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Nordic values, culture, and development of academic skills according to international large scale-assessment (ILSA)

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Abstract

The aim is describe and analyze the relationship between 1) national reading skills measured by International Large Scale Assessment (ILSA) and 2) national values, culture and development of society (e.g. socioeconomic factors).

The main method is comparison on national level. The performance in reading measured as ILSA (PISA2000 and PISA2009 and IALS1994-98) is compared with scores from large scale cross-cultural studies (the World Values Surveys combined with studies by Hofstede).

The paper presents a number of hypotheses about the relation between national values, culture and socioeconomic factors on the one hand and the national scores in reading on the other. The hypotheses are tested with available statistical data from primarily three clusters of countries: Nordic, Confucian and English speaking.

The discussion on evidence and ILSA-results had set the agenda for policymaking around the world, the Nordic Countries included. Several studies of the attitudes and viewpoints on ILSA and rather few of the scientific premises which are the foundation of the research have been published. However, what is faith, and what is evidence? Which causal relations are valid?

The methods of national testing are developed in a non-Nordic setting which indicates in a NERA context that the scientific discussions of their relevance in relation to the measurement of the quality of Nordic education systems need research and scrutiny.

KeyWords

Comparative, Evidence, Measurement, PISA, Values

1. Introduction

What is the relationship between 1) the national development of academic level (linguistic comprehension as measured by international reading studies) and 2) the national differences related to values and culture and development of society (e.g. socioeconomic factors)?

The main method is empirical comparison of the reading results from PISA2000 and PISA2009 (OECD studies) and the trend in this period of time. The IALS1998 (Tuijnman 2003) is compared with scores from the The World Values Surveys which is designed to provide a comprehensive measurement from religion to politics to economic and social life (Inglehart 1997). Two index values on independent

dimensions are constructed: 1) Traditional/ Secular-rational and 2) Survival/Self-expression values. High values in these characterize "an advanced society" according to Inglehart (2002). The paper is in addition including/controlling for findings done by Hofstede (2001) in cross-cultural comparison between nations.

The research design and the methodology framework is a comparative cross-disciplinary analysis based on existing data from ILA and value studies.

Several hypotheses are established about the interaction between 1) national values and culture and 2) the mean proficiency level. They are tested with available statistical data from ILA (PISA) and from three clusters of countries: English speaking, Confucian and Nordic.

2. Hypotheses

The paper is based on the hypotheses that

- national values/culture has a defining effect on the national academic level of 1) young learners both in the end of lower secondary education and adult learners in "an advanced society".
- national differences in culture and values are relatively stable over time and not very sensitive to political initiatives; therefore the national academic level is equally insensitive to change in educational policy on the short term.
- academic progress depends on the individual student's personal effort more than anything else. And the educational systems success (as measured by PISA) depends on student incentive to work hard, which is closely connected to values and culture.
- national differences in the academic level of young learners (as measured by PISA) shows different results than the academic level of adult learners (as measured by IALS). The national differences, especially in a comparison which includes the Nordic countries is caused by the cultural background and the long Nordic tradition for education of adults.

A discussion of the causality is included in the paper: Are national performance in e.g. PISA primarily an influence from or a product of culture, value and socioeconomic factors?

The discussion on evidence and ILSA-results has in a high degree set the agenda for the policymaking in Nordic countries. It is relevant to note that these testing methods are developed in different cultural setting. That is why the discussion about on their relevance as tools for the measurement of quality in the national systems of education in the Nordic countries needs more research and scrutiny. Much research on the attitudes towards ILA has been conducted but limited research of the scientific premises which are the foundation has been published.

3. Definitions of concepts

Culture, values, assessment, learning, testing, measurement and evidence are all ambiguous concepts. Values are often referred to as deeply held beliefs about what is good, right, and appropriate (personal values) or what experts, political parties or medias point out as (subjective) characteristics of the people or of a group of people (e.g. Danes are jovial, mediocre, democratic and are using a very direct form of communication. Finnish teachers are highly respected because the schools are doing so well. Norwegians feels that taking care of the environment is very important. The Swedes go for 'lagom': not too much, not too little, not too noticeable, everything in moderation).

The concept of "evidence" has obtained a strong position in the educational debate in the last decade. The label "evidence-based" is frequently used when some kind of data mostly pointing in the desired direction is registered. However, the data are often self-reported or just results based on teachers subjective assessment.

Neither of these definitions applies to the intention of this paper, which is to focus on quantitative empirical observations. A definition of the concepts as used in this context will for this reason be necessary.

Values in this context is based *on survey data and analysis of responses on peoples convictions, attitudes, believes, position, opinions on matters as family, work, politics etc*. (inspired by Gundelach 2004) The population is representative groups of people from different nations. The national values are considered as the values that are typical or dominant of the inhabitants in a country. The advantage of this approach (also called causal analysis) is that the survey method is based on observations (input) that are objective to a certain extend[1]. What are to be discussed are the output - the statistical methods and the interpretation of the results.

Culture in this context is determined by the collective values and believes in a country. Culture can be defined *as the collective mental programming of the human mind which distinguishes one group of people from another*. Statements about culture do not describe "reality"; they are all general and relative (Hofstede 2001). The point is that culture exists by comparison only.

Evidence should be convincing and tested. Indisputable evidence in the social sciences is rarely found. Convincing evidence presupposes three qualities:

a) There have to be a hypothesis, a theoretical mechanism that explains the interplay of the variables in a convincing manner
b) There should be a strong statistical correlation supporting the hypothesis (the required strength varies among the scientific fields)
c) Serious attempts should be made to falsify the hypotheses, to look for competing explanations.

Tests are defined as series of items that can be scored (almost) objectively. Educational **Measurement** is the outcome of a scoring process typically performed by a psychometric statistical method within the field of Item Response Models or Rasch Models, where the scales for scoring are interval scales (e.g. Rasch logits or PISA score points). And measurement of l**earning outcomes** in this context is done by comparing two test scores from the same interval scale.

4. National Culture and Values

We are going to focus on three clusters (Nordic, English Speaking and Confucian countries) in the comparison of the observed culture and values (through cross-cultural surveys), the differences in academic skills (through ILSA) and in the socioeconomic factors. The purpose is to shed light on inference about what is causes and what is effects in these rather complex setting.

This issue is explored at country-level with international cross-cultural survey data on non-cognitive indicators. Others countries (primarly from the western world) are included for the purpose of reference

[1] Objectivity is a difficult concept especially mixed with analysis of opinions and attitudes in multilingual surveys

in addition to the main subjects of this analysis (the three clusters of Nordic, Confucian and English-speaking countries).

Cross-cultural studies have been conducted systematically in decades and large quantities of data are collected from most of the world. The authors will in the following deal with two of the most used and debated set of survey data on culture and values: The data in World Values Surveys (Inglehart 1997) and data collected by Hofstede (2001). The scientific methods have similarities: Both are based on individual survey data that is analyzed by factor analyses identifying general dimensions in the data; the data is then aggregated to country-level in order to discover general country traits. Both are having National Cultures and Values as their core concepst which are to be analyzed trough comparison. Even if culture and values evolve, the movements are often both slow and parallel, compared eg. to movements in political and socioeconomic factors. The relative differences are therefore quite stable over time. But their approaches are different.

4.1. The Hofstede approach

Initially, Geert Hofstede analyzed a database of employee value scores collected by IBM between 1967 and 1973, covering more than 70 countries. The Hofstede approach has been the basis for much cross-cultural and cross-national research. It is based on rather old data but new data has indicated that the traits he measured are surprisingly stable (because of the focus on differences in data with parallel development)[2]. Hofstede's original model operated with 4 dimensions (Power distance PDI, Individualism versus Collectivism IDV, Masculinity versus Femininity MAS and Uncertainty Avoidance UAI - all originally normed from 0 to 100) and two more dimensions have been added. Data from the four clusters of countries of the Hofstede MAS-dimension is shown in figure 1 (the right side). A national indicator personal competitive attitude is used.

[FIGURE 1]

There is clearly a significant difference between 1) the Nordic Countries and 2) the Confucian and the English speaking countries.

Nordic countries has a strictly non-competitive culture. Hofstede describes: *In Nordic countries the focus is on "working in order to live", leaders (incl. politicians and teachers) strive for consensus, people value equality, solidarity and quality in their working lives. Conflicts are resolved by compromise and negotiation. Incentives such as free time and flexibility are favored (compared to wage). Focus is on well-being, status is not shown, especially not in Scandinavia where the fictional law, "Law of Jante", counsels people not to boast or try to lift themselves above others"* (excerpt from Hofstede 2001 & website). There is a strong Nordic focus on the weak students in schools and the ranking/rewarding/sanction students, teachers and schools on basis of results of assessment is not a Nordic way.

[2] The statistical approach of Hofstede has been criticized, debated and questioned in several studies. E.g. in McSweeney 2002 and Spector 2001. The latter tried to replicate Hofstedes finding on their data. Their analysis indicates that the Hofstede dimensions are questionable as a general model and Hofstede is criticized for lack of statistical documentation (only mean scores for countries are available). Hofstede explains his approach and his model is designed for comparing mean scores of matched Samples of respondents across a number of countries (Hofstede 2002). Other Studies (e.g. Maseland & Hoorn 2009) comparing Hofstedes findings with other cross-cultural research (e.g. World Value Surveys and GLOBE) finds high correlation between Hofstede scales and comparable scales in these surveys. The Hofstede IDV dimension correlates strongly whit the Inglehart Survival/Self-expression values (Maseland & Hoorn 2009).

Both the Confucian and Anglo-American cultures are highly competitive. Striving for perfection/to be the best/to win is a natural objective. And it is no shame in being rich and famous. Assessment in schools is done by testing and the main purpose of testing is to provide accountability. The ranking/rewarding/sanction students, teachers and schools on basis of results are felt natural in the Confucian and the Anglo-American cultures.

4.2. The Inglehart approach

The World Values Surveys are based on a battery of 300-400 questions (variables) that are collected every 5 years ("waves" of data collections) within the last 30 years, in representative samples of the population in participating countries. More than 90 countries have participated in at least one wave[3].

Inglehart has been a driving force in the project. He identifies in analyzing the data from World Values Survey through factor analysis (including a small number of variables) two scales (dimensions; principal component factor loadings) that accounts for 70% of the variation among countries. Most of the world's countries are placed on a chart (he names the left side of figure 1 a "cultural map"). The poles of the scales are: From "Traditional" to "Secular-rational" values (moving up), from "Survival" to "Self-expression" values (moving from left to right). See Box 1 for a brief description of the "poles" on these scales.

There is a rather clear tendency to clustering into three groups (the Nordic, Confucian and the English speaking countries) while the other westerns countries (Continental Europe) are scattered over a larger area.

The Nordic and English speaking countries are characterized by self-expression values; in upbringing of children respect, tolerance and imagination are treasured values. In the other dimension (Traditional/Secular-rational values) there is a difference. However, while the Confucian and the Nordic Countries are dominated by secular-rational values the English-speaking countries are influenced by more traditional values.

Box 1: Ron Ingleharts 2 scales: Traditional→Secular-rational values and Survival→Self-expression values

Societies near the **"traditional"** emphasize deference to authority, absolute standards and traditional family values, national pride and a nationalistic outlook. It is considered important that children learn the value of religious faith and obedience which influences the values in school. **"Secular-rational"** societies represent the opposite preferences to the traditional values and e.g. accept of homosexuality, divorce and abortion. Independence, determination and perseverance are valued qualities in upbringing of children.

"Survival" represents strong emphasis on economic and physical security; children should learn the qualities of hard work and thrift. **"Self-expression"** values are emphasis on subjective well-being, quality of life, tolerance, trust and individual freedom; children should learn the qualities of imagination, tolerance and respect for other people.

5.0. Cause and effect in cultural and socioeconomic development

Inglehart argues that economic development, cultural change, and political change go together in coherent and even, to some extent, predictable patterns (Inglehart 1997). It implies that some trajectories of socioeconomic change are more likely than others and consequently that certain changes are foreseeable.

[3] 1st wave of World Values Survey was collected in in 1981-84, 6th wave started in 2010 and is not yet published.

Once a society has embarked on industrialization, a series of related changes in the economic and political environment is likely to appear (Modernization); but they take place with a generational time lag and have considerable autonomy and momentum of their own (economic growth). This is only the first step.

When an industrial society becomes "advanced" a basic shift in values, de-emphasizing any authority, including the instrumental rationality that characterized industrial society will follow Postmodern values are then bringing new societal changes, including democratic political institutions (moving east to west), changing emphasis on key aspects on life (from safety and survival to wellbeing).

Inglehart draws on data from the World Values Surveys to analyze the links between belief systems and political and socioeconomic variables.

One of his points is that when you move from the left corner in the bottom (which in figure 1 is primarily African and South Asian countries) towards the right corner in the top of this map you move from poor to rich, from developing countries to welfare states (economically, organizational . . . and educational level).

[FIGURE 2]

Ingelharts fundamental assumption is that modernization leads to cultural change, and cultural change leads to democracy. There seems to be as indicated in figure 2 a strong systematic connection between a countries economy and the culture/values. However, the causal structure on how culture and socioeconomics influence each other is still discussed. He is supporting the view-point that economics is the probable driving force behind change of culture. This idea was prior formulated as a hypothesis saying that increasing incomes would lead to democracy (Lipset 1959).

The question is: What exactly translates socio-economic development into democracy, helping democracies either to emerge and/or to endure? A concrete mechanism for endogenous democratization is suggested: income inequality. The argument is that "democracy is caused not by income per se but by other changes that accompany development, in particular, income equality".

The hypothesis about the causal structure is not unchallenged. Other scientists advocate the reverse mechanism: That cultural change is the driving force in economic development. Haller notices that Inglehart keeps a doors open. "*In spite of Inglehart's repeated assertion that modernization does not follow a linear path, that it is probabilistic, not deterministic, and the mention of a 'feedback mechanism from culture and values to economic change' (Inglehart, 1997:67), he does propose a unilinear, monocausal theory of change. In this regard, he is following an old tradition in philosophical-historical thinking and sociological theorizing* ". (Haller 2000)

6.0. Cause and effects in education: Common perception, Evidence and Hypothesis

We will in this section present the common perceptions of the interaction between educational outcome, culture, values and socioeconomics, present some evidence and evaluate/present hypothesis on the causes and effects. The focus is on reading: Measurement of reading ability in International large scale assessment (ILSA) like PISA and IALS has a special status and has been a major source to educational debate. Why is reading so important? When the fundamental decoding is in place, reading

ability is close to identical to comprehension[4] (Hoover & Gough 1990); The ability to understand communication from others (speech, written text or nonverbal language). This is fundamental to most human activity, especially in education.

6.1. Educational outcome vs. socioeconomic

The common perception is that Education is the driver of Economics (Hanushek 2007), the focus is on cognitive skills (Reading, math, Intelligence etc.) and economic growth is generated through improved education. Much of the ILSA rhetoric hinges on the assumption that educational achievement is a principal cause of economic standing and a nation's international competitiveness (e.g., Hanushek & Woessmann 2011).

As compelling as this logic may be, a number of cautions and caveats are warranted: The idea that educational performance as measured by cognitive tests is the principal determinant of national economic performance sound like a misunderstanding (Feuer 2012). None the less, this seems to be taken for granted in much policymaking and the reason for tests like PISA is considered as a policy tool. This theory of causality is substantiated by

a) A strong statistical correlation between average educational measures of cognitive skills and countries economic standing and
b) That there is evidence for this causal structure on the micro level: Strong cognitive abilities are promoting opportunities and are one of the best predictors for (economic) success in a person's life.

But this is an average consideration: When private enterprises are asked what traits they look for when hiring and what is expected from employee, usually the answer is non-cognitive skills like initiative, humor, thrift, reliability, ingenuity and conscientiousness - cognitive abilities has a very low ranking on the list (Dalsgaard & Wandall 1994). Some emphasize that they are cautious not to hire persons that are overqualified.

This is of course is an exception from the rule: The best qualified and longest educated is usually preferred for the job in well-educated societies like in the Nordic countries. This general principle has in some cases led to "educational inflation" in times of economical crises. Unemployment makes academics apply for jobs which used to be done by unskilled labor. The trend becomes a "status competition" (Walters 2000). It is an expensive and ineffective "educational waste" when a large part of the population is educated to a level (independently of whether the training provided valuable and valued job skills) that goes far beyond what society really needs (Hansen 2003).

There is no unambiguous evidence for the causal structures: High/increasing performance in education → high performing/increasing productivity in economics. There is not always an apparent correlation, see figure 3 (Feuer 2012)

[FIGURE 3]

[4] Hover & Gough demonstrated in 1990, that there is to components in reading (R) – comprehension(C) and decoding (D). Their experiments showed that the relation is multiplicative: R = C x D. The students participating in PISA have usually no reading disabilities, and normally the decoding skills for 15 year old student are fully automated. That means that D=1 and therefor R=C. In other words testing reading (like in PISA) is in reality testing comprehension.

Education is e.g. not an effective weapon combatting unemployment: "If the line of unemployed are better educated, the main effect will be a better educated line of unemployed – but not a shorter line" (Hansen 2003).

[FIGURE 4]

Feuer (2012) offers an alternative view of the relationship between education and economy as illustrated in Figure 4 on combatting poverty and promoting economic equality: Feuers's suggestion is referring to the income distribution in Finland. There are still problems even though these theoretical considerations are far stronger than the usual economic-education arguments: When the income distribution, the poverty and the PISA-results in Korea and Demark are compared the result will cause some problems for the theory.

To sum up: There are generally strong statistical correlations between economy and education: The World Economic Forum (WEF) calculates every year an index of competitiveness. The correlation between PISA and WEF (r=.66) is shown in Figure 5.

[FIGURE 5]

But it looks as if the relatively high correlation is partly a product coming from two clusters: Advanced countries (including the Nordic, Confucian and English speaking countries) scores relatively high in PISA and have a high index value. And less advanced countries scores low in both competitiveness and PISA. There are very little correlation between the WEF-index and the PISA scores internally in these clusters. It seems as if the most plausible hypothesis is that there is no direct causal relation between education and economy – but they both varies with the same overlaying factors. The question is whether Culture and Values are such overlaying factors.

6.2. Educational outcome vs. culture and values

PISA's reading scores are as mentioned above insufficient measures for educational outcome. Only a very small part of what is learned is measurable with standardized testing. Furthermore, the statistical model and the model for scaling in PISA is dubious - to put it mildly (Kreiner 2011).

Never the less, it is what we have got to look at. And certain things can actually be measured fairly precisely, especially the results for each country over the years. The principle is that the same items are used each year, and as the population should be representative. The results should therefore be comparable measures on the cohorts of 2000 and 2009. Comparing these results should give a good picture of the educational progress. The PISA 2000 results is shown in figure 6 plotted against the development form 2000-2009.

[FIGURE 6]

There is a clear negative correlation (r=-.66). The high performing countries in 2000 are in general scoring lower in 2009 while the students in low performing countries are improving. It may look as if everybody is regressing to the mean – except the Confucian countries.

Figure 7 is illustrating the change in PISA scores from 2000 to 2009 in the cultural map of Ingelhart. It is striking that the students in all the Nordic and English speaking countries performed worser in 2009 than in 2000 where they were relatively high performing. And that both Korea and Hong Kong who were also high performing in 2000 have increased their performance.

Figure 7 is illustrating the PISA results 2009 in the cultural map.

[FIGURE 7]

There is a clear trend – the countries in the lower left half of the map is performing relatively poorly compared to the countries in the upper right half. The PISA results follow the same pattern as the economy (right side figure 2). Whit two exceptions:

a) The Confucian countries are doing much better in education than in economics (measured by GNP/capita)

b) The Scandinavian countries in the upper right corner should have – if they had followed the same pattern as in Figure 2 – been top performing. Both Sweden and Denmark is below 500 PISA score points and Norway is just above 500. And they have moved back all three of them since they participated in PISA for the first time. We are talking about three countries with highly competitive economies, relatively low unemployment, positive balance of payment and surplus on public expenditure and very well financed educational systems.

A hypothesis for explaining these observations may be found in the values the students are taught to respect (table 1).

- The Confucian teacher has hard working, imaginative, tolerant students,
- the Anglo-American students are trained to be independent and determined but also obedient,
- the Scandinavian students are imaginative, independent and determined.

Table 1 (excerpt for Box 1)	**Survival** hard work, thrift	**Self-expression** Independence, determination, perseverance
Secular-rational imagination, tolerance	Confucian	Nordic
Traditional, religious faith, obedience		Anglo-American

Becoming a skilled reader requires lot of training. Imaginative, independent and determined people can be exiting to work with. But if a teacher has to make students do something that might be a bit dull and boring, it could be a good deal to trade some independence and imagination for a little hard work and obedience.

6.3. Testing reading in PISA vs Literacy in IALS

The Nordic Countries – especially Scandinavia - have a long tradition for education of adults – both general and job-related, formal as well as informal and non-formal. In fact, the rates of adult participation in the Nordic countries are highest in the world (Tuinman & Hellström 2001).

A logic hypothesis would be that adults in Scandinavia are performing relatively better in a test than the young PISA-respondents in Scandinavia. The International Adult Literacy Survey (IALS, 1994-98) tested adult learners 16-65 of age in literacy, covering 3 scales: Reading, understanding of documents and math (The English speaking countries participated but not the Confucian). The assumption is that the IALS reading test are comparable to the PISA reading score. The studies both report results on an

interval scale but the IALS-scale goes to 500 while this is the center of the PISA score. A simple index is done in Table 2 (un-weighted mean scores=100) to make the measures comparable.

[TABLE 2]

The PISA-score index is in figure 9 plotted against the IALS-index. The Scandinavian countries are as anticipated performing relatively better in IALS than in PISA. A logical explanation in relation to the Nordic countries could be that the reading ability evolves through participation in education of adults which is more common than in other countries.

[FIGURE 9]

It can be tested whether there is a connection. While the PISA-test is done by 15-years old students, the span of age is quite large (16-65 yrs.) in IALS. Jensen & Holm looked into how the scores vary with age – Results are shown in in Figure 10.

[FIGURE 10]

It turns out quite surprising that the reading ability is deteriorating from the moment the students leave school – except in the US. There might be a small preventive effect in the education of adults but the pattern is that the students are peaking when they are 16 yrs. old. Norwegian 16 years old respondents will after taking PISA-tests surpass respondents in New Zealand with 25 IALS score points (at least the double in PISA score points) – this is not plausible!!! It looks like there have been an error somewhere – or the IALS reading scale is fundamentally different from the PISA reading scale.

Next step is PIAAC – this will mark a leap in knowledge on adults reading ability and competencies. Comparing PIAAC to PISA 2012 might shed light over this mystery.

7.0 Concluding remarks

The main objective of this paper is to explore what determines the educational level and the development in educational outcome. Three different factors mutual relations has been investigated on a macro level: Cultur & values, cognitive skills/educational outcome and (socio)economic standing.

The background for the extensive use of ILSA in the last two decades in the Nordic countries seems to be a belief in education as the driver of economy, economic growth and employment.

The presented evidence suggests that economics and education are strongly correlated but there is no apparent causal structure. They are both not seems to be under influence of some more fundamental mechanisms and the evidence presented suggest that culture and values could be that underlying defining mechanism.

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Figure 1: Values and Cultural Dimensions in the Western world, The Nordic, English-speaking and Continental European Countries[5]

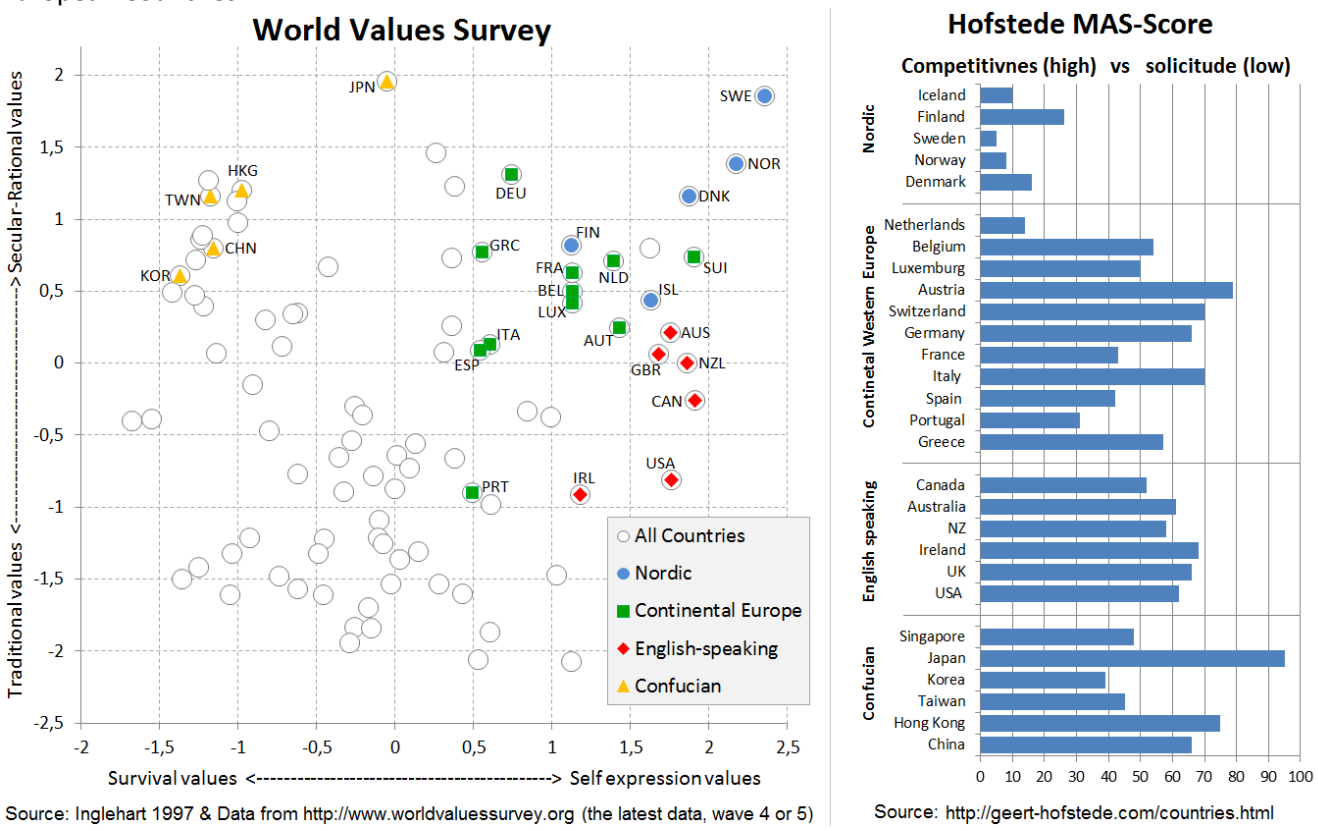
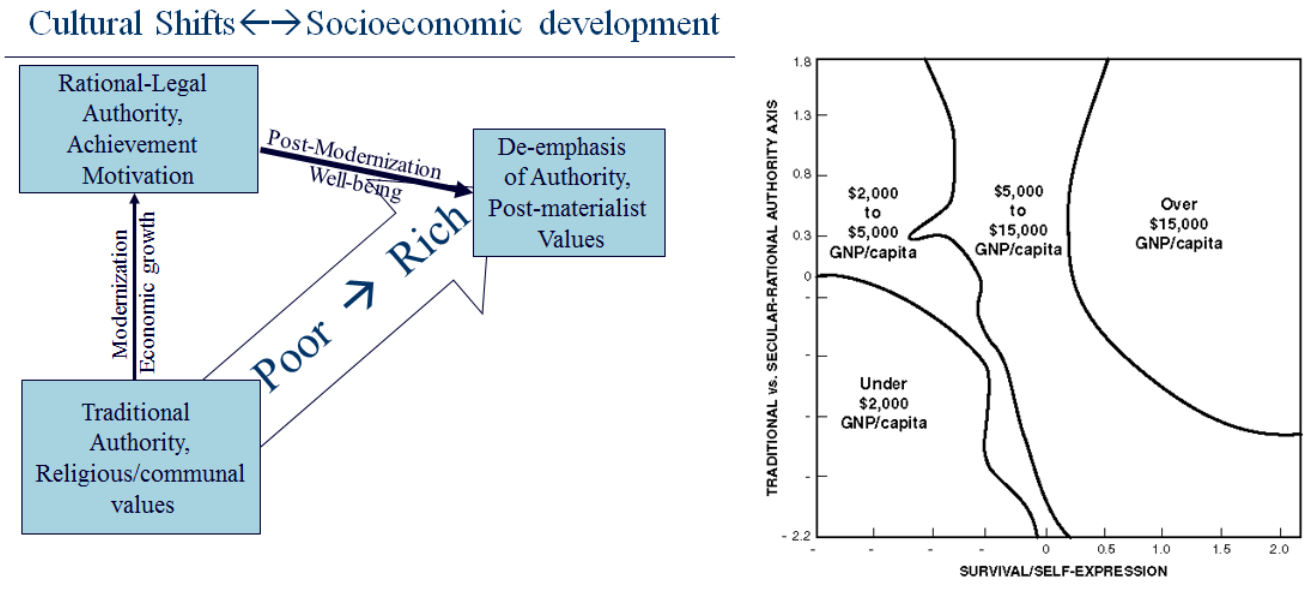


Figure 2. The path of development to an advanced society



[5] The classification of Countries is inspired by Esping-Andersen 1990 and Aiginger & Guger 2006

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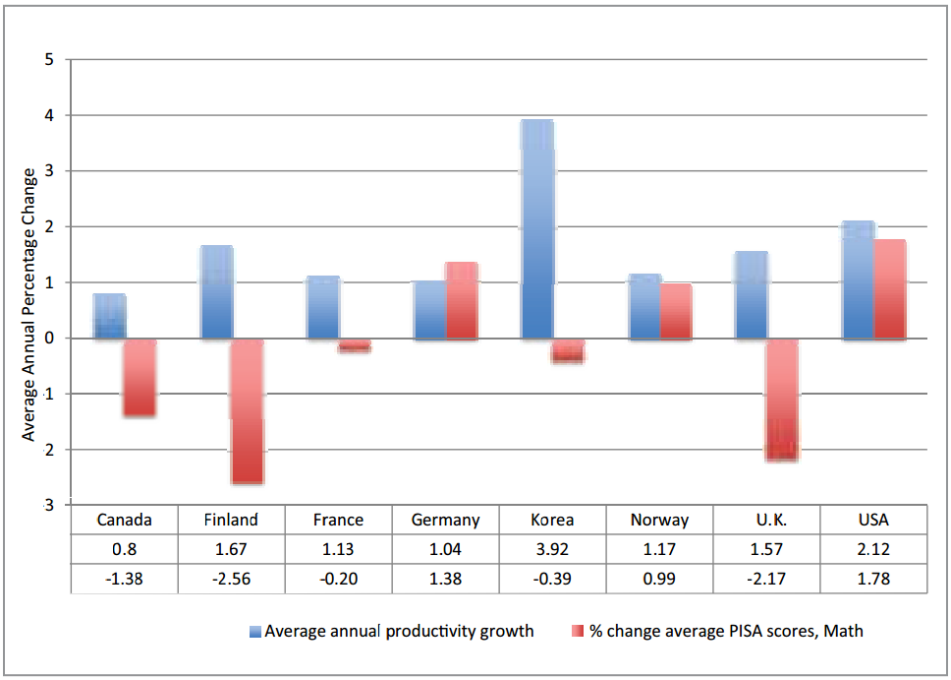
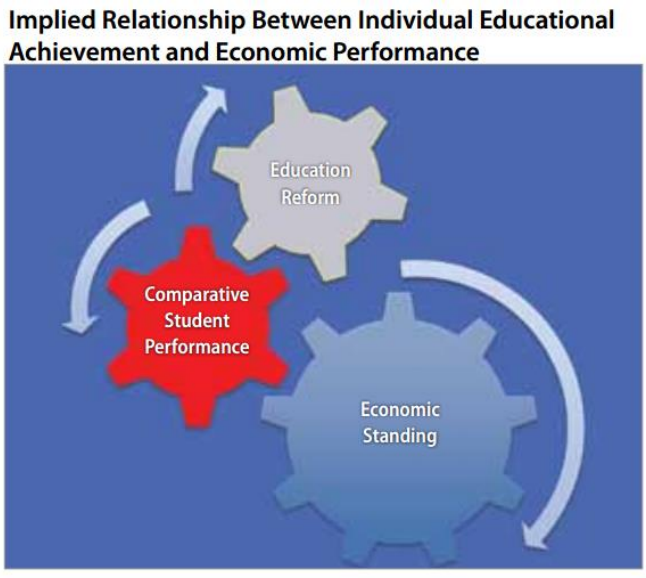
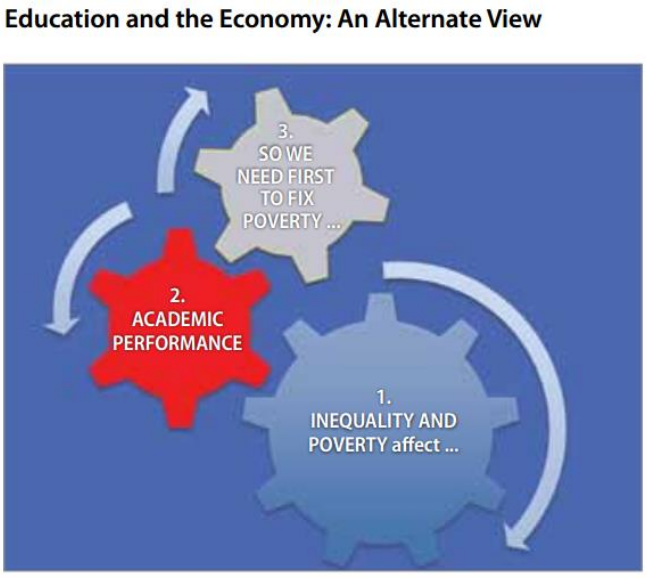
Figure 3: Comparing PISA Scores and Productivity Growth, Selected Countries, 2000–2009 (Source: Feuer 2012)



	Canada	Finland	France	Germany	Korea	Norway	U.K.	USA
Average annual productivity growth	0.8	1.67	1.13	1.04	3.92	1.17	1.57	2.12
% change average PISA scores, Math	-1.38	-2.56	-0.20	1.38	-0.39	0.99	-2.17	1.78

Figure 4: Alternative view on the relation Economy-Education





Source: Feuer 2012

Figure 5: Economy and Education

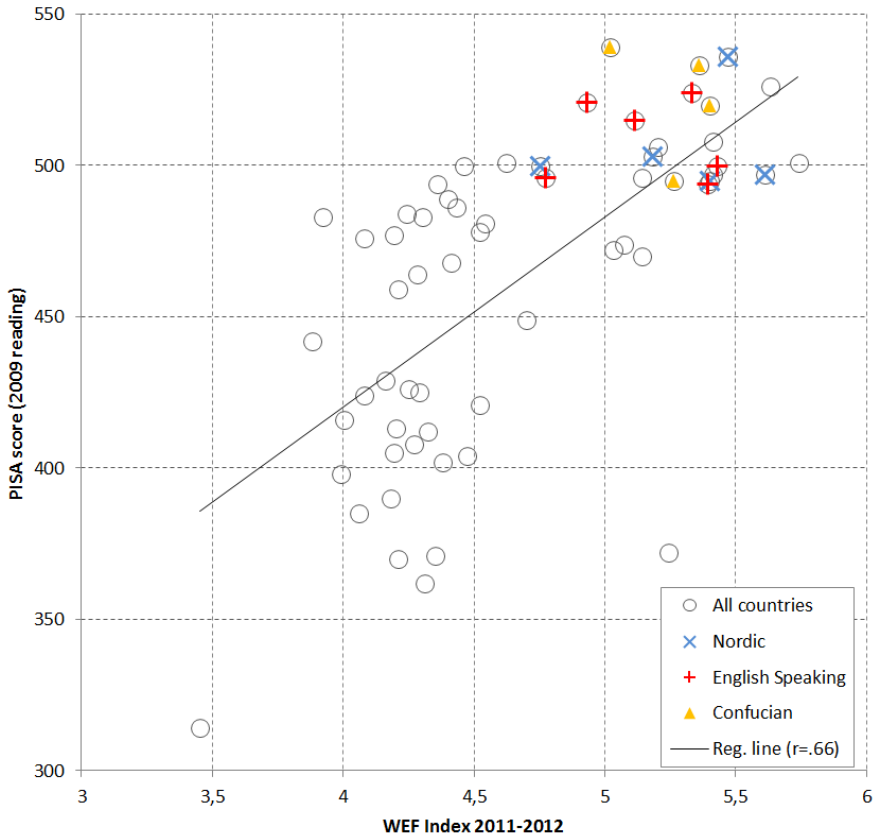


Figure 6: PISA scores in reading 2000 and development in PISA scores 2000-2009

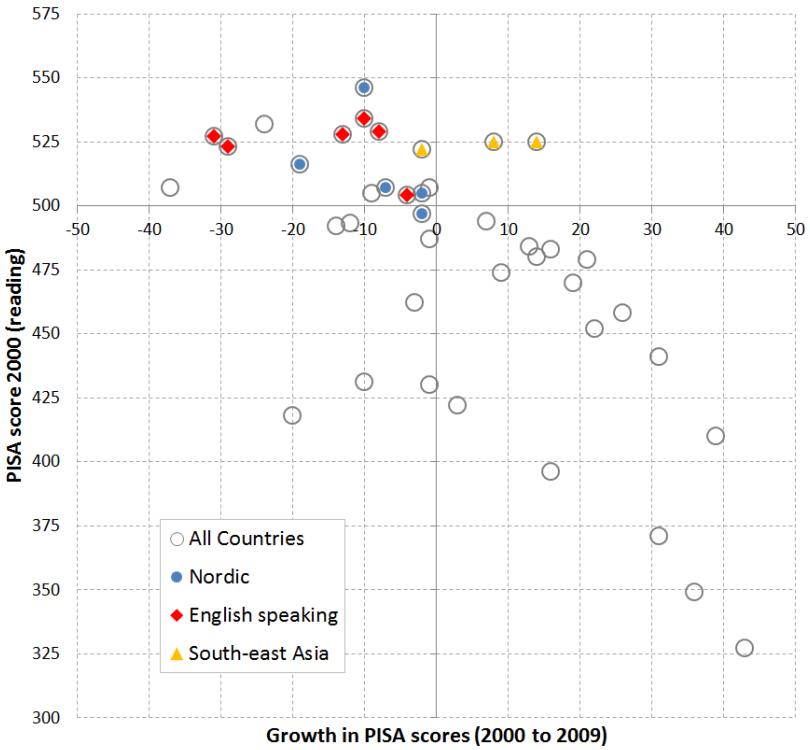
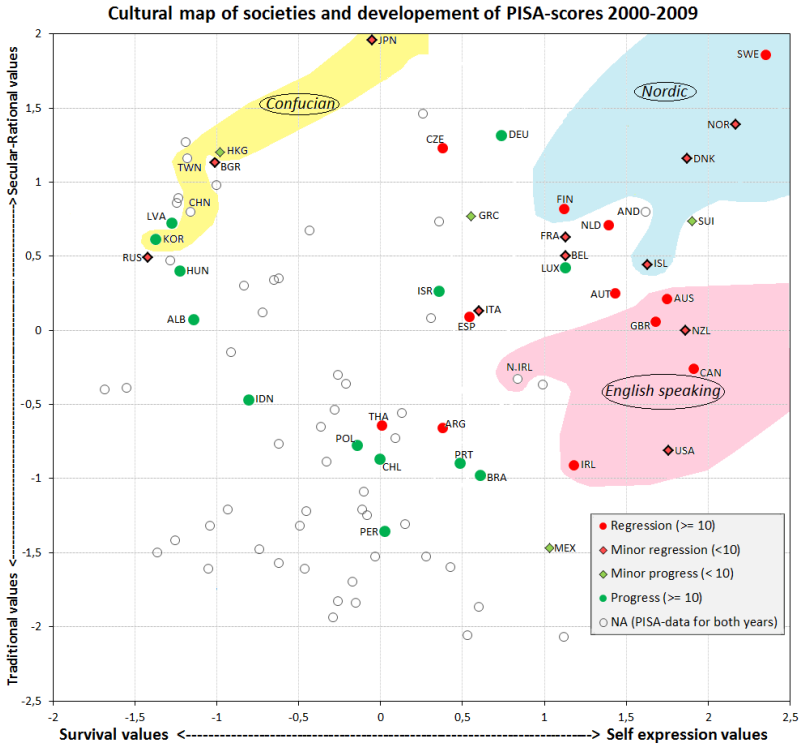


Figure 7: PISA scores in reading, growth from 2000 to 2009



Source: Inglehart and Welzel 2005 & WWW.OECD.ORG (PISA reading 2000 & 2009)

Figure 8 PISA results in Ingelharts cultural map

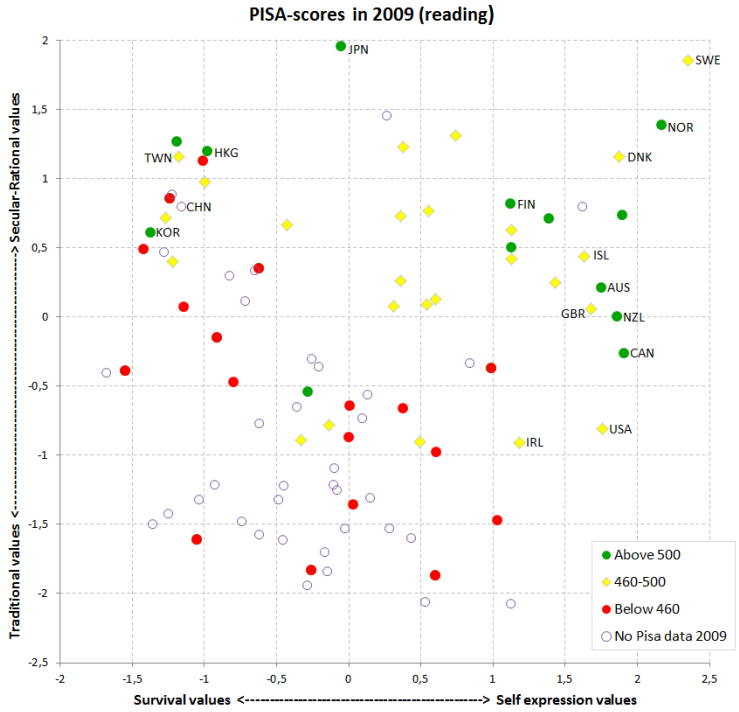


Table 2: Country score points PISA 2000 and IALS 1994-98

		PISA 2000		IALS 1994-98	
		Country Score points	Index (Mean=100)	Country Score points	Index (Mean=100)
DNK	Denmark	497	99	275	103
FIN	Finland	546	109	288,6	108
NOR	Norway	505	100	288,5	108
SWE	Sweden	516	103	301,3	113
AUS	Australia	528	105	274,2	103
CAN	Canada	534	106	278,8	105
GBR	UK	523	104	266,7	100
IRL	Ireland	527	105	265,7	100
NZL	New Zealand	529	105	275,2	103
USA	US	504	100	273,7	103
BEL	Belgium	507	101	271,8	102
CHL	Chile	410	82	220,8	83
CZE	Czech Republic	492	98	269,4	101
DEU	Germany	484	96	275,9	103
HUN	Hungary	480	95	242,4	91
NLD	Netherlands	532	106	282,7	106
POL	Poland	479	95	229,5	86
PRT	Portugal	470	93	222,6	83
SUI	Switzerland	494	98	264,1	99
Mean of Country Scores (un weighted)		503,0	100,0	266,7	100,0

Source: OECD & Statistics Canada 2000, OECD PISA 2000 (own calculations)

Figure 9: PISA 2000 and IALS 1994-98 (Source: As table 1)

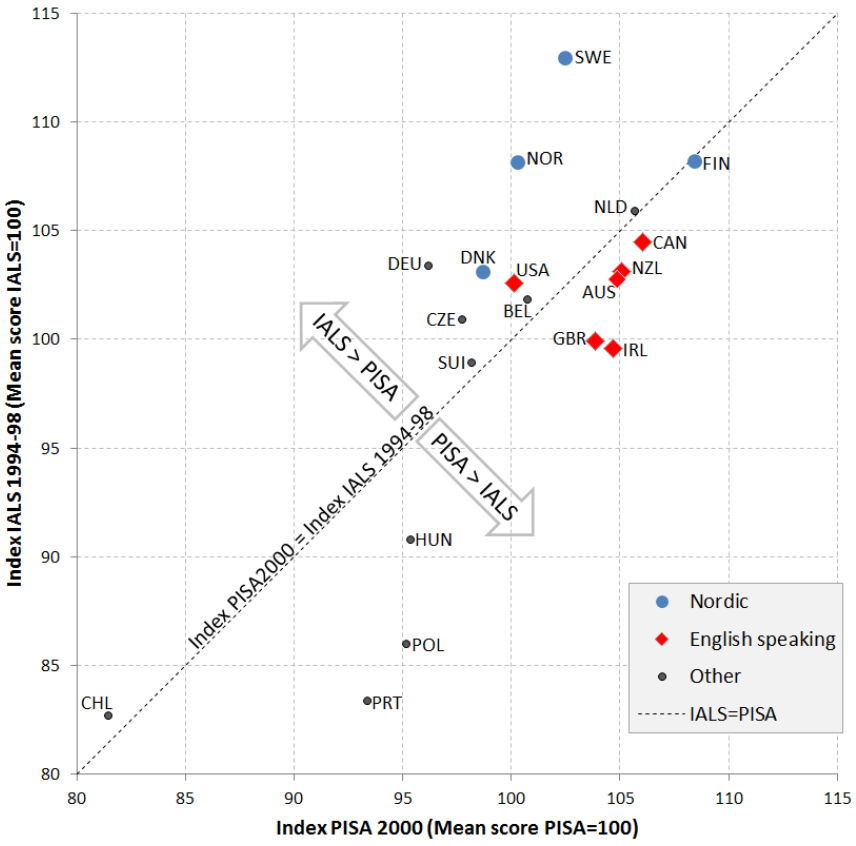


Figure 10. IALS 1994-98 reading score by age in Nordic and English Speaking Countries (Source Jensen & Holm 2000)