



III. WORKSHOP

Príprava pilotných testovaní

Projekt Vývoj kritériálnych testov pre primárne a nižšie sekundárne vzdelávanie na Slovensku (SRSS/S2018/071)

Bratislava, 17. - 18. jún 2020

Fotodokumentácia

National
Institute for
Education

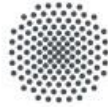
State School
Inspection

Institute of
Educational
Policy

Teach for
Slovakia



- Experts
- Test Developers



University of Stuttgart
Germany

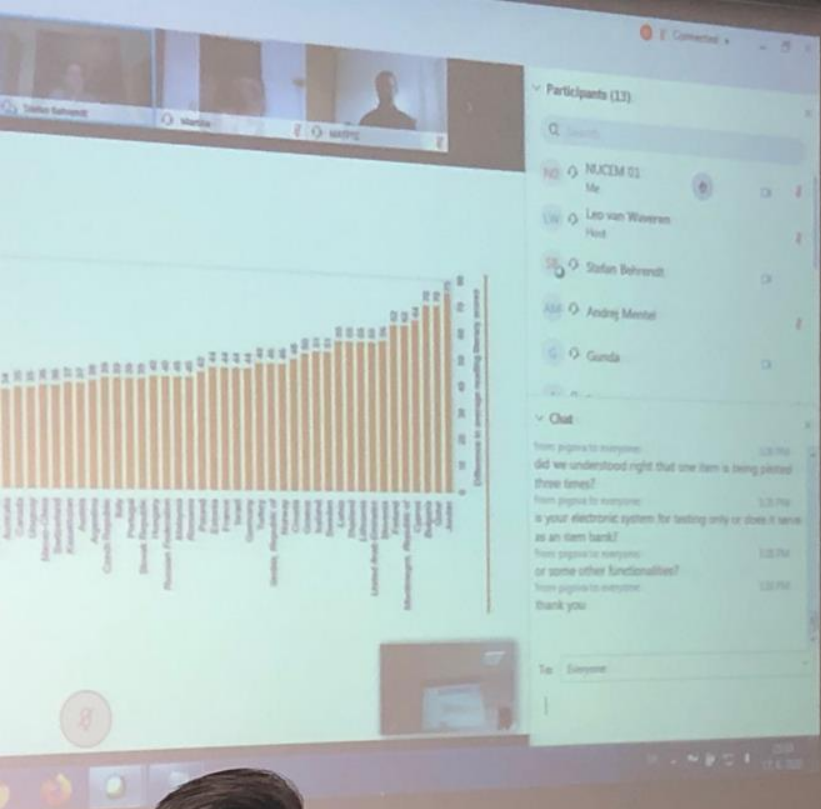












Classroom Meeting | 10:00 AM | 10:00 AM

Participants: LW, ...

Krátke zhrnutie # 2

Item Characteristic Curve

$P(X_i = 1; \theta)$

Person Ability θ

- Parameter položky (napr. o alebo τ) a miera schopnosti osoby (θ - theta) sú na rovnakej škále
- Funkcia príslušných odpovedí definuje toto prepojenie ako bijektívnu funkciu, napr. Model Rasch (1PL):

$$P(X_i = 1|\theta) = \frac{\exp(\theta - \tau_i)}{1 + \exp(\theta - \tau_i)}$$

Chat

ok

how many students are tested normally by one test? do you also have paper-based tests or electronic only?

on one test?

10thousands at one time or the test is accessible for extended period of time (a month) and this is the number of totally tested pupils?

ok, thank you, that was exactly what we meant with our question

do you pilot each test? how big is a pilot sample (usually)?

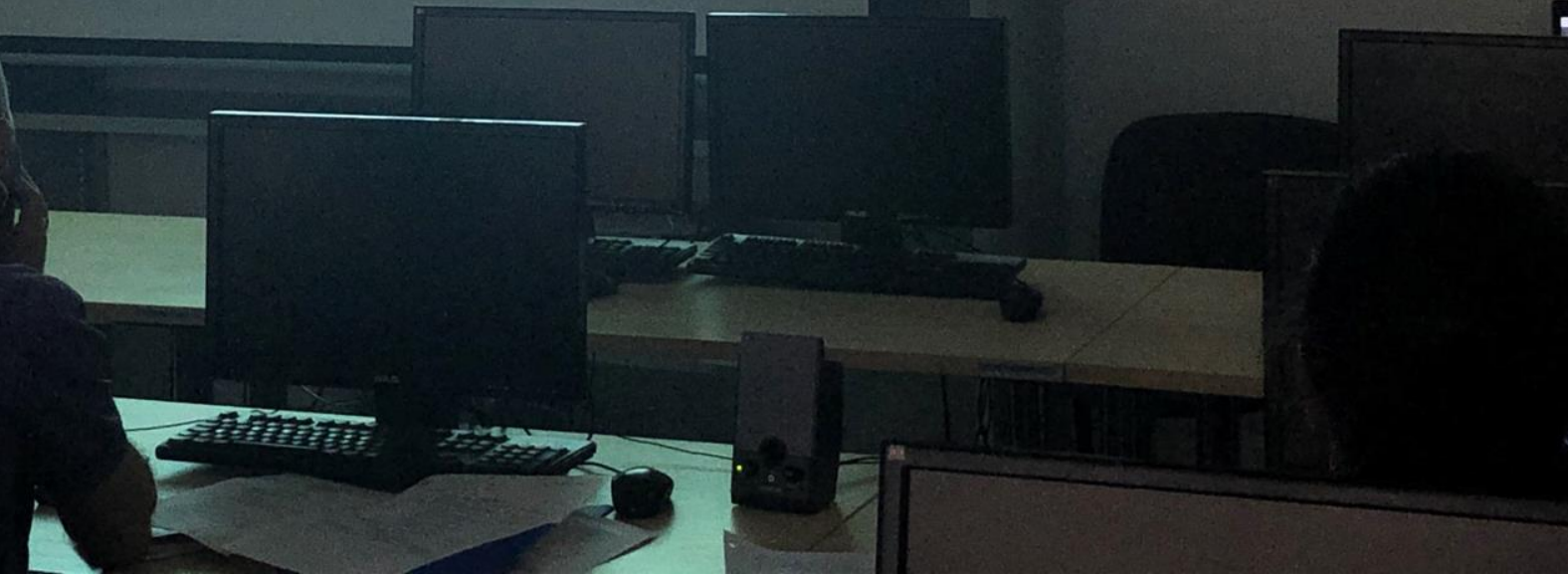
did we understand right that one item is being piloted three times?

is your electronic system for testing only or does it serve as an item bank?

or some other functionalities?

thank you

10:00
17.6.2020



Kratke zhrnutie #2

Item Characteristic Curve


Item Characteristic Curve (ICC) is a graph showing the relationship between the latent trait score (theta) on the x-axis and the probability of a correct response (p) on the y-axis.

The ICC is a sigmoidal curve, indicating that the probability of a correct response increases as the latent trait score increases, but the rate of increase slows down as the score approaches the maximum.

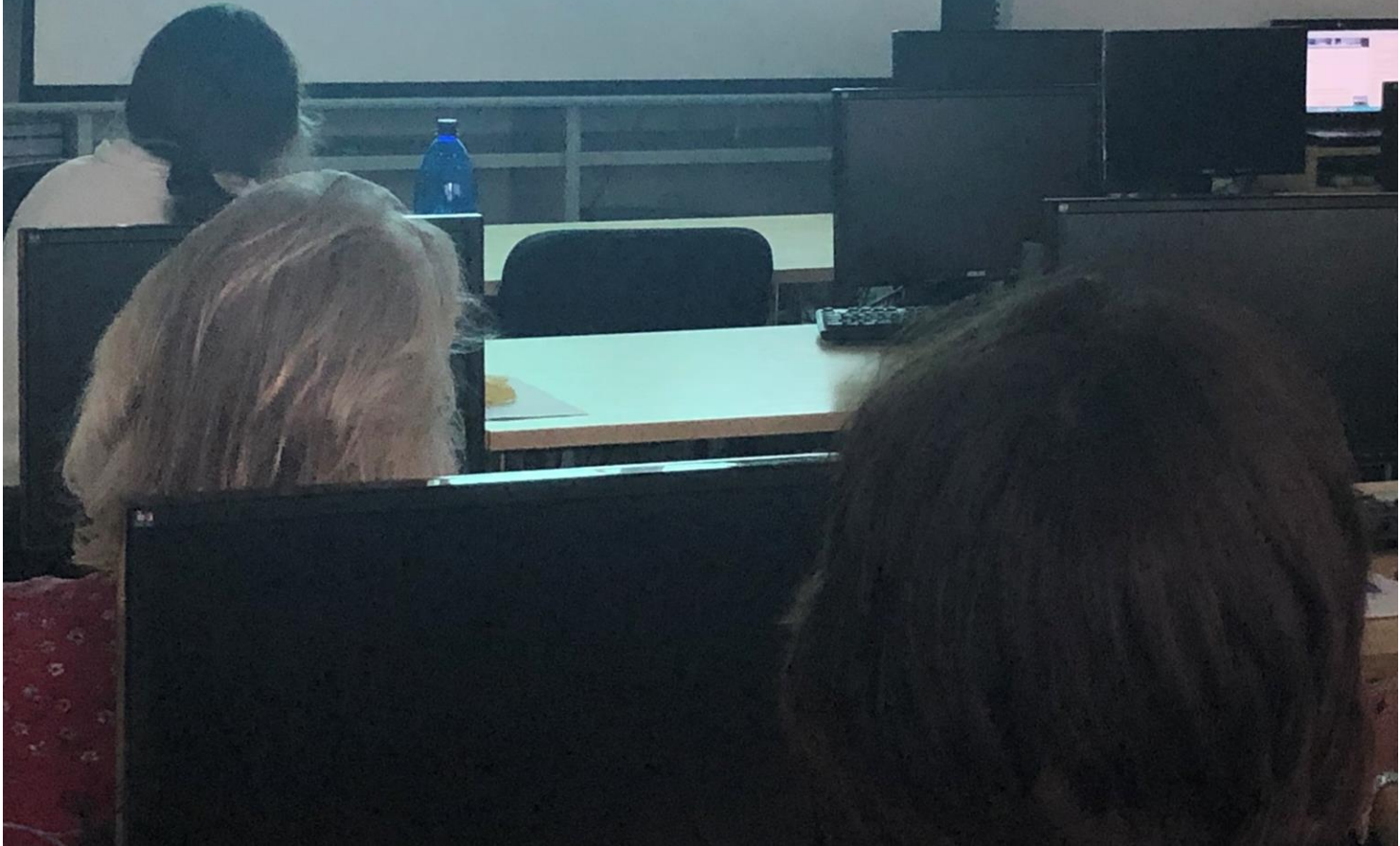
The curve is characterized by three parameters:

- Location (b):** The horizontal position of the curve, representing the difficulty of the item.
- Discrimination (a):** The slope of the curve, representing the item's ability to differentiate between individuals with different levels of the latent trait.
- Upper Asymptote (c):** The maximum probability of a correct response, representing the ceiling effect.

The Item Characteristic Curve is a key component of Item Response Theory (IRT), which is used to estimate the latent trait score for each individual based on their responses to a set of items.



Windows taskbar at the bottom of the screen shows various application icons and the system tray with the date and time.





Wi-Fi
ZONE
High speed
Internet @ 100Mbps







Connected

Participants (13)

Search

- NUCEM 01 Me
- Leo van Waveren Host
- Stefan Behrendt
- Andrej Mentel
- Gunda

Chat

from pigova to everyone: 3:26 PM
did we understand right that one item is being piloted three times?

from pigova to everyone: 3:28 PM
is your electronic system for testing only or does it serve as an item bank?

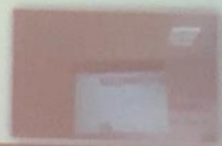
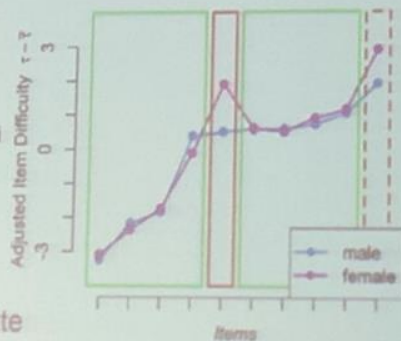
from pigova to everyone: 3:28 PM
or some other functionalities?

from pigova to everyone: 3:30 PM
thank you

To: Everyone

Potreba výberu vzorky Príklad č. 1

- Situácia
 - efekty špecifické pre konkrétne pohlavie
 - dievčatá majú zvyčajne v mat. gramotnosti nižšiu výkonnosť ako chlapci
 - chlapci majú zvyčajne v čit. gramotnosti nižšiu výkonnosť ako dievčatá
 - I ale aj dievčatá reagujú na podnety inak ako chlapci
- Úloha pre terénnu skúšku
 - zozbierať a odhadnúť špecifické informácie o tomto efekte podľa položiek
 - zabezpečiť nezaujaté („unbiased“) zloženie budúcich testov vzhľadom na pohlavie
- Čo robiť, keď nemáme dostatočné informácie o dievčatách alebo chlapcoch?



Leo van Waveren (Host) Connected

Participants (13)

- Ivo
- Martina
- MATFYZ

Chat

from Leo van Waveren to everyone: 9:52 AM
This is the link in case someone contacts you, who is unable to join:
from Leo van Waveren to everyone: 9:52 AM
<https://ciscojitsi.webex.com/ciscojitsi/join/MTO-emz-29f6ffe2165aa5014f4e2a04d4e>
from Ivo to everyone:
The code for interpreting today

To: Everyone

8:51 18.8.2020



Medzinárodné hodnotenie kľúčových kompetencií dospelých (EFKA2)

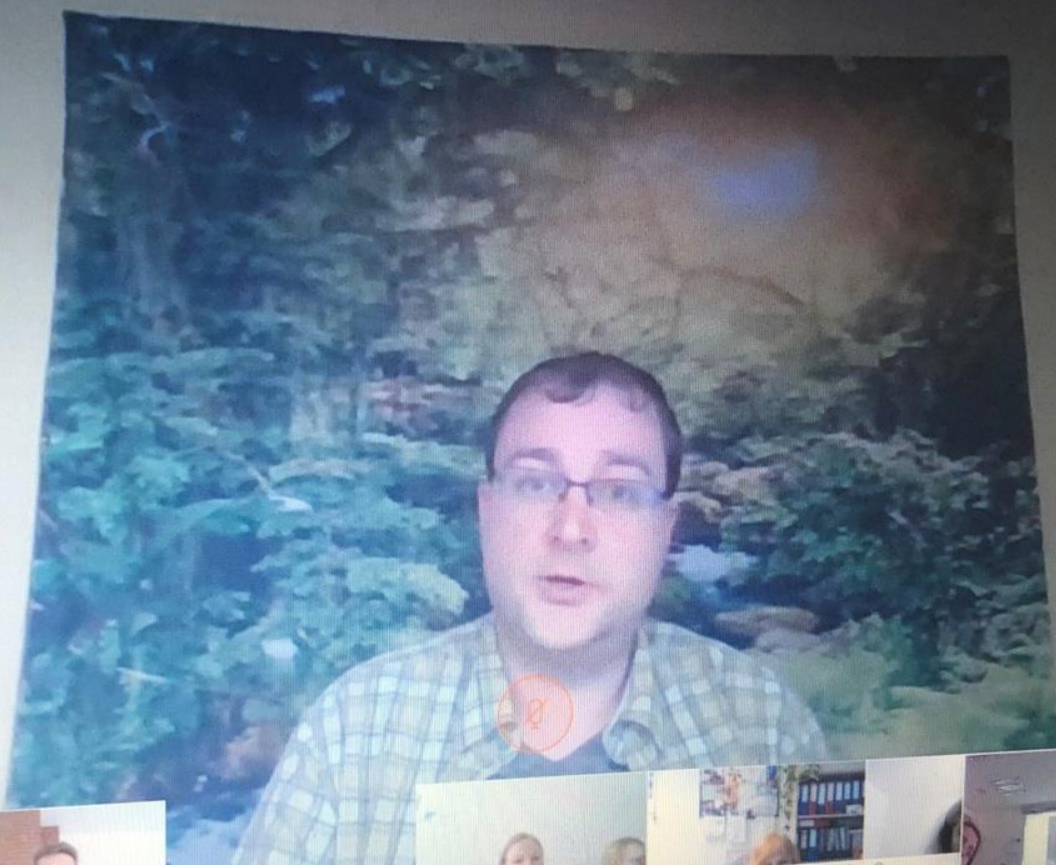
Meeting interface showing a video conference with participants and a presentation slide.

Participant	Status
John Doe	Online
Jane Smith	Online
Mike Johnson	Online
Sarah Brown	Online
David White	Online
Emily Green	Online
James Black	Online
Alice Grey	Online
Bob Blue	Online
Charlie Red	Online
Diana Purple	Online
Ethan Yellow	Online
Fiona Orange	Online
George Silver	Online
Helen Gold	Online
Ivan Bronze	Online
Judy Iron	Online
Kyle Nickel	Online
Laura Copper	Online
Mark Zinc	Online
Nancy Tin	Online
Oscar Lead	Online
Peter Platinum	Online
Quinn Silver	Online
Rachel Gold	Online
Sam Bronze	Online
Tina Iron	Online
Uma Nickel	Online
Victor Copper	Online
Wendy Zinc	Online
Xavier Tin	Online
Yvonne Lead	Online
Zoe Platinum	Online





Stefan Behrendt



Participants (15)

Search

NUCEM 01
Me

Leo van Waveren
Host

Agota

Chat

It seems to work now
from pigova to everyone:
it does :)

from pigova to everyone:
sorry for confusion, you can continue

from pigova to everyone:
we statisticians are not quite sure about
proceedings

from pigova to everyone:
there are many gaps we have to fill still

from Leo van Waveren to everyone:
Today's event code for ablio audience ap
from Leo van Waveren to everyone:
Er9Sao

from pigova to everyone:
not age, but gender

To: Everyone

Enter chat message here

Leo van Waveren (Host) | Stefan Behrendt | Gunda | Ivana Pichančová | Agota





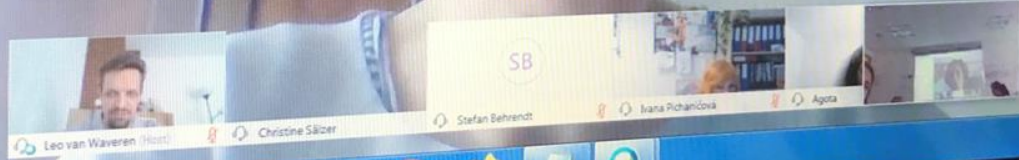
Connected a

Participants (15)

- NUCEM 01 Me
- Leo van Waveren Host
- Agota

Chat

it seems to work, how it does :)
sorry for confusion, you can continue
we statisticians are not quite sure about all the proceedings
there are many gaps we have to fill still
Today's event code for ablo audience app is:
Er9Sao
not age, but gender



PreBook 6560b

14:11 18.6.2020

Gunda



Participants (15)

- Search
- NO NUCEM 01 Me
- LW Leo van Waveren Host
- A Agota

Chat

it seems to work now from pigova to everyone: it does :) 12:02 PM
from pigova to everyone: sorry for confusion, you can continue from pigova to everyone: 12:03 PM
we statisticians are not quite sure about all the proceedings from pigova to everyone: 12:06 PM
there are many gaps we have to fill still from Leo van Waveren to everyone: 1:21 PM
Today's event code for ablio audience app is: from Leo van Waveren to everyone: 1:22 PM
Er9Sao 1:34 PM
from pigova to everyone: not age, but gender

To: Everyone
Enter chat message here

14:12
18.6.2020

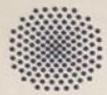
Video thumbnails for participants: Leo van Waveren (Host), Gunda, Christine Säger, Ivana Pichančová, Agota

Windows taskbar with icons for Internet Explorer, File Explorer, VLC, Signal, Wi-Fi, Chrome, Firefox, and Webex Meetings.



ProBook 6560b

Leo van Waveren (Host) Gunda Maria Mlynarcikova Pavol Sveda Stefan Behrendt



University of Stuttgart
 Institute of Education
 Department of Pedagogics

CRITERION-REFERENCED TESTING IN SLOVAKIA ("CRT SLOVAKIA")

SRSS/S2018/071



**June 2020
 Steering committee**

First and foremost:

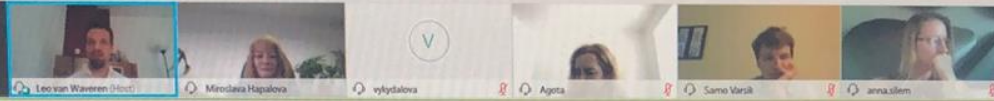
We hope to find you all up and well, despite the current situation



The Ablio-event code for today is: **ErD93c**

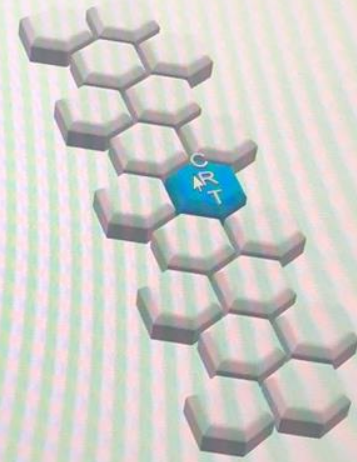
Maps.google.com

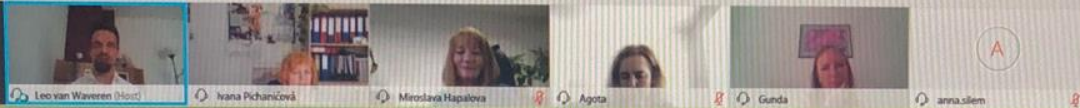




Learning Slovakia & National Programme for Education and Training Development Reform (2017/18) Ministry of Education

- Background: Country-Specific Recommendation to Slovakia by EU Commission based on PISA 2015
 - performance gap gender & different socioeconomic backgrounds
 - early school leaving rate risen to 7.4 %
 - Above average number of low achievers
- More than 115 specific measures to improving the quality and accessibility of education
 - ⇒ Changes to national student assessment system.





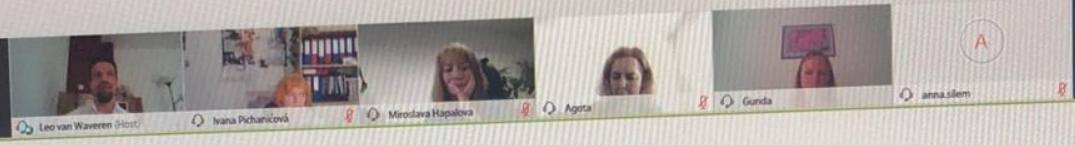
Timeline of the CRT project – no changes planned

12/2018 – 03/2021



• Due to current situation, field trial will not be in grade 5 but grade 6





Evaluation of the theoretical model by external advisory board

Workshop #1



Development of theoretical model



Test development

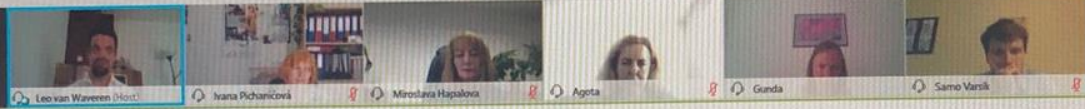


- CRT-Test development by teams with expertise in
 - Mathematics
 - Slovak Language
 - Statistics
- Development at NUCEM are led by local experts of the field (e.g. from the University) and remotely supported by Innove (Estonia) and University of Stuttgart (Germany)

Table 3: Levels of General Mathematics Competences contrasted with different hierarchies of Cognitive Demands, alignment in a row does not indicate equivalence of levels

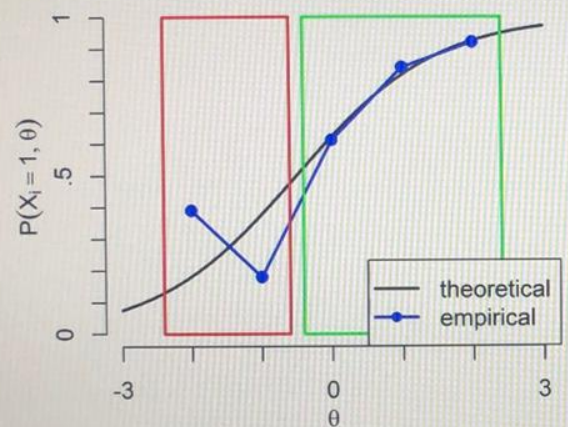
CRT Slovakia (Levels as further differentiation of General Mathematics Competences)	German Educational Standards (Level of Requirement ²⁾)	TIMMS (Cognitive Domains)	PISA 2012 (Mathematical Processes)
1	Reproduce	Knowing	Formulating (situations mathematically)
2	Making Connections	Applying	Employing (mathematical concepts, facts, procedures and reasoning)
3	Generalize and Reflect	Reasoning	Interpreting (applying and evaluating mathematical outcomes)





Workshop #3 – Preparation of the field trial

Sampling methods



- 1. cross-effects for effect sizes
- b) population probabilities

	male	female	Σ
Základná škola	.36	.36	.72
Gymnázium	.10	.12	.22
Konzervatôrium	.05	.01	.06
Σ	.51	.49	

- Discussion on needed sample size
- E-Test available at schools
- ~20 schools for both subjects in both grades
- T5/T9-testing conditions
- ➔ E.g. making sure developed test
 - is able to measure „high“ and „low“ performing students
 - Is employed on an adequate sample to compare grade, type of school,...





Workshop #3 – Preparation of the field trial

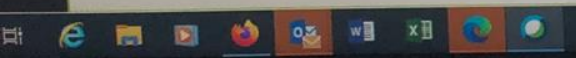
Checklist & round table

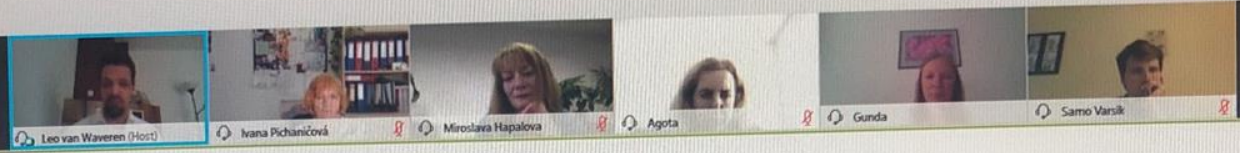
Checklist		Responsible	Start/End	Status
1. Review the current curriculum	Check the current curriculum for listening comprehension tasks	Miroslava Hapalová	15.03.2023	Done
2. Identify existing procedures	Identify existing procedures for listening comprehension	Agota	15.03.2023	Done
3. Clarify remaining steps	Clarify remaining steps for the field trial	Miroslava Hapalová	15.03.2023	Done
4. Define responsibilities	Define responsibilities for the field trial	Agota	15.03.2023	Done
5. Plan for future projects	Plan for future projects	Miroslava Hapalová	15.03.2023	Done
6. Exchange experiences	Exchange experiences from (inter)national testing	Agota	15.03.2023	Done

Activity	Responsible	Start/End	Status
1. Review the current curriculum	Miroslava Hapalová	15.03.2023	Done
2. Identify existing procedures	Agota	15.03.2023	Done
3. Clarify remaining steps	Miroslava Hapalová	15.03.2023	Done
4. Define responsibilities	Agota	15.03.2023	Done
5. Plan for future projects	Miroslava Hapalová	15.03.2023	Done
6. Exchange experiences	Agota	15.03.2023	Done

Activity	Responsible	Start/End	Status
1. Review the current curriculum	Miroslava Hapalová	15.03.2023	Done
2. Identify existing procedures	Agota	15.03.2023	Done
3. Clarify remaining steps	Miroslava Hapalová	15.03.2023	Done
4. Define responsibilities	Agota	15.03.2023	Done
5. Plan for future projects	Miroslava Hapalová	15.03.2023	Done
6. Exchange experiences	Agota	15.03.2023	Done

- Working in teams on best-practice check-list
- Re-use of existing procedures
- Clarifying remaining steps for the field trial
- Responsibilities
- Potential for future projects
 - E.g. to enhance feedback for schools
 - Identify teaching / learning opportunities
 - Implement additional parts of the curriculum
 - Challenges of new testing methods (remote testing of listening comprehension)
- Exchange of experiences from (inter)national testing in Estonia and Germany





Workshop #3 – Preparation of the field trial

Open topic discussion

