

# ‘Using Process Data to inform Test Design and Administration’

**CEMO Lecture Series on *Process Data in Educational Assessment***  
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Dr Bryan Maddox



UiO : **University of Oslo**



**Assessment  
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*‘Aside for serving as evidence for validity arguments, these data can also **inform test item design and development** (Leighton and Gierl, 2007) by revealing construct-irrelevant aspects of tasks that test takers may fail to understand and thus impede performance.’*

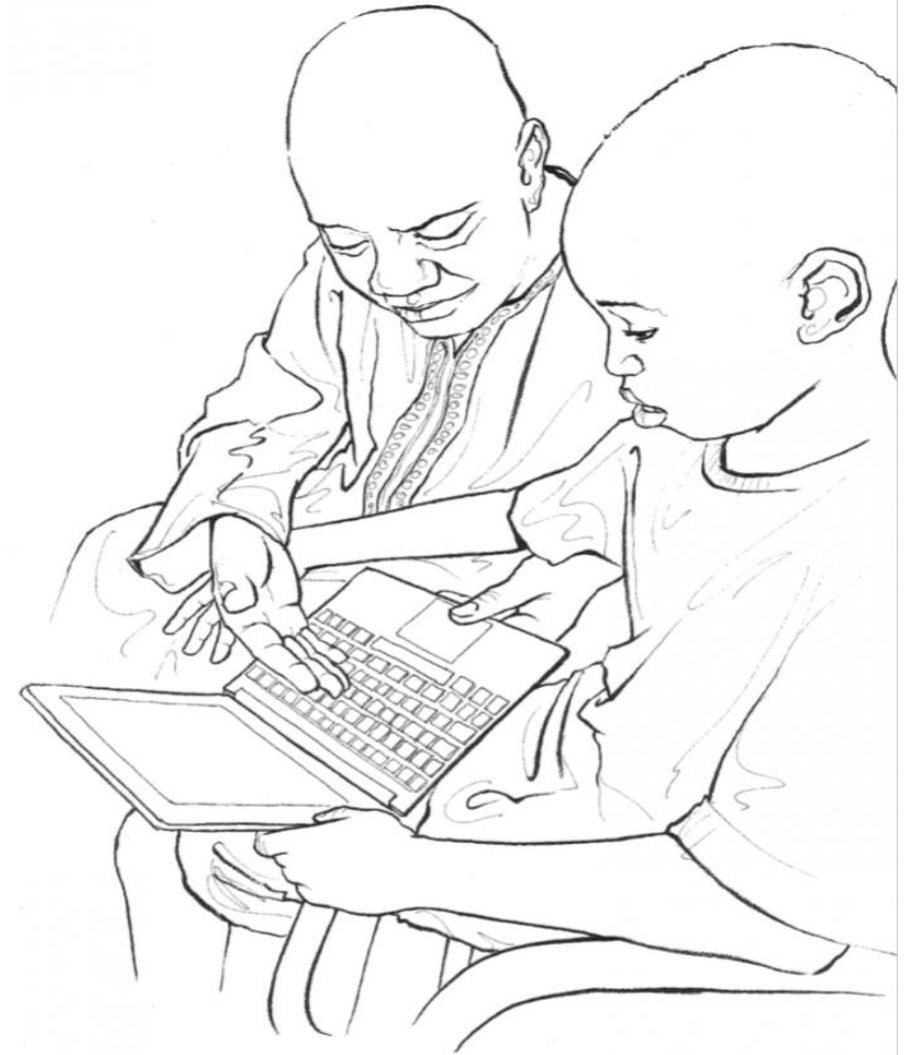
(Leighton, Tang and Guo, 2017 p137, emphasis mine)

*‘..response data can enrich the assessment by providing insights about **whether students engage with tasks in the intended ways** and thereby contribute to improving assessment design and validating score meaning.’ (Ercikan, Guo and He, 2020, p 3, emphasis mine).*

# Defining Response Processes

‘Assessment response processes concern observed evidence of the **cognitive and affective dimensions** of test taking in the testing situation, taking into account their **temporal, spatial, embodied, material, interactive** and **socio-cultural** characteristics’.

(Maddox, 2023 – working definition)

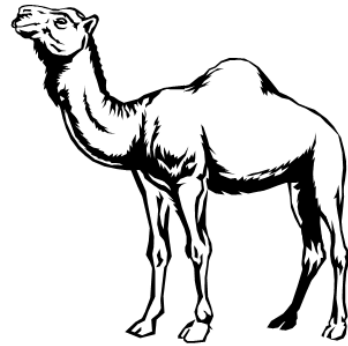


Example 1: UNESCO LAMP, Mongolia

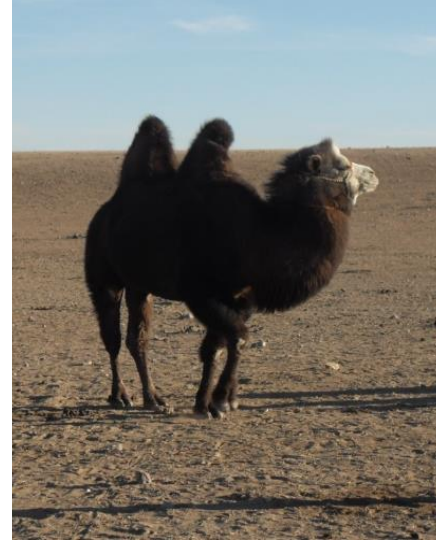
Observing Testing Situations



# Mongolian Camel



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Q. *'Is this a camel or a donkey?'*

A. Not a camel or a donkey. It is a wild camel (khavtai).

In Mongolian there are different terms for domestic (temee) and wild camel (khavtai).

**R:** *How many litres of water can a camel drink in one day?*

**R:** *Fifty litres!* [she answers before reading the text and gets the item correct]

**R:** *Where can you find Mongolian camels?*

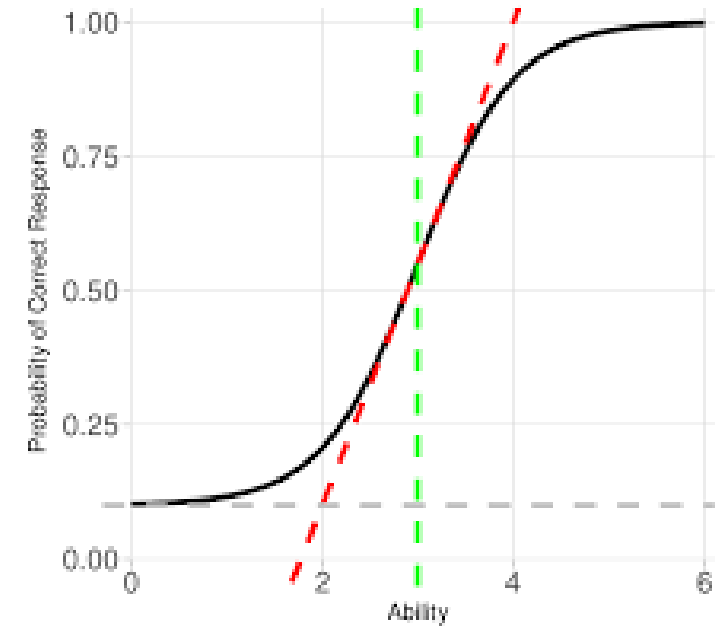
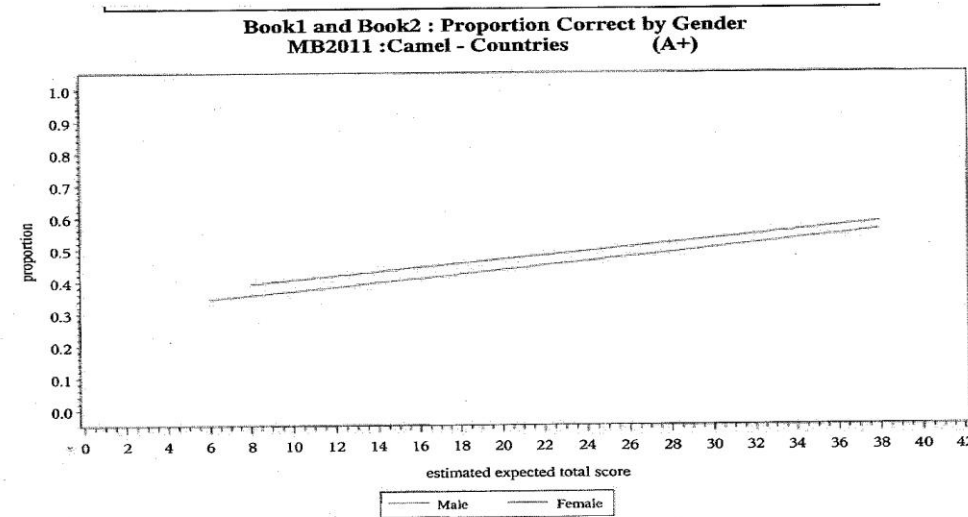
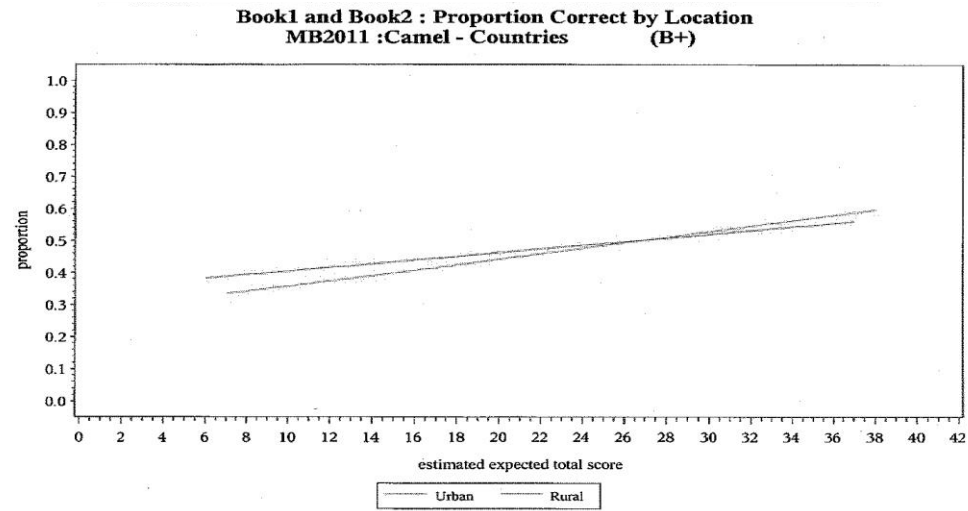
[she reads the question slowly and out loud. The respondent tells everyone that you can find them in China and Russia as well. This corresponds reasonably well to the information in the text. She gets the item correct].

**R:** *Why is the camel suitable for the Mongolian winter?*

**R:** *Because the camel is patient about the cold and heat. It does not have to drink every day, and can cope with hunger.*

[This does not match with the text. It is marked as incorrect].

# Camel - Performance Graph





## Example 2: PIAAC, Slovenia

I: Here.  
((presses key on laptop))  
R: I see.  
I: Now this keyboard will work as well.  
R: Aww, great.



(Maddox, Keslair & Javrh, 2019, p161.)

# PIAAC - Repair



<https://vimeo.com/253780506>

*R: What about, I mean, what now? I've done this already. Choose a month.. and I chose October – now what? ...*

*I: Um, um, choose May.*

*R: I see! I did...*

*I: The instructions are always at the top.*

*R: I haven't read this at all, I read only 'select a month' and I chose the month we're in! I blew it!*



<https://vimeo.com/253780506>

**'I blew it!'**



*I: The instructions are always at the top.*

*((the interviewer leans over to see the screen and points)).*

*R: Yes, yes, I have to take a look.*

*I: Nothing works with the 'enter' ((the interviewer points to the enter key)), it always goes [here ((she points to the section on the screen and smiles)).*

*R: Yes yes yes, I understand*

*I: OK.*

# PIAAC: Implications for Improved Test Administration?

- Respondent engagement varied with the seating arrangements of the test taker and test administrator - Item skipping increased as with seating arrangements.
- Despite computer administration, the presence and support of the human test administrator was necessary to ensure good engagement of participants.
- Changes to PIAAC administrator guidance and training (seating, support/interaction).

# References

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