comprehensive reports covering all age groups. Additionally, for all 30 countries, we published **Short Reports** covering all age groups, containing the summary of performance data and policy messages of the Long Reports. These reports are accompanied by a collection of good practice examples which cover all age groups and policy areas as well. These examples refer to the **European Framework of Good Practice in Raising Literacy Levels;** both are to be found in the section "Good Practice"[5].

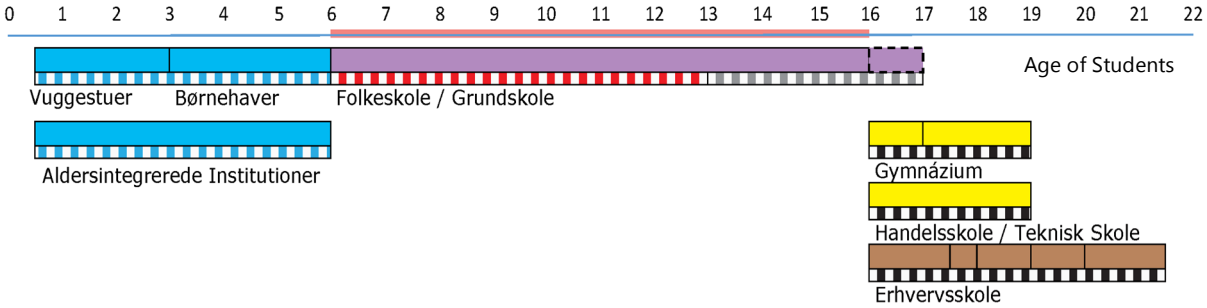
[1] For more information about the network and its activities see: www.eli-net.eu.
[2] In the following, the final report of the EU High Level Group of Experts on Literacy is referenced as "HLG report". This report can be downloaded under the following link: http://ec.europa.eu/education/policy/school/doc/literacy-report_en.pdf.
[3] See: http://www.eli-net.eu/research/country-reports/.
[4] "Equity" was added by ELINET.
[5] See: http://www.eli-net.eu/good-practice/.

2 General Information on the Danish Education System

As can be seen from Figure 1, the educational system includes early education (0-6 years), including ante-preschool (0-3 years) and preschool education (3–6 years)

According to Winther-Linqvist (2013), 98 percent of children attend full-day day care in Denmark from one to six years of age, after which compulsory schooling starts. All day care is administered by local authorities and municipalities. Day-care institutions include crèches/nurseries/private family day care (zero to three years), kindergartens (three to six years), integrated institutions (zero to six years) and after-school centers (six to ten years). Each institution varies in size and the manner of its organization and most are unit-based, so that every child belongs to a unit with particular adults.

Figure 1: Structure of the Denmark School System[6]



Pre-school is designed primarily to introduce very young children to a school-type environment. This stage comprises kindergarten and pre-school classes. Upon completion of this stage, children continue their education at the next stage (primary education).

The Danish Folkeskole is a comprehensive school covering pre-school (one year), six years of primary (Grades 1-6) and lower secondary education (grades 7-9/10). They are run by local municipalities. Students who do not attend the Folkeskole may attend private school (around 18% of students at basic school level in Denmark did so in 2015). Private schools are recognised officially, and receive government financing, regardless of their ideological, religious, political or ethnic motivation. Most recently, municipalities have been permitted to establish international schools for children of foreign workers. These schools are outside the Folkeskole system.

Less than 2 percent of the students are in segregated special schools (Employment, Social Affairs & Inclusion 2013. p. 14)

[6] See: http://eacea.ec.europa.eu/education/eurydice/documents/facts_and_figures/education_structures_EN.pdf.

Upper secondary education usually begins at the end of compulsory schooling. It covers general education (which qualifies students to access to higher education), and vocational or technical education (which mainly qualifies students for the labour market). It is targeted at students aged 16-19 years. Four programmes are offered:

- STX – general upper secondary provision of the Gymnasium (three years to complete, after grade 9). The STX programme consists of a broad range of subjects in the humanities, natural science and social science.
- HF - the higher preparatory examination programme (two years to complete, after grade 10). Like the STX, the HF programme consists of a broad range of subjects in the humanities, natural science and social science
- HHX – the higher commercial examination programme (3 years). This programme focuses on business and socio-economic disciplines, in combination with foreign languages and other general subjects.
- HTX – the higher technical examination (3 years). The focus of the HHX is on technological and scientific subjects in combination with general subjects.

Admission to STX, HHX and HTX is based on completion of nine years of Danish basic education (or equivalent). Students must have taken the compulsory final examination at the end of lower secondary schooling. Admission to HF is based on 10 years of Danish basic education; student must have taken exams in Danish, English, mathematics, a second foreign language (French or German) and physics/chemistry. Students who have not attended a Danish school may be admitted following a concrete assessment of whether they have equivalent qualifications to those who have attended a Danish school. They may have to take an admissions test.

Denmark also has a comprehensive vocational education and training (VET) system that provides a bridge between schooling and the world of work. In 2014, Denmark offered 106 different VET courses including building and construction, body and style, power, management and IT, and transport and logistics. VET programmes are provided in independent intuitions which are funded by the state. In 2014, the vast majority of 83,000 students who attended VETS (some straight from compulsory education), had training agreements with companies. The programmes often include a significant practical component (Danish Ministry of Education, 2014).

3 Literacy Performance Data

Denmark participated in IEA's PIRLS study (4th graders reading comprehension) in 2006 and 2011, in OECD's PISA study (15 year-olds' reading) in each cycle since 2000, and in OECD's PIAAC study (adults' reading literacy) in 2012. This means that it is possible to describe the changes over time in average reading proficiency, according to different characteristics of readers, and to compare relative levels of reading proficiency for different age groups.

Denmark performed well above the EU average in PIRLS 2011 (554 vs 535 EU-average). Just two EU countries had a significantly higher mean score. The performance of 4th graders in Denmark increased slightly between 2006 and 2011 (+ 8 score points), when there was no change on average across EU counties. In PISA 2012, the score for Denmark was also somewhat higher than the average for EU countries (496 vs 489 respectively), but was quite unchanged since PISA 2000.

In PIRLS 2011, 12% of pupils were classified as low-performing readers; in PISA, this proportion reached 15%. These estimates are lower than on average across EU countries (20% at both levels). In PISA, low-performing students can read simple texts, retrieve explicit information, or make straightforward inferences, but they are not able to deal with longer or more complex texts, and are unable to interpret beyond what is explicitly stated in the text.

The proportion of low-performing readers decreased in PIRLS between 2006 and 2011 (from about 15% to 12%) and decreased as well in PISA, from 18% to 15% between 2000 and 2012. These decreases were of similar extent among girls and boys (around 3%). The proportion of top-performing readers was 13% in PIRLS 2011 (vs 9% across EU countries) and 5.4% in PISA 2012 (vs 7% across EU countries).

The gap according to the pupils' socioeconomic background was much lower than the EU average in PIRLS (56 vs 76 on average) and in PISA (81 vs 89 on average). However, the indices of socioeconomic background are not the same in PIRLS and PISA, so the comparison should be taken with caution.

In PISA 2009, the gap between native students and students with a migrant background was higher than in EU countries on average (63 vs 38 EU-average) while the proportions of native students and students with an immigrant background were similar to EU average levels. In PIRLS, the mean score difference between those who always spoke the test language at home, and those who 'sometimes' or 'never' spoke it was slightly higher than in EU countries on average (30 vs 26). In PISA, this gap according to whether or not students spoke the language of the test at home was higher than the EU average (67 vs 54).

In Denmark, the gender gap (in favor of girls) was similar to the corresponding EU average difference in PIRLS (12) and much lower in PISA (20 vs 44 on average). The gender difference in Denmark decreased slightly but not significantly over time in PIRLS: from 14 in 2006 to 12 points in 2011. In PISA, while overall reading performance tended to be highly stable between 2000 and 2012, a very small difference in trends was observed between girls (+2) and boys (-4), resulting in an increasing gender gap.

In conclusion, Denmark proved to be high-performing in reading at grade 4 across the two cycles of PIRLS in which it has participated, with a slight increase between 2006 and 2011. Denmark performed better than EU countries on average and was one of the highest-ranking in the EU. As for 15 year-olds in PISA, the Danish performance is also higher than EU average but to a lesser extent and remained

quite unchanged across cycles of PISA. Denmark has proportions of low-performing readers that are lower than the corresponding EU averages in both PIRLS and PISA, and these proportions have decreased over time. The spread of achievement (gap between low and top performing readers) is smaller in Denmark than in EU on average at both primary and post-primary levels, suggesting that achievement is more clustered. The gap according to socioeconomic status tends to be somewhat lower in Denmark than in EU countries on average. In contrast, the gaps according to the migrant status, and the language spoken at home are marginally higher. The score difference between native and migrant students in PISA is the equivalent of one and a half-years of schooling. This issue of equity could be a matter of concern in Denmark.

As far as adults are concerned, Denmark showed a pattern of results and characteristics very close to the EU's, reaching the same score of 271 points. It should be remembered that only 17 EU countries took part to PIAAC in 2012, so the comparison with other age groups should be taken with caution. The spread of achievement – namely the gap between top and bottom performers - was quite similar to the EU average as well (116 vs 117 on average). The proportion of adults performing at or below level 1 in Denmark is 15.7%, compared with an EU-24 average of 16.4%, that is very close again.

Similar to the European situation, the average performance of females in Denmark in PIAAC reached exactly the same level as males (271), although a slightly lower proportion of females scored at level 1 or below (14%) compared with males (17%). The Danish adults' reading performance is once again very close to the European values where gender is concerned (270 among females, 272 among males). The gender gap was very close to the EU on average (respectively 0 and 2 score points), which is coherent with what was observed among 4th graders. The gap in PIAAC according to parents' level of education was somewhat lower than in the EU countries on average (37 vs 41), reflecting the same trend as in PIRLS and PISA. The reverse was observed for the gap according to the language spoken at home: the gap between native and not-native speakers was larger than the EU-17-average (40 vs 28) although the distribution in Denmark of native and non-native speakers was close to EU-17 average.

Challenges: Overall performance on PIRLS reading literacy in Denmark is high, relative to most EU countries. However, the proportion of students in Denmark performing at the PIRLS Advanced benchmark (12%) is higher than in a number of EU countries, including Finland, and could be further reduced. An increase in the proportion reading at an Advanced level could raise overall performance as well. This would need to be done in the context of maintaining a relatively narrow gap between the lowest and highest performers in Denmark.

Although significantly higher than the average for EU countries, overall performance on PISA reading literacy lags behind a number of countries including Finland, Ireland, Poland and Estonia. Further, performance on PISA reading has remained stable over time, with effects of recent reforms yet to make an impact. There is a need to ensure that recent and ongoing structural reforms in the education system, including those related to teachers Continuous Professional Development (CPD), lead to enhanced student performance in literacy. In particular, there is a need to raise the performance of higher-achieving students.

Gender differences in reading literacy in favour of girls in PIRLS and PISA are at or below EU average levels. However, there is a need to implement policy initiatives to ensure that, as overall performance rises, gender gaps remain small.

4 Key Literacy Policy Areas for Development (age-specific and across age-groups)

4.1 Creating a Literate Environment

4.1.1 Pre-Primary Years

Providing a supportive home literacy environment: The home learning environment, particularly in the first three years, is extremely important (Brooks et al. 2012). It determines the quantity and quality of interactions between the infant and the primary caregivers, who are the most powerful agents of language development, both receptive and expressive, in the context of everyday activities and experiences. We know that the more words the children are exposed to, the more they can learn. Caregiver-child relations in their turn strongly influence the ability to learn, by influencing self-esteem, general knowledge and motivation. A number of indicators drawn from the PIRLS 2011 study and elsewhere point to a relatively strong environment for literacy in homes in Denmark.

Students in Denmark at the bottom quartile of the PIRLS home resources scale (which is based on number of books at home, number of children's books at home, access to a quiet room to study, Internet access, and parent education and job status) had a mean score on PIRLS reading literacy that was significantly lower, by 62 points, compared with those who in the top quartile. The corresponding difference on average across the EU-24 was 79, indicating that the association between home resources and reading achievement is somewhat weaker in Denmark than on average across the EU-24.

PIRLS 2011 also reported on the percentage of students whose parents (often, never or almost never) engaged in various literacy-relevant activities with them before the beginning of primary school (Mullis et al. 2012, exhibit 4.6 - Early Literacy Activities Before Beginning Primary School, p. 126). Nine activities were considered including reading books, telling stories, singing songs and playing with alphabet toys. In Denmark, 32% of parents engaged in these activities 'often' (EU average = 41%), while 67% did so sometimes (EU average = 57%) and 2% never or hardly ever did so (EU average = 2%). The relatively large proportion of parents in Denmark in the 'sometimes' category indicates room for improvement.

In general, homes in Denmark are well-resourced with children's' books. According to PIRLS 2011, 23% of parents reported that they had more than 100 children's books in their homes, and this is above the EU average of 16%. Moreover, just 6% had 1-10 books, compared with an EU average of 12%.

4.1.2 Primary Children and Adolescents

Providing a literate environment in school: Based on data provided by their teachers, PIRLS shows that 38% of pupils in Denmark were in classrooms which had class libraries – well below the corresponding EU-24 average of 73% (ELINET PIRLS 2011 Appendix C[7], Table H2). Thus, for 62% of pupils there is no classroom library available. Across all classrooms (including those with no library), 94% of students in Denmark had teachers who reported that they brought them to a library other than

[7] Appendices A-D are ELINET appendices available at http://www.eli-net.eu/. Appendices A and B cover the pre-school period, while Appendices C covers PIRLS 2011, and Appendix D covers PISA 2001 and 2006, for EU countries not in PISA 2011.

the class library at least monthly, considerably higher than on average across EU-24 countries (65%) (Mullis et al. 2012, exh. 8.13, p.240; EU averages from PIRLS 2011 database, s. Table H2 in Appendix C). This may arise because schools in Denmark typically have well-stocked school libraries.

Offering digital literacy opportunities at school: A literate environment can also be created by incorporating digital devices into the school environment. According to teachers in PIRLS 2011, 87% of students in Denmark had a computer available for reading lessons, compared to the EU-average of 45% (Appendix C, Table I6). Students in Denmark also took part in computer-based literacy activities more often than their counterparts across EU countries. For example, 76% looked up information at least monthly (EU average = 39%) and 83% wrote stories or other texts with the same frequency (EU average = 33%). Indeed, computer usage by students in Denmark is the highest out of all participating EU countries in PIRLS. According to the ESSIE study (European Schoolnet and University of Liege, 2012), Danish schools are well equipped with high levels of computer access and fast broadband connectivity. Most notably, 70% of Danish students in Grade 8 used computers at least weekly in class for learning, 51% used their personal mobile phones and 43% used their own laptops. On average across EU countries, the corresponding percentages were 53%, 11% and 28% respectively. The proportion of teachers in Denmark who used ICT in at least 25% of lessons was 40% in grade 4, and 71% in grades 8 and 11, which are well above the corresponding EU averages.

Denmark currently enjoys an advantage over other EU countries in terms of access to computers and use of computers in school settings. Access to electronic books by children and adolescents is also supported by the library system and several initiatives are in place to encourage use of electronic media in school settings. The challenge for Denmark is to maintain its advanced status in relation to technology, while at the same time ensuring that children and adolescents continue to choose reading as a regular leisure activity.

Strengthening reading motivation, especially among boys and adolescents: *Bookfun.* The Mary Foundation is behind BookFun, which consists of specific pedagogical materials designed to strengthen children's language skills and self-confidence by actively engaging them in reading stories aloud[8]. BookFun, which is targeted at 3-6 year olds, builds on the "dialogic reading" method which involves expanding the classic way of reading aloud so that it becomes a dialogue instead of a monologue. This involves the teacher reading the same story aloud three times in a row – with increasing involvement from the children at each stage.

The Danish 'National Reading Campaign for School Children' aims to encourage children's joy of reading by having libraries organise different kinds of reading competitions in collaboration with local schools. The participant classes form teams and the whole class supports the team throughout the local, regional and national rounds of the tournament (Eurydice, 2011a, p. 131).

A recent survey a survey of 1,999 Danish school children found that the proportion of nine- to 12-year-olds who read books in their free time had climbed from 56% to 61% since 2000 (Guardian Newspaper, 26 January 2015). While children were still watching TV and using digital devices, these activities did not seem to affect reading of real books. Stine Reinholdt Hansen, of the Centre for Children's Literature at Aarhus University, who led the study, attributed the change to effective government campaigns in Danish schools to encourage reading such as *Læselyst*, or 'Love of reading', a willingness to allow children to decide what they wish to read (i.e., children have a right to decide

[8] See: http://www.maryfonden.dk/en/bookfun.

rather than adults), and a greater responsiveness on part of book publishers to providing books related to children's interests.

Læselyst was launched by the Ministry of Culture in Denmark in 2003. It represents an example of a national campaign that was implemented at local level. Essentially, funding was provided for a range of literacy projects, including Bookstart (a programme in which students receive a gift of books at 6, 12, 18 and 36 months), the establishment of kindergarten libraries, which make books available to day-care institutions serving young children, and a reading quiz for children, Reading, Steady, Answer.

Public libraries continue to meet the needs of children and adolescents, in the context of motivating them to engage in reading for enjoyment, using both print and electronic media. As noted above, there is some evidence that primary students' interest in reading has increased in recent years, and efforts should be made to build on this as students progress through lower secondary schooling.

4.1.3 Adults

Fostering literacy provision for adults: Adult literacy provision is a part of the public education system in Denmark and is known as "preparatory education for adults" (Forberedende Voksenundervisning [FVU]). FVU is offered free of charge to participants through Denmark's 29 adult education centres (Voksenuddannelsescenter [VUC]) and some regional satellite departments.

FVU is aimed at adult students (18 years old and over), with some exceptions (such as younger people in prisons or work place education). It consists of two subjects, FVU-reading (four levels) and FVU-maths (two levels): FVU-reading courses include content addressing digital literacy. Each level consists of between 30 and 60 one-hour long lessons. In Denmark, other types of adult literacy provision include special education programmes for people with reading and writing disabilities, including dyslexia, and Danish language courses for foreigners (see 4.3.3 below).

The most recent Ministry of Education data available show that participation rates in these adult literacy programmes are as follows:

Programme	Number of students (2011/2012)
Preparatory education for adults (FVU)	39,525 (1.1% of adults 16-65 years)
Education for people with reading and writing disabilities	23,517 (0.7% of adults 16-65 years)
Danish language courses (for foreigners)	72,141 (14.7% of adults 16-65 with a foreign background)

In addition to these formal education programmes, the VUC and FVU cooperate with public schools on targeting adults and families with free, specially-tailored reading and writing courses. Schemes to promote reading and writing for pleasure for adults include "Denmark Reads" ("Danmark Læser"[9]), financed by The Ministry of Culture, which focuses, among other goals, on motivating adult readers.

[9] See: http://www.danmarklaeser.dk/.

4.2 Improving the Quality of Teaching

4.2.1 Pre-primary Years

Investing in pre-primary education: According to Eurostat (European Commission/EACEA/ Eurydice/Eurostat, 2014, Figure D3), the total public expenditure per child in pre-primary education as a percentage of GDP in Denmark is 1.01% and the highest in Europe. The range is from 0.04% in Turkey and 0.1% in Ireland to 1.01% in Denmark (for an overview of European countries see table D1 in Appendix B).

Raising the qualifications of pre-school teachers and carers: The minimum required level to become a qualified teacher is Bachelor level (ISCED 5). Length of study is 3.5 years (European Commission/EACEA/Eurydice/Eurostat 2014, p. 101). Continuing Professional Development is not obligatory.

Implementing pre-school language and literacy curricula: In 2004 the Educational Curricula Act in Denmark specified that all day care centres for pre-schoolers should implement six dimensions of aims and content, which are expressed as general themes: 1) Personal competences, 2) social competences, 3) language, 4) body and movement, 5) nature and natural phenomena, and 6) cultural forms of expression and values. Parents and staff of the individual day care centre must discuss and interpret these themes, and once a year the day care centre staff create their own curriculum based on their own specific needs and circumstances. Thus, it is ultimately left to the discretion of the day care professionals themselves to interpret the 6 general themes and implement them during educational processes. On a biannual basis each day care centre must deliver a report to the municipality, which – among other things - describes and documents how the staff have transformed the 6 national general themes into pedagogical practice benefitting the children's well-being, learning and development (Jensen, Broström & Hansen, 2010).

In recent years, emergent literacy approaches have been gaining ground in the kindergarten class (OECD 2006, p. 312). Broström, Jensen and Hansen (2012) found that Danish preschool teachers to some degree take literacy-supporting initiatives, and consider creating a literacy-rich environment to be a part of their everyday practices. Reflecting on a given day, 69% of the respondents stated that they have initiated and/or participated in a drawing/writing activity, and a significant amount of these activities involved one or more children playing with written language (i.e. pretend-writing, copying logos, etc.) According to the study, 76% of the respondents stated that their kindergarten department/room was equipped with a special corner for reading aloud and telling stories, and 80% stated that there was a designated area for drawing/writing etc.

Pre-school takes place in the Folkeskole, where children attend a one-year pre-school class, usually in the year in which they turn 6. It is intended to provide a transition between daily life at home/homecare, and more formal schooling. Compulsory themes are: language and methods of expression, the natural world and scientific phenomena, creativity, movement and coordination, social skills, and togetherness and cooperation. Play makes up a central element of the teaching, with emphasis being placed on the value of play in and of itself and learning through playing and play-related activities.

The Eurydice Study of Reading Literacy (Eurydice, 2011a) indicates that none of the 9 skills they sought information on was included in national steering (curriculum) documents for kindergarten. The skills that were missing from Danish documents included different functions of printed materials, awareness

that print carries meaning, conventional direction of reading, playing with language using nonsense words and exploring and experimenting with sounds, words and texts. It may be that, while these activities are not specified in the 2004 national guidelines for preschools, they are included in municipal or local level programmes.

There is a need to ensure that early childhood carers at local level are supported in their efforts to build on young children's emergent literacy skills. Relevant emergent literacy skills should be developed in appropriate contexts, including play environments.

4.2.2 Children and Adolescents

Ensuring adequate instructional time for language and literacy in primary and secondary schools: According to PIRLS 2011, pupils in Denmark spent about the same number of hours per year at school (860) as on average across EU-24 countries (850 hours). Students in Denmark spent 219 hours (about one-quarter of all instructional hours) on instruction in the language of the PIRLS test, compared to an EU-24 average of 241 hours. In Denmark, 63 instructional hours per year are spent on reading as part of language, marginally less than the EU-24 average of (68), though the EU-24 average is itself low relative to, for example, the United States and New Zealand (both 131 hours). Teachers in Denmark reported allocating less time to teaching reading across the curriculum and in reading classes (108 instructional hours per year) than on average across EU-24 countries (147 hours) (Mullis et al. 2012, Exhibit 8.4. p. 214; for EU averages from PIRLS 2011 database, see Appendix C, Table I3).

At the beginning of the 2013-14 school year, the Danish government increased the allocation of time to teaching and learning in schools, with the allocation of additional time to Danish, mathematics and physical education. Children in grades 0-3 (ages 6-9) now have 30 hours of school each week, while students in grades 4-6 (ages 10-12) have 33 hours per week and those in 7-9 grade (ages 13-15) are be in class for 35 hours per week[10].

Improving the quality of literacy instruction: There is some evidence that instruction in reading comprehension occurs less frequently in Denmark than on average across EU countries. In PIRLS 2011, Denmark was well below the EU-24 average on the frequency with which students engage in activities such as locating information in the text, identifying the main idea and explaining or supporting their understanding, even though several of these strategies have been identified as appearing in curriculum documents. A number of important comprehension strategies such as describing the style or structure of a text and determining the author's perspective or intention were implemented daily or almost daily by fewer than 10% of students in Denmark.

According to PISA 2009, among adolescents in Denmark there is considerable gap in reading achievement of 88 score points – equivalent to more than two years of schooling – between students with good knowledge of reading strategies and those who have a limited knowledge of strategies, including metacognitive ones. There is a similar gap (95) related to students' engagement in reading.

It is well documented in research studies that explicit teaching of comprehension strategies may improve reading comprehension among readers with different levels of ability. Literacy instruction in primary and secondary schools should become more cognitively demanding and targeted at using higher-level strategies. One crucial prerequisite for achieving those goals is adequate preparation of teachers.

[10] See: http://www.thelocal.dk/20140811/denmarks-public-schoolchildren-enter-a-new-era.

Improving digital learning: According to Mejding and Nogaard Fink (2012), use of computer technology is a priority in the Danish *Folkskole*. They note that: "... initiatives [supporting the development of new Internet-based educational materials] have aimed to make computers a tool for students in the lower grades and to ensure that the use of computers would be included in the curriculum objectives for language instruction and other subjects by 2009. However, many teachers still prefer books to technology-based instructional materials" (p. 187).

According to Eurydice's Key Data on Learning and Innovation through ICT at school in Europe, in Denmark there are national strategies in place for training in use of ICT in E-learning, promoting digital media literacy, and conducting research into e-skills development (Eurydice, 2011b). Furthermore, there are central steering documents for all ICT learning objectives at primary and secondary level, except for knowledge of computer hardware, electronics and developing programming skills.

There is a need to ensure that schools in Denmark achieve a good balance between focusing on ICT usage on the one hand, and ensuring that students receive instruction across a range of reading comprehension strategies, including those that are relevant for reading digital texts, on the other.

Early identification and support for struggling readers: According to Mejding and Nørgaard Fink (2012), teachers in kindergarten must administer a diagnostic early language screening test to all children that is designed to identify linguistic and cognitive difficulties, and can form the basis of an intervention programme, if needed. At other grade levels, diagnostic tests in reading and spelling are available, and can be administered on a needs basis. Assessment tools include computer-based adaptive tests, administered at grades 2, 4, 6, and 8, which serve as screening tools, as well as other standardised tests and formative assessments used by teachers. In 2015, dyslexia tests in pre-grade 1 to grade 3 were to be introduced to strengthen early identification of reading difficulties (Danish Ministry of Education, 2013).

There is some evidence that not all children in Denmark who are in need of remedial support in reading receive such support when they need it. Based on a question that class teachers answered in PIRLS 2011, it is estimated that 14.9% of students in Fourth grade in Denmark are considered to be in need of remedial reading instruction. It is also estimated by teachers that 11.9% are in receipt of remedial reading instruction (Elinet Appendix C, Table K1). Hence, there is a shortfall of 3.0% between those in need and those in receipt.

According to Mejding and Nørgaard Fink (2012), when a child initially encounters reading difficulties, the lowest degree of intervention, support from a remedial teacher in the child's classroom, is preferred. If this is not successful, the student may receive support from a reading specialist at school level, while continuing to participate in all classroom lessons, if possible. They note that teachers are responsible for recommending special education for individual students. Final decisions on allocation of children to special classes are made by the municipality. However, recent policy has been focusing on remedial instruction in the classroom instead of segregated instruction.

An important form of support, mainly for pupils with dyslexia, relates to IT-backpacks. Since 2013, dyslexic pupils in youth education programmes have been equipped with an IT-backpack[11] at the beginning of their studies, which will provide them the help required to complete a study programme. The backpack consists of, among other things, a computer with literacy-supportive software which will

[11] See: http://www.uvm.dk/~/UVM-DK/Content/News/Udd/Gym/2012/Nov/121102-It-rygsaek-skal-hjaelpe-ordblinde-elever.

make it easier for the pupil to read and write, and thereby be able to deal with the academic challenges waiting ahead. The backpack also contains a scanner, with which texts can be scanned and transformed into sounds. This IT-initiative puts a focus on the importance of receiving support from the very beginning of an educational programme - especially for pupils with dyslexia (Eurydice, 2014b).

Improving the quality of pre-service and inservice teacher learning: Danish early childhood educators are professionally trained at the bachelor's level in providing care and supporting development (Winther-Lindqvist, 2013).

Denmark requires primary and lower-secondary teachers to have a bachelor's degree which takes four years' study. The alternative Merit Teacher Education Programme takes 2.5 years. Teachers of upper-secondary students are required to complete a Master's degree, which takes five years (European Commission/EACEA/Eurydice, 2013. Key Data on Teachers and School Leaders in Europe).

According to PIRLS 2011 (Mullis et al. 2011, exh. 7.1, p. 188), 4% of students in Fourth grade are taught by teachers who completed a Postgraduate University Degree, 75% by teachers who completed a Bachelor's Degree or equivalent but not a Postgraduate Degree, 19% by teachers who completed post-secondary education but not a Bachelor's Degree, and 1% by teachers with no further education than upper secondary education. Hence, as of 2011, not all primary teachers held a graduate or post-grade degree.

In PIRLS 2011, primary teachers indicated the level of emphasis given to a number of topics deemed relevant to teaching literacy in their pre-service teacher education. The data indicate relatively less emphasis on teaching reading pedagogy in initial teacher education (49% of students are taught by teachers who identify it as an area of emphasis, compared with the EU-24 average of 59%). Similarly, a slightly lower proportion of students in Denmark (65%) were taught by teachers who reported that the test language was an area of emphasis during their initial teacher training, compared with the average across the participating EU countries (74%).

PIRLS data also suggest that initial teacher education in Denmark places less emphasis on the assessment of reading (14% of students in Denmark are taught by teachers who identify it as an area of emphasis), than the EU-24 average (27%).

Differences in areas of emphasis may reflect the fact that teacher candidates in Denmark can select areas of specialism in foundational competences and main subjects. Hence, although the Pedagogy and Teaching Profession component of foundational competences includes pupils' learning and development, general teaching proficiency, special needs and remedial training, and Danish as a second language, candidates can vary in the emphasis they place on these topics (Danish Ministry of Education and Science, 2015).

Since 2013, the Bachelor of Education programme has been guided by competency objectives for teaching practice, though University Colleges (Professionshøjskoler), the institutions that offer teacher education programmes have additional autonomy in setting programme structures and determining the content of modules for development of different teacher profiles (OECD, 2013).

Inservice teacher education/Continuing professional development: In Denmark, the school leader (principal) and the teacher together decide on a continuing educational professional plan, as per the 2011 collective agreement for teachers in the municipalities, which has been agreed upon between the Danish Union of Teachers (Danmarks Lærerforening) and Local Government Denmark (Kommunernes

Landsforening). CPD is not directly related to professional promotion or to salary increases. Danish teachers are free to participate in CPD if they wish.

In TALIS 2013 (OECD, 2014b), 88% of primary teachers in Denmark reported that they had been involved in some form of professional development in the 12 months prior to the study, with just 15% contributing to the costs. Post-primary teachers in Denmark in the same study reported similar participation levels.

Many of the in-service training possibilities for teachers are at the university colleges, which have departments in many cities in Denmark. Here, in-service training is offered in the form of courses, with diplomas, degrees and other awards available in a range of areas (e.g. supplemented main subjects, guidance programmes, school librarian programmes etc).

There is no formal assessment of either the participating teacher or the in-service training system. Teachers who have participated in in-service training courses normally receive a certificate (Eurydice, 2013, Fig. C6, p. 64; Eurypedia Reports on CPD).

Time spent on professional development related to literacy: Concerning the participation rate of primary school teachers in literacy-related professional development, two sources of information are available: In PIRLS 2011, teachers were asked how much time they had spent on reading professional development in the past two years before the study. In Denmark, 25% of the students were taught by teachers who spent 16 hours or more (EU-24 average: 18%), 49% were taught by teachers who spent some time but less than 16 hours (EU-24 average 53%), and 26% were taught by teachers who spent no time (EU-24 average 29%) (Mullis et al. 2012, exh. 7.4, p. 196) (Appendix C, Table J4).

Denmark, Ireland, the United Kingdom (England) and Norway are the only countries where fully-qualified teachers can obtain an additional qualification to become a specialist in teaching reading. In Denmark, a university college programme worth 30 ECTS leads to a qualification as a specialist in teaching literacy (Laesevejleder). It focuses on children's language development, literacy (including reading and writing difficulties), assessment and counselling. In schools, these specialists advise classroom teachers on successful methods and suitable learning materials. They also interpret and communicate screening test results to teachers and parents (Eurydice, 2011a).

A relatively high proportion of students in Denmark (16%) are taught by teachers who did not attend professional development related to reading in the two years prior to the PIRLS 2011 assessment. It would seem important to ensure that all teachers engage in professional development in reading / literacy on an ongoing basis.

4.2.3 Adults

Monitoring the quality of adult literacy providers: A unit based at the Ministry of Education is responsible for the quality and inspection of adult education providers and screens the quality of the FVU on the basis of statistical information.

In additional to this centralised monitoring, the responsibility for quality assurance is devolved to the head of each provider. Quality is ensured through the national standards of the education.

Developing curricula for adult literacy: The FVU-reading courses follow a compulsory national curriculum set by the Ministry of Education. The Ministry also provides a guide for FVU-reading, elaborating the aims, learning objectives, suggestions for methodology and activities. Following the guide is non-compulsory.

The delivery of literacy courses to adults in Denmark is underpinned by the belief that teachers should use materials that are authentic for the students, such as using written materials that the students encounter in their everyday lives, including in their work place.

Improving the qualification and status of teachers of adult literacy: Adult education professionals in Denmark are generally well-regarded and enjoy working conditions on a par with those working in primary or lower secondary schooling, although they earn less than those teaching in upper secondary schools. They are, however, a smaller group than school teachers and thus lack visibility in the media and in other arenas.

Adult literacy teachers are required to have a FVU-reading diploma in addition to both a Bachelor degree (or equivalent) and two years of work experience. In general, participation on the diploma course is funded by the employing organisation: the course follows a curriculum set by the Ministry of Education. In-service training is decentralised and the responsibility of each school/institution.

4.3 Increasing Participation and Equity

4.3.1 Pre-primary Years

Encouraging pre-school attendance, especially for disadvantaged children: Attendance at formal care and preschool by children aged 3-5 years is higher in Denmark than in most EU countries, ranging from 97% among 3-year olds to 88% among 5 year-olds. Average attendance among 3-5 year olds is 94%, compared with an EU average of 83% (OECD, 2014a[12]). Compulsory education starts at age 6.

Addressing speech and language difficulties: Special needs education and support for pre-school children is available to those with speech or language difficulties, and is usually provided by a speech or hearing specialist. The educational-psychological service (PPR) assesses the child every six months. Special assistance is offered to these children in order to prevent development that would be harmful for the child and to limit the consequences of their impairment, as well as to support and develop the child's linguistic and communicative skills[13].

4.3.2 Children and Adolescents

Support for children with special needs: In Denmark, nearly 5 percent students of the total school population are identified as having SEN (special educational needs) (EU Employment, Social Affairs & Inclusion 2013, p.11). The general objectives of supplementary and special education state that children with special needs should be taught in mainstream schools as far as possible, and that all children are entitled to teaching adapted to their prerequisites, possibilities and needs. Following this, teaching objectives are similar to those that apply to the different levels of the education system.

Since the Danish parliament amended the Folkeskolen Act in 2012 to make schools more inclusive, schools still have access to external specialised advice from pedagogical and psychological services, if the head teacher so requires or if some students are to be offered special needs education. However,

[12] See: www.oecd.org/social/family/database.

[13] See: https://www.european-agency.org/country-information/denmark/national-overview/special-needs-education-within-the-education-system.

schools are no longer dependent upon external advice for implementation of supplementary education or other support[14].

In Denmark, a pupil with special education needs typically remains in a mainstream school class and receives special education in one or more subjects as a supplement to general teaching. A pupil may receive special education that replaces participation in regular education in one or more subjects. Alternatively, they may be taught in a special class, either in mainstream or special school settings. Finally, the pupil may attend either a mainstream school class or a special class and be taught in both types of classes. Special classes exist for pupils with, for example, intellectual disabilities, dyslexia, visual impairment, hearing impairment, and physical disabilities (ibid).

According to Special World[15], Denmark is to introduce a nationwide test to identify dyslexic difficulties. The test had been developed in partnership with the Centre for Reading Research at Copenhagen University and the School Research Programme at Aarhus University, and is based on internationally recognized research into dyslexia. However, its use in schools is voluntary.

Support for migrant children and adolescents whose home language is not the language of school: In Denmark, around 10% of students in basic school speak Danish as a second language (Mejding & Nørgaard Fink, 2012), though in PIRLS 2011, 16.9% of students in Grade 4 reported that they sometimes speak a language other than the test language at home, while 1.1 % reported that they never spoke the language of the test at home.

Schools offer instruction in Danish as a second language for students who are not able to follow the same instruction as the rest of the class. While instruction in Danish as a second language is viewed as part of ordinary instruction, it is differentiated to meet a student's specific needs. If needed, students may receive instruction outside the classroom from a second-language specialist (Mejding & Nørgaard Fink, 2012, p. 188).

Schools in Denmark have a high degree of autonomy, so the strategies and actions used to support immigrants may vary across schools and municipalities (Nusche et al. 2010). However, proficiency in the language of instruction (Danish) is recognized as important across the education system (Nusche et al., 2010).

Denmark has adopted a needs-based approach, where every child's language needs are assessed and support is provided accordingly. All immigrant pupils undergo a language evaluation when they first enter the school system, or when they change schools. The aim of this language assessment is to determine if and to what extent the pupil needs language support (Nusche et al., 2010).

Danish as Second Language (DSL) is one of the school subjects in the national curriculum. It is taught to all pupils who are assessed as needing such instruction in order to perform on a par with their native peers in other subjects. There is also an increasing focus on integration of content and language learning – learning the language in all subjects (Rydin et al., 2011).

Danish as Second Language is offered in the vocational education and training (VET) sector, too. A subject called "vocational Danish as a second language" has been developed for bilingual students who need to improve their Danish language proficiency in order to complete a VET programme. The subject is an optional part of the VET programmes (Nusche et al., 2010).

[14] See: https://www.european-agency.org/country-information/denmark/national-overview/special-needs-education-within-the-education-system.

[15] See: http://www.specialworld.net/2015/06/20/denmark-to-introduce-national-dyslexia-test/, June 20, 2015.

There are aspects of the language support system which may lead to interruptions in the DSL learning process of students. For example, once a bilingual student leaves the DSL support system, they no longer have a right to get back into the system or to receive DSL support at a later time. In the VET sector, the provision of DSL support relies on self-selection of students rather than on a mandatory needs assessment. In addition, DSL is intensely provided at the pre-school level, but at the school level it is often limited to basic remedial instruction for beginners. DSL classes concentrate on students in the first years of Folkeskole where they develop basic conversational Danish skills. This support is often not followed into the later years of Folkeskole to enable immigrants to enhance their proficiency in academic Danish (Nusche et al., 2010).

Immigrant pupils in Denmark often do not receive mother tongue instruction. This is partly due to the fact that the immigrant population is small in number, but great in variation – in all, immigrants speak 100-200 languages, so the policy of not providing mother tongue instruction (it is not obligatory) has been developed in view of financial and practical difficulties (Rydin et al., 2011).

Asylum seekers and refugees of age 7-16 are usually taught at an asylum center, although some pupils may get to participate courses at a Folkeskole (The Danish Immigration Service, 2014). In reception class programmes, children are taught separately for two years and the focus is on supporting them to develop their language skills before transferring them to a mainstream classroom. In language stimulation programmed, pupils are with provided Danish instruction up to 15 h/week, but otherwise participate in mainstream classes (Rydin et al., 2011).

Pupils usually receive DSL lessons separately, although at the school level it is often limited to basic remedial instruction. DSL classes concentrate on developing basic conversational Danish skills. Once having acquired these basic communicative Danish skills, immigrants often attend only mainstream classes. Their further language learning then depends on the capacity of the mainstream teachers to differentiate instruction (Nusche et al., 2010).

Denmark has a clear system for addressing the needs of newcomer students, including those who speak a language different from the language of instruction. The system needs to be monitored in the years ahead to ensure that it is as effective as possible in addressing current and emerging needs.

Preventing early school leaving: According to Eurostat, in Denmark, the rate of early school leavers was 8.0% in 2013, down from 9.1% a year before. The target value of the early school leaving (ESL) rate set for 2020 is under 10%. The percentage of 18-year olds in education was 84.8% in 2011, which situated Denmark above the EU-27 average (80.7%). By 2012, this increased to 86.4%. Since 2001, Denmark has consistently exceeded the EU average value for this indicator.

In Denmark, 52 municipal Youth Guidance Centres help young people continue to complete their chosen education programme. The main target groups are pupils in primary and lower secondary schooling and young people under the age of 25 who are not involved in education, training or employment. The Youth Guidance Centres support young people during their studies and in their transition to the labour market. In compulsory education, each pupil is required to prepare an education plan in partnership with a youth guidance counsellor. After compulsory education, Danish municipalities are legally obliged to monitor all young people between 15-17 years of age and help those who are not in employment or education (European Commission/EACEA/Eurydice, 2013, p. 40).

In Denmark, the policy approach to reducing early school leaving is organised in three strands: 1) Supporting measures for pupils who need help and motivation to complete compulsory education. The measure includes special courses for improving basic skills in reading and writing, help with

homework and more practically-oriented classes for pupils lacking academic skills; 2) Improved mentoring, guidance and bridging courses for disadvantaged pupils who are struggling and need support through their compulsory education. Youth Guidance Centres support young people during their studies and in their transition to the labour market; and 3) More differentiation and individualisation of educational provisions in order to meet the needs of all pupils, match talent and support disadvantaged pupils (European Commission/EACEA/Eurydice, 2013, p. 43).

4.3.3 Adults

Increasing offers for second-language learners: Courses in Danish as a second language are available free to adult migrants for the first 3-5 years they live in Denmark. The courses, which are paid for by the local municipalities, are provided by municipal language centres. For those who no longer qualify for this offer, the FVU have a free, special course aimed at this target group.

There are three different courses aimed at the student's different objectives and skills. All three courses have their separate curriculum described by the Ministry of Education. The courses are delivered by teachers specially trained in teaching Danish as a second language. Those with literacy needs in their own language are also provided for.

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