

# Package: mixRaschTools (via r-universe)

August 20, 2024

**Title** Plotting and Average Theta Functions for Multiple Class Mixed Rasch Models

**Version** 1.1.1

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**Description** Provides supplemental functions for the 'mixRasch' package (Willse, 2014), <https://cran.r-project.org/package=mixRasch/mixRasch.pdf> including a plotting function to compare item parameters for multiple class models and a function that provides average theta values for each class in a mixture model.

**Depends** R (>= 3.3.0)

**License** GPL

**Encoding** UTF-8

**LazyData** true

**Imports** graphics

**Suggests** knitr, rmarkdown, mixRasch, testthat

**RoxygenNote** 6.0.1

**NeedsCompilation** no

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**Repository** <https://pamelapsc.r-universe.dev>

**RemoteUrl** <https://github.com/cran/mixRaschTools>

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## Contents

Average Ability Levels for Multiple Class Mixed Rasch Model . . . . .	2
fourclass_ex . . . . .	3
Item parameter plot for mixed Rasch model . . . . .	3
threeclass_ex . . . . .	4

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Average Ability Levels for Multiple Class Mixed Rasch Model  
*Average Ability Levels for Multiple Class Mixed Rasch Model*

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### Description

This function produces mean ability levels for each class in a mixture Rasch model.

### Usage

```
avg.theta(x)
```

### Arguments

x                    A fitted multiple class mixture Rasch model

### Details

mixRaschTools Average Theta \_\_\_\_\_

This function produces a matrix containing the average theta values for each latent class included in mixture Rasch model.

### Author(s)

Pamela S Trantham

### References

Willse, J. T. (2011). Mixture Rasch models with joint maximum likelihood estimation. *Educational and Psychological Measurement*, 71, 5-19, <https://doi.org/10.1177/0013164410387335>

### Examples

```
##Example multiple class mixture Rasch models included with mixRaschToolkit  
data(threeclass_ex)  
##Average Theta Values  
avg.theta(threeclass_ex)
```

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`fourclass_ex`*mixRaschTools Sample Four Class Model*

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**Description**

Object containing model information for a four class model.

**Usage**`fourclass_ex`**Format**

This four class mixed Rasch model was created with the use of the mixRasch program (Willse, 2014) using a subset of the 2012 PISA US math achievement data (OECD, 2012). This model was created using the "Math Self Efficacy" scale included in the contextual assessment included in that year. The dataset used for the models was created using students from the United States who had completed all math questions contained in the PM7A booklet. The final dataset contained 12 dichotomously scored math achievement items creating a sample of 1229 students. These models contain the following parameters: "fourclass\_ex" contains the ability estimates, item parameters, and standard errors for a four class Rasch model fitted using the mixRasch program. "threeclass\_ex" contains the ability estimates, item parameters, and standard errors for a three class Rasch model fitted using the mixRasch program.

**Source**

<http://www.oecd.org/pisa/pisaproducts/pisa2012database-downloadabledata.htm>

**References**

Organisation for Economic Co-operation and Development., & Programme for International Student Assessment. (2012a). Paris: OECD. Willse, J. T. (2014). Package mixRasch. R package version 1.1.

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`Item parameter plot for mixed Rasch model`*Item parameter plot for mixed Rasch model*

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**Description**

This function produces a plot of item parameters by latent class for Rasch calibrated mixture models.

**Usage**`mixRasch.plot(x, xlab, ylab)`

**Arguments**

x	A fitted multiple class mixture Rasch model
xlab	user defined label for x axis
ylab	user defined label for y axis

**Details**

mixRaschTools Functions —————

This function provides an item parameter plot that can be used to compare the different item parameters in mixture Rasch models that contain two or more latent classes.

**Author(s)**

Pamela S Trantham

**Examples**

```
##Example multiple class mixture Rasch models included with mixRaschTools
data(threeclass_ex)
##Item Parameter Plot
mixRasch.plot(threeclass_ex)
```

---

threeclass\_ex                      *mixRaschTools Sample Three Class Model* —————

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**Description**

Object containing model information for a three class model.

**Usage**

```
threeclass_ex
```

**Format**

This three class mixed Rasch model was created with the use of the mixRasch program (Willse, 2014) using a subset of the 2012 PISA US math achievement data (OECD, 2012). This model was created using the "Math Self Efficacy" scale included in the contextual assessment included in that year. The dataset used for the models was created using students from the United States who had completed all math questions contained in the PM7A booklet. The final dataset contained 12 dichotomously scored math achievement items creating a sample of 1229 students. These models contain the following parameters: "fourclass\_ex" contains the ability estimates, item parameters, and standard errors for a four class Rasch model fitted using the mixRasch program. "threeclass\_ex" contains the ability estimates, item parameters, and standard errors for a three class Rasch model fitted using the mixRasch program.

**Source**

<http://www.oecd.org/pisa/pisaproducts/pisa2012database-downloadabledata.htm>

**References**

Organisation for Economic Co-operation and Development., & Programme for International Student Assessment. (2012a). Paris: OECD. Willse, J. T. (2014). Package mixRasch. R package version 1.1. Willse, J. T. (2011). Mixture Rasch models with joint maximum likelihood estimation. *Educational and Psychological Measurement*, 71, 5-19.<https://doi.org/10.1177/0013164410387335>

# Index

## \* datasets

fourclass\_ex, 3

threeclass\_ex, 4

Average Ability Levels for Multiple  
Class Mixed Rasch Model, 2

avg.theta(Average Ability Levels for  
Multiple Class Mixed Rasch  
Model), 2

fourclass\_ex, 3

Item parameter plot for mixed Rasch  
model, 3

mixRasch.plot(Item parameter plot for  
mixed Rasch model), 3

threeclass\_ex, 4