Adult Competences vs. Basic Education

A study of PIAAC and PISA data from Norway, Finland and Japan

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Adult competence has received increased attention in recent years in both policy and research. One contributing factor is the PIAAC program that the OECD introduced in 2012. It was intended to be a parallel to the PISA program. The purpose of this study is to study adult competences in Norway, Finland and Japan and analyze it considering the results of young people's competences. The study uses Mixed Methods Research (MMR), combining quantitative data from PIAAC and PISA, analyzing these considering qualitative data about differences in the countries' culture, society and school systems.

The two programs are not directly comparable, but this study found that adults aged 16 - 65 in Norway, Finland and Japan score at a high level in PIAAC and significantly above the OECD average. On the other hand, it was found that 15-year-olds in Norway score significantly lower on PISA and shows a negative trend throughout the period, despite extensive measures. The latter also applies to some extent to Finland, while Japan has maintained a high level throughout the period. The results for adults also show a negative trend over time. The findings are explained about culture, school systems and different arrangements for continuing and further education as well as work ethics. Different learning styles and classic factors such as learning environment, concentration, repetition, perseverance in learning and systematic improvement of teaching are highlighted. Differences in the use of physical versus digital learning materials have also been observed. Recently, AI has also become a challenge in schools and work as well as social and private life. But it remains to be seen how this will be included in the surveys.

The study concludes that it can be difficult to make good use of international surveys such as PIAAC and PISA. They only measure a limited area of a person's competence but are often given greater importance than there is evidence for. Sometimes, measures are implemented that do not lead to either better practice or higher performance. Measures must therefore be supported by national surveys that delve into the specific challenges in each country.

Keywords: Adult competences, PIAAC, PISA, Norway, Finland, Japan

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1. Introduction

In recent years, there has been growing interest in developing a better understanding of the skills adults need to succeed in society, in the workplace and in their personal lives. A major contribution to this interest is the OECD's Programme for International Assessment of Adult Competencies (PIAAC). It is a survey of adults aged 16–65 in 30 countries and their skills in reading, numeracy and adaptive problem-solving (OECD, 2024). PIAAC was designed in collaboration with participating countries and represents a broad spectrum of knowledge and skills required in different adult contexts. The aim is not only to map, but also to understand and improve adult learning interventions that can ensure that adults maintain and develop their skills throughout their lives. This is believed to be a prerequisite for full participation in society and adaptation to changing demands in work and education.

The results show, among other things, that adults with lower levels of literacy and numeracy skills experience less satisfactory conditions regarding social participation, education and work compared to their more qualified adults of the same age. A key question is to what extent results are related to personal circumstances and societal conditions? Promoting equal opportunities for individuals in the face of different life situations can be justified based on both moral, economic and societal considerations. For example, Soroui and Sullivan (2025) studied the relationship between parents' education and socio-economic status and found a clear connection with children's education and socio-economic status. But the child was in the USA, what is the situation in Norway and countries we can naturally compare ourselves with? Other researchers have studied gender differences in education by drawing inspiration from both PISA and PIAAC with the aim of uncovering their economic and social implications (Encinas-Martín and Cherian, 2024). They found, among other things, that boys have a lower completion rate from upper secondary education compared to girls. In a third study on gender differences in literacy in PIAAC, Miyamoto, Gauly, and Zabal (2025) found that the gender gap in literacy seems to "disappear" in adulthood. Against this background, it is natural to investigate possible differences between countries and the extent to which changes occur from child to adult.

Some researchers also highlight the challenge of cultural differences (Chong et al, 2023, p. 3). Gert Hofstede (2011) argues that culture and its traditions can influence learning preferences and styles, for example, preference for active experimentation over reflective observation, perseverance, motivation to succeed, collective versus individualistic attitudes, and more.

For many years, the skills of students in primary and lower secondary education have been assessed through PISA, the OECD's Programme for International Student Assessment These have several complementary objectives (OECD, 2025 and 2014). PISA seeks to identify ways in which students can learn better, how teachers can teach better, and how schools can organize education in the best possible way. PIAAC, on the other hand, focuses on how adults develop their skills, how they use

these skills, and what benefits they gain from using them. To this end, the Survey of Adult Skills collects information on how skills are used at home, in the workplace, and in society. It also examines how these skills are developed, maintained, and lost over the course of a lifetime. The extent to which skills are adapted to participation in work is also relevant, as is the extent to which they affect income, health, social, and political engagement.

Considering the background presented, this study aims to examine the Norwegian PIACC results, compare them with corresponding data for Finland and Japan, and compare them with the PISA results for the same countries. An overarching question is similarities and differences and possible explanations. This study builds on and makes use of data from a previous study of PISA results in Norway, Finland and Japan (Aakre, 2023).

2. Method

This study compares quantitative PIAAC and PISA results in Norway, Finland and Japan. These may be interesting in themselves, but the study is also based on the assumption that cultural and societal conditions are different and may produce different results. A comparative research design in combination with mixed methods, known in English as Mixed Methods Research (MMR) was therefore chosen (Bryman, 2012, p. 74 and p. 645; Pluye and Nha Hong, 2013, p. 32).

With a comparative design, one seeks to understand social phenomena better when they are compared in relation to two or more meaningful and contrasting cases or situations. This can be realized in both quantitative and qualitative research, but also by combining these by analyzing them in both breadth and depth. The quantitative approach aims to uncover general trends at the macro level using measurements, numbers and statistics. The qualitative approach aims to understand practice and how practice can provide possible explanations for differences and similarities, both at the micro and macro levels.

In this study, the quantitative data are based on results from PIAAC and PISA for the years 2012 and 2023 (OECD, 2012a and 2023a). The number of respondents varies somewhat, but over five thousand and is estimated at (N>5000). The qualitative data is based on texts, notes, interviews and observations collected over time. Analysis of these data searches in depth through condensation and categorization at the micro level for details within defined areas (Bryman, 2012, p. 408). These build on Hofstede's theory of cultural differences (Hofstede, 2011), and an earlier study on PISA (Aakre, 2023). Gert Hofstede describes culture and its traditions as learned patterns of thinking and behavior that distinguish members of one group or category of people from others. These explain how differences in

cultural socialization can affect learning preferences and styles, for example, preference for active experimentation over reflective observation.

3. What is PIAAC and how does it differ from PISA?

What is PIAAC, how is it justified and implemented and how does it differ from PISA? Before delving into the data itself, this is a relevant question to answer. PIAAC is an abbreviation for the Programme for the International Assessment of Adult Competencies. The program aims to examine adults aged 16 to 65 and their skills in reading, numeracy and adaptive problem-solving in a vocational context (OECD, 2024). The survey is carried out every 10 years. The purpose of is to guide member countries in designing policies for lifelong learning, adult education and the labor market. This contrasts with PISA, the Programme for International Student Assessment, which measures the competence of 15-year-olds in reading, mathematics and science every three years in a school context. The purpose of the latter is to compare school systems and see how students perform across countries, as well as to look at trends over time (OECD, 2014).

The PIAAC program assumes that adults' ability to cope and thrive in a world of rapid technological change depends on their basic skills. These now include results in reading, numeracy and adaptive problem solving, and they are divided by variables such as age, gender, region, educational level, labor market participation and economic sector. The first survey (PIAAC 1) was conducted in 2011–2012 with results released in 2013. PIAAC 2 was conducted in 2022–2023 (OECD, 2012a and 2023a). In the latter, adaptive problem-solving skills were included in the survey. It is about the ability to define a problem, find information and solve problems in different contexts that change during the test. The survey itself is conducted as a visit interview, like previous tests, but the actual testing now takes place on a tablet that the interviewer brings with him.

Adaptive problem solving as a new element in the survey (OECD, 2017). It is justified by the fact that technological changes, automation and the latest advances in artificial intelligence (AI) are contributing to structural changes in most industries and professions. These challenges are expected to be amplified by a new economic world order that is now characterized by protectionism and increased tension in the world. AI and digitalization are also changing how basic skills are used in everyday life, from managing personal finances to making data-driven decisions in the workplace. Another element is that an aging population leads to longer working lives and changing demand for goods and services, including in health and care. This competence comes as a foundation across specialized skills in specific professions and is expected to be crucial for individuals to be able to navigate these profound changes.

In PIAAC, literacy skills are assumed to equip people to process information, communicate effectively and participate in society. Numeracy skills underpin decision-making, financial literacy and the ability to interpret complex data. Problem-solving skills are assumed to enable individuals to adapt, innovate and exploit technology. Together, these skills are not only indispensable for economic success, but also fundamental for societies to address inequality, foster resilience and promote social cohesion (OECD 2013, p. 20).

PIAAC examines how adults use basic skills in work and everyday life, how these skills are developed, maintained and lost during life. This is done with a combination of individual tests, preferably digital, interviews and questionnaires on, among other things, education and work. The tasks are related to working life, everyday tasks and digital interaction and map adults' reading comprehension, numeracy and problem-solving skills in technology-rich environments. The tasks in reading can, for example, be about reading and understanding a job advertisement, interpreting the requirements for the position, who can apply, what education and experience are required, as well as salary and other rights associated with the position. The tasks in numeracy can, for example, be about comparing electricity consumption given in a table over a few months, calculating variation, average and price. Tasks in problem-solving can, for example, be about using email and calendar, finding a time for a meeting, prioritizing, giving feedback or sending a notice digitally. The texts are relatively short compared to the tasks in PISA.

The tasks in PISA are more about the application of school knowledge. The tasks in reading may, for example, involve reading an article about climate change, interpreting causes and effects and extracting the main message of the article. The tasks in mathematics may, for example, involve calculating how much paint is needed to cover a wall with given dimensions and number of coats, calculating the price and assessing how much paint is left over. The tasks in problem-solving May, for example, involve planning the delivery of a product to a given address within a given time using map data and digital aids. The task texts are generally longer in PISA than in PIAAC. For both programs, tasks have been developed that are intended to be operationalizable.

PIAAC, literacy is defined as the ability to understand, evaluate, use and engage with written texts to participate in society, achieve one's goals and develop one's knowledge and potential. Numeracy is defined as the ability to access, use, interpret and communicate mathematical information and ideas to engage with and manage the mathematical demands of a range of situations in adult life. For this purpose, mathematics involves dealing with a situation or solving a problem in a real-world context. Problem solving in technology-rich environments is defined as the ability to use digital technology, communication tools and networks to acquire and evaluate information, communicate with others and carry out practical tasks. The assessment focuses on the ability to solve problems for personal, work-

related and societal purposes by setting appropriate goals and plans, and by accessing and using information through computers and computer networks.

Table 1 seeks to provide an overview of the content of PIAAC and PISA, respectively, and how they differ.

Table 1. PIAAC and PISA programs content compared.

Category	PIAAC	PISA
Full name	*Programme for the International Assessment of Adult Competencies*	*Programme for International Student Assessment*
Target group	Adults (16–65 years), living in private households	15-year-olds in school, regardless of school level
Purpose	Measuring how adults use skills in work and everyday life	Measure how students can use school knowledge in practical and unfamiliar situations
Skills measured	- Reading (literacy) - Calculation (numeracy) - Problem solving in technology-rich environments	- Reading - Math - Science/Problem Solving (every 3 years)
Context	Adult life: work, everyday tasks, digital interaction	School and everyday life: tasks that require the application of school knowledge
Frequency	Every 10 years (2012 and 2023)	Every 3 years (from 2000 to present)
Example – Literacy	Read a job advertisement and answer who can apply	Read an article about climate change and extract the main message
Example – Numeracy	Compare electricity consumption in a table over three months and calculate the difference	Calculate how much paint is needed to cover a wall of given dimensions
Example – Problem-solving	Find a time for a meeting based on emails and calendar and send the invitation digitally	Plan the route for a delivery with limited time and various map data
	Individual test (digital, some paper); interview and questionnaire about education, work, etc.	School-based test (digital or paper); student and school principal form
Area of use	Designing policies for lifelong learning, adult education, labour market	Evaluating quality and equity in education systems

4. Results from PIAAC 2012 and 2023

In this analysis, we have chosen to start with an overview based on an average of the countries' combined results in 2012 and 2023. Here, we seek to identify the relationship between the countries and the trend from cycle one to cycle two. We have also included the average for all OECD countries as a reference. These are shown in Figure 1 below.

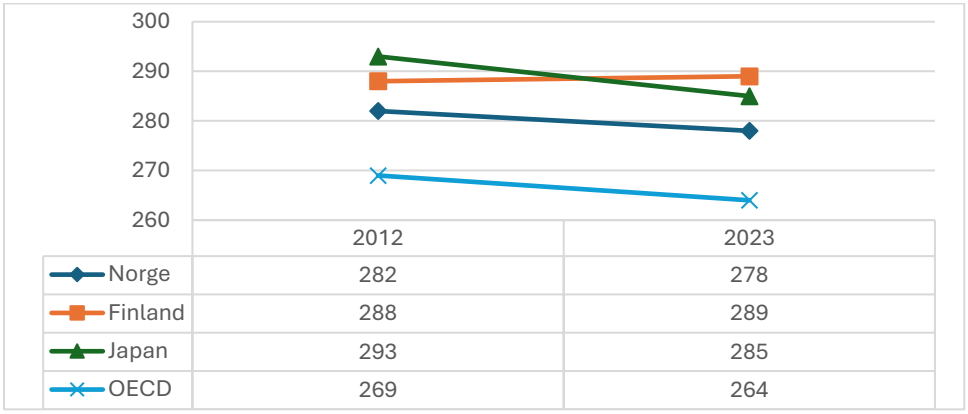


Figure 1. Average of results from PIAAC 2012 and 2023 (N>5000).

Figure 1 provides an overview of averages in the form of mutual differences between Norway, Finland, Japan and the OECD, as well as development trends in the period from 2012 to 2023. The results show that Finland, Japan and Norway score among the highest levels of adult competence compared to the OECD, which includes 30 participating countries. Sweden is also in this group. The Norwegian results are slightly below Finland and Japan in both measurements, but significantly above the OECD average. On the other hand, it can be seen that the results for Norway and Japan have decreased somewhat from 2012 to 2023, while the results for Finland remain at the same or slightly higher level.

Table 2. PIAAC results correlated

Pearson's r	r	p
Norway - Finland	0.703	.003
Norway - Japan	0.996	< .001
Norway - OECD	0.682	.005
Finland - Japan	0.754	.001
Finland - OECD	0.122	.666
Japan - OECD	0.627	.012

A relevant question is how large or small the differences are. For this purpose, a correlation was calculated based on Peareson's r. The result is shown in Figure 2. t shows that Norway and Japan score almost exactly the same (r=0.996 and p<0.001). Or to put it another way. There is no significant difference in the results for Norway and Japan. On the other hand, there is a significant, but weak moderate difference in the results between Norway and Finland (r=0.703 and p=0.003). The same is the relationship between Finland and Japan, but somewhat weaker. On the other hand, the results show a significant and strong difference between both Norway, Finland and Japan on the one hand and the OECD on the other. Most obvious is the difference between Finland and the OECD (r=0.122 and P=0.66).

The previous analysis was based on an average of all the measurements for the three countries and for the OECD average. Table 3 shows a more differentiated picture with results for reading comprehension, numeracy and problem solving, respectively, as well as the total referred to above. For example, are there one or more skills that stand out in one direction or another?

Table 3. Differentiated PIAAC results 2012 vs. 2023.

Peared Samles T-Test				
Measure 1	Measure 2	t	df	p
NoM	JpM	-7,155	7	< 0.001
NoM	FiM	-4,458	7	0,003
NoL	JPL	-3,157	7	0,016
NoL	FiL	-4,962	7	0,002
NoS	JpS	-12,271	7	<0,001
NoS	FiS	-8,189	7	<0,001
Note: Students t-test Korrelasjon				

First, all three countries appear to outperform the OECD average in all three skill areas. Problem solving is the skill that all three countries score highest on, with Finland (295), Japan (294 and Norway (289) respectively in 2012. But it is also seen that the result decreased significantly from 2012 to 2023. Reading comprehension is the skill

that Norway scores lowest on, with 278 in 2012, but somewhat higher in 2023 with 281. Finland has the highest score in numeracy with 294 in 2023, which is an improvement from 2012 with 288.

The OECD countries as a whole score fairly stable and similar on different skills, but significantly lower than Norway, Finland and Japan. If we differentiate by gender, women had somewhat higher scores on reading in 2012, but the opposite in 2023. Both PIAAC and PISA categorize the test results in levels from level 1 as the lowest to level 5 as the highest. Figure 3 shows an overview of these for reading comprehension and numeracy respectively.

Let's start with reading comprehension. Finland has the most adults who score at the highest level L5 and T5 in both reading comprehension and numeracy. If we combine the two highest levels L5 and L4, 60% score at this level in Norway, while it is somewhat higher for Finland and Japan with 67% and 66% respectively.

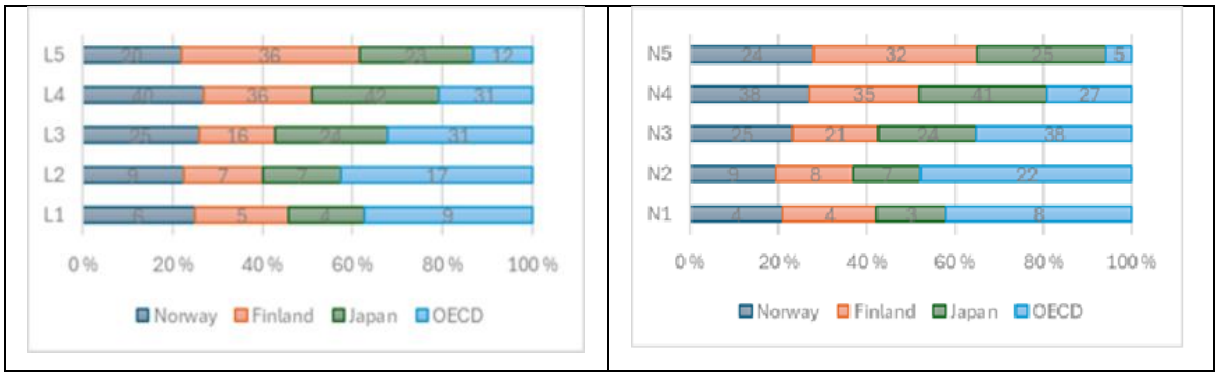


Figure 4. PIAAC Literacy L1-L5 vs. Numeracy N1-N5 (N>5000)

The OECD countries scored lower with 32% at the two highest levels. If we combine the two lowest levels L2 and L1, 13% of adults in Norway score at this level. This suggests that 13% have such low competence in reading comprehension that they have difficulty reading and understanding the content of a simple job advertisement. For Finland and Japan, the result is somewhat better with 12% and 11% respectively. For the OECD, the result is 30%.

When it comes to numeracy, the results show the same trend. If we combine the two highest levels T5 and T4, Norway scores 62% on this, while it is somewhat higher for Finland and Japan with 67% and 66% respectively. For the OECD, the score is 32% at this level. If we combine the two lowest levels T2 and T1, 15% of adults in Norway score at this level. This suggests that 13% have such low competence in numeracy that they have difficulty comparing prices for a product. For Finland and Japan, the situation is slightly better with 12% and 11% respectively. For the OECD, the result is 26%.

When it comes to problem solving, the results show greater differences. This is evident from Figure 3. If the two highest levels P5 and P4 are combined, 53% of adults in Norway score at this level, while it is higher for Finland and Japan with 74% and 65% respectively. For the OECD, 32% score at this level. If the two lowest levels P2 and P1 are combined, 15% of adults in Norway score at this level. This suggests that 15% have such low competence in problem solving that they may have difficulty opening an email, replying and following up on a message that is conveyed there. For Finland and Japan, the situation is slightly lower at 12%. For the OECD, the result is 30%.

In summary, it can be concluded that Norway scores high on all skills and significantly above the OECD average. However, adults in Finland still score best on problem solving in technology-rich environments. While the results for Norway and Japan decreased slightly from 2012 to 2023, the results for Finland were higher.

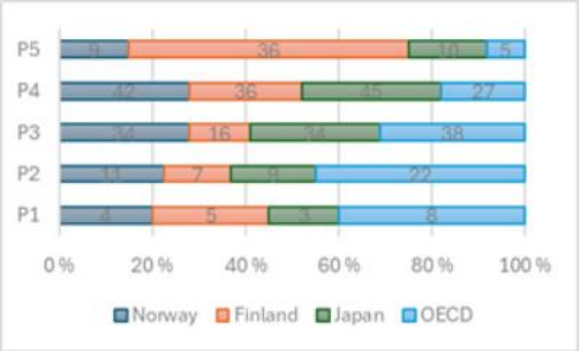


Figure 5. PIAAC Problem-solving in Technology Rich Environment P1-P5 (N>5000)

If we go a little deeper into the data, we find differences in the skill level between different groups and genders in the population. These are more evident in reading and numeracy than in adaptive problem solving. Women had better reading comprehension than men, while men on average had better numeracy. But this has evened out. Skills also vary between age groups, with younger adults scoring higher than older adults. The level of education is believed to be a contributing factor. In addition, the results show differences between immigrants in Norway and the rest of the population. Of the three countries, Norway has the most immigrants and Japan the fewest, which also has an impact on employment. Employed people have, on average, better reading and numeracy skills than those who are not employed. There also seem to be nuances between different groups of employed people.

Literacy and numeracy are not only basic skills for functioning in society. They also affect other aspects of adult life. Adults with good skills tend to have better health, are more satisfied with life, and trust other people more than adults with poor skills.

5. PIAAC versus PISA

The OECD emphasizes that PIAAC and PISA have complementary objectives (OECD, 2013, p. 25). In the first report, there are a total of 77 references to PISA and specific comparisons are also made (OECD, 2013, pp. 205 and 379). Against this background, it is interesting to analyze the results from the two programs in context. However, several reservations must be made here, which will be

discussed later. The surveys are different, they measure different things and the context is different. However, the ranking between the countries is assumed to be relevant here. PIAAC focuses on how adults develop their skills, how they use these skills, and what benefits they get from using them. For this purpose, the Survey of Adult Skills collects information on how skills are used at home, in the "workplace"

PISA, on the other hand, seeks to identify ways in which students can learn better, how teachers can teach better and how schools can be run more effectively. and in society; how these skills are developed, maintained and lost over the course of a lifetime, and how "these skills are related to labor market participation, income, health and social and political engagement. With this knowledge, the OECD believes it can document which skills are required in work and social life in general, as well as identify policy measures to strengthen more specific skills. Figure 6 shows average results for the two programs side by side.

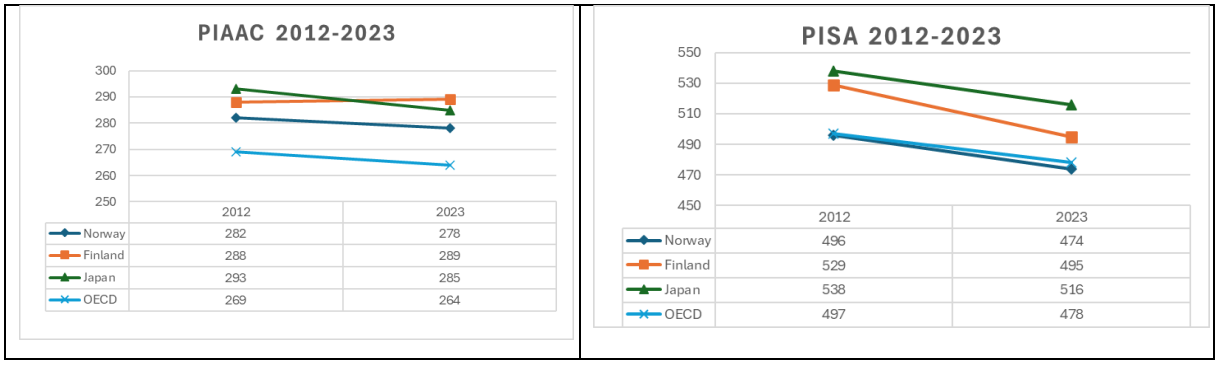


Figure 6. PIAAC vs. PISA results 2012 – 2023 (N>5000)

The two programs are not directly comparable, for example, the values on PIAAC are lower than on PISA. This is because skills are forgotten and weakened over time. One can still see and calculate differences between the countries and the trend from 2012 to 2023. We can also note that Norway scores high on the PIAAC survey, but only average on PISA with the OECD average as a reference. Finland and Japan, on the other hand, score high on both surveys. However, all three countries have one thing in common, the PISA results have decreased from 2012 to 2023. During the same period, the PIAAC results for Finland have increased, but decreased for Norway and Japan. This is also the case for the OECD countries in both surveys.

In the PIAAC survey, problem solving is defined as "Problem Solving in Technology-Rich Environments" (PSTRE) and is consequently more context-dependent than in the PISA survey. But the countries score fairly similarly on both, except for Japan, which scores significantly higher on the

PISA survey. This is evident from Figure 6b. Norway scores lower than Finland and about at OECD level.

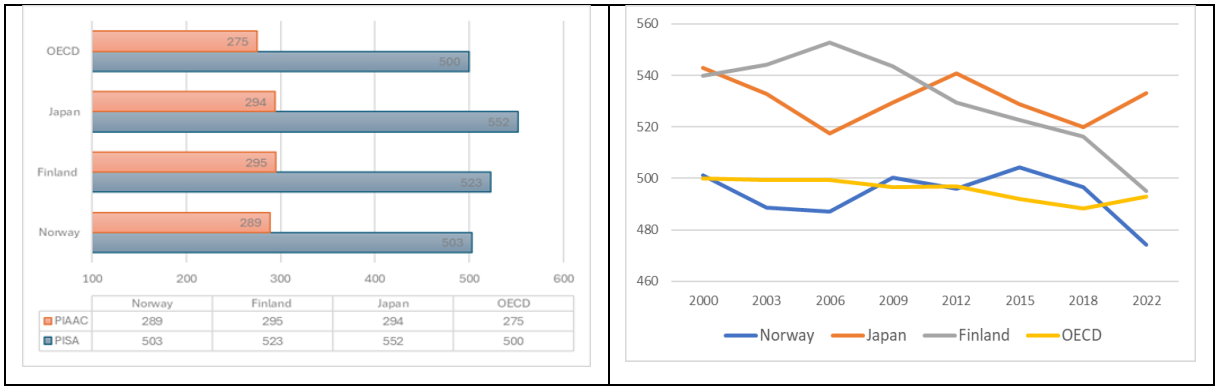


Figure 7. PIAAC (2012-2013) vs. PISA (2000-2022) (N>5000)

Figure 7 (left) shows the average for all measurements in the PISA survey. There we see that Norway scores significantly lower than Finland and Japan, Finland has also had a negative trend in recent years and is approaching the OECD average. The negative trend is assumed to have some connection with the Covid epidemic in 2020 - 2022, but not for Japan. It is difficult to point to any rational explanation for this other than that Japan has been more successful with online home education than the other countries. This is interesting because both Norway and Finland have invested a lot in digitalization in schools in recent years. This digitalization does not seem to have had the expected effect. Recently, AI has also become a challenge in school, work, social and private life. But it remains to be seen how this will be included in the surveys.

Table 4. PISA skills Correlated

Peared Samles T-Test				
Measure 1	Measure 2	t	df	p
NoM	JpM	-7,155	7	< 0.001
NoM	FiM	-4,458	7	0,003
NoL	JpL	-3,157	7	0,016
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NoS	FiS	-8,189	7	<0,001
Note: Students t-test Korrelasjon				

The last problem to be highlighted is the individual skills correlated with each other. It is shown in Table 4. This shows that Science is the skill where Norway scores lowest and Japan scores highest (NoS – JpS). In this skill, Norway also scores significantly lower than Finland (NoS – FiS). To some extent the same applies to mathematics and reading (NoM – FiM NoM – JpM, NoL – FiL, NoL – NoL – JpL). However, to a lesser and less significant extent. But why these do not have an impact on adults' competences is difficult to judge from this survey.

6. Cultural differences

The role of culture I global assessments must be considered and discussed (Chon et al, 2023). For this purpose, Hofstede's theory is considered relevant to use Hofstede (2011). Such differences can sometimes be observable in the content and organization of education. But they can also be more subtle, deeply rooted in culture and history, in attitudes and settings towards learning and effort.

It has already been pointed out that adults in Norway and Finland have better access than adults in Japan to paid further education. This also includes paid practical training in companies for apprentices. On the other hand, a higher vocational education at a 2-year college after high school is more common in Japan. But relatively little practice. On the other hand, primary school, especially in Japan, is more focused on studies, motivation for learning and attendance than in Norway. Japan uses tablets and other digital learning tools but better planned for academic learning. On the other hand, Japan still relies on nationally approved textbooks in all subjects. It is assumed that there is less variation between schools and districts.

According to Hofstede, we can understand the culture of a country in six dimensions (Aakre, 2023, p. 19). Figure 8 shows how Norway, Finland and Japan score on the six dimensions.

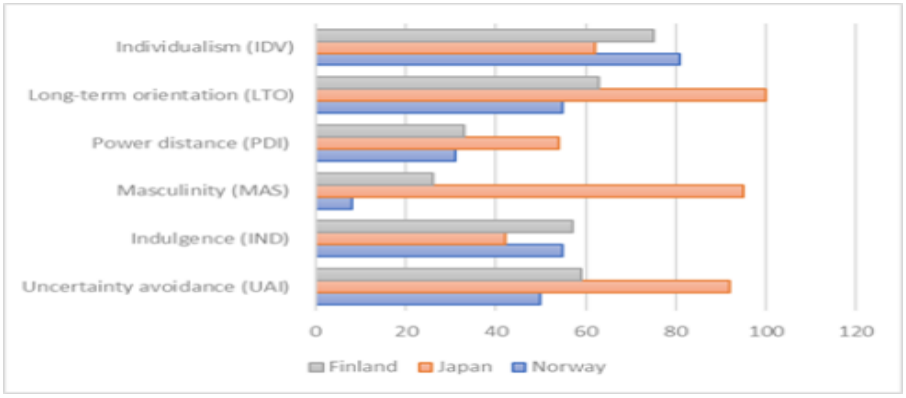


Figure 8. Cultural differences and learning in Norway, Finland and Japan on Hofstede scale

Power distance (PDI) says something about the degree of hierarchy versus flat structure. Individualism (IDV) says something about individual rights versus harmony and avoiding open conflicts. Masculinity (MAS) says something about the balance between freedom and competition on behalf of the group such as work ethics in Japan. Uncertainty avoidance (UAI) says something about tolerance for disorder versus rules and predictability. Long-term disorientation says something about what is important here and now versus long-term planning. Indulgence (IND) says something about individual freedom versus restraint, self-control and norms.

When it comes to differences that are more culturally determined, one must look at attitudes and practices that are not directly related to school systems. This is where Hofstede's theory can contribute

to a deeper understanding. The differences between Norway and Finland are relatively small, but Norway scores highest on the two dimensions individualism (IDV=81) and lowest on masculinity (MAS=8), i.e. attitudes towards achievement and competition. Finland scores neither high nor low on any of them. Japan stands out with very high scores on both long-term orientation (LTO=100), which among other things measures perseverance, masculinity (MAS=95), which among other things measures competition, and uncertainty avoidance (UAI=92), which among other things measures the tendency to avoid uncertainty and chaos. This is the dimension where Norway scores lowest, which suggests that noise, unrest and unpredictability are more easily accepted in Norway. These factors are clearly observed in schools on factors like learning styles, learning environment and classical factors such as learning environment, concentration, repetition, perseverance in learning as well as systematic improvement of teaching practice.

7. Discussion

Studies such as PIAAC and PISA have been the subject of criticism from both academic and political interest. The results and the methodological design of the programs must therefore be critically assessed considering what they aim to measure (validity), the accuracy of the results (reliability) and our interpretation in a broader societal context.

It is natural to start with the results themselves, which often capture the interest of readers first. Questions are sometimes raised about whether we can trust them. Statistically, there is hardly any reason for such doubt. The tests measure what they are designed to measure, but there may be possible sources of error that must be considered. The study also found observable differences in school systems and practices that can explain differences. In addition, there are differences that are more culturally determined. Cultural differences, partly result in observable differences in ways of organizing education, but also deeper in attitudes and settings towards learning and motivation.

In this study, it was found that both Norway, Finland and Japan score high on PIAAC compared to the OECD average. This suggests that adults have a good foundation when they enter adulthood, and that this competence is maintained and improved throughout life. If one sees this in relation to factors such as access to education, the economy, employment and social participation, one can assume that there is a connection. But it can be difficult to calculate exactly how strong this connection is.

When presenting data in this study, it is also pointed out that the results in literacy and numeracy comprehension are very different in PIAAC, which measures adults, and PISA, which measures 15-year-olds. Both in general and for the three countries covered in this study. This is not due to the scale, which is from 0 to 500 in both programs, but reflects that we forget what we have learned to varying degrees if we do not use or repeat what we have learned. Adults will therefore score lower than young

people who are in education. In PIAAC, the results may also reflect the extent of further education, either in the workplace or schools and higher education. The tasks are also not completely identical in both studies. It can be assumed that 15-year-olds would therefore score differently on tests in PIAAC than in PISA. The task texts also have different scopes and lengths. They are shortest in PIAAC.

One of the most obvious findings from this study is that Norway scores significantly better on PIAAC than on PISA, on a par with Finland and Japan, and significantly higher than the OECD average. At first glance, there is nothing to suggest that one cohort, age group 15, and another cohort, 16 – 65, score so differently. A possible explanation could be that primary and secondary schools in Norway are less focused on basic skills than, for example, Japan. But this evens out as they get older. On the other hand, the Finnish and Japanese results show that the population retains skills they have learned early. Another possible explanation could be a closer link between school and working life in Norway and Finland. Here it is obvious to mention the scheme with two years of paid apprenticeship for apprentices in Norway based on national training plans. Easier access to continuing and further education can also be mentioned. In Japan, 95% of students complete upper secondary education, but there the vocational subjects are more general, and students rarely gain experience of working life until after completing primary education. years. There is also shorter internship training, of varying length. It is also unpaid and most forms of continuing education and training must be paid for by the individual themselves.

Such factors may even help to understand why many countries score lower on PIAAC in 2023 than in 2012. However, this does not apply to Finland. On the other hand, Finland has also experienced a significant downward trend on PISA, while Japan has had stable development throughout the period. The Covid epidemic in 2020 – 2022 may be a factor but does not seem to have had any effect in Japan, where results have actually improved on PISA. It seems that Japanese students coped better with studying at home. School reforms may be another explanation.

The individual's motivation for taking such tests is also a factor. In some countries, including Japan and other countries in East Asia, such tests are more common and are given great importance for getting into schools and educations with high prestige. In Norway, some say that students "give a lift" because they have no importance for the individual (Sjøberg, 2022). Japan is also a more collective culture than those we have in the Nordic countries. This means, among other things, greater expectations that, especially from the age of 12, school is highly valued and preferably ahead of other activities. This is expressed, among other things, in the fact that many take extra classes in their free time at Juku to prepare for entrance exams. These are often quantitative tests of the type used in PIAAC and PISA. It can be assumed that this experience makes students perceive the tests as more important, both for themselves and on behalf of society. The latter brings us to conditions that lie

deeper in the countries' culture, school system and how everyday school life is for 15-year-olds and younger.

One criticism raised against international tests that seek to rank countries is differences in language and culture. For example, is it possible to formulate tasks that can be translated and perceived equally in all languages? It has also been observed that some countries take such tests very solemnly, with an appeal from the management to do their best for the country. Some schools also choose official marking with a flag hoisting and an appeal. Others carefully choose the day and time of the week that is most optimal in terms of doing well.

A previous study has pointed out that school culture, school system, length of the school year and number of hours in the various school subjects may be a contributing factor to Norway scoring only average on PISA, but high on PIAAC (Aakre, 2023). It has been observed that the classroom environment is more focused and makes better use of time in Finland and especially Japan than in Norway. In Japan, there is a strongly ingrained attitude not to disturb others in lessons and work, which also characterizes working life and society in many areas. Classes start promptly, learning is focused, and time is utilized to the fullest. This is the most obvious and observable difference.

When it comes to time available, Norway scores the lowest in Science, which has relatively few hours. The content is also different, with a more holistic perspective on nature, the environment and society, and less emphasis on classic science with physics, chemistry and biology than in Finland and Japan. Another possible explanation could be that young people in Norway stay in education longer. Upper secondary education takes 13 years in preparatory subjects and 14 years for those who will take a vocational certificate, while the equivalent in most other countries is 12 years. This may lead to Norwegian students choosing to prioritize education later when they are somewhat older.

Population composition is also a factor that can affect the results. Norway has significantly more people with a foreign cultural background, close to 20%, than Finland and Japan. Many take the tests in Norwegian before they have learned the language well. The PISA tests in both language comprehension, number comprehension and science consist of relatively long texts. This means that one must have good language comprehension to score correctly on the tasks. It also turns out that immigrants with a foreign language background score significantly lower than native Norwegians, which results in lower averages.

But there are also factors that vary equally across the three countries in this survey. Adults generally document lower skills than their younger counterparts, but less different than the OECD average. This may be related to the quality of both basic education and the opportunities offered to adults to take continuing and further education, or to participate in practices that help maintain and develop skills throughout life. The PIAAC results also show that workers in occupations that require few formal skills score low, which can inhibit learning and improvement in the workplace.

Men and women score similarly, but there is a tendency for men to score higher than women in numeracy and problem solving, while women score slightly higher in reading comprehension. However, the gap is small and among younger adults the gender differences are almost negligible.

7. Conclusion

This study examined the competences of adults, aged 16-65, in Norway, Finland and Japan. Quantitative data from the OECD PIAAC program was used in combination with qualitative data from own surveys. The results were also analyzed considering the competences of 15-year-old students in basic education based on results from the OECD PISA program. There are three major conclusions.

At first, the study found that adults aged 16 - 65 in Norway, Finland and Japan score at a high level in PIAAC and significantly above the OECD average. Adults in Finland score somewhat higher in 2023 than in 2012, while adults in Norway and Japan score somewhat lower. Secondly and somewhat surprisingly, it was found that 15-years olds students in Norway score significantly lower on PISA than adults on PIAAC. The latter also applies to some extent to Finland, while Japan has maintained a high level on PISA throughout the whole period.

Why do adults in Norway score far better than younger people? First, it must be pointed out that the two programs are not directly comparable. They measure competence in different contexts. However, there is some evidence that young people in Norway prioritize education less than older people who take education more seriously. Another factor may be that access to continuing education is more accessible and often financed by a company or the public sector in Norway. One example is vocational training, where apprentices receive paid training for 1 – 2 years in a company after two years of school. Finland has a similar system and even improved its on PIAAC. In Japan, such practical training is not paid, it does not take place until after completing 3-year upper secondary education in a school. In most cases it is only as a short-term internship or introduction to working life. On the other hand, in Japan, this is compensated by a basic education strongly characterized by strong work ethic, concentration, perseverance and repetition, which together lays a solid foundation for adult life. Japan also has a unique system of practice-based improvements in schools like the lesson study. Teaching practice in Japan also seems more pragmatic with focus on what works in practice rather than sophistical theories. Recently, AI has also become a challenge in school, work, social and private life. But it remains to be seen how this will be included in the surveys.

In conclusion, one can also ask: how credible are programs such as PIAAC and PISA? They probably measure with a degree of certainty what they are measuring. But that is within limited area of competence. It also depends on the motivation to do such tests. We know little about how they affect the performance of work in practice or the participation in society.

Finally, it turns out that it seems to be difficult for each country to make good use of international surveys such as PIAAC and PISA. The results are often given more importance than there is a basis for, and measures tend to be implemented that do not lead to either better practice or higher performance. In Norway, extensive reforms and measures have been implemented based on low PISA results. However, the results have had a negative trend throughout the period. The PIAAC results for Norway and Japan have also declined somewhat, though the results for Finland have improved a little. The conclusion is that measurement results are primarily only indications at a general level and within limited areas of expertise. Measures must therefore be supported by national surveys that delve into the challenges each individual country faces in their system of education.

Referanser

Aakre, B. M. (2023). Hva har Norge lært av PISA-studiene? En analyse med data fra Norge, Japan og Finland. *Didactica, Vol. 5, No. 1*

Chong, H. Y., Hyun, S. L., Emily L. & Siyan G. (2023). Adult Learning Across USA, Canada, and New Zealand: A Cross-Cultural Study of PIAAC. *International Education Studies; Vol. 12, No. 5.*

Encinas-Martín, M. and Cherian, M. (2025). *Gender Differences in Education, Skills and STEM Careers in Latin America and the Caribbean Insights from PISA and PIAAC*. OECD.

Engelhardt, P. V. (2021). On the dimensionality of cognitive abilities in PIAAC. *Intelligence, 88, 101575*. https://doi.org/10.1016/j.intell.2021.101575

Hanushek, E. A., Kinne, L., Witthoeft, F., & Woessmann, L. (2024). Age and Cognitive Skills: Use It or Lose It. *arXiv preprint*. https://arxiv.org/abs/2410.00790

Hofstede, G. (2011). *Dimensionalizing Cultures: The Hofstede Model in Context*. Online Readings in Psychology and Culture, 2(1). https://doi.org/10.9707/2307 0919.1014

Miyamoto, A., Gauly, B & Zabal, A. (2025). Gender differences in literacy in PIAAC: do assessment features matter? *Springer. Volume 12, article number 21, (2024)*

Maehler, D. B., Hernández-Torrano, D., Courtney, M. G. R., Fischer, F. P., Hollricher, L. F., & Gorges, J. (2025). PIAAC Survey of Adult Skills: A review of the research landscape. *International Review of Education, 71(2), 123–145*. https://doi.org/10.1007/s11159-024-10123-4

Maehler, D. B., Rosman, T., & Hertel, T. (2025). The PIAAC research landscape: A systematic mapping review. *International Review of Education, 71(2), 239–271*. https://doi.org/10.1007/s11159-024-10123-4

St. Clair, R. (2016). The limits of levels: Canada and the OECD's PIAAC. *International Review of Education, 62(3), 279–297*. https://doi.org/10.1007/s11159-016-9552-8

St. Clair, R. (2012). The limits of PIAAC: Considerations of policy and practice. European *Journal of Education, 47(4), 487–496*. https://doi.org/10.1111/ejed.12002

Tsatsaroni, A., & Evans, J. (2014). Adult numeracy and the global governance of skills: Examining the PIAAC survey. *Educational Studies in Mathematics, 87(2), 123–143*. https://doi.org/10.1007/s10649-014-9558-x

Kalcic, M. (2024). Om forskjeller mellom PIAAC og PISA: hva måler de egentlig? *Forskning.no*.

OECD (2025). *Education and skills at the OECD*. OECD. https://www.oecd.org/content/dam/oecd/en/about/directorates/EDU/EDU-brochure-2025-26_final.pdf

OECD (2024). *Survey of Adult Skills (PIAAC)*. OECD. https://www.oecd.org/en/about/programmes/piaac.html

OECD (2014). Comparison of PIAAC and PISA Frameworks for Numeracy and Mathematical Literacy. https://www.oecd.org/content/dam/oecd/en/publications/reports/2014/05/comparison-of-piaac-and-pisa-frameworks-for-numeracy-and-mathematical-literacy_g17a24b0/5jz3wl63cs6f-en.pdf

OECD (2012-a). PIAAC 1st Cycle Database. https://www.oecd.org/en/data/datasets/piaac-1st-cycle-database.html

OECD (2023-a). PIAAC 2nd Cycle Database https://www.oecd.org/en/data/datasets/piaac-2nd-cycle-database.html

NIER (2013). Japan's Participation in the OECD PIAAC Survey. https://www.nier.go.jp/english/PIAAC.html

OECD (2013). OECD Skills Outlook 2013 First Results from the Survey of Adult Skills. https://www.oecd.org/content/dam/oecd/en/publications/reports/2013/10/oecd-skills-outlook-2013_g1g3451c/9789264204256-en.pdf

OECD. (2023). OECD Skills Outlook 2023: Skills for a Resilient Green and Digital Transition. OECD Publishing. https://doi.org/10.1787/6f66257a-en

OECD (2023). Trends in Adult Learning. https://www.oecd.org/en/publications/trends-in-adult-learning_ec0624a6-en/full-report/where-what-and-how-are-adults-learning_59e53872.html

OECD. (2013). Technical Report on the Survey of Adult Skills (PIAAC). OECD Publishing. https://www.oecd.org/skills/piaac/Technical%20Report_17OCT13.pdf

OECD (2017). Adaptive problem solving Moving towards a new assessment domain in the second cycle of PIAAC. https://www.oecd.org/en/publications/adaptive-problem-solving_90fde2f4-en.html

OECD. (2018). Interviewers, test-taking conditions and the quality of the PIAAC assessment. OECD Education Working Papers No. 191.

Park, J., Jin, I. H., & Jeon, M. (2024). Analysis of Log Data from an International Online Educational Assessment System: A Multi-state Survival Modeling Approach to Reaction Time between and across Action Sequence. *arXiv preprint*. https://arxiv.org/abs/2403.14908

Sjøberg, S., Jenkins, E. (2023). PISA: a political project and a research agenda. Studies in *Science Education. Volume 58, 2022 - Issue 1*

Soroui, J. and Sullivan, L. (2024) Parental Education: What We Learned From the Program for the International Assessment of Adult Competencies. *American Institutes for Research*.

Yamashita, T., & Kunkel, S. R. (2015). PIAAC Numeracy Skills and Home Use Among Adult English Learners. Adult Literacy Education: *The International Journal of Literacy, Language, and Numeracy, 2(1), 45–60*. https://proliteracy.org/wp-content/uploads/2023/07/2.1.2_Research-Article-2_ALE-Research-Journal_Vol-2-No-1.pdf

Park, J., Jin, I. H., & Jeon, M. (2024). Analysis of Log Data from an International Online Educational Assessment System: A Multi-state Survival Modeling Approach to Reaction Time between and across Action Sequence. *arXiv preprint*. https://arxiv.org/abs/2403.14908