



LATVIJAS
UNIVERSITĀTE
ANNO 1919



OECD PISA pētījums 2000 - 2012

Datu bāzes, resursi, datu
apstrāde

2015.gada 30.oktobrī

OECD PISA

(saturiskās jomas un instrumenti)

11.00-11.30

Primārās un sekundārās analīzes būtība un iespējas, balstoties uz lietoto datu savākšanas instrumentu saturu un struktūru (aptauju papildmoduļi, testu saturiskās jomas).

- **OECD PISA instrumenti:**

- Testi

- Saturiskās jomas (matemātika, dabaszinātnes, lasītprasme)
 - Finanšu izpratības modulis (2012)
 - Struktūra

- Aptaujas

- Skolas aptauja
 - Skolēnu aptauja
 - Pamataptauja
 - IKT modulis
 - Izgl. karjeras modulis

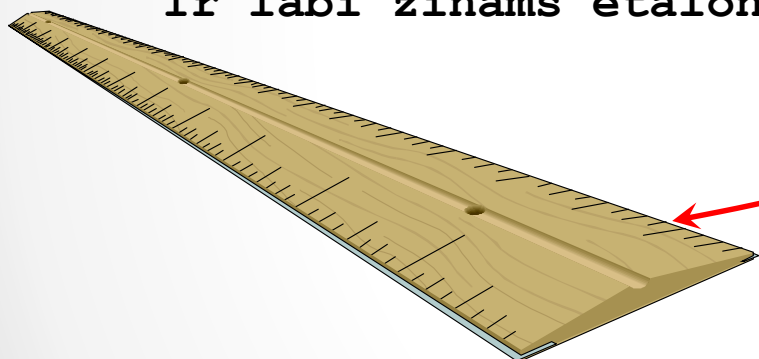
...turpinājums

- Instrumentu “sasaiste” datu analīzes veikšanai
 - Vienkāršā sasaiste, piemēram, respondentu dzimums un rezultāti testā; skolas tips un vidējie rezultāti utt.
 - Sasniegumu tendences (šim nolūkam tiek izmantoti saiknes uzdevumi, kas ļauj salīdzināt dažādu ciklu rezultātus)
- Sekundāro analīzi var nosacīti dalīt vairākās grupās
 - Viss tas, kas ir ārpus aprakstošās statistikas metodēm
 - Izglītības sistēmas pasūtīti datu analīzes uzdevumi
 - Pētnieku pašu akadēmiska interese, kas var būt oriģināla vai citu pasaulē veiktu pētījumu “inspirēta”
 - Pētniecība kvalifikācijas iegūšanai
 - Bakalaura
 - Maģistra
 - Doktora

Izglītības pētījumu mērinstrumenti

Izglītības pētījumu mērinstrumentiem nav etalonu. Tāpēc, instrumentu (testu, aptauju, interviju) validitātes un drošuma noteikšana ir sarežģītāka un darbietilpīgāka nekā citās jomās.

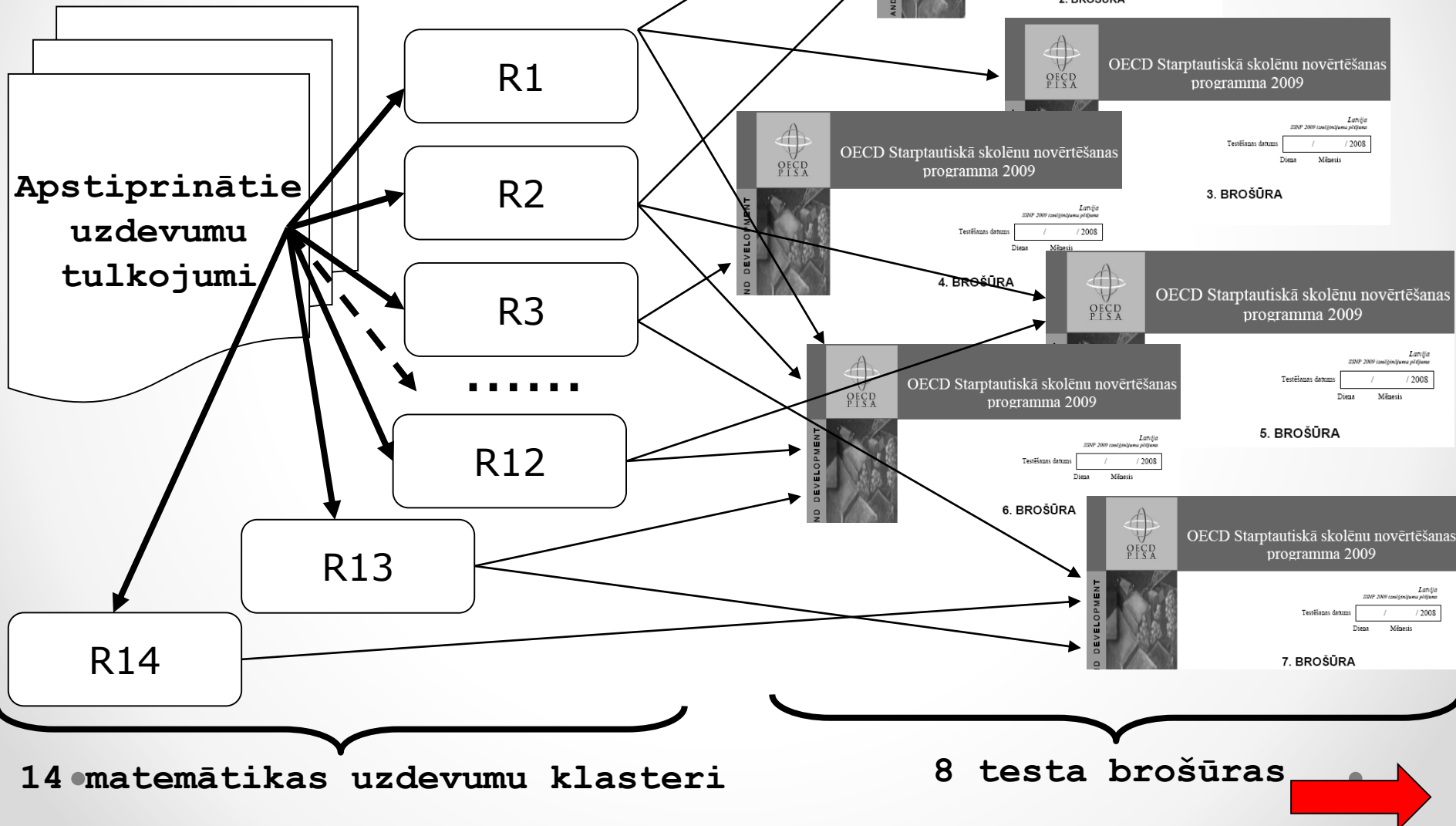
Ir labi zināms etalons



Etalona nav

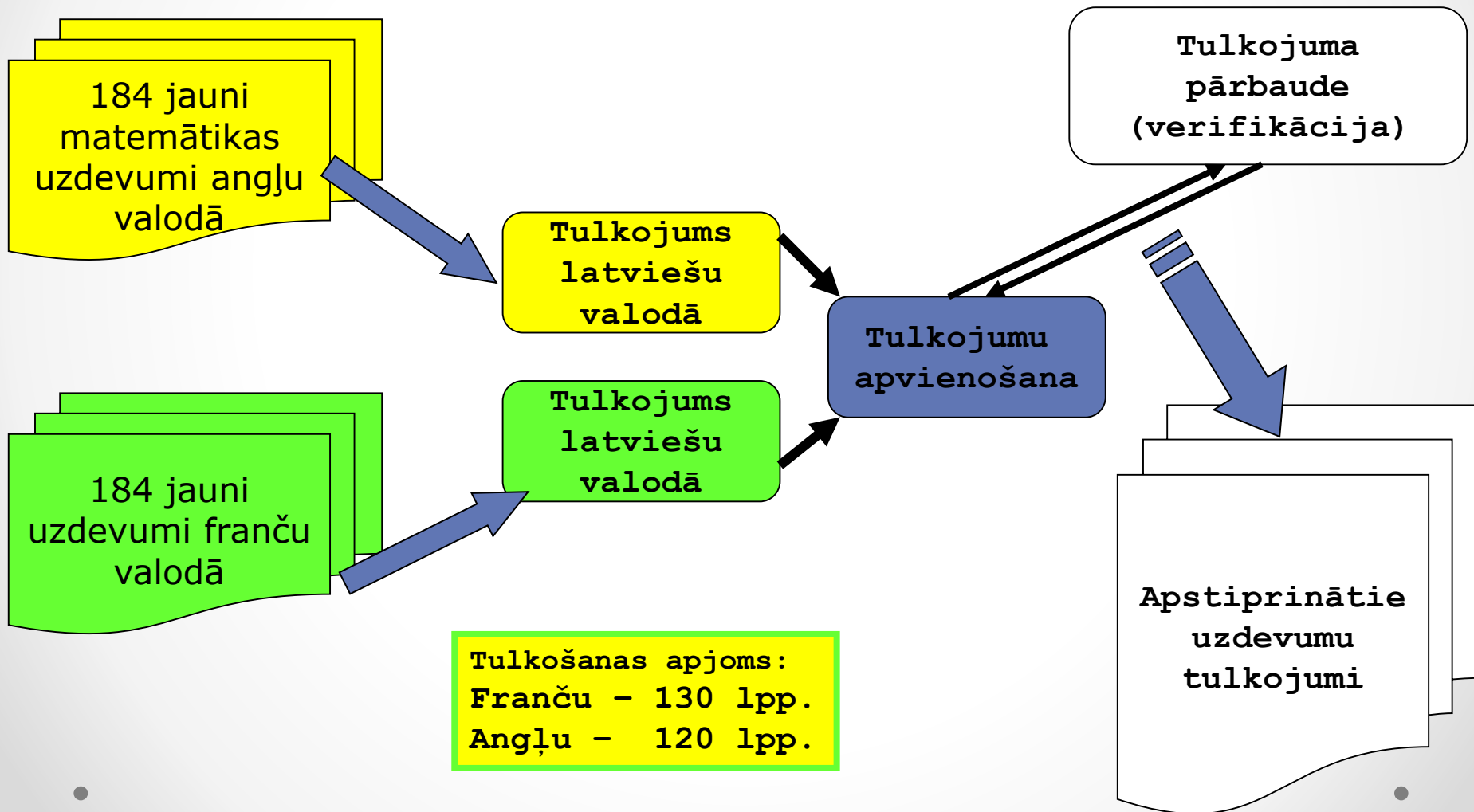
1. Vai tiek mērīts tas, ko patiešām grib mērīt???
2. Vai mērījumi ir droši (atkārtojami)???

Testa brošūru sagatavošana



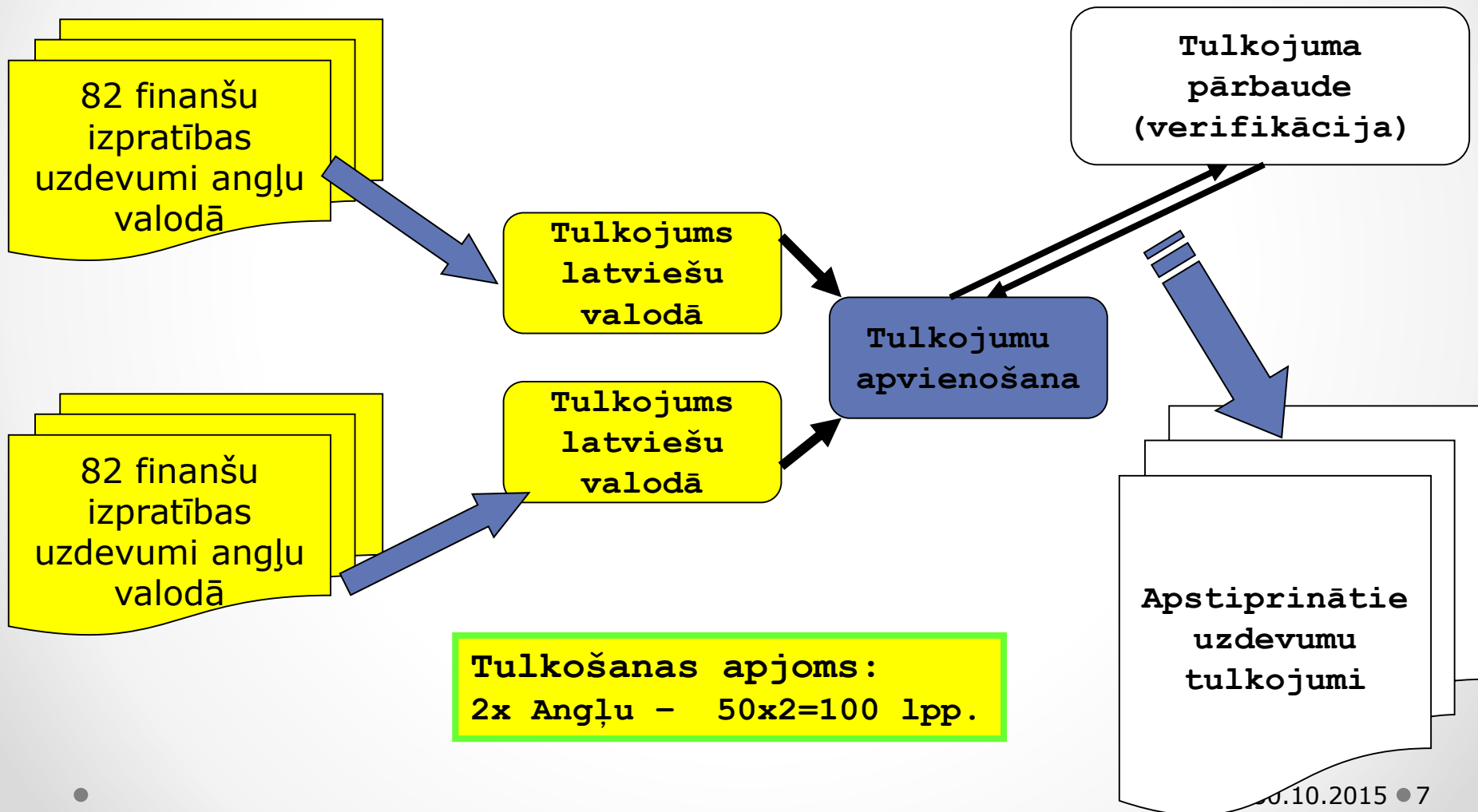
MATEMĀTIKA

Tulkošana, apvienošana (rekonsilācija), pārbaude
(verifikācija)



Finansu izpratība

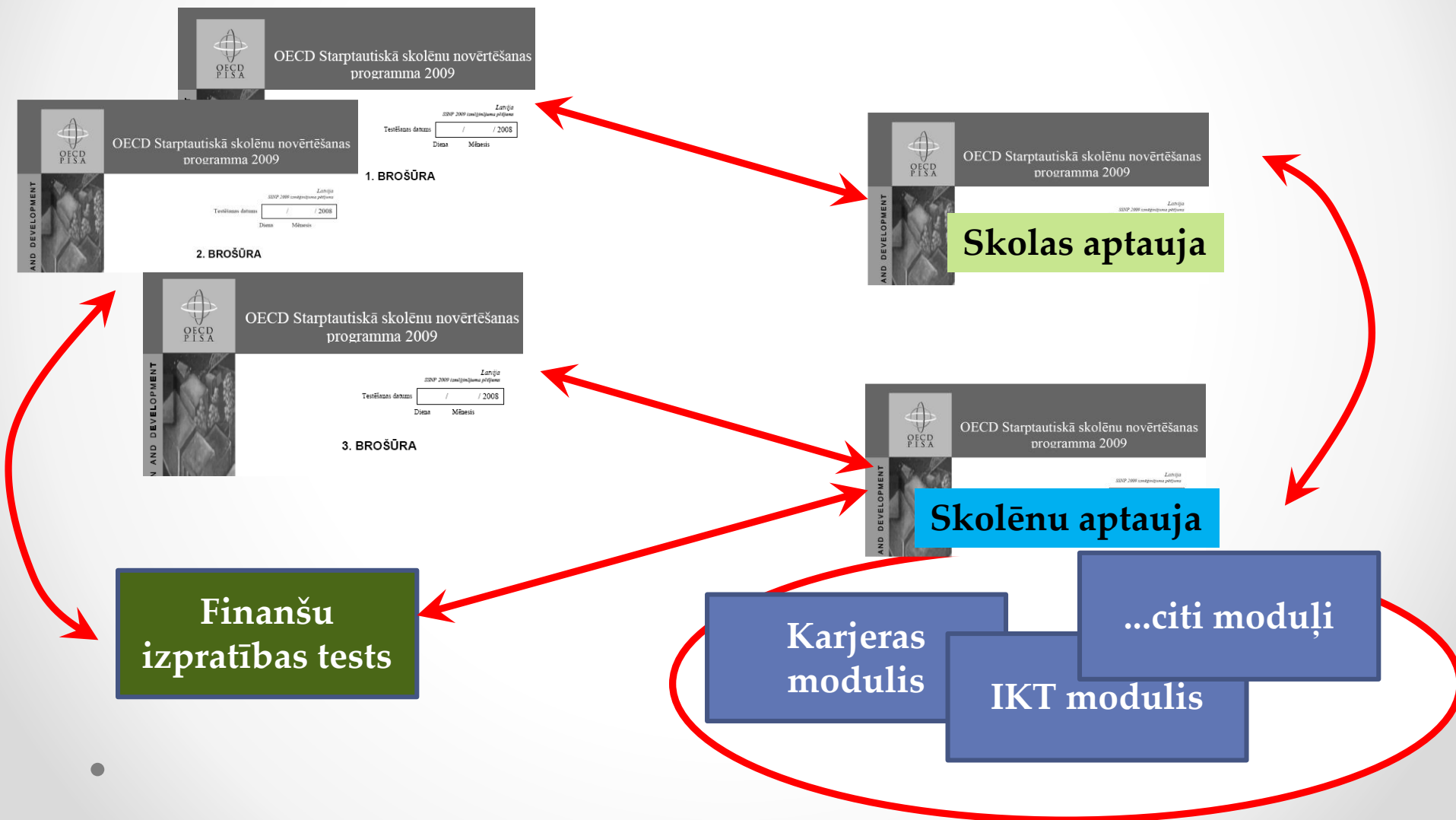
Tulkošana, apvienošana (rekonsilācija), pārbaude (verifikācija)



UZDEVUMU SAGATAVOŠANA LIETOŠANAI
PĒTĪJUMĀ IR SAREŽĢĪTS DAUDZPAKĀPJU
PROCESS, KAS TIEŠI SAISTĪTS AR PĒTĪJUMĀ
IEGŪSTAMO DATU KVALITĀTI !!

Šo var uzskatīt par universālu un obligāti
nepieciešamu visos izglītības pētījumos
(neatkarīgi no mēroga)

Pētījuma instrumentu (testu un aptauju) struktūra un saistība



No 2015.gada Latvija OECD PISA pētījuma piedalās «elektroniskajā versijā»:
Testi un aptaujas tiek aizpildīti īpaši izveidotā «elektroniskajā platformā»

Tas uzskatāms par papildus izaicinājumu tendenču pētījumā, jo, iespējams, mainīgo mērīšana (testēšana) datorvidē ir atšķirīga.

Vecuma grupa	Izlase	Pētījuma laiks	Pētījumā iekļautie mainīgie
V_1	I_1	L_1	$M_1, M_2, M_3, \dots, M_x$
V_1	I_2	L_2	$M_1, M_2, M_3, \dots, M_x$
...	...	...	...
V_1	I_n	L_n	$M_1, M_2, M_3, \dots, M_x$



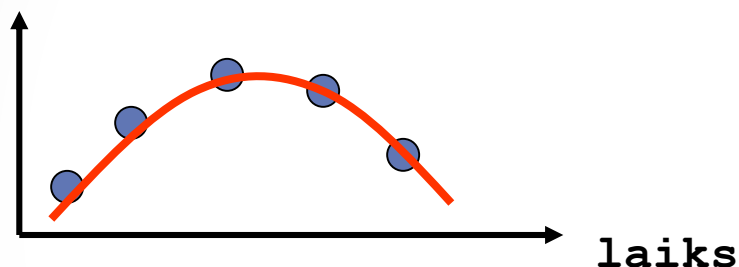
Nemainīga vecuma grupa



Tendenču pētījumu priekšrocības un trūkumi

- **Priekšrocības:**

Procesu tendenču noteikšanas iespējas



- **Trūkumi:**

Pētījuma projektēšanas laikā nav iespējams paredzēt visas iespējamās tendences, kuras būtu jāpēta

OECD PISA – mājaslapas sadaļa par OECD PISA

11.50 – 12.20

- **OECD Mājaslapas sadaļa par OECD PISA:**

- sadaļu struktūra un saturs
- Atrašanās vietas
- Lietošanas iespējas

OECD PISA pieejamie resursi

<http://www.oecd.org/pisa/>

About PISA

PISA products

Results
In Depth
Overviews
Methodology, Manuals

Key findings

About PISA

The Programme for International Student Assessment (PISA) is a triennial international survey which aims to evaluate education systems worldwide by testing the skills and knowledge of 15-year-old students. To date, students representing more than [70 economies](#) have participated in the assessment.

The most recently published results are from the assessment in 2012.

Around 510,000 students in [65 economies](#) took part in the PISA 2012 assessment of reading, mathematics and science representing about 28 million 15-year-olds globally. Of those economies, 44 took part in an assessment of creative problem solving and 18 in an assessment of financial literacy.

[Consult all PISA 2012 results here.](#)

More than 70 economies have signed up to take part in the assessment in 2015 which will focus on science.

[Download the PISA trifold brochure.](#)



A different

What the assessment involves

PISA develops tests which are not directly linked to the school curriculum. The tests are designed to assess to what extent students at the end of compulsory education are able to use their knowledge to deal with situations

Since the year 2000, every three years, fifteen-year-old students from selected schools worldwide take tests in the key subjects: reading and science, with a focus on one subject in each year of assessment

[PISA](#) › [Key findings](#)

- [PISA 2012 key findings](#)
- [PISA 2009 key findings](#)
- [PISA 2006 key findings](#)
- [PISA 2003 key findings](#)
- [PISA 2000 key findings](#)

Overviews

Country-specific overviews

Full reports and data

OECD PISA resursi - turpinājums

- <http://www.oecd.org/pisa/pisaproducts/>



The screenshot shows the OECD PISA website. At the top is the OECD logo with the tagline 'BETTER POLICIES FOR BETTER LIVES'. To the right is a 'Follow us' section with links for E-mail Alerts, Blogs, RSS, Twitter, Facebook, and YouTube. Below this is a search bar. The main banner features the PISA logo and the text 'Programme for International Student Assessment (PISA)'. A navigation bar contains links for Home, About PISA, PISA products, Key findings, Contacts, and PISA FAQ. Red arrows point from the 'PISA products' link in the navigation bar and from the 'PISA Products' section header to the 'PISA products' link in the navigation bar. The 'PISA Products' section is divided into four categories: Results, Overviews, In depth, and Methodology, manuals. Each category has a list of links to various resources.

OECD
BETTER POLICIES FOR BETTER LIVES

Follow us
E-mail Alerts Blogs RSS Twitter Facebook YouTube

Programme for International Student Assessment (PISA)

Home About PISA **PISA products** Key findings Contacts PISA FAQ

[PISA](#) > [PISA products](#)

PISA Products

Results

- [Key findings](#): PISA key findings include rankings of student performance by country/economy and information on student background, their approaches to learning and the organisation of their schools.
- Databases for each year the students took the test: [2012](#), [2009](#), [2006](#), [2003](#), [2000](#)

Overviews

- [Briefs: PISA in Focus](#): A series of concise 4-page monthly education policy-oriented briefs designed to describe a PISA topic.
- [Video series: Strong Performers and Successful Reformers in Education](#): Produced jointly by the OECD and the Pearson Foundation, this series of videos highlights initiatives taken by education authorities around the world to help school students do better.

In depth

- [In-depth reports](#): Detailed analysis of the PISA data covering a wide range of subjects at the student, school and government levels.
- ['Strong Performers and Successful Reformers'](#): Country-specific policy advice to countries who have requested it.
- [Research papers](#)

Methodology, manuals

- [Test questions](#)
- [Background documents for PISA 2018 bidders](#)
- [Background questionnaires](#): Questionnaires filled in by students, school principals and parents to provide contextual information.

[2012](#), [2009](#), [2006](#), [2003](#), [2000](#)

PISA Products

• Results

Results

- [Key findings](#): PISA key findings include rankings of student performance by country/economy and information on student background, their approaches to learning and the organisation of their schools.
- Databases for each year the students took the test: [2012](#), [2009](#), [2006](#), [2003](#), [2000](#)

• Overviews

Overviews

- [Briefs: Pisa in Focus](#): A series of concise 4-page monthly education policy-oriented briefs designed to describe a PISA topic.
- [Video series: Strong Performers and Successful Reformers in Education](#): Produced jointly by the OECD and the Pearson Foundation, this series of videos highlights initiatives taken by education authorities around the world to help school students do better.

• In Depth

In depth

- [In-depth reports](#): Detailed analysis of the PISA data covering a wide range of subjects at the student, school and government levels.
- ['Strong Performers and Successful Reformers'](#): Country-specific policy advice to countries who have requested it.
- [Research papers](#)

• Methodology, Manuals

Methodology, manuals

- [Test questions](#)
- [Background documents for PISA 2018 bidders](#)
- [Background questionnaires](#): Questionnaires filled in by students, school principals and parents to provide contextual information.
[2012](#), [2009](#), [2006](#), [2003](#), [2000](#)
- [Assessment frameworks](#): Theory behind the surveys - what they aim to achieve and how they're developed.
[2015](#), [2012](#), [2009](#), [2006](#), [2003](#), [2000](#)
- [Technical reports](#): Detailed description of the implementation of the surveys:
[2009](#), [2006](#), [2003](#), [2000](#)
- [Manuals - data analysis](#): [SAS and SPSS data analysis manuals](#)
- [Manuals - survey implementation](#):
[PISA 2012 translation manuals and guidelines](#)
[PISA 2009 manuals and guidelines](#)

Results

Results

- [Key findings](#): PISA key findings include rankings of student performance by country/economy and information on student background, their approaches to learning and the organisation of their schools.
- Databases for each year the students took the test:
[2012](#), [2009](#), [2006](#), [2003](#), [2000](#)



> About PISA
> PISA products
> Key findings
> Contacts

Database - PISA 2012

The PISA International Database

PISA is a survey of students' skills and knowledge as they approach the end of compulsory education. It is not a conventional school test. Rather than examining how well students have learned the school curriculum, it looks at how well prepared they are for life beyond school.

Online data

[Download the PISA 2012 data set](#) - for professional researchers

[Interactive data selection](#) - to explore the PISA 2012 dataset

[Multi-dimensional Data Request](#) - submit a query to an automated service

Visu pētījuma
ciklu datu bāzes!!

Overviews

■ Overviews

- Briefs: Pisa in Focus: A series of concise 4-page monthly education policy-oriented briefs designed to describe a PISA topic.
- Video series: Strong Performers and Successful Reformers in Education: Produced jointly by the OECD and the Pearson Foundation, this series of videos highlights initiatives taken by education authorities around the world to help school students do better.

PISA in Focus



PISA in Focus is a series of concise monthly education policy-oriented notes designed to describe a PISA topic.

- N°44: How is equity in resource allocation related to student performance?

Also available: [français](#) ([lisez le blog](#))

- N°43: Are disadvantaged students more likely to repeat grades?

Also available: [français](#) ([lisez le blog](#))



Do 15-year-olds know how to manage money?

- On average across the 55 OECD countries and economies that participated in the PISA financial literacy assessment, 10% of students can analyse complex financial products and solve non-routine financial problems, while 15% can, at best, make simple decisions about everyday spending, and recognise the purpose of everyday financial documents, such as an invoice.
- In 17 out of the 59 participating countries and economies, boys and girls show similar skills in financial literacy. However, among students with comparable performance in mathematics and reading, boys perform better than girls in financial literacy in 11 out of 18 countries and economies.

Financial products and services are becoming increasingly complex, and young people today will probably have to make more financial decisions in their lives than their parents. Students nearing the end of compulsory education are already consumers of financial products: many have bank accounts, use online payment services and/or have a pre-paid mobile phone. Many are also about to decide, with their parents, whether to continue on to higher education and, if so, how to pay for it. But are 15-year-olds acquiring the financial knowledge and skills needed for their adult lives?

PISA 2013 included an assessment of students' financial literacy – the first international survey of its kind. Some 29 000 students in 18 OECD and partner countries and economies – representing around nine million 15-year-olds – participated.

In Depth

In depth

- [In-depth reports](#): Detailed analysis of the PISA data covering a wide range of subjects at the student, school and government levels.
- ['Strong Performers and Successful Reformers'](#): Country-specific policy advice to countries who have requested it.
- [Research papers](#)

PISA in-depth reports

[Reading](#) | [Mathematics and Problem Solving](#) | [Science and Technology](#) | [Student learning](#) | [Equity](#) | [Economics of Education](#) | [Strong Performers, Successful Reformers \(in-depth country reports\)](#)

READING

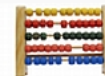


[Reading for change: performance and engagement across countries \(PISA 2000\)](#)

[Let's Read Them a Story! The Parent Factor in Education](#)

Also available: [français](#)

MATHEMATICS AND PROBLEM SOLVING



[Learning mathematics for life: A perspective from PISA \(PISA 2003\)](#)

[Mathematics teaching and learning strategies in PISA \(PISA 2003\)](#)

[Problem Solving for Tomorrow's World: First Measures of Cross-Curricular Competencies from PISA 2003](#)

SCIENCE AND TECHNOLOGY



[Green at fifteen? How 15-year-olds perform in environmental science and geoscience in PISA 2006](#)

[Top of the class: high performers in science in PISA 2006](#)

Methodology, Manuals

Methodology, manuals

- [Test questions](#)
- [Background documents for PISA 2018 bidders](#)
- **Background questionnaires:** Questionnaires filled in by students, school principals and parents to provide contextual information.

[2012](#), [2009](#), [2006](#), [2003](#), [2000](#)
- **Assessment frameworks:** Theory behind the surveys - what they aim to achieve and how they're developed:

[2015](#), [2012](#), [2009](#), [2006](#), [2003](#), [2000](#).
- **Technical reports:** Detailed description of the implementation of the surveys:

[2009](#), [2006](#), [2003](#), [2000](#)
- **Manuals - data analysis:** [SAS and SPSS data analysis manuals](#)
- **Manuals - survey implementation:**

[PISA 2012 translation manuals and guidelines](#)

[PISA 2009 manuals and guidelines](#)

Dažādi pētījumam nepieciešamie metodiskie norādījumi, apraksti, tehniskie standarti utt.

OECD PISA DATU BĀZES

12.20 – 12.40

(struktūra un interaktīvais rīks katra gada datu bāzē)

Results

- [Key findings](#): PISA key findings include rankings of student performance by country/economy and information on student background, their approaches to learning and the organisation of their schools.
- Databases for each year the students took the test:
[2012](#), [2009](#), [2006](#), [2003](#), [2000](#)



> About PISA
> PISA products
> Key findings
> Contacts

Visu pētījuma
ciklu datu bāzes!!

Database - PISA 2012

The PISA International Database

PISA is a survey of students' skills and knowledge as they approach the end of compulsory education. It is not a conventional school test. Rather than examining how well students have learned the school curriculum, it looks at how well prepared they are for life beyond school.

Online data

[Download the PISA 2012 data set](#) - for professional researchers

[Interactive data selection](#) - to explore the PISA 2012 dataset

[Multi-dimensional Data Request](#) - submit a query to an automated service

OECD PISA datu bāze – ko tas nozīmē?

- Trīs sadaļas



- [Download the PISA 2012 data set](#) - for professional researchers – **DATU FAILI**



- [Interactive data selection](#) - to explore the PISA 2012 dataset – **INTERAKTĪVĀ DATU APSTRĀDE**



- [Multi-dimensional Data Request](#) - submit a query to an automated service – **SALIKTIE VAICĀJUMI**

Uzdevumi datu apstrādei interaktīvajā režīmā

12.40 – 13.20

- Atvērt 2012.gada interaktīvo datu bāzi
- Izvēlēties sadaļu - [Interactive data selection](#)
- Izdarīt izvēli, nepieciešamības gadījumā vispirms atverot aptaujas failu (testu faili nav pieejami – konfidenciāli)
- Jautājumi (vienkārši jautājumi):
 - Vai Latvijas skolēnu sasniegumi ir saistīti ar grāmatu skaitu mājās (**ST28Q01**)?
 - Vai Latvijas skolnieču un skolnieku vidējie sasniegumi ir statistiski nozīmīgi atšķirīgi no OECD valstu vidējā rezultāta?
 - Kā saistīti Latvijas un Lietuvas skolēnu sasniegumi ar
 - Vecāku izglītību
 - Skolēnu attieksmi pret skolu
- Rezultātu formāts – tabula vai .csv formāta fails
 - Tabulu pārvešana

Vaicājuma rezultāts

Variable:	ST04Q01	Sex
	Full question:	"Are you female or male?".
Category:	1	Female
	2	Male

Izvēlētais aptaujas jautājums

Vidējie sasniegumi
un standartklūdas

					Reading		Mathematics		Science	
Country	Variable	Category	%	(%SE)	Mean	(SE)	Mean	(SE)	Mean	(SE)
OECD Total	ST04Q01	1	49.28	(0.27)	508	(1.25)	481	(1.33)	494	(1.28)
OECD Total	ST04Q01	2	50.72	(0.27)	475	(1.43)	496	(1.35)	498	(1.46)
OECD Total	ST04Q01	m	0.00	(0.00)	0	(0.00)	0	(0.00)	0	(0.00)
OECD Average	ST04Q01	1	49.55	(0.19)	513	(0.52)	490	(0.56)	501	(0.56)
OECD Average	ST04Q01	2	50.45	(0.19)	474	(0.61)	501	(0.61)	501	(0.62)
OECD Average	ST04Q01	m	0.05	(0.05)	0	(0.00)	0	(0.00)	0	(0.00)
Non-OECD Countries										
Latvia	ST04Q01	1	50.66	(0.87)	507	(3.09)	481	(3.41)	497	(3.21)
Latvia	ST04Q01	2	49.34	(0.87)	460	(3.43)	483	(3.52)	490	(3.75)
Latvia	ST04Q01	m	a	(a)	a	(a)	a	(a)	a	(a)
Lithuania	ST04Q01	1	49.30	(0.50)	498	(2.56)	480	(2.96)	500	(2.94)
Lithuania	ST04Q01	2	50.70	(0.50)	439	(2.79)	474	(3.06)	483	(3.51)
Lithuania	ST04Q01	m	a	(a)	a	(a)	a	(a)	a	(a)

14.00 – 14.45

Interaktīvā rīka lietošana – turpinājums (problēmuzdevumi par skolas kavējumiem)

Pētnieciskā problēma Nr.1

Skolas kavēšanas un skolēnu sasniegumu iespējamās saistības noskaidrošana, izmantojot OECD PISA 2012 interaktīvo datu bāzi

Uzdevumi:

1.Iepazīties ar OECD PISA interaktīvās datu bāzes lietošanu

(<http://www.oecd.org/pisa/pisaproducts/>)

a.Datu bāzes struktūra

b.Datu atlasīšana un tabulu veidošana

c.Tabulu pārnešana

2.Noskaidrot skolēnu aptaujas jautājumus par skolas kavēšanu

3.Izveidot skolas kavēšanas un skolēnu sasniegumu iespējamās saistības tabulas:

a.Vidēji OECD valstīs

b.Vidēji Latvijā

c.Vidēji Baltijas jūras reģiona valstīs

...turpinājums

4. Noskaidrot skolas aptaujas jautājumus par skolas kavēšanu
5. Apkopot un analizēt iegūtos rezultātus par skolēnu sasniegumiem un skolas kavējumiem
6. Sameklēt problēmas teorētiskajam aprakstam nepieciešamo literatūru
7. Uzrakstīt atskaiti par pētnieciskās problēmas Nr.1 izpētes teorētiskajiem aspektiem un praktiski iegūtajiem rezultātiem no OECD PISA 2012 pētījuma interaktīvās datu bāzes. Ieteicamā atskaites struktūra:
 - a. Ievads – problēmas identifikācija, kas un kā tiks pētīts
 - b. Ko par to saka citi pētnieki – literatūras apskats
 - c. Skolēnu un skolas aptauju jautājumi par tēmu
 - d. OECD PISA interaktīvās datu bāzes dati
 - e. Rezultātu analīze un secinājumi