



LITERACY IN DENMARK

COUNTRY REPORT

CHILDREN AND ADOLESCENTS

March 2016

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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 countries¹. 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 2012². 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 about Children and Adolescents 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 equity⁴).

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 Executive Summary

LITERACY PERFORMANCE DATA

Denmark participated in IEA's PIRLS (4th graders reading comprehension) in 2006 and 2011, in OECD's PISA (15 year-olds' reading) since 2000, and in OECD's PIAAC (adults' reading literacy) in 2012. This means it is possible to describe the changes over time in average reading proficiency, according to different characteristics of the 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 countries had a significantly higher mean score. The performance of 4th graders increased slightly between 2006 and 2011 (+8 score points), which is higher than the EU average; moreover, performance was stable across the three cycles of the study conducted up to now. In PISA 2012, the score for Denmark was also significantly higher than the average for EU countries (496 vs 489 respectively); Denmark's mean score remained slightly higher than the EU average and quite unchanged across PISA cycles.

In PIRLS, 11% of pupils can be considered as low-performing readers; in PISA, this proportion reached 14.6%. These estimates are lower than on average across EU countries (20% in both assessments). In PISA, lower-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 14.6% between 2000 and 2012. These decreases were of similar extent among girls and boys (around 3%). The proportion of top-performing readers was 12% 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 comparisons across studies 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 immigrant background were similar. In PIRLS, the mean score difference between those who always spoke the test language at home, and those who spoke another language was slightly higher than in EU countries (30 vs 26). In PISA, this gap according to the language spoken at home was also higher than the EU average (67 vs 54).

In Denmark, the gender gap (in favour of girls) was similar to the corresponding EU average difference in PIRLS 2011 (12) and much lower in PISA (20 vs 44 on average). The gender difference in Denmark decreased slightly 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 increased gender gap.

In conclusion, Denmark proved to be high-performing in reading in 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 the EU average but to a smaller extent, and remained quite unchanged across the three 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 countries 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 higher. The score difference between native and migrant students in PISA is the equivalent of one and-a-half years of schooling.

KEY LITERACY POLICY AREAS FOR DEVELOPMENT (AGE-SPECIFIC AND ACROSS AGE-GROUPS)

Creating a Literate Environment

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%.

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 C⁶, 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

⁶ 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 aloud⁷. 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

⁷ 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.

Improving the Quality of Teaching

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.

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 week⁸.

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

⁸ See: <http://www.thelocal.dk/20140811/denmarks-public-schoolchildren-enter-a-new-era>.

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.

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-backpack⁹ 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 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-graduate 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

⁹ See: <http://www.uvm.dk/~UVM-DK/Content/News/Udd/Gym/2012/Nov/121102-It-rygsaek-skal-hjaelpe-ordblinde-elever>.

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.

Increasing Participation, Inclusion and Equity

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, 2014a¹⁰). 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 skills¹¹.

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, schools are no longer dependent upon external advice for implementation of supplementary education or other support¹².

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

¹⁰ See: www.oecd.org/social/family/database.

¹¹ See: <https://www.european-agency.org/country-information/denmark/national-overview/special-needs-education-within-the-education-system>.

¹² See: <https://www.european-agency.org/country-information/denmark/national-overview/special-needs-education-within-the-education-system>.

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 World¹³, 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).

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

¹³ See: <http://www.specialworld.net/2015/06/20/denmark-to-introduce-national-dyslexia-test/>, June 20, 2015.

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).

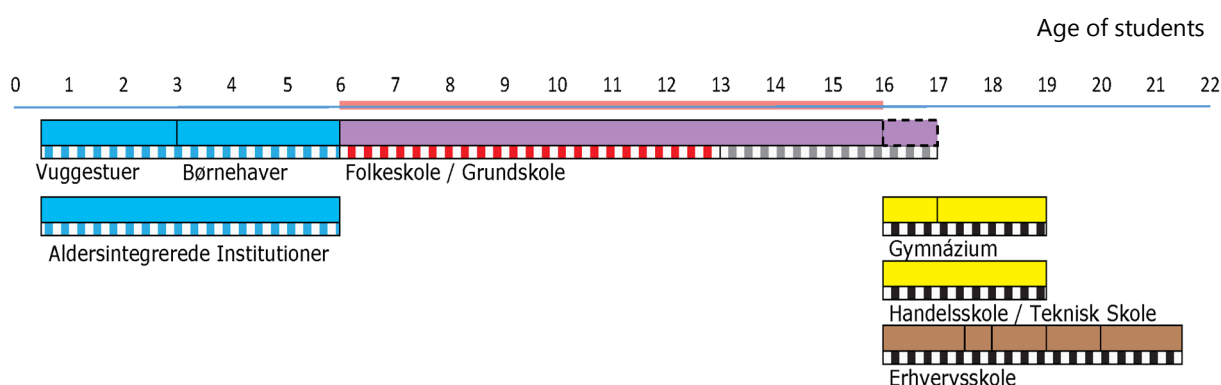
In Denmark, the policy approach to reducing early school leaving is organised in three strands: 1) Supporting measures for pupils who need help and motivation to complete compulsory education. The measure includes special courses for improving basic skills in reading and writing, help with homework and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

3 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 centres (six to ten years). Each institution varies in size and the manner of its organisation and most are unit-based, so that every child belongs to a unit with particular adults

Figure 1: Structure of the Denmark School System¹⁴



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)

¹⁴ 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 institutions 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).

4 Literacy Performance Data for Children and Adolescents

4.1 Primary Children

The performance data for primary children are derived from the IEA's PIRLS studies.

Inaugurated in 2001 and conducted every 5 years, **PIRLS (Progress in International Reading Literacy Study)** is an assessment of pupils' reading achievement at fourth grade organised by the Association for the Evaluation of Educational Achievement (IEA). The survey was administered in 35 countries in 2001, 45 education systems in 2006, and 50 in 2011. PIRLS assesses different purposes for reading (literary and informational) and different reading processes (retrieve explicit information, make inferences, interpret and integrate ideas and information, examine and evaluate content, language, and textual elements). Both multiple choice and open-ended questions are used.

Combining newly developed reading assessment passages and questions for 2011 with a selection of secure assessment passages and questions from 2001 and 2006, PISA 2011 allowed for measurement of changes since 2001. PIRLS 2011 also examined the national policies, curricula and practices related to literacy in participating countries, and included a set of questionnaires for students, parents/caregivers, teachers, and school principals to investigate the experiences that young children have at home and at school in learning to read, in particular their attitudes and motivation towards reading.

For all PIRLS data used in this report, detailed tables with data for all participating countries in ELINET are provided, together with the EU averages (see. Appendix C: ELINET PIRLS 2011 Data, Appendix D: ELINET PIRLS 2006 Data).

4.1.1 Performance and variation in reading: proportion of low and high performing readers

Students in Denmark achieved an overall mean reading score of 554 (one-quarter of a standard deviation above the EU-24 average) in PIRLS 2011 (Table 1). Only Finland (568) and Northern Ireland (559) among the EU-24 achieved significantly higher mean scores.¹⁵ Performance in Denmark was similar across reading purposes (Literary, Informational) and reading processes, (Interpret, Integrate & Evaluate; Retrieve & Inference) (Appendix C, Tables A.2-A.5).

Table 1: Overall Performance on PIRLS 2011 – Denmark and EU-24 Average

	Overall Reading – Mean Score
Denmark	554
EU-24	535

Significant differences (relative to the EU-24 Average) are shown in **bold**.

¹⁵ While students in Northern Ireland and England tested at different grade levels than students in Denmark (due to different approaches to the organisation of schooling in those countries), they had lower average ages.

In 2006, students in the Denmark achieved a mean score of 546 on the overall reading scale. There was a significant rise in performance of 8 points between 2006 and 2011 (Table 2). This rise in performance in Denmark is in contrast to the EU-24 average, where performance was largely consistent across the three rounds of testing. Denmark did not participate in PIRLS in 2001 so a comparison cannot be drawn between 2001 and 2011.

Table 2: Trends in Performance 2001-2011 (Overall Scale) – Denmark and EU Average

	2001	2006	Change (2006-2001)	2006	2011	Change (2011-2006)	2001	2011	Change (2011-2001)
Denmark	-	546	-	546	554	8	-	554	-
EU-24 Avg.	534	534	0	534	535	1	534	535	1

Significant differences in **bold**.

In Denmark, 11% of students performed at or below the Low benchmark on overall reading (Table 3). This is 9 points lower than the EU average of 20%. Though Denmark is behind countries such as Finland (8%), the Netherlands (10%) and Croatia (10%) in terms of the proportion of students performing at or below the Low benchmark, Denmark's standing relative to most EU countries on this indicator is strong (see Appendix C, Table A.6). In Denmark, 12% of students achieve at the Advanced benchmark. This is well above the EU average of 9%, but behind countries such as Northern Ireland (19%), England (18%) and Finland (18%).

Table 3: Performance by Overall PIRLS Reading Benchmarks 2011 - Percentages of Pupils – Denmark and EU Average

	Below 400	400-475 Low	475-550 Intermediate	550-625 High	Above 625 Advanced
Denmark	1	10	33	43	12
EU-24	5	15	36	35	9

Denmark's standard deviation of 64 was 6 points lower than the EU-24 average indicating a slightly smaller spread of achievement (Table 4). The difference between the scores of students at the 10th and 90th percentiles in Denmark – 164 points – is 16 points below the corresponding EU-24 average of 180, suggesting that achievement is more clustered in Denmark than in the EU over all.

Table 4: Spread of Achievement – Standard Deviation, 10th, 90th Percentiles, and Difference between 90th and 10th Percentiles on Overall Reading – Denmark and EU-24 Average

	Standard Deviation	10 th Percentile	90 th Percentile	90 th -10 th
Denmark	64	468	632	164
EU Avg	70	441	621	180

In 2011, girls in Denmark achieved a mean score on overall reading that was higher than boys by 12 points. This was the same as the EU-24 average difference of 12 points (Table 5).

Table 5: Trends in Performance by Gender 2001-2011 (Overall Scale) – Denmark and EU-24 Average

	Denmark			EU		
	Girls	Boys	Girls-Boys	Girls	Boys	Girls-Boys
2011	560	548	12	541	529	12
2006	553	539	14	541	528	13
2001	-	-	-	542	525	17

Significant differences in **bold**

4.1.2 Gaps in reading

As in every European country there are achievement gaps between different groups in Denmark.

Parents' educational achievement

Students in Denmark whose parent(s) attended University or Higher achieved a mean score (570) that was some 56 points higher than students whose parents completed Lower Secondary or below (514) (Table 6). The average difference across the EU-24 was 76 points, indicating a relatively weaker relationship between parents' educational level and performance in Denmark.

Table 6: Percentages of Parents Whose Highest Level of Education was Lower Secondary, and Percentages who Finished University or Higher – Denmark and EU-24 Average

Level of Education	Lower Secondary or Below		University or Higher		Difference (Univ or Higher – Lower Sec)
	%	Mean	%	Mean	
Denmark	8	514	56	570	56
EU-24	18	495	30	571	76

Statistically significant mean score differences in **bold**.

Primary language spoken at home different from language used at school

In Denmark, 82% of pupils reported that they always spoke the language of the PIRLS reading test at home – only slightly above the corresponding EU-24 Average (80) (Table 7). Eighteen percent said that they sometimes or never spoke the test language at home. The difference in achievement between pupils in Denmark reporting that they always or sometimes/never spoke the language of the test was 30 points – slightly above the corresponding EU-24 average difference (26).

Table 7: Percentages of Students Reporting that They Always or Sometimes / Never Speak the Language of the PIRLS Test at Home, and Associated Mean Score Differences – Denmark and EU-24 Average

Language of the Test Spoken at Home	Always		Sometimes /Never		Mean Score Difference (Always – Sometimes/Never)
	%	Mean	%	Mean	
Denmark	82	560	18	530	30
EU-24 Avg	80	541	20	519	26

Statistically significant mean score differences in **bold**.

Gender

The gender gap in Denmark, in favour of females (12 score points) is statistically significant, and the same as the corresponding EU-24 average (12). The gender gap has narrowed marginally in Denmark, from 14 points in 2006 to 12 in 2011.

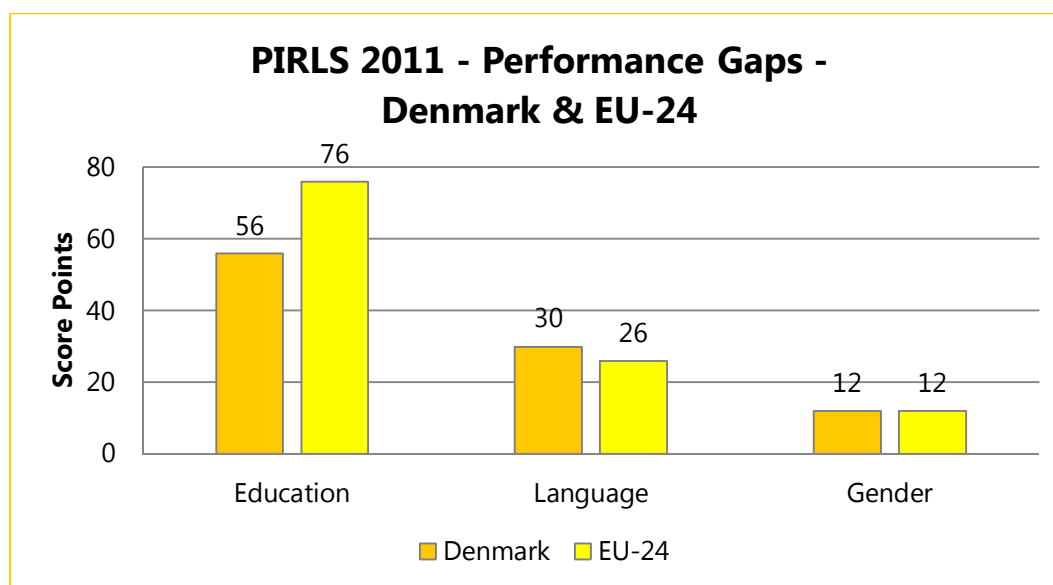
Table 8: Trends in Performance by Gender 2001-2011 (Overall Scale) –and EU-24 Average

	Denmark			EU		
	Girls	Boys	Girls-Boys	Girls	Boys	Girls-Boys
2011	560	548	12	541	529	12
2006	553	539	14	541	528	13
2001	-	-	-	542	525	17

Significant differences in **bold**

Gaps in performance for different at-risk groups in Denmark and on average across EU countries are shown in Figure 2.

Figure 2: Performance Gaps – Gender, Education and Language Spoken at Home



Education: Parent has University vs. Lower Secondary/Primary education; Language: Student speaks language of the test at home always vs. sometimes/never; Gender: Girls – boys;

Attitudes to Reading

There was a difference of 43 points between the top and bottom quartiles of the like Reading Scale in Denmark in 2011 (Table 9). On average across the EU-24, the difference between pupils in the top and bottom quarters of the Like Reading scale was 52 points, indicating a relatively weaker relationship between Liking Reading and performance in Denmark.

Table 9: Mean Overall Reading Scores of Students in the Top and Bottom Quartiles of the PIRLS Like Reading Scale – Denmark and EU-24 Average

Like Reading	Overall Reading Score		
	Top Quartile	Bottom Quartile	Difference (Q4-Q1)
Denmark	579	536	43
EU-24	563	511	52

Significant differences in **bold**

Students in Denmark in the top quarter of the Confidence in Reading scale achieved a mean score (590) that was some 80 points higher than students in the bottom quarter (510) (Table 10). The average difference across the EU-24 was also 80 points.

Table 10: Mean Overall Reading Scores of Students in the Top and Bottom Quartiles of the PIRLS Confidence in Reading Scale – Denmark and EU-24 Average

Confidence in Reading	Overall Reading Score		
	Top Quartile	Bottom Quartile	Difference (Q4-Q1)
Denmark	590	510	80
EU-24	570	490	80

Significant differences in **bold**

4.1.3 National literacy surveys at primary level

The national tests in Denmark are IT-based and the pupils answer the questions online via the internet. Test results (e.g., scores, reports) are automatically calculated and generated. The tests are supplied to the schools free of charge. The tests are adaptive. Each test contains three separate adaptive test sessions which deal with different dimensions of the subject (so-called "profile areas", described below).

The main purpose of the testing system is to provide teachers with information for pedagogical purposes. The tests serve as a pedagogical tool that can help the teacher analyse the proficiency level of the pupils and the level of the class. In order to reduce the incentive to "teach to the test" and as precautionary measures against ranking of teachers, schools or local communities, it is forbidden by law to publish the test results. Any test result obtained by a pupil, an average by a group of pupils, classes, schools, or municipalities is strictly confidential.

Since 2010, all students in Grades 2, 4, 6 and 8 have taken Danish language tests that focus on reading (language comprehension, decoding and text comprehension). In addition to the national tests is an optional test in Danish as a second language in Grades 5 and 7.

4.2 Adolescents

The performance data are derived from the OECD PISA study.

The Programme for International Student Assessment (PISA) led by OECD¹⁶ **assesses the skills and knowledge of 15-year-old students every three years in all OECD countries** and in a number of partner countries.

Since 2000, PISA has been testing students in reading, mathematics and science. The OECD assessment also collects information on students' backgrounds and on practices, motivational attributes and metacognitive strategies related to reading.

The PISA tests assess different aspects of reading literacy – retrieve information, interpret, reflect on and evaluate texts – and use a variety of texts – continuous (prose) and non-continuous (texts including graphs, tables, maps...). About half of the questions are multiple-choice, the other half open-ended (short or constructed answers). Results are reported on scales defining different levels of proficiency ranging from 1 (low performing) to 6 (high performing). Level 2 is considered as the level all 15 year-olds should reach to enable them to participate effectively to society. Since 2015, PISA has been administered on computers only in most participating countries.

The follow-up of students who were assessed by PISA in 2000 as part of the Canadian Youth in Transition Survey has shown that students scoring below Level 2 face a disproportionately higher risk of poor post-secondary participation or low labour-market outcomes at age 19, and even more so at age 21, the latest age for which data from this longitudinal study are currently available. For example, of students who performed below Level 2 in PISA reading in 2000, over 60% did not go on to any post-school education by the age of 21; by contrast, more than half of the students (55%) whose highest level was Level 2 attended college or university (OECD 2010, S. 52).

4.2.1 Performance and variation in reading; proportion of low and high performing readers

Denmark has participated in PISA since 2000. It is therefore possible to describe the change in average reading performance over twelve years, according to different characteristics of the readers. In PISA 2012, students in Denmark performed 7 score points above the participating EU countries' average (Table 11).

Table 11: Reading performance in PISA 2012

	Mean	S.E.
Denmark	496	(2.7)
EU-27	489	(0.6)

S. E. = standard error; Significant differences between the country and the EU average are shown in **bold**.

¹⁶ See: <http://www.pisa.OECD.org>.

The performances in reading of Danish students remained relatively constant between 2000 and 2012 (Table 12) with marginally lower growth than on average across EU countries.

Table 12: Trends in reading performance - PISA 2000-2012

	2000		2009		2012		Change 2000–2009		Change 2009–2012		Change 2000–2012	
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.
Denmark	497	(2.4)	495	(2.1)	496	(2.7)	-2	(5.8)	1	(4.3)	-1	(7.1)
EU-27	489*	(0.7)	486**	(0.6)	489***	(0.6)	-3*	(5.0)	5**	(2.7)	3*	(6.0)

Significant differences between assessment cycles in **bold** *EU21 **EU26 ***EU27

In PISA 2012, the spread of achievement between those students who performed in the 10th and 90th percentiles in Denmark was smaller than in the participating EU countries on average (Table 13). For girls, the spread of achievement was 205 compared with 230 for the EU-27 countries. The spread of achievement for boys in Denmark was slightly higher (219) than for the girls but still significantly lower than that of the EU-27.

Table 13: Spread of achievement. Difference between 10th and 90th percentiles on the reading scale, all students and by gender – PISA 2012

	Difference 90 th –10 th for all students		Difference 90 th –10 th for girls		Difference 90 th –10 th for boys	
	Score diff.	S.E.	Score diff.	S.E.	Score diff.	S.E.
Denmark	216	(5.0)	205	(5.9)	219	(7.7)
EU-27	251	(1.3)	230	(1.2)	259	(1.6)

Significant differences between the country and EU in **bold**

In Denmark the proportion of both low-performers and high-performers is a little lower than in EU countries on average (Table 14). Combined with the smaller spread of achievement found among students in Denmark, this indicates that more students in Denmark are clustered in the mid-range.

Table 14: Percentage of low-performing (below level 2) and high-performing (levels 5 and 6) students - PISA 2012

	Below level 2		Levels 5 and 6	
	%	S.E.	%	S.E.
Denmark	14.6	(1.1)	5.4	(0.6)
EU-27	19.7	(0.2)	7.0	(0.1)

Significant differences between the country and EU in **bold**

Between 2000 and 2012, the proportion of low-performing readers in Denmark has decreased slightly, by 3%. This decrease can be seen among both girls, by 3%, and boys, by just under 3%.

Table 15: Trends in the proportion of low-performers (below level 2) in reading, all students, and by gender – PISA 2000-2012

	All students		Girls		Boys	
	%	S.E.	%	S.E.	%	S.E.
2000	17.9	(0.9)	13.3	(1.0)	21.8	(1.3)
2009	15.2	(0.9)	11.5	(0.9)	19.0	(1.3)
2012	14.6	(1.1)	10.1	(0.9)	19.2	(1.5)

Significant differences between assessment cycles in **bold**

4.2.2 Gaps in reading performance

Socio-economic status

In Denmark the gap in reading performance according to the students' socioeconomic background is slightly less pronounced than on average in the participating EU countries (Table 16). Denmark performs slightly better and is more equitable than an average across the EU-26.

Table 16: Difference in reading performance between bottom and top national quarters of the PISA index of economic, social and cultural status – PISA 2009

	Score diff.
Denmark	81
EU-26	89

Significant differences in reading performance between bottom and top national quarters in **bold**

Migration

In PISA 2009, the percentage of students in Denmark with an immigrant background was 8.6%, which is similar to the average of the EU-26 countries. Nevertheless, the gap between native students and those with an immigrant background is higher in Denmark (63 score points) than in the EU countries on average (38 score points) (Table 17). The gap in Denmark is equivalent to one year of schooling.

Table 17: Percentage of students and reading performance by immigrant status – PISA 2009

	Native students				Students with an immigrant background (first- or second-generation)				Difference in reading performance between native and students with an immigrant background	
	Percentage of students	S.E.	Performance on the reading scale		Percentage of students	S.E.	Performance on the reading scale		Score dif.	S.E.
			Mean	S.E.			Mean	S.E.		
Denmark	91.4	(0.4)	502	(2.2)	8.6	(0.4)	438	(3.8)	63	(3.9)
EU-26	91.7	(0.02)	490	(0.4)	8.3	(0.02)	452	(6.4)	38	(6.4)

Significant differences between native and students with an immigrant background in **bold**

Language spoken at home

In PISA 2012, only 5% of students in Denmark did not speak the test language at home, compared to 13% on average across the EU-27. The gap in performance between those who did and did not speak the test language at home was slightly higher in Denmark (67 score points) than the EU-27 average. It is equivalent to one and a half year of schooling (Table 18).

Table 18: Percentage of students and reading performance by language spoken at home – PISA 2012

	Speak test language at home				Speak another language at home				Difference in reading according to language spoken at home	
	Percentage of students	S.E.	Performance on the reading scale		Percentage of students	S.E.	Performance on the reading scale		Score dif.	S.E.
			Mean	S.E.			Mean	S.E.		
Denmark	95.5	(0.3)	501	(2.1)	4.5	(0.3)	434	(5.3)	67	(5.2)
EU-27	86.7	(0.02)	494	(0.4)	13.3	(0.02)	441	(5.4)	54	(5.4)

Significant differences according to language spoken at home in **bold**

Gender

In PISA 2009, the gender difference in reading performance was lower in Denmark than in participating EU countries on average – 29 points, compared with 44 (Table 19).

Table 19: Mean reading performance by gender and gender differences – PISA 2009

	Boys		Girls		Difference (G - B)	
	Mean	S.E.	Mean	S.E.	Score diff.	S.E.
Denmark	480	(2.5)	509	(2.5)	29	(3.3)
EU-26	463	(0.5)	506	(0.4)	44	(0.5)

Significant differences between boys and girls in **bold**

In Denmark between 2000 and 2012, girls' performance stayed relatively constant, increasing by just 2 score points, while the boys' performance decreased slightly, by 4 score points. The trend is somewhat similar to that of the EU countries on average in the same period: girls' performance increased by 5 score points while the boys' decreased by the same value (Table 20).

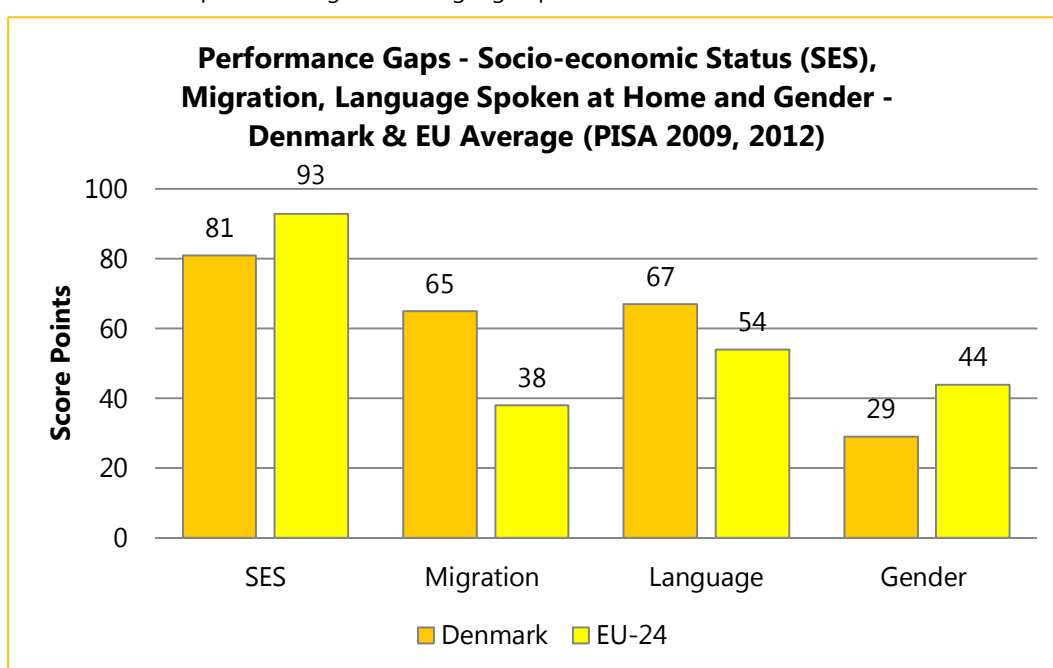
Table 20: Trends in reading performance by gender – PISA 2000-2012

	Denmark				EU-27			
	Girls		Boys		Girls		Boys	
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.
2000	510	(2.9)	485	(3.0)	506*	(0.8)	473*	(0.9)
2009	509	(2.5)	480	(2.5)	507**	(0.7)	464**	(0.8)
2012	512	(2.6)	481	(3.3)	511***	(0.6)	468***	(0.8)

Significant differences between assessment cycles in **bold** *EU21 **EU26 ***EU27

The performance gaps in Denmark and on average across EU countries relating to socioeconomic status, migration, language spoken at home and gender are shown in Figure 3.

Figure 3: Performance Gaps – SES, Migration, Language Spoken at Home and Gender



SES: Top – Bottom national quarters of the PISA index of economic, social and cultural status; Migration: Native - Students with an immigrant background; Language: Speak test language at home – speak other language at home; Gender: Girl - Boy

Engagement and metacognition

In PISA 2009, the gap between the students in Denmark who reported being highly engaged in reading (top quarter), and those reporting low engagement (bottom quarter) was 95 score points – which is equivalent to almost two and a half years of schooling. Not surprisingly, students who report being engaged in reading perform better on the PISA test (Table 21). The difference between the most and the least engaged readers in Denmark was close to the average across the participating EU-26 average.

Table 21: Mean reading scores between students poorly engaged and highly engaged in reading – PISA 2009

	Low quarter		Top quarter		Difference
	Mean	S.E.	Mean	S.E.	
Denmark	451	(2.9)	546	(2.7)	95
EU-26	444	(0.8)	543	(0.8)	99

Significant differences according to the level of reading engagement in **bold**.

In Denmark, there is a gap of 88 score points - equivalent to two years of schooling - between the students who know which strategies are the most efficient to understand and remember a text, and those who have a limited knowledge of these metacognitive activities (Table 22). On average across the participating EU countries, the gap is higher (98 score points).

Table 22: Mean reading scores between students in low and top quarters of understanding and remembering strategies

	Low quarter		Top quarter		Difference
	Mean	S.E.	Mean	S.E.	
Denmark	453	(2.5)	541	(2.4)	88
EU-26	433	(0.8)	531	(0.8)	98

Significant differences according to the degree of awareness of efficient reading strategies (understanding and remembering strategies) in **bold**.

Similarly, students in Denmark who use efficient summarising strategies perform 85 score points above those who do not use these strategies (Table 23). This gap is equivalent to two years of schooling. The gap on average for the EU countries is slightly higher (90 score points). The difference in performance between those who use efficient strategies to aid reading comprehension and those who do not reflects the close relationship between reading proficiency and awareness of efficient reading strategies.

Table 23: Mean reading scores between students in low and top quarters of summarizing strategies

	Low quarter		Top quarter		Difference
	Mean	S.E.	Mean	S.E.	
Denmark	451	(2.5)	536	(2.4)	85
EU-26	440	(0.8)	530	(0.7)	90

Significant differences according to the degree of awareness of reading strategies (summarizing strategies) in **bold**.

4.2.3 National literacy surveys

The same series of national assessments that are run at primary level extend to post-primary level (see above), with all students in Grade 8 sitting an assessment in the Danish language¹⁷.

Teachers can compare the results for their class with the national profile results. So far no results have been published that break down the results on social, migrant or gender gaps.

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 below a number of EU countries. 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.
- The levels of engagement of students in PIRLS in Denmark in both higher- and lower-level reading comprehension skills on a daily or almost-daily basis are low relative to other EU countries. This and the finding that a relatively low percentage of students in Denmark are engaged in 'most' lessons, require further investigation including whether they may arise because Danish teachers understate levels of student engagement.
- 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.
- The performance gap in Denmark between students who have/do not have an immigrant background is considerably greater than the EU average and needs to be reduced. There is also a large performance gap between students who speak the language of the PISA test at home, and those who do not, and this needs to be reduced, too.
- There are large gaps in Denmark (and on average across EU countries) among PISA students who know best which reading comprehension strategies are most effective for understanding and remembering a text and those who do not, and between those who know which summarisation strategies are most efficient, and those who do not, and these gaps need to be reduced.
- 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.

¹⁷ Results from the national tests are not published. However, domain profiles from 2009 onwards can be found at: <http://uvm.dk/Uddannelser/Folkeskolen/Elevplaner-nationale-test-og-trivselsmaaling/Nationale-test/Test-resultater/National-praestationsprofil>.

5 Policy Areas

The High Level Group of Experts on Literacy (2012, p. 38) recommended that all EU Member States should focus on the following areas as they craft their own literacy solutions:

- 1) Creating a more literate environment
- 2) Improving the quality of teaching
- 3) Increasing participation, inclusion and equity (with the term “equity” being added by ELINET).

The following parts refer to these three key issues; however some overlap may occur.

In order to achieve as much comparability as possible across countries, quantitative and qualitative indicators for which information from international data are available are reported. Appendix A provides more information on criteria for the choice of indicators and the chosen indicators for the pre-primary age group. For each of these indicators Appendix B contains a table with numbers for the European countries participating in ELINET. Appendix C has been created using the international database for PIRLS 2011 – and contains separate tables for all information reported.

5.1 Creating a literate environment for children and adolescents

The EU High Level Group of Experts on Literacy stated the following in relation to **creating a more literate environment**:

Creating a more literate environment will help stimulate a culture of reading, i.e. where **reading for pleasure** is seen as the norm for all children and adults. Such a culture will fuel reading motivation and reading achievement: people who like to read, read more. Because they read more, they read better, and because they read better they read more: a virtuous circle which benefits individuals, families and society as a whole (HLG report 2012, p. 41).

Parents play a central role in children’s emergent literacy development. They are the first teachers, and shape children’s language and communication abilities and attitudes to reading by being good reading role models, providing reading materials, and reading to the child.

Schools play an important role in offering a literate environment for students. Schools may foster reading motivation and reading for pleasure by establishing school and classroom libraries, offering a wide variety of books and other reading material in different genres, providing sheltered and comfortable spaces for individual reading activities (like reading clubs), and not forcing children into having to express and exchange their individual (intimate) reading experiences. However, schools do not have sole responsibility. A broad range of actors may shape literacy motivation, from parents and peers to libraries. Parents may provide role models and influence children’s attitudes towards literacy practices. Also, libraries have a vital role if they offer free books, especially for families who cannot afford to buy books. Regional or national campaigns may inspire children and their parents to engage in reading activities (Cf. ELINET Country Reports, Frame of Reference, pp. 29ff.)

Adolescence is a crucial phase in life where young people develop long-term *identities and self-concepts* which include media preferences and practices (*media identity*). In this perspective, it is of great importance that families, schools and communities offer young people rich opportunities to encounter the *culture of reading* and develop a stable *self-concept as a reader/writer* and member of a

literary culture. This includes access to a broad variety of reading materials (in print and electronic forms) and stimulating literate environments in and outside of schools; it also includes opportunities to get actively involved in engaging with texts, and communicating, reflecting on and exchanging ideas about texts with peers and ‘competent others’, such as teachers or parents (Ibid., pp. 45f).

5.1.1 Providing a literate environment at home

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.

Several indicators are used to describe the literate home environment of very young children in this report, drawing on data from international sources (PIRLS) that are comparable across countries. It is important to acknowledge that some of the PIRLS data are self-reported and may be biased by social desirability and the ways in which questions are interpreted by parents within countries.

Parental attitudes to reading

PIRLS 2011 used the “Parents Like Reading Scale” according to their parents’ responses to seven statements about reading and how often they read for enjoyment. The figures are presented below with the percentage of students whose parents “like”, “somewhat like” or “do not like” reading” as reported by PIRLS 2011 (Mullis et al. 2012a, Exhibit 4.4 – Parents Like Reading, p. 120).

- Like: 49.8% (EU average 35.3 %)
- Somewhat like: 40.1% (EU average 52.6 %)
- Do not like: 10.1% (EU average 17.9 %)

(For an overview of European countries see table B1 in Appendix B).

Compared to the EU average, many pupils in Denmark have parents with positive attitudes towards reading. The importance of parental attitudes to reading is shown by the fact that in Denmark there are significant differences in reading performance at grade 4 between children whose parents like to read (average achievement 568) and those who do not (average achievement 527).

Home Educational Resources

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 are in the top quartile (Table 24). The corresponding difference on average across the EU-24 was 79, again indicating that the association between home resources and reading achievement is somewhat weaker in Denmark than on average across the EU-24.

Table 24: Mean Overall Reading Scores by Quartile: Pupils Whose Parents Reported Having Few or Many Home Resources for Learning on Index of Home Education Resources – Denmark and EU-24 Average

Level of Home Resources	Few Resources (Lower Quartile)		Many Resources (Upper Quartile)		Difference (Many - Few)
	%	Mean	%	Mean	
Denmark	25	524	25	586	62
EU-24	25	495	25	573	79

Statistically significant mean score differences in **bold**.

In Denmark, 7% of pupils reported having 10 or fewer books at home, compared with an EU-24 average of 11% (Table 25). More pupils in Denmark (16%) reported having over 200 books than on average across EU countries (12%). The mean score difference in favour of students with 200 books, compared with those who had 10 or fewer books was 73 points in the Denmark, compared with an average of 82 across the EU-24 (ELINET PIRLS Appendix, Table E1). Hence, the relative association between number of books and reading achievement in Denmark is somewhat weaker than on average across the EU-24.

Table 25: Mean Overall Reading Scores of Pupil with 0-10 books at Home, and those with More than 200 Books – Denmark and EU-24 Average

Books in the Home	None or Few Books (0-10)		More than 200 Books		Mean Score Difference (More than 200 – None or few)
	Percent of Students	Mean Reading Score	Percent of Students	Mean Reading Score	
Denmark	7	511	16	584	73
EU-24	11	482	12	563	82

Statistically significant mean score differences in **bold**.

Number of children's books in the home

The PIRLS 2011 database provides the figures below about the number of children's books in the home. Compared to the average across the participating EU countries, the availability of children's books in the home (as reported by parents) is higher in Denmark. Only six percent of pupils in Denmark are reported as having 10 or fewer books at home; this is below the EU average of 12%.

- 0-10: 6.1% (European average 11.8%)
- 11-25: 13.1% (European average 19.7%)
- 26-50: 26.9% (European average 29.4%)
- 51-100: 31.1% (European average 23.4%)
- >100: 22.9% (European average 15.7%).

Early Literacy Activity Scale

PIRLS 2011 reports 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. 2012a, exhibit 4.6 - Early Literacy Activities Before Beginning Primary School, p. 126). Nine activities are considered: reading books, telling stories, singing songs, playing with alphabet toys, talking about

things done, talking about things read, playing word games, writing letters or words, reading signs and labels aloud.

The figures for Denmark in the composite score for all these activities are below (for an overview of European countries see Table B3 in Appendix B):

- Often: 31.9% (EU average 40.7%)
- Sometimes: 66.6% (EU average 57.4)
- Never or almost never: 1.5% (EU average 1.9%).

This means that, in Denmark there are marginally fewer parents who never or hardly ever engage in the nine activities, (1.5%) compared with the EU 24 (1.9%).

While the Early Literacy Activity Scale is a composite score, it is of interest to look at single items. If only the category “often” is considered, the percentage of pupils in Denmark whose parents engaged in literacy-related activities with them before the beginning of primary school is very close to the EU average and in some cases above the average:

- read books to them often: 66.8% (EU average 58.4 %)
- told stories to them often: 40.2% (EU average 51. 5%)
- sang songs to them often: 56.8% (EU average 50.6%)
- played games involving shapes (toys and puzzles) with them often: 55.0% (EU average 63.5%).

(For more details and an overview of European countries see table B 4 – B 7 in Appendix B).

Challenges: Although more children in Denmark than on average across EU countries have access to key home educational resources such as books in the home, and gaps between students with high and low levels of resources are smaller than on average across EU countries, efforts should be made to ensure that all children have access to literacy-related resources during early childhood.

5.1.2 Providing a literate environment in school

Resources teachers use for teaching reading

Since the type of reading materials teachers use in literacy instruction may influence the motivation of students, it is of interest to have a closer look at this matter. PILRS 2011 provides some data. Just over half of students in Denmark (55%) are taught by teachers who use a variety of children’s books as a basis for reading instruction, well above the EU-24 average of 29%, but less than France (72%) or England (83%). While a similar proportion of students in Denmark (50%) are taught by teachers who use textbooks as the basis of reading instruction, this is less than the EU-24 average of 70%. Just three percent of students in Denmark are taught by teachers who report that computer software is used as a basis of reading instruction, despite the county’s heavy emphasis on ICT in the classroom. This is less than the already low EU-24 average (5%), and countries such as Austria (9%) and the Netherlands (10%). However, 71% of students in Denmark are taught by teachers who report using computer software as a supplement, compared with 47% on average across EU countries. This is among the highest proportion of students reported across the participating EU countries, with the exception of Northern Ireland (73%) (Mullis et al. 2012a, exh. 8.12, p. 236, EU averages obtained from Table H1 in Appendix C).

Availability and use of classroom library

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, Table H2). Thus, for 62% of pupils there is no classroom library available. In Denmark, only 5% of students had access to more than 50 books in their class libraries, compared with an EU average of 32% (ibid.). Similarly, fewer students in Denmark (7%) had access to at least three magazines in their class library compared to the average across participating EU countries (28%). Thirty-one percent of students in Denmark could spend class time in the library/reading corner at least weekly – almost half the average across EU-24 countries (61%). 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 the class library at least monthly, considerably higher than on average across EU-24 countries (65%) (Mullis et al. 2012a, 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.

5.1.3 Providing a digital environment

Digital environment of primary students

A literate environment can also be created by incorporating digital devices into the school environment. According to teachers' reports, 87% of students in Denmark have a computer available for reading lessons, compared to the EU-average of 45% (Appendix C, Table I6).

Regarding computer activities during reading lessons, PIRLS provides figures that refer to all students, including those who do not have access to a computer during reading lessons.

The percentage of students in Denmark who engage in specified computer activities during reading sessions at least monthly for various purposes related to literacy include:

- looking up information: 76% (EU-24 average = 39%)
- reading stories or other texts: 65% (EU-24 = 32%)
- writing stories or other texts: 83% (EU-24 = 33%)
- developing reading skills and strategies with instructional software: 54% (EU-24 =27%).

Hence, for each indicator, computer use is greater in Denmark than on average across the EU-24, though it might be noted that the EU-24 averages are quite low (Mullis et al. 2012a, exh. 8.14, p. 242). Computer usage in Denmark is the highest out of all participating EU countries in PIRLS.

Digital environment of secondary students

What classroom resources (books, notebooks, internet...) are used to support the development of adolescents' digital literacy?

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, Danish students use their personal mobile phones and computers for educational purposes more often than EU average. However, the EU average is quite low with 28% of students using the personal mobile phone at least weekly for educational purposes and 11% using the personal laptop at least weekly.

The proportion of teachers in Denmark who use ICT in at least 25% of lessons is 40% in grade 4, and 71 % in grades 8 and 11, which are well above the corresponding EU averages.

Challenges: 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.

5.1.4 The role of public libraries in reading promotion

Cooperation between secondary schools, families, libraries and other agents in literacy promotion for adolescents

The Nationalt Videncenter for Læsning (the National Centre for Reading) carries out various projects within the field of literacy (Eurydice, 2011). Its mission is to promote reading, writing and language development, reaching out to all levels of education (Nationalt videncenter for læsning (N/D). The Centre has completed various projects in cooperation with other reading promotion agencies and offers a wide range of courses geared towards students, teachers and academics (Danmarks Biblioteksforening, 2012).

According to a study conducted by the Aarborg libraries, students of one Danish secondary school have reported that they feel that libraries are boring and that information could be obtained more easily on the internet. Libraries are, therefore, not always seen as a desirable place to spend one's free time. Other reports say that "de unge er vilde med biblioteket!" [Young people are very interested in libraries] (Danmarks Biblioteksforening, 2012).

5.1.5 Improving literate environments for children and adolescents: Programmes, initiatives and examples

Family literacy programs

Family literacy programmes for migrant parents are reported under "Participation, Inclusion and Equity"

The Bookstart project mentioned below is also intended to support efforts to develop family literacy.

Digital projects

The project Sommerbogen 2014 (The Summer Book 2014) organised by the Danish Children's Libraries offers children and adolescents the chance to enter a competition for a prize by reading and reviewing three books of their own choice online. It is, however, directed towards children aged 8-12 years and only just falls within the domain of adolescents (Gavebod, 2010a, 2010b, 2014).

Various web application for Danish eBooks exist, namely www.ereolen.dk and www.ebib.dk, which are both services offered by public libraries. They are, however, in competition. Of the two, eReolen seems to be more attractive to young people. All public libraries take part in the eReolen project. There is also a eReolen app for iOS to directly loan and read an ebook on one's iPad. While this project is open to everyone it can be assumed that adolescents will use it disproportionately. It allows for easy and fast access and eliminates the need to physically travel to a library.

Initiatives to foster reading engagement among children 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.

BookFun 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. During the first reading, the children just sit down and listen – perhaps interrupted by a single question about the story. The second time around, the teacher addresses specific words and pictures which the children need to consider and talk about. On the third reading, the dialogue increases and the children are quizzed, among other things, and the book's storyline is later used as inspiration for games and activities.'

The material is easy to use, and the follow-up research shows that BookFun significantly improves children's ability to communicate – when compared to a test group of children who had the same stories read aloud to them in the conventional way.

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, 2011, p. 131).

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

Læselyst (Love of Reading) 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 the reading quiz for children, Reading, Steady, Answer (Poulsen, 2009).

Challenge: There is a need to ensure that 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. 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.

5.2 Improving the quality of teaching

To improve the quality of teaching, important aspects need to be considered:

- The quality of preschool
- coherent literacy curricula
- high-quality reading instruction,
- early identification of and support for struggling literacy learners
- highly-qualified teachers (cf. Frame of Reference for ELINET Country Reports).

Especially crucial is the quality of teaching and of teachers, as the McKinsey report “How the world best performing school systems come out on top” (McKinsey et al. 2007) states: “The quality of an education system cannot exceed the quality of its teachers” (McKinsey et al. 2007).

5.2.1 Quality of preschool

While early childhood education has long been neglected as a public issue, nowadays early childhood education and care (ECEC) has been recognised as important for “better child well-being and learning outcomes as a foundation for lifelong learning; more equitable child outcomes and reduction of poverty; increased intergenerational social mobility; more female labour market participation; increased fertility rates; and better social and economic development for the society at large” (OECD 2012 *Starting Strong III*, p. 9). In Denmark and in all the other European countries, pre-primary education is an important part of political reflection and action.

The EU High Level Group of Experts on Literacy stated:

Increasing investment in high-quality ECEC is one of the best investments Member States can make in Europe’s future human capital. ‘High quality’ means highly-qualified staff and a curriculum focused on language development through play with an emphasis on language, psychomotor and social development, and emerging literacy skills, building on children’s natural developmental stages (High Level Group Report, 2012a, p. 59).

While there is no international or Europe-wide agreed concept of ECEC quality, there is agreement that quality is a complex concept and has different dimensions which are interrelated. In this report we focus on *structural quality* which refers to characteristics of the whole system, e.g. the financing of pre-primary education, the relation of staff to children, regulations for the qualifications and training of the staff, and the design of the curriculum. There are some data concerning structural quality, but there is a lack of research and data about process quality, practices in ECEC institutions, the relation between children and teachers, and what children actually experience in their institutions and programmes.

Annual expenditure on pre-primary education

According to 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).

Ratio of children to teachers in pre-primary school

No data are available for Denmark (for an overview of European countries see table D2 in Appendix B).

Percentage of males among preschool teachers

No data available for Denmark. The range is from 0.2% in Bulgaria and Hungary to 17.7% in France (for an overview of European countries see table D3 in Appendix B).

Preschool teachers' qualifications

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 (Eurostat 2014, pp. 104–105).

Preschool language and literacy curriculum

The design of the kindergarten curriculum is an important aspect of quality. Therefore, it is included in this section and not in the next section, "Literacy curricula in schools". This also recognises that pre-school children have learning needs that may be different from those of primary school children. Pre-school programmes should focus on developing children's emergent literacy skills through playful experience, not by systematic training in phonics and teaching the alphabet. There is no evidence that systematic instruction of reading in preschool has any benefit for future learning (Suggate 2012).

In 2004 the Educational Curricula Act was passed by the Danish parliament. The curriculum requires all day care centres for pre-schoolers to 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 to pedagogical practice benefitting the children's well-being, learning and development.

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. The following 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 playing in and of itself and learning through playing and play-related activities.

In principle, pre-school teachers are free to choose content, working methods, didactical material, and so forth. However, a municipality may draw up an educational plan, and the parental boards may define the principles of the activities in an institution (Eurypedia). Teaching mostly takes the form of play and other development-based activities. There are no formalised classes or lessons, but there is a growing emphasis on, and interest in, pre-planned pedagogical activities as a means to working towards the aims specified in the local curriculum.

According to Winther-Lindqvist (2013), a national curriculum of six learning themes has been gradually implemented into the play-based system. She also notes that, in the current political climate, providing high-quality care and optimal learning conditions is at the centre of debates. In 2010, the early

childhood education system was placed under the auspices of the Ministry of Education, allowing for a stronger focus on cognitive development.

Fostering the **development of emergent literacy skills** is an important function of pre-school institutions, providing a basis for formal literacy instruction in primary school. Its key components are: oral language development, including vocabulary learning and grammar, familiarisation with the language of books (e.g. through hearing stories read and told), being engaged and motivated in literacy-related activities, experiencing a literacy-rich environment, developing concepts of print, and language awareness (for more information see the frame text of country reports). In our analysis of steering documents, we ask whether these components are included in the preschool curriculum.

Does the curriculum include emergent literacy? If yes, what are the overall aims?

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 designed area for drawing/writing etc.

However, the Eurydice Study of Reading Literacy (2011) 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.

Oral language development and vocabulary learning and grammar

The national curriculum states that “language development” [Danish: Sproglig udvikling] is one of the six mandatory themes, which should inspire pedagogical activities and local curriculum development. A national research-based guide to formulating policy, as well as practice, was published by the Ministry for Social Affairs around the time of the passing of the Act on Preschool Curriculum in 2004. This guide is called “Guldguiden” [eng: The Gold Guide], and it explicitly describes how oral-, written- and bodily expressions should be the focus of a holistic and child-centred approach to language development. In this way the literacy dimension is clearly intended to be part of the national language development theme. Aims are defined on the municipal and local/institutional levels.

There are no formal guidelines or requirements relating to the familiarisation of children with the language of books. See the “Bookfun” example of promising practice on this area.

Challenge: 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.

5.2.2 Literacy curricula in schools

Curricula provide a normative framework for teachers and a guideline for their teaching aims, methods, materials and activities. However, one should keep in mind that there is a difference between the intended curriculum, as outlined in official documents, and the implemented curriculum – what actually happens in the schools.

Primary school curriculum

According to Mejding and Nørgaard Fink (2012), Danish language instruction is considered a single unit from Grades 1-10, and reading instruction is part of the general teaching of Danish language, which focuses on three main areas – oral language proficiency, reading, and writing skills, together with an awareness of language, literature and communication. Mejding and Nørgaard Fink (2012) further state that: “The primary goal of Danish language instruction is to cultivate students’ experience of language, as a source of developing a personal and cultural identity based on aesthetical, ethical, and historical understanding” (p. 183-184).

Although there is a national curriculum in Denmark, and specific objectives and goals are communicated through the Common Objectives 2009, it is common practice for municipalities and local schools to develop their own reading policies based on the national guidelines (Mejding & Nørgaard Fink, 2012). The Common Objectives establish binding national goals in the form of centrally-defined objectives, intermediate and final achievement goals for each subject and goals for the themes in the one-year kindergarten class.

The Common Objectives (2009) for Grades 1 and 2 (combined) assume that basic processes such as awareness of rhymes, phonemes and word formation, and learning the names, shapes and sounds of letters, have been covered in kindergarten. Hence, the focus at Grades 1-2 shifts to application of this knowledge to basic decoding strategies. Students apply these skills in the context of reading alone, and reading aloud to the teacher, a partner or a small group. Work on spelling is also completed.

The Common Objectives for Grades 3-4 suggest that decoding work completed in the earlier grades is built on as students consolidate decoding skills and adjust reading speed and technique to the types of texts they encounter.

The Eurydice (2011) analyses of literacy curricula indicate that the following word identification and phonics skills are covered in Denmark in the course of pre-primary and primary education: progression in recognising words; enriching vocabulary; naming letters and sounds of the alphabet and linking sounds to letters; and using knowledge of letters, sounds and words when writing. The Eurydice analyses suggest that the following elements are not covered: reading a range of familiar and common words independently; using word recognition as a reading strategy; writing own name from memory; writing other names from memory; drawing forms of letters, and using knowledge of letters, sounds and words when writing.

Source: Eurydice (2011). Teaching Reading in Europe: Contexts, Policies and Practices. Brussels: Education, Audiovisual and Culture Executive Agency, p.60, Figure 1.2

Reading for pleasure

According to PIRLS 2011 Encyclopaedia, there is ‘some’ emphasis on reading for pleasure in the intended language/reading curriculum in Denmark. Denmark is among a group of 11 countries participating in PIRLS 2011 which reported some emphasis on reading for pleasure in the curriculum.

Four of the EU-24 countries in PIRLS 2011 reported that reading for pleasure was given a little or no emphasis and 9 countries that it had major emphasis (Mullis et al. 2012b, Vol.1, exhibit 9, p. 36).

Contents of literacy curricula

The Eurydice report "Teaching Reading in Europe" offers broad information about the content of reading literacy curricula and official guidelines (European Commission/EACEA/ Eurydice 2011). In order not to duplicate this work only two aspects were addressed in the ELINET country reports whose importance might not yet be acknowledged and therefore might be missing in the literacy curricula and official guidelines: explicit instruction of grapheme-phoneme correspondences (phonics), and reading strategies.

Explicit instruction of grapheme-phoneme correspondences

At primary level, there is a moderate emphasis on phonics in Denmark, with three of the five skills examined by Eurydice included in official documents. These are: linking sounds to letters and naming sounds and letters of the alphabet; using knowledge of letters, sounds and words when reading; and combining letters and understanding that the same sound can have different meanings (Eurydice, 2011, Figure 1.2). Phonic skills not included in steering documents are: drawing the forms of letters, and using knowledge of letters, sounds and words when writing. Denmark is identified as a country in which phonics instruction is developed throughout the whole of primary level.

Do reading literacy curricula and official guidelines in primary schools include a wide range and a combination of several strategies?

While literacy instruction in the early years is more focused on code-based skills, in later stages it is important to develop and foster a wide range of comprehension strategies with all children. Explicit teaching of comprehension strategies may improve reading comprehension among readers with different levels of ability. These strategies include:

- Drawing inferences or interpretations while reading text and graphic data
- Summarising text and focusing selectively on the most important information
- Making connections between different parts of a text
- Using background knowledge
- Checking/monitoring own comprehension
- Constructing visual representations
- Pupils reflecting on their own reading process (Eurydice 2011, p. 55).

According to the analysis of steering documents by Eurydice (2011, p.60, Figure 1.4) the following reading strategies are mentioned in literacy curricula for primary education in Denmark: Drawing inferences, Summarising text, Making connections between parts of a text, Using background knowledge, Monitoring own comprehension. Not mentioned are: Constructing visual representations and Pupils reflect their own reading process. This last strategy is rarely mentioned in literacy curricula in European countries (Eurydice 2011), a remarkable finding because reflecting on one's own reading process is a very important aspect of reading comprehension.

According to Mejding and Nørgaard Fink (2012), by the end of grade 4, students should be able to read both literary and informational texts with good comprehension in print and on the computer, adjusting strategies according to reading purpose, genre and text difficulty. They should also be able to apply their reading strategies to simple Swedish and Norwegian texts.

Literacy curricula in secondary schools

Literacy is a basic subject in primary and lower secondary school (up to Grade 9), and is also a part of the subject Danish. It is also addressed in all curricular subjects. In upper secondary school, literacy is mostly taught within the subject area of Danish but the importance of the subject is mentioned in some other subjects. The subject area Danish in upper secondary school is divided into three parts, language, literature and media. Literacy plays a part in all the parts.

In the curricula, both competences and knowledge the students gain are mentioned. It is divided into "finding suitable text", preparing reading, choose ways of reading according to the aim of the reading, language comprehension, text comprehension, "cohesion", and reading of theoretical texts in different subjects¹⁸.

Challenge: It is important to view literacy, reading and writing holistically, although these are used in different ways in different subjects. Teachers need to attend to the development of literacy competences so the learners gradually become readers who can choose the material they need or want to read or share and use appropriate methods of reading and writing.

5.2.3 Reading instruction

While most literacy researchers have clear concepts about effective literacy instruction, we do not know much about what is actually going on in classrooms in Denmark or other European countries. In order to describe the practice of reading instruction we would need extensive observational studies. However, there are only rare observational studies (Philipp 2014). There is a noteworthy shortage of data on actual reading instruction in school. Only PIRLS offer some data for primary schools, albeit based on self-reports by teachers (PIRLS) which might not be valid and may be biased by social desirability.

In PIRLS 2006, fourth-grade reading teachers reported about instructional materials, strategies and activities. In a latent class analysis Lankes and Carstensen (2007) identified 5 types of instruction:

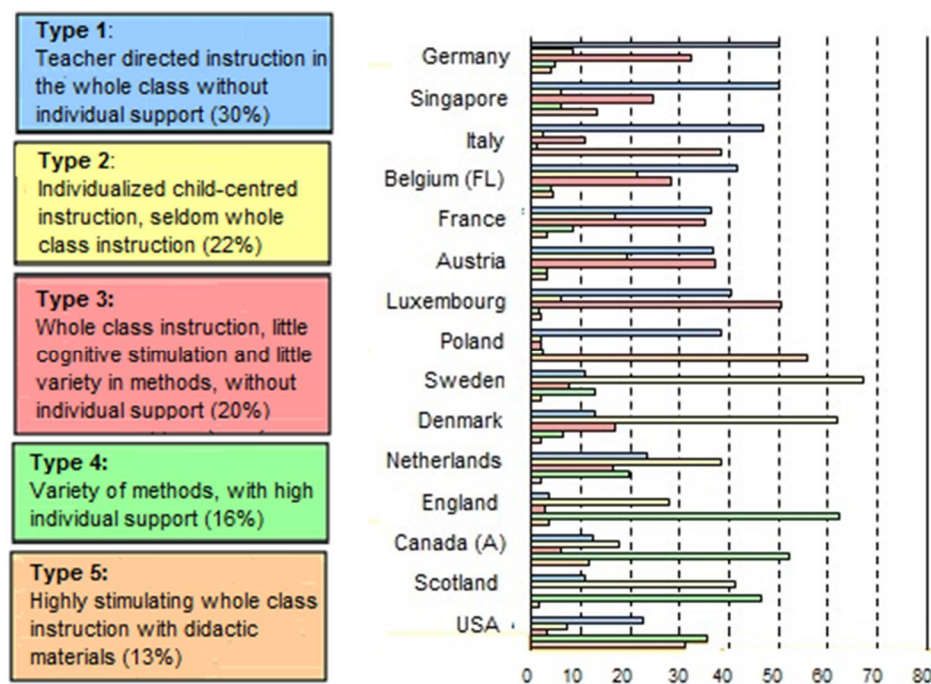
- Type 1: Teacher-directed instruction in the whole class without individual support
- Type 2: Individualised child-centred instruction, seldom whole-class instruction
- Type 3: Whole-class instruction with little cognitive stimulation and little variety in methods, without individual support
- Type 4: Variety of methods with high individual support
- Type 5: Highly stimulating whole-class instruction with didactic materials.

There were significant differences between countries concerning these types of instruction (Lankes & Carstensen 2007). In the case of Denmark, there was a stronger emphasis on individualized child-centered instruction. This contrasted with other countries in the study, including Germany, Italy and Belgium (FI), where there was a relatively strong emphasis on whole-class teacher-directed instruction without individual support.

PIRLS 2011 teacher self-reports also point to differences in approaches to reading instruction in European countries (Mullis et al. 2012a, Tarelli et al. 2012).

¹⁸ See: <http://www.emu.dk/omraade/gsk-l%C3%A6rer/ffm/dansk#cookieaccepted>.

Figure 4: Distribution of types of Reading Instruction (PIRLS 2006 data)



Source: Adapted from Lankes & Carstensen 2007

In PIRLS 2011 principals and teachers provided some information on language and reading instruction. Concerning the **instructional time spent on language and reading**, the following results are of interest. In 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. 2012a, Exhibit 8.4. p. 214. EU averages from PIRLS 2011 database, see Appendix C, Table I3).

The amount of time allocated to language instruction in Denmark, including reading as reported in the PIRLS Encyclopaedia is in line with the expected time. This varies by municipality, but the minimum is set at 24% (Mullis et al., 2012, Vol. 1, Exhibit 6).

At the beginning of the 2013-14 school year (i.e. after the PIRLS assessment), the Danish government increased the allocation of time to teaching and learning in schools. Children in grades 0-3 (ages 6-9) will now have 30 hours of school each week, while students in grades 4-6 (ages 10-12) will have 33 hours per week and those in 7-9 grade (ages 13-15) will be in class for 35 hours per week¹⁹. Additional time was allocated to Danish and mathematics and to physical education.

¹⁹ See: <http://www.thelocal.dk/20140811/denmarks-public-schoolchildren-enter-a-new-era>.

Challenge: It would be of interest not only to count hours for reading in language classes and across the curriculum but also to find out how competences in literacy are developed in these contexts. Attention should also be given to examining how students transfer knowledge about literacy gained in language classes to other subject areas.

As pointed out above (Table 22 and 23), among adolescents in Denmark there is a 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 score points) related to students' engagement in reading. In view of these findings, it is of interest to look at the reports of teachers concerning reading strategies and engagement.

Activities teachers use to develop students' reading comprehension skills

PIRLS 2011 provides information on the frequency with which teachers in Denmark engage students in specific reading comprehension activities. The following are the percentages of students in Grade 4 in Denmark and on average across the EU-24 who engage in specified comprehension activities 'every day or almost every day':

- Locate information within the text: 41% (EU-24 = 66%)
- Identify main ideas of what they have read: 34.1% (EU-24 = 56%)
- Explain or support their understanding of what they have read: 36% (EU-24 = 62%)
- Compare what they have read with experiences they have had: 20% (EU-24 = 35%)
- Compare what they have read with other things they have read: 11% (EU-24 = 22%)
- Make predictions about what will happen next in the text: 11% (EU-24 = 22%)
- Make generalisations and inferences: 14% (EU-24 = 37%)
- Describe the style or structure of the text: 9% (EU-24 = 23%)
- Determine the Author's Perspective or Intention: 7% (EU-24 = 21%)

(Source: PIRLS 2011 database. See Mullis et al. 2012a, Exhibit 8.8, p. 226 for data for 'at least weekly', s. also Table I.1 in Appendix C).

Denmark is 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 are implemented daily or almost daily by fewer than 10% of students in Denmark.

Challenge: 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.

In PIRLS 2011, teachers were asked a series of questions designed to ascertain the extent to which their students are engaged in learning (for an overview of responses in Denmark and other European countries see Table I.2 in Appendix C). These included: "I summarise what students should have learned from the lesson"; "I relate the lesson to students' daily lives" and "I use questions to elicit reasons and explanations". Based on a scale summarising frequencies across all six items, 23% of

students in Denmark were deemed to be taught by teachers who implemented instructional practices to engage learning in “most lessons”. The corresponding EU-24 average was 70% (ELINET PIRLS 2011 Appendix, Table I2). These findings, together with those based on frequency of student engagement in reading comprehension strategies, require further investigation including whether they may arise because Danish teachers understate student engagement in learning.

PIRLS also examined engagement in reading lessons from the perspective of students (for an overview of responses in Denmark and other European countries see Table I.7 in Appendix C).

- 31% of students in Denmark ‘agree a lot’ that they like what they read about in school. This is below the corresponding EU-24 average of 46%.
- Just 25% of students in Denmark ‘agree a lot’ that their teacher gives them interesting things to read, compared with 48% on average across EU countries.

These outcomes are, perhaps, unexpected given the emphasis in Denmark in allowing students to select their own texts.

Digital literacy as part of the curriculum for primary and secondary schools

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 Denmark’s country profile in the EU ESSIE (ICT in schools) study, ICT is taught as a general tool across subjects. In Denmark, at grade 8, all students are in schools that provide an ICT coordinator. At grade 11, the majority of students also has support by an ICT coordinator.

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.

Challenge: 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.

5.2.4 Early identification of and support for struggling literacy learners

Effective assessment tools upon entry to primary school will help teachers identify literacy skills from the very beginning of formal education. Regular formative assessment throughout primary school will ensure that literacy problems do not continue to go unrecognised, and that students receive the support they need through education that matches their learning needs. This should prevent children from leaving school with unrecognised literacy problems (EU High Level Group of Experts on Literacy 2012a, p. 67).

Standards as basis of assessment of reading difficulties

Standards of reading achievement, which allow teachers, parents and school leaders to understand the rate of progress of learners and to identify individual strengths and needs should be integrated in the curriculum and should be the basis of assessments. The High Level Group pointed out that there is a need to establish minimal standards of literacy achievement (benchmarks) for each grade, and to administer regular tests based on these standards, to allow for identification of struggling readers/writers (EU High Level Group of Experts on Literacy 2012a, p. 43).

Standards of all EU countries have defined learning objectives in reading to be reached at the end of primary and secondary education cycles. However, only a few Member States have detailed standards (benchmarks) at each grade (school year) which form the basis of assessments allowing for early identification of reading difficulties and subsequent allocation of attention and resources. These standard-based assessments allow teachers and school leaders to judge children's progress and to target additional reading support.

Assessment standards and methods are prescribed by the language/reading curriculum in half of the European countries that participated in PIRLS 2011 (Mullis, Martin, Minnich et al., 2012, Vol. 1, p. 99, Exhibit 7). Denmark is identified as a country in which goals and objectives of the language/reading curriculum are specified (for example, for Grades 1-2 and Grades 3-4), but not assessment standards.

However, Mejding and Nørgaard Fink (2012) note that the Folkeskole Act 2010 requires schools to evaluate student learning in relation to binding intermediate achievement goals presented in the Common Objectives, in line with an increased focus on quality assurance and evaluation in primary and lower-secondary schooling. Since 2010, schools are required to administer computer-based adaptive tests in Danish/reading to students in Grades 2, 4, 6 and 8. While overall results are reported at national level, reports on the performance of individual students, schools and municipalities are confidential. Schools also used standardised tests when testing elementary skills such as word recognition and sentence reading.

Mejding and Nørgaard Fink (2012) also note that various diagnostic reading and spelling tests are available at all grade levels, with some focusing on decoding and comprehension, and others assessing student attitudes towards learning.

Although assessment standards are not specified directly in the Common Objectives, the national goals in the form of centrally-defined objectives and intermediate and final goals are viewed as being legally binding, as are goals for the themes in one-year kindergarten programmes. The range of instruments used to assess students, including the computer-adaptive tests in Danish/reading administered in grades 2, 4, 6 and 8, would be expected to track achievement relative to specified intermediate and final goals.

In Denmark, teachers are required since 2009 to prepare individual learning plans for students, and to update these on an annual basis. These plans contain results of ongoing evaluation (including formative assessments) and a course of action based on the outcomes. The purpose of the plans is to improve communication on how parents and the school can collaborate to support student learning.

Screening for reading competence to identify 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.

The broad range of assessments described above, including computer-based adaptive tests, administered at grades 2, 4, 6, and 8, also serve as screening tools, as do the 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 (Ministry of Education, 2013).

The decision as to whether a child's development requires special consideration or support rests upon a concrete assessment in each individual case. In line with section 12 in the Act on the Folkeskole, the decision is made based on educational and psychological counselling and following consultation with the pupil and his/her parents. Normally teacher(s) in mainstream settings identify a given pupil's special needs (European Agency for Special Needs and Inclusive Education, 2012).

Do teachers use formative assessment?

The Folkeskole Act states that schools are obligated to evaluate student learning in relation to the binding intermediate achievement goals presented in the Common Objectives.

In PIRLS 2011, teachers were asked how much emphasis they placed on specified assessment tools to monitor students' progress in reading. Table 26 shows that 51% students in Denmark, compared to 84% on average across the EU-24 are taught by teachers who placed a major emphasis on evaluation of student work to monitor their progress in reading. Similarly, fewer students in Denmark (18%) were taught by teachers who placed a major emphasis on use of class tests, compared with the corresponding EU-24 average (51%). Fifteen percent of students in Denmark were taught by teachers who placed a major emphasis on the use of national or regional achievement tests, again, less than the average across the participating EU countries. The majority of teachers placed some emphasis on each of the assessment types, but not major emphasis. This suggests that teachers in Denmark place less emphasis on assessments of reading than on average across the EU-24.

Table 26: Percentages of Students with Teachers Reported Placing Varying Levels of Emphasis on the Use of Specified Tools to Monitor Students' Progress in Reading – Denmark and EU-24 Average

	Denmark			EU-24		
	Major Emphasis	Some Emphasis	Little/No Emphasis	Major Emphasis	Some Emphasis	Little/No Emphasis
Evaluation of student's ongoing work	51	42	7	84	16	1
Classroom tests (e.g., teacher-based tests)	18	64	18	51	45	5
National or regional achievement tests	15	59	26	25	52	24

Source: PIRLS 2011 database (see ELINET PIRLS 2011 Appendix, Table I8)

At the end of Grades 9 and 10, students take school-leaving examinations. These examinations are compulsory after Grade 9 and voluntary after Grade 10. The tenth-grade examinations place higher academic demands on the students than the ninth-grade examinations. Students must take examinations in a total of seven subjects. Five of the examinations are compulsory for all students:

written and oral examinations in Danish, a written examination in mathematics, and oral examinations in English and physics-chemistry. Each student also must take two examinations drawn at random: one from the humanities group, which includes written English as well as French or German, history, social studies, and Christian studies; and one from the science group, which consists of geography or biology.

Challenge: While teachers in Denmark have access to a broad range of tests to identify possible reading difficulties, data from PIRLS suggests that the emphasis placed on using the outcomes of classroom-based tests and regional/national tests to monitor progress in reading is below EU average levels. The use of assessment information by teachers to monitor students' progress in reading and to identify those with reading difficulties might be examined in greater detail to ensure that optimal use is made of assessment outcomes.

Supporting struggling literacy learners

Number of struggling readers receiving remedial instruction

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 PIRLS 2011 Appendix, Table K1). Hence, there is a shortfall of 3.0% between those in need and those in receipt. On average across EU-24 countries, 18.1% of students in Grade 4 are identified by their teachers as being in need of remedial teaching, while 13.3% are identified as being in receipt of such teaching.

In Denmark, 11.7% of students in Fourth grade performed at or below the PIRLS low benchmark on overall reading (ELINET PIRLS 2011 Appendix, Table A.6.) Hence, the percentages of students in Denmark in receipt of remedial reading instruction (11.9%) is about the same as the percentage of those who performed poorly on PIRLS.

Kinds of support offered

It is crucial that teachers provide support measures to help struggling readers. European Countries differ widely in their approaches, from in-class support with additional support staff (reading specialists, teaching assistants or other adults) working in the classroom together with a teacher, to out-of-class support where speech therapists or (educational) psychologists offer guidance and support for students with reading difficulties.

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 as segregated instruction.

Based on teacher responses to a series of questions in PIRLS 2011, 34% of students in Denmark are in classes where there is always access to specialised professionals to work with students who have

reading difficulties, compared with an EU-24 average of 25% (Table 27). Just 3% of students in Denmark are in classrooms where there is access to a teacher aide with the same frequency, while less than 1% are in classrooms where there is access to an adult/parent volunteer. Corresponding EU averages are 13% and 34%, indicating relatively less use of these resources in Denmark.

Table 27: Percentages of Students in Classrooms with Access to Additional Personnel to Work with Children with Reading Difficulties, Denmark and EU Average

Access to...	Denmark			EU-24 Average		
	Always	Sometimes	Never	Always	Some-times	Never
Specialised professional	34.4	63.4	2.25	24.9	41.8	33.3
Teacher aide	2.7	44.6	52.7	13.2	33.6	53.2
Adult/parent volunteer	0.5	7.5	92.0	2.8	17.5	79.7

Source: ELINET PIRLS 2011 Appendix, Tables K2-K4

According to responses provided by teachers in PIRLS 2011, 66% of students in Denmark are in classes where the teacher arranges for students falling behind in reading to work with a specialised professional such as a reading professional (Table 28). The corresponding EU average is lower at 55%. Thirty-two percent of students in Denmark are in classes whose teachers wait to see if performance improves with maturation – marginally below the EU-24 average of 37%. Eighty-three percent of students in Denmark are taught by teachers who spend more time working on reading individually with a student who falls behind – below the EU-24 average (90%). Finally, almost all students in Denmark (99.2%) and on average across the EU-24 (96.9%) are taught by teachers who ask parents to provide additional support to a student who falls behind in reading.

Table 28: Percentages of Students in Classrooms Where Teachers Engage in Specified Activities to Support Students Who Begin to Fall Behind in Reading, Denmark and EU Average

	Denmark (Yes)	EU-24 Average (Yes)
I have students work with a specialised professional	65.7	55.2
I wait to see if performance improves with maturation	32.0	36.6
I spend more time working on reading individually with the student	82.8	90.1
I ask the parents to help the students with reading	99.2	96.9

Source: ELINET PIRLS 2011 Appendix, Tables K5-K8.

Students with special needs are basically met with the same expectations as any other student. Special needs education includes differential teaching, counselling, technical aid and personal assistance (Ministry of Education, 2014a). Furthermore, special teaching arrangements and activities, as well as materials, can be used in instruction. Local educational-psychological advisory services will advise on the structure and nature of the special educational assistance proposed for a particular child (European Agency for Special Needs and Inclusive Education, 2012).

An important form of support, mainly for pupils with dyslexia, is IT-backpacks. Since 2013, dyslexic pupils in youth education programmes have been equipped with an IT-backpack 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 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 the educational programme - especially for pupils with dyslexia (Eurydice, 2014b).

In addition, the school reform of 2013 guarantees all pupils new and extra time for assisted learning (Ministry of Education, 2013). From the school year 2014/15 on, it is also mandatory for schools to offer homework assistance and time for in-depth study as part of the integrated school day for the academically-gifted as well as for the academically-weak students (Ministry of Education, 2013).

Moreover, the school reform of 2013 aims at improving all students' performance in Danish (Ministry of Education, 2013), by adding more Danish lessons and improving working methods in the subject (Ministry of Education, 2013).

Support for struggling readers – a legal right?

In Denmark, municipalities are responsible for ensuring that children are tested in kindergarten, using a language screening test, and providing any necessary interventions, before formal schooling begins.

The consolidation act on Folkeskole or Compulsory School Act (2013) states that special education and other special educational assistance shall be given to children whose development requires special consideration or support (Retsinformation, 2013).

The Folkeskole in Denmark adheres to the principle of inclusion. Pupils with special needs often stay in the mainstream classes and receive special education in one or more subjects as a supplement to the general teaching. Students who do not adequately benefit from this, may receive special education that is substituted for the student's participation in the regular education in one or more subjects. A student may also be taught in a special class either within a mainstream school or within a special school. A combination of both special and mainstream class teaching is possible, too. Special classes may be organised for students with intellectual disabilities, dyslexia, hearing problems or similar (Ministry of Education, 2014a).

Challenge: There is a need to monitor the effectiveness of initiatives arising from recent educational reforms, including, in particular, the support received by children with reading difficulties, including dyslexic difficulties.

5.2.5 Initial Teacher Education (ITE) and Continuous Professional Development (CPD) of Teachers

Entry requirements for Initial Teacher Education

In Denmark, performance at upper secondary level is the main requirement for entry to teacher education (European Commission/EACEA/Eurydice, 2013, Fig. A5, p. 32). There are a number of avenues to meeting these requirements, including: the upper secondary school examination (stx), the higher preparatory examination (hf), the higher commercial examination (hhx), the higher technical examination (htx), and the vocational educational examination qualifying for access to higher education (eux). Secondary exams in the Faroe Islands and Greenland also qualify students for entry to teacher education as do the Danish/French Baccalaureate (DFB), the European Baccalaureate (EB), the International Baccalaureate (IB), and the Option Internationale du Baccalauréat (OIB).

For teachers wishing to teach at post primary level, "selection is exclusively determined at institutional level "(European Commission/EACEA/Eurydice, 2013. Key Data on Teachers and School Leaders in Europe). There is no examination in language skills (Eurydice, 2011).

An alternative teacher qualification pathway is the Merit Teacher Programme, which is open to students who already have a Bachelor's, Master's or Professional Bachelor's degree. Alternatively, applicants may gain entry to the programme if they are at least 25 years of age, have completed a vocational training programme (at upper secondary level or above), and have at least two years of work experience.

Are there specific selection methods for admission to initial teacher education?

Candidates that meet the entry requirement are selected in one of two ways:

- First, available study places are reserved for applicants who have achieved a grade point average (GPA) of at least 7.0 (equivalent to C on the European Credit Transfer and Accumulation System). Places are offered to students based on their GPA from high to low.
- Remaining places are offered on the basis of an entrance examination, which is based on the multiple-mini interviews principle (MMI) and assesses applicants on motivation, cognitive ability, cooperation and personal integrity, communicative ability, ethical understanding, and understanding of professional texts.

Applicants to the Merit Teacher Programme can also be accepted to the programme based on an individual evaluation of their qualifications and competences. The merit-teacher education is considered as continued professional development (CPD) and, unlike the B.Ed. programme, students are charged a tuition fee.

Level of qualification for teachers and length of the required training

Typically, primary teachers' education routes are through a four-year university bachelor's degree programme in primary education. In ten European countries – Croatia, the Czech Republic, Estonia, Finland, Germany, France, Iceland, Portugal, Slovakia and Slovenia – initial education for primary teachers is at master's level and usually takes five years. In recent years an increase in the minimum length of initial teacher education can be noted for many countries (European Commission/EACEA/Eurydice 2012, Fig. E2, p. 112). 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)

More information about primary reading teachers' formal education is offered by PIRLS 2011 (Mullis et al. 2011, exh. 7.1, p. 188). Four percent 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. The EU-24 average for the last category is 6%.

The role of literacy expertise in Initial Teacher Training

Important teacher competences related to literacy development are a) the assessment of the strengths and weaknesses of each individual student they teach, b) selection of appropriate instructional methods and c) instructing in an effective and efficient manner. These topics should therefore be addressed in teacher training.

Do all teachers of reading (normally classroom teachers) have training in language/literacy?

In PIRLS 2011, primary teachers were asked to indicate the level of emphasis given to a number of topics deemed relevant to teaching literacy in their pre-service teacher education. The data in Table 29 suggest that there is slightly less emphasis on teaching reading pedagogy in initial teacher education in Denmark (49% of students are taught by teachers who identify it as an area of emphasis), compared with the EU-24 average (59%). Similarly, a slightly lower proportion of students in Denmark (65%) are 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%).

Furthermore, according to PIRLS 2011, only 11% of students in Denmark are taught by teachers who report that remedial reading was an area of emphasis in their pre-service teacher education. The corresponding EU-24 average is 22%. According to an analysis of guidelines for ITE institutions, tackling reading difficulties is not a topic in Initial Teacher Training in Denmark (European Commission/EACEA/Eurydice 2011, Fig. 2.5, p. 99).

The 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%). According to an analysis of guidelines for ITE institutions, assessing pupils' reading skills is not a topic in Initial Teacher Training (European Commission/EACEA/Eurydice 2011, Fig. 2.5, p. 99). This is reflected in the relatively low proportion of students in Denmark whose teachers place major emphasis on the ongoing evaluation, classroom tests and national/regional tests of reading (Table 26 above).

Table 29: Percentages of Students Taught by Teachers who Reported each of Several Topics to be Areas of Emphasis during Initial Teacher Education

Topic	Test Language	Reading Pedagogy	Reading Theory	Remedial Reading	Assessment Methods in Reading
Denmark	66	49	43	11	14
EU-24	74	59	30	22	27

Source: PIRLS 2011 Database (see Mullis et al., 2011, Exhibit 7.2, p. 190 and Appendix C, Table J2 – J3).

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 (Ministry of Education and Science, 2015).

According to Eurydice (2011), in Denmark, candidate teachers for both primary and lower-secondary acquire generic skills or methodology for teaching reading. Areas not covered in Denmark, but

covered to some extent in other EU countries, include: tackling reading difficulties, assessing pupils' reading skills, and teaching to read online texts. These data are based on steering documents for ITE that were in place in 2009-10.

Challenge: Initial teacher education in Denmark needs a compulsory focus on developing literacy expertise among future primary and secondary teachers. Not all teachers who are involved in teaching reading and writing skills in primary or secondary schools have a solid training in literacy. Only limited aspects of literacy are mentioned in the curricula on mother tongue education. Literacy expertise should become a clear standard for teacher education in all grades and subjects, not only for primary teachers, but also for secondary teachers. It should be ensured that initial training covers topics such as the teaching of reading, tackling reading difficulties, assessing pupils' reading skills, and supporting those with persistent difficulties.

The minimum time allotted to in-school placements during ITE in Denmark for candidate teachers preparing for primary and lower secondary schooling is decided by individual institutions. There is considerable variation in Europe: For prospective primary teachers, this time ranges from 40 hours in Latvia to 900 hours in Austria (European Commission/EACEA/Eurydice, 2011, Fig. 2.6, p. 102).

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).

Digital literacy part of initial teacher education

According to an analysis of guidelines for ITE institutions, teaching to read on-line texts is not a topic in Initial Teacher Training (European Commission/EACEA/Eurydice 2011, Fig. 2.5, p. 99).

The Czech Republic, Denmark, France, Hungary, Israel and Switzerland have developed their own national ICT certificates for teachers (either for initial or in-service training) (OECD, 2011). The Danish certificate, called the Pedagogical ICT license, was originally offered to in-service teachers, but has been offered to teachers in initial teacher training since 2004. The certificate is not mandatory for teachers in Denmark. The course requires prospective teachers to gain:

Insight into the impact of ICT on the role of teachers and students and on the pedagogical and organisational development of the school; insight into the impact of ICT on the development of the subject; basic ICT skills; insight into and experience with team-based work in a net-based learning environment (Højsholt-Poulsen, 2004, p. 2).

Assessment is based on the development of a personal digital portfolio related to school and education, assembled over a four-year period. It includes an individual portfolio documenting student competences, and a logbook documenting reflections.

Challenge: There is a growing need to include reading and writing more intensively in ICT programmes in Denmark. Teachers must be qualified in teaching students to read and understand non-linear texts and write such texts as well.

Continuing Professional Development (CPD)

In Denmark, the school leader (principal) and the teacher decide together upon a continuing educational professional plan. The new collective agreement 2011 for teachers in the municipalities,

which has been agreed upon between the Danish Union of Teachers (Danmarks Lærerforening) and Local Government Denmark (Kommunernes Landsforening), contains elements of an individual continuing professional development plan. The agreement states that the school leader and the teacher together work out a continuing educational professional plan. The goal is to make sure that the resources are used for education which is relevant in relation to the challenges the teachers meet in their teaching. The plan is thought of as a simple tool to prioritise and maintain focus on education, which supports teachers' work even more. The result of this agreement is seen as the first step towards securing the right to continuing professional development for teachers (Eurydica Reports on CPD).

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, 2014), 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 results.

In the ESSIE study (European Schoolnet and University of Liege, 2012), 29% of students in Grade 4 in Denmark were taught by teachers who had participated in online communities (regarded as a form of CPD), in the previous two years, compared with an EU average of 25%. At Grade 8, the corresponding percentages were 26% and 31% respectively. At Grade 4, 32% of students in Denmark were taught by teachers who had availed themselves of ICT training provided by school staff (EU average = 40%), while 68% of students were taught by teachers who had reported engagement in personal learning about ICT in their own time (EU average = 68%). At grade 8, 47% were taught by teachers who had availed themselves of ICT training provided by school staff (EU average = 51%), while 49% had engaged in personal learning about ICT in their own time (EU average = 74%). Hence, it would seem that, at primary level, Danish teachers' participation in ICT-related CPD is close to EU average levels, while at Grade 8, participation levels in Denmark lag a little behind corresponding EU average levels.

Time frame and quality standards of CPD

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).

CPD in-service training continues to be offered in the form of courses, seminars and conferences. Traditional teaching situations are, however, giving way to new pedagogical methods such as interactive teaching, study visits abroad and projects developed in cooperation with local businesses. In-service training now constitutes an integral part of a strategy to develop both the qualifications of the individual teacher and the general profile of the schools concerned.

Furthermore, many municipalities, and sometimes schools, have their own courses for teachers, often of a shorter duration.

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; Eurydica 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. 2012a, exh. 7.4, p. 196) (Appendix C, Table J4).

Challenge: A relatively high proportion of students in Denmark 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.

Furthermore, PIRLS 2011 asked teachers how often they read children's books for professional development. In Denmark, a similar proportion of students (69%) were taught by teachers who read children's books at least once a month as part of their professional development. This is about the same as the corresponding EU-24 average (68%) (see Table J4 in Appendix C).

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, 2011).

Professional development related to Reading Recovery is available in Denmark, through the European Reading Recovery Centre in England (Eurydice, 2011).

5.2.6 Improving the quality of literacy teaching for children and adolescents: Programmes, initiatives and examples

Improving the quality of staff in kindergartens

The Department of Education at Aarhus University in Denmark led a four-year (2010-13) project to improve preschool teacher training so that children's emotional and intellectual needs are better looked after from an early age. Another aim was to help day care centre staff develop techniques to ensure that all children play a full part in their group of children, also known as 'social inclusion'. The Danish government is providing just over one million euros in funding. The main concern is that many Danish children whose parents are poor, unemployed, have no education or are on welfare are at a greater risk of developmental and wellbeing problems and of being excluded from society in later life. The project was carried out with three Danish preschool teacher training colleges and targeted 120 day care centres by developing new practices for children aged between three and six years old. These colleges organised training courses for directors of day care centres and one member of staff. The Department of Education ran seminars just for the directors. The cost (travel and paid time off) of sending the staff and directors to these events was covered by the four Danish municipalities involved in the project. Over the three years of the project, a director and one member of staff from each day

care centre spent 17 days on training courses and directors spent another six days on seminars with other directors. Of the one million euros from the Danish government, one third was used for the courses and seminars, one-third to study the effects of the project and one-third on analysis and administration²⁰.

5.3 Increasing participation, inclusion and equity

The High Level Group of Experts on Literacy drew attention to persistent gaps in literacy, namely the gender gap, the socio-economic gap, and the migrant gap (HLG Final report 2012, pp. 46–50). These gaps derive from the reading literacy studies that repeatedly show unequal distribution of results among groups of children and adolescents (PIRLS, PISA).

The **socio-economic gap** in literacy refers to the fact that children and adolescents from disadvantaged families have lower mean performance in reading than students from more advantaged families. However, the degree to which family background relates to the reading literacy performance varies from one country to another even in Europe. Family background, measured as parents' educational level and/or occupation, or measured as economic, social and cultural status is one of the most important predictors of reading literacy performance. Family background also explains some of the performance differences between schools.

The **migrant gap** refers to the unequal distribution of learning outcomes between the native students and immigrant students who in most countries have lower levels of performance in reading than the native students. In many countries the migrant gap is associated with the socio-economic gap but this explains only a part of it, because the migrant gap is also associated with home language differing from the language of instruction at school which increases the risk of low performance in reading. It is noteworthy that even language minorities with high status in the society (and above-average socioeconomic background) show below average performance if the language of school is not supported at home, which signals the importance of a good command of the language used at school.

Another alarming gap in reading literacy in many countries is the **gender difference**, which is more vital for adolescents than for children. In all PISA studies, 15-year-old girls outperformed boys in reading in all the European countries, and boys are frequently overrepresented among the low performers. PISA 2009 results showed that these differences are associated with differences in student attitudes and behaviours that are related to gender, i.e. with reading engagement, and not gender as such. Therefore the gender gap is also related to growing up in a family or in a school environment that values reading and learning and considers reading as a meaningful activity.

To achieve fairer and more inclusive participation in literacy learning we need to close these gaps, which already start in early childhood, by supporting children, adolescents and adults "at risk". The groups of students "at risk" must have access to language screening and flexible language learning opportunities in school, tailored to individual needs. Furthermore early support for children and adolescents with special needs is necessary.

In the section below we address the following issues:

- Compensating for socio-economic and cultural background factors
- Support for children with special needs

²⁰ See: http://europa.eu/epic/practices-that-work/practice-user-registry/index-country_en.htm#topic_0801262488646df3

- Promoting preschool attendance, especially among disadvantaged children
- Provisions for preschool children with language difficulties
- Support for children and adolescents whose home language is not the language of school.
- Preventing early school leaving
- Addressing the gender gap among adolescents.

This section refers to children and adolescents who for different reasons can be considered as being “at risk” (e.g., those from disadvantaged homes, those whose home language is not the language of school, or those with “special needs”). The focus is on preventing literacy difficulties among members of these groups. There is a certain overlap with the topic “Identification of and support for struggling literacy learners”, dealt with in the section “Improving the quality of teaching”, which is concerned with those who have already developed literacy difficulties.

5.3.1 Compensating for socio-economic and cultural background factors

The child’s **socioeconomic and cultural background** has a strong impact on literacy. Material poverty and educational level, particularly of the mother, are well-recognised main factors influencing literacy (World Bank 2005, Naudeau et al. 2011). Socio-economic background also influences biological risks to children, by determining early exposure to risk factors and increased susceptibility (Jednoróg et al. 2012). The primary language spoken at home also influences literacy development (Sylva et al. 2004).

In order to describe the socioeconomic and cultural factors that influence emergent literacy, several indicators were used which stem from international surveys, thus providing comparability across Europe (for more information concerning the concepts and indicators s. Appendix A).

Gini index

The Gini index is the most commonly used measure of inequality, and represents the income distribution of a nation’s residents with values between 0 (maximum equality) and 100 (maximum inequality). In the European countries participating in ELINET the range is from 22.6% in Norway to 35% in Spain (for an overview of European countries see table A1 in Appendix B). With 28.1% Denmark is above the European Average.

Child poverty

An indicator of child poverty is the percentage of children living in a household in which disposable income, when adjusted for family size and composition, is less than 50% of the national median income (UNICEF Innocenti Research Centre 2012). At 6.5% Denmark’s rate is below the average for European countries participating in ELINET. The range is from 4.7% in Iceland to 25.5% in Romania (for an overview of European countries see table A2 in Appendix B).

Mother’s education level

The PIRLS 2011 database offers information about mother’s level of education referring to ISCED levels. The figures for Denmark are presented below and point to a rather high level of education, compared with the average figures for the European countries participating in PIRLS (shown in parentheses) (for an overview of European countries see table A3 in Appendix B).

- No schooling: 0.3% (0.6%)
- ISCED 1: primary education: 3.7% (5.3%)
- ISCED 2: Lower secondary education: 4.7% (16.7 %)

ISCED 3: Upper secondary education: 12.7% (36.1%)
ISCED 4: Post-secondary non-tertiary education: 6.2% (7.1 %)
ISCED 5B: Tertiary education (first stage) with occupation orientation: 23.6% (9.5%)
ISCED 5A: Tertiary education (first stage) with academic orientation 30.9% (13.9%)
BEYOND: 16.4% (10.1%)
Not applicable: 1.4% (0.9%).

Teenage mothers

According to UNICEF (2001) the percentage of teenage mothers is 8.1% for Denmark. The range for the European countries participating in ELINET is from 5.5% in Switzerland to 30.8% in United Kingdom (for an overview of European countries see Table A4 in Appendix B).

Single parent

According to Eurostat (2012, Figure A 7), Denmark has the highest percentage of children living mainly with a single parent (30%). The range for the European countries participating in ELINET is from 1.4% in Croatia to 30% in Denmark (for an overview of European countries see table A5 in Appendix B).

Migrant parents

According to PIRLS 2006 (Mullis et al. 2007, Exhibit 3.12 – Students' Parents Born in Country), in Denmark the proportion of children with parents born outside the country (9%) or only one parent born outside the country (12%) remains below the European average (for an overview about European countries see table A6 in Appendix B).

Primary language spoken at home different from language used at school

According to PIRLS 2011 (Mullis et al. 2012a, exhibit 4.3 - Students Spoke the Language of the Test Before Starting School, p. 118), the proportion of children speaking a different language at home from the one used at school is low in Denmark, at 2.5% (for an overview of European countries see table A7 in Appendix B).

Challenge: Recent migration to Europe will provide a challenge to education systems in all European countries in the years ahead. It is important for Denmark to review its approaches to integrating migrant children, and supporting their development in the Danish language, and modifying approaches as needed.

Support for children with special needs

Not only children from culturally disadvantaged families are "at risk" in their literacy development but also those with very low birth weight and severe prematurity, factors that are associated with developmental disabilities, including reading and writing disabilities. Also cognitive and sensory disabilities must be considered.

Very low birth weight and severe prematurity

According to PERISTAT (2010, Figure 7.11, p.149) the percentage of live births with a birth weight under 2500 grams in Denmark was 4.3%. The range is from 3.0% in Iceland to 8.8% in Cyprus (for an overview of European countries see table E1 in Appendix B). Furthermore, according to the same report (PERISTAT 2010, Figure 7.14, p.155), the percentage of live births with a gestational age <32

weeks was 1.0% in Denmark (with a range from 0.7% in Iceland to 1.4% in Hungary). The percentage of live births with a gestational age between 32 and 36 weeks was 5.4% (with a range from 4.5% in Lithuania to 7.5% in Hungary (for an overview of European countries see table E2 in Appendix B).

Cognitive or sensory disabilities

In Denmark, nearly 5 percent students of the total school population are identified as having SEN (special educational needs) (Employment, Social Affairs & Inclusion 2013, p.11)

There is systematic assessment of children in order to identify language development problems. Language assessment is available to all parents of 3-year olds. Assessment is performed by the Kindergarten teachers, with input provided by the parent (Eurypedia, 2014). Language stimulation training is offered to children by the local authorities as needed (Eurypedia, 2013b)²¹.

There is provision for support from educational psychologists, speech and language therapists, special education needs teachers and other specialized professionals (European Commission/EACEA/Eurydice/Eurostat, 2014, p. 109).

5.3.2 Promoting preschool attendance, especially among disadvantaged children

The benefits of attending preschool institutions have been proven in many studies. The duration of attendance is associated with greater academic improvement (Mullis et al. 2012b).

According to European Commission/EACEA/Eurydice/Eurostat (2014, Figure C1 p.62), the enrolment rate at age 4 is 97.9%. Denmark surpasses the European benchmark for at least 95% of children between age 4 and the start of compulsory education participating in ECEC (for an overview of European countries see table C1 in Appendix B).

The OECD Family Database (2014) offers more differentiated figures for participation rates at ages 3, 4 and 5. According to 2010 statistical data, the participation rate is 87.8% for 5-year-olds, 97.9% for 4-year-olds, and 96.7% for 3-year-olds (OECD 2014) (for an overview of European countries see table C2 in Appendix B).

PIRLS 2011 (Mullis et al. 2012a, Exhibit 4.7, p. 128) provides information about the relationship between the length of preschool education attendance and average reading performance in grade 4. These are the figures:

- 3 years and more: 81.0% (average reading score 558)
 - Between 1 and 3 years: 17.0% (average reading score 544)
 - 1 year or less: 2.0% (average reading score not available)
 - Did not attend: 0.0% (average reading score not available)
- (For an overview of European countries s. table C3 in Appendix B).

Pre-primary care and education in Denmark is not free. Parents pay fees that do not exceed the 25% of the total cost to the institution (Eurypedia, 2013b)²².

²¹ See: https://webgate.ec.europa.eu/fpfis/mwikis/eurydice/index.php/Denmark:Assessment_in_Early_Childhood_Education_and_Care (accessed August 22, 2014).

²² See: https://webgate.ec.europa.eu/fpfis/mwikis/eurydice/index.php/Denmark:Early_Childhood_and_School_Education_Funding#Pre-Primary_Education_and_Care (accessed August 20, 2014).

5.3.3 Provisions for preschool children with language problems

Literacy competence strongly builds on oral language proficiency, word knowledge and syntactic knowledge. Measures must be taken by governments and institutions to ensure that children with poor language development (second-language speaking children and those from a low socio-cultural background, as well as others who experience difficulty in learning language) acquire adequate levels of oral language in kindergarten, in preschool institutions and at school. The Standing Conference of EU Ministers of Education and Cultural Affairs indicated in 2001 (among other measures) that there is a need for: *Measures for the improvement of language proficiency in pre-schools: further development of educational concepts for pre-school lessons with particular attention to language development; language level assessment.*

For culturally and/or linguistically disadvantaged children, extra support is given by additional staff in mainstream settings, while global special programmes and programmes focusing on language may also be provided (EACEA; Eurydice 2009, p. 104).

5.3.4 Support for students 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 spoke the language of the test at home. Corresponding EU-24 averages are 17.3% and 3.0% respectively.

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 a 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).

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 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).

Among the more targeted measures, the government has launched a “task force for bilingual pupils” to assist municipalities in improving the quality of education for immigrant students, and many municipalities now have consultants to help schools better meet the needs of immigrants. The DSL training for teachers and the language support offer for immigrant students has also been strengthened at all levels of education (Nusche et al. 2010).

Asylum seekers and refugees aged 7-16 are usually taught at an asylum centre, although some pupils may get to participate in 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 programmes, pupils are provided with 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 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).

Challenge: 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.

5.3.5 Preventing early school leaving

One important, but certainly not sufficient, precondition for raising performance levels in literacy for adolescents is literacy provision during secondary schooling, as functional literacy is mainly acquired in school-based learning. Thus, the provision of secondary education for all adolescents and the prevention of early school leaving may serve as indicators for the opportunities of adolescents to improve their literacy performance especially, related to basic functional literacy.

Rate of early school leavers

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%. We also find that in Denmark, 70.2% of 15-24 year olds were in some form of education in 2011, which was well above the average EU-27 value of 61.9%. This indicator is on a slightly increasing trend: by 2012 it stood at 71.6%.

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.

Policies to prevent early school leaving

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. The pupil is expected to participate in a series of consultations in order to develop these plans and is encouraged to start thinking ahead to employment and further education opportunities after compulsory education. If the pupil is unable to decide, the pupil may be offered a 10-day 'bridging course' that introduces them to various educational pathways and job-fields. Furthermore, 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, 2013, p. 40).

Production schools, or similar models, have been established in Denmark. Young people may gather practical experience of job-related processes and requirements as well as insights into 'what professional life is about'. Although the concept of production schools varies from country to country, it generally combines academic learning programmes and practical work experience. The aim is to raise the motivation of young people to engage in learning and to provide them with the experience necessary to make informed decisions on their future careers. Production schools often offer workshops for learning by doing, vocational guidance, socio-pedagogic support, practical experience and assistance in improving basic education skills (European Commission, 2013, p. 41).

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 measures include 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, 2013, p. 43).

In Denmark, measures focus on decreasing the number of early leavers in the VET sector through increasing the weight of practical and work-based training in relation to theoretical learning (Education and Training in Europe 2020, p. 35). The government entered an agreement on improved VET

programmes as part of the Finance Act Agreement in 2013. Among other things, the agreement is expected to contribute to reducing drop-out from VET by increasing the number of available places for students to enter in-company practical work experience and enhancing schools' responsibility in finding apprenticeship places. In addition, the most recent measures require all VET schools to prepare an action plan for improving completion rates (Education and Training in Europe 2020, p. 28).

5.3.6 Addressing the gender gap among adolescents

National recommendations on this could not be found. This could be due to the fact that the gender differences in literacy skills between girls and boys in Denmark are relatively small (See: World Economic Forum, 2013; Rosdahl, 2014).

5.3.7 Increasing participation, inclusion and equity for children and adolescents: Programmes, initiatives and examples

The Danish Agency for Culture is behind the "Bogstart" initiative [eng: Bookstart], which is a programme that targets families in low-income areas. Selected families receive packages with free books and inspiration for read-aloud sessions, etc. in order facilitate shared (parent-child) meaningful experiences with books and to strengthen the child's literacy competences²³.

One of the main targets of the school reform from 2013 is to diminish the impact of social background on academic performance in public schools. This is targeted through three main areas of improvement in the public school:

- A longer and more varied school day with more and improved teaching and learning.
- Enhanced professional development of teachers, pedagogical staff and school principals.
- Fewer and clearer objectives and simplification of rules and regulations.

(Ministry of Education, 2013).

Longer and more varied school days should make it possible for teachers to allocate more time to teaching, use more varied teaching methods and implement more assisted learning. Furthermore, homework assistance will be provided for all students. This is to strengthen pupils' learning capacities (Ministry of Education, 2013: 3-4). School personnel will also receive more training and evidence-based methods will be used more broadly in teaching (Ministry of Education, 2013). Good quality teaching is also ensured by clarifying objectives to ease the pressure on school management, teaching and learning. Increased follow-ups are also added on every level (Ministry of Education, 2013).

²³ See website, in Danish: <http://www.kulturstyrelsen.dk/institutioner/biblioteker/fokusomraader/boern/bogstart/>.

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