Co-creating tools to monitor first graders' progress in reading: a balancing act between perceived usefulness, flexiblity & workload

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In light of **achievement gap**, what is **fair** regarding progress monitoring in **reading** in early grades?

Achievement Gap in the

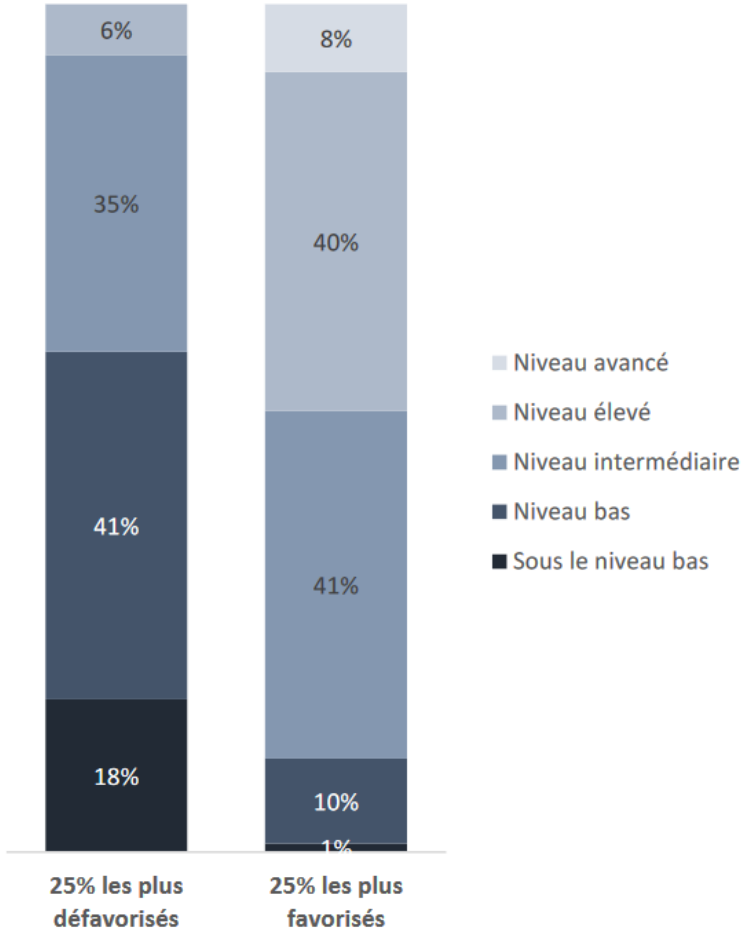
French-speaking part of Belgium

Among 25% most disadvantaged 4th graders:

- **60%** are **« struggling readers »**
- **6%** have a high level
- **No one has an advanced level**

Yet, 48% of the 25% most advantaged 4th graders have a high or advanced level

PIRLS 2021 (Schillings et al., 2023)



Graphique 21 : Pourcentages d'élèves aux différents niveaux de compétences selon l'origine socioéconomique

Agenda

01

Literature

- Progress monitoring
- Practice-embedded research

02

Method

- Iterative and participative process with 5 teachers for four months
- Inductive content analysis with an interactionist framework

03

Main results

Co-creation of tools

To help teachers to monitor progress of their pupils in early literacy

Research Question

How do the tools meet the needs of primary school teachers to monitor the progress of their pupils' reading skills?

04

In light of the achievement gap

01

Literature

- Progress monitoring
- Practice-embedded research

Progress monitoring consists of regularly measuring and analyzing pupils' progress with the aim of adapting the instruction to their needs

Dietrichson et al., 2017 ; 2021

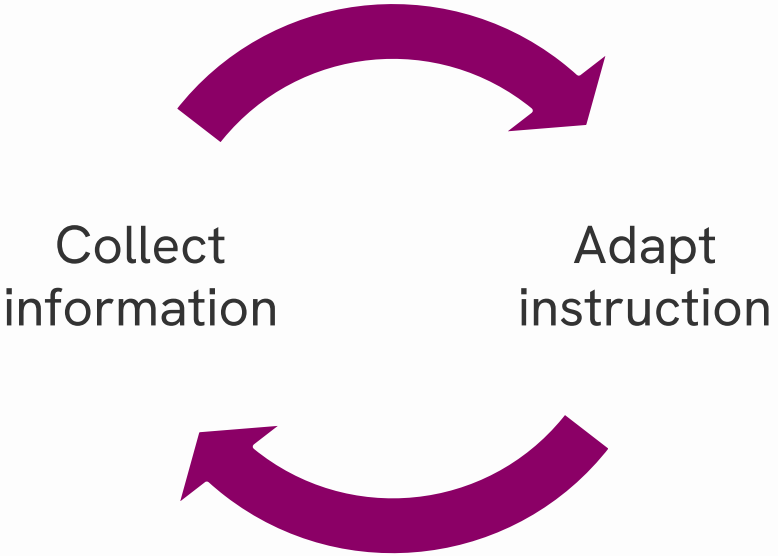
Progress monitoring as part of...



Progress Monitoring

- **Formative assessment** — Collect and analyze information about what and how pupils learn (Klute et al. 2017)
- **Differentiated Instruction** — Different instructional adaptations to answer pupils' needs (Graham et al., 2021)
- **Data-Based Decision Making** — Continuous process of collecting and analyzing data about pupils' skill level to guide decisions on instruction (Filderman et al., 2018)
- **Response To Intervention** — Multi-tiers system of support to detect and intervene quickly towards struggling pupils (Alahmari, 2019)

Progress monitoring



Facilitates …

- Having more information about pupils' level
- Offering activities tailored to their needs

→ Identified as a promising practice to increase achievement of pupils from low SES background (Dietrichson et al., 2017)

Allal & Mottier-Lopez, 2005 ; Eysink & Schildkamp, 2021 ; Lemons et al., 2014

Research-Practice Gap







Berkeley et al., 2020, Bressoux, 2021

Practice-embedded research



Build sustainable partnership

Between teachers and researchers, seen on equal footing



Taking into account the complexity of the class

From the onset of the research process



Developing tools that can be implemented into tearchers' professional routines

To sustainably modify practices

The Design-Based Research Collective, 2003 ; Donovan et al., 2013 ; Goigoux et al., 2021 ; Snow, 2015

Goals of the study



Co-creation of tools

To help teachers monitoring progress in reading in early grades



Research question

How do the tools meet the needs of early grades teachers to monitor the progress of their pupils' reading skills?

02

Method

- Iterative and participative process with 5 teachers for four months
- Inductive content analysis with an interactionist framework

Procedure

Co-developers :

- 5 teachers of 1st and 2nd grade
- Researcher

	Years of teaching	Gender	Years of xp	Public
Sophia	1st grade	F	8	Strongly disadvantaged
Victoria	1st and 2nd grade	F	24	Strongly advantaged
Carol	1st and 2nd grade	F	18	Strongly disadvantaged
Lucy	1st and 2nd grade	F	9	Disadvantaged
George	2nd grade	M	7	Strongly disadvantaged

Given names

Procedure

Goals of In-class Tests

- Testing the tools *on the field*
- Collecting experiences

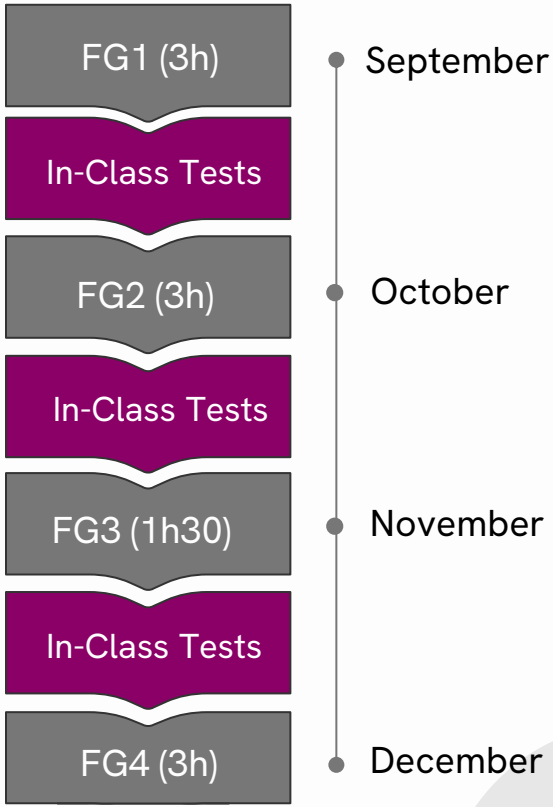
Goald of the Focus Groups (FG)

- Sharing experiences
- Decisions on the tools

- Focus Groups recorded, transcribed and analysed

Cèbe & Goigoux, 2017 ; Goigoux, 2021 ; Snow, 2015

Iterative & participative



FG = Focus Group

Analysis



1. **Inductive content analysis** Baribeau, 2009
2. **Interactionist framework** Morrissette, 2011 ; Morrissette & Guignon, 2016

Shared

Mutual agreement, reflecting common professional routines

Accepted

Not shared by all participant but recognized as legitimate

Disputed

Strong disagreement, potential obstacle for dissemination

03

Main results



Co-creation of tools

To help teachers to monitor progress of their pupils in early literacy



Research Question

How do the tools meet the needs of primary school teachers to monitor the progress of their pupils' reading skills?

Co-constructed tools

Criterion-based rubrics

- Individual monitoring
- Reading components acquisition
- Letter-sounds correspondence
- Multiple measurement times

Blank version

To maximize flexibility

Whole-class tool

- Whole-class overview
- Reading components acquisition
- Letter-sounds correspondence

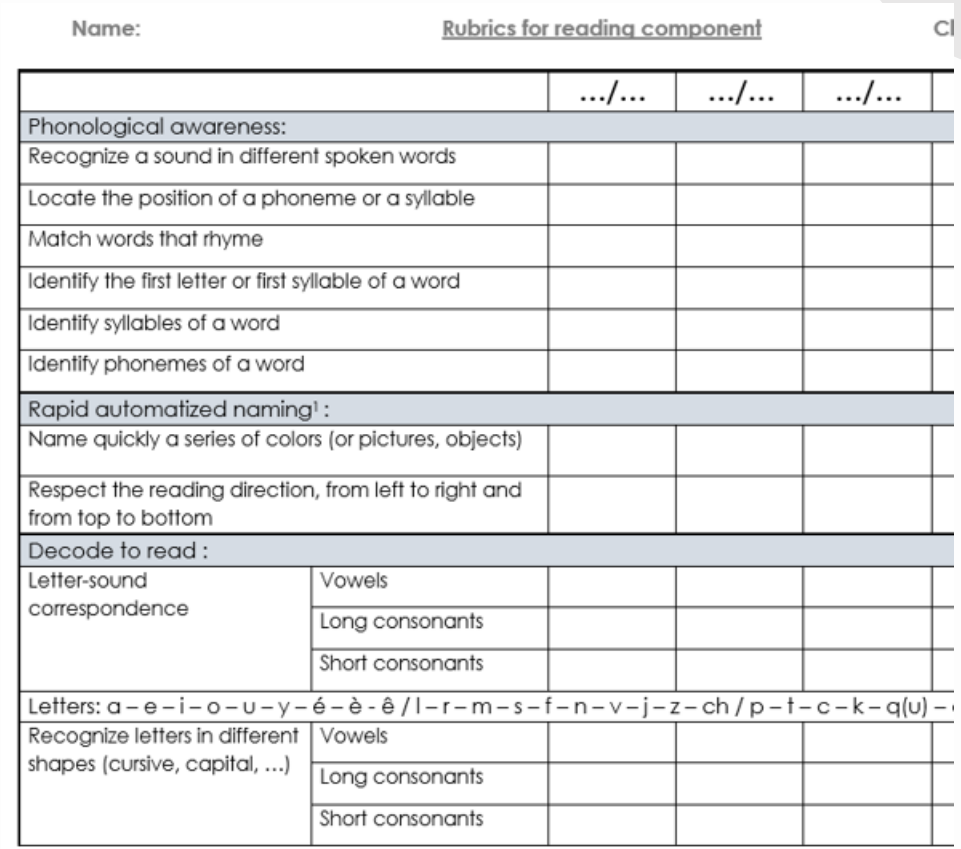
Excel Version

For more computer-oriented teachers

Co-constructed tools

Criterion-based rubrics

- Individual monitoring
- Reading components acquisition
- Letter-sounds correspondence
- Multiple measurement times



Name: Rubrics for reading component Cl

		.../...	.../...	.../...	
Phonological awareness:					
Recognize a sound in different spoken words					
Locate the position of a phoneme or a syllable					
Match words that rhyme					
Identify the first letter or first syllable of a word					
Identify syllables of a word					
Identify phonemes of a word					
Rapid automatized naming[1] :					
Name quickly a series of colors (or pictures, objects)					
Respect the reading direction, from left to right and from top to bottom					
Decode to read :					
Letter-sound correspondence	Vowels				
	Long consonants				
	Short consonants				
Letters: a – e – i – o – u – y – é – è - ê / l – r – m – s – f – n – v – j – z – ch / p – t – c – k – q(u) –					
Recognize letters in different shapes (cursive, capital, ...)	Vowels				
	Long consonants				
	Short consonants				

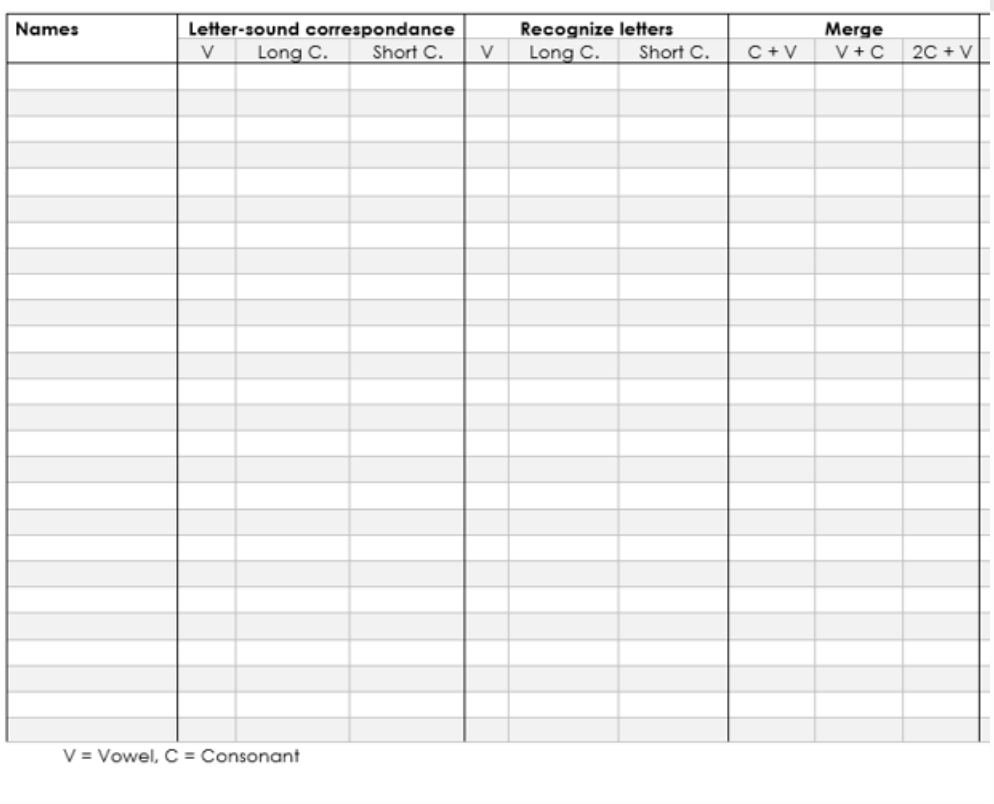
Co-constructed tools

Criterion-based rubrics

- Individual monitoring
- Reading components acquisition
- Letter-sounds correspondance
- Multiple measurement times

Whole-class tool

- Whole-class overview
- Reading components acquisition
- Letter-sounds correspondence



Names	Letter-sound correspondance			Recognize letters			Merge		
	V	Long C.	Short C.	V	Long C.	Short C.	C + V	V + C	2C + V

V = Vowel, C = Consonant

Co-constructed tools

Criterion-based rubrics

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Blank version

To maximize flexibility

Whole-class tool

- Whole-class overview
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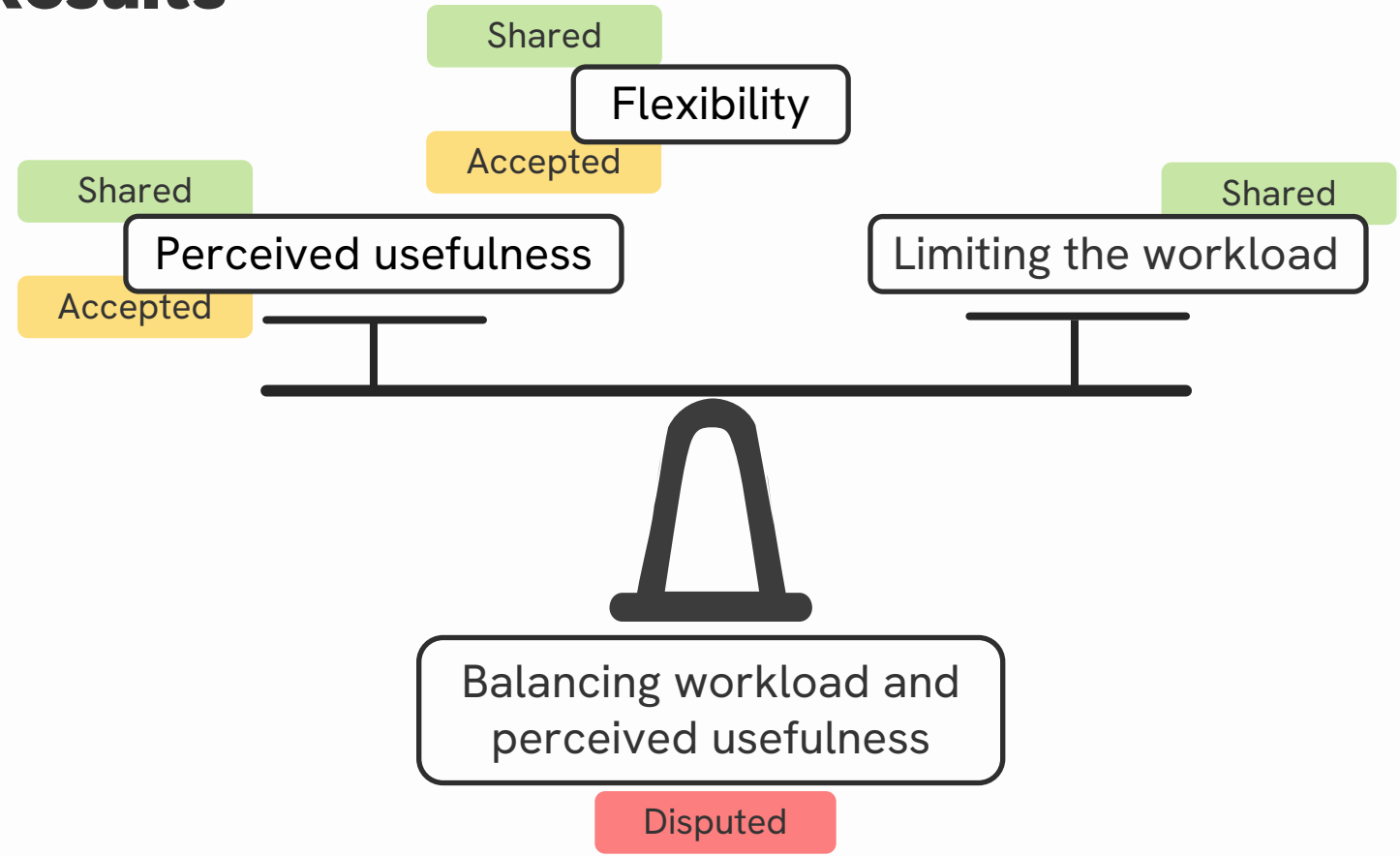
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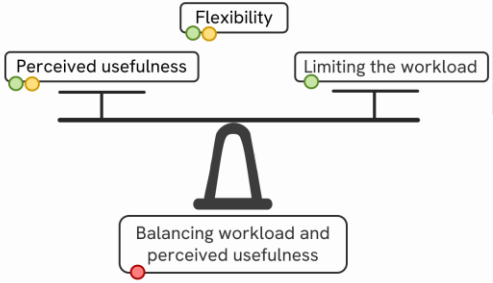
How do the tools meet the needs of early grades teachers to monitor the progress of their pupils' reading skills?



Results


Shared
Flexibility
Accepted
Shared
Perceived usefulness
Accepted
Shared
Limiting the workload
Balancing workload and perceived usefulness
Disputed

Perceived usefulness - Shared



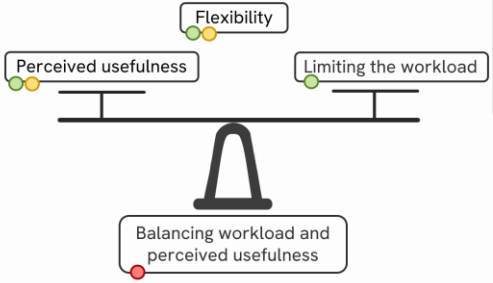
Objectively identifying pupils' level

Gain an *objective* overview of pupils' progression over time

Differentiate

Early identification of struggling students and providing them with appropriate pedagogical intervention

Perceived usefulness - Shared



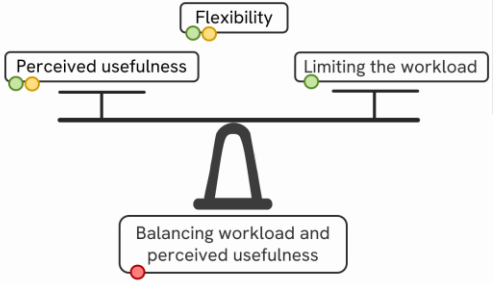
Objectively identifying pupils' level

"Here we can tick off, if we did not check off [the criteria], **that means that these pupils must be worked with separately**. But the others keep going and the pupils who have not yet acquired the skills keep going, but we thus **saw it in time and we remedy in time**. Lucy: That's it."

Differentiate

Early identification of struggling students and providing them with appropriate pedagogical intervention

Perceived usefulness - Admitted

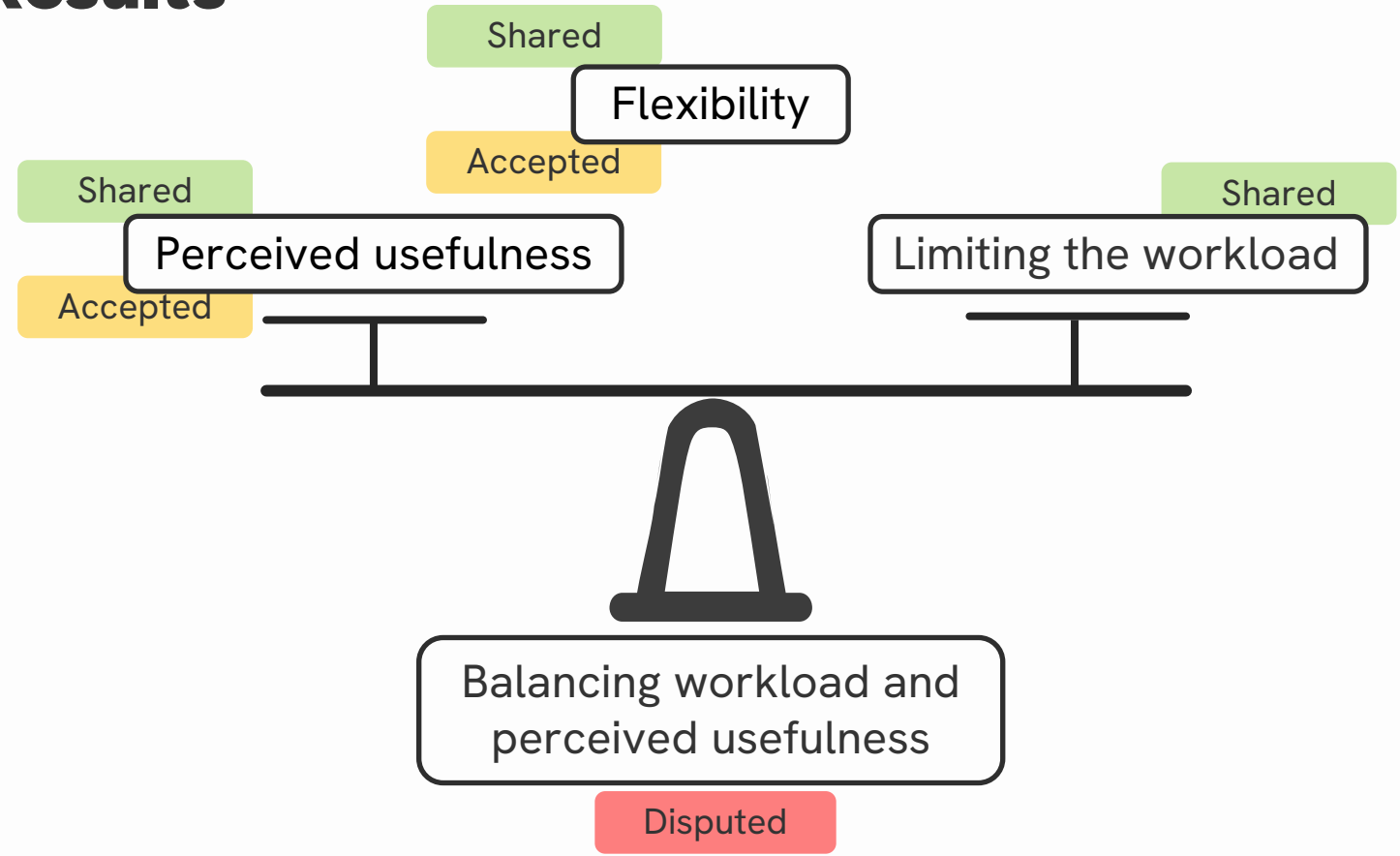


Different tools serving different goals

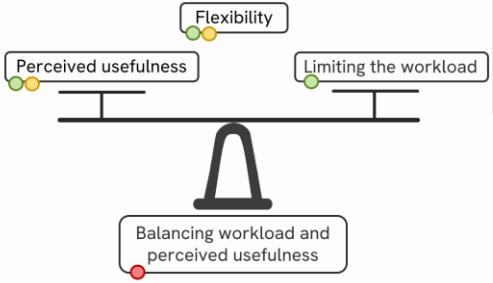
Rubric for reading components -> tailored learning path
Whole class tool -> ability groups

"I think that [...] the two versions can **complement each other as you said...** Well, yes, why not for struggling pupils keep the individual one [...] And as it was said to create ability groups, having the collective one can be interesting too..."

Results


Shared
Flexibility
Accepted
Shared
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Limiting the workload - Shared

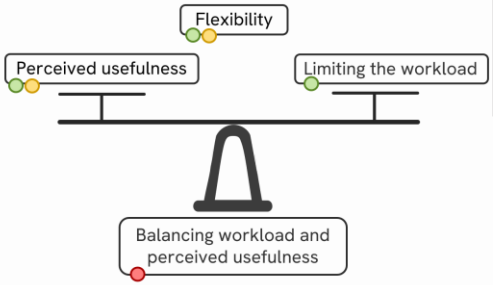


Progress monitoring is time-consuming

Maximize ease of use

By minimizing the number of columns and criteria, using the common vocabulary of teachers and assuring that criteria are arranged in chronological order and are easily observable

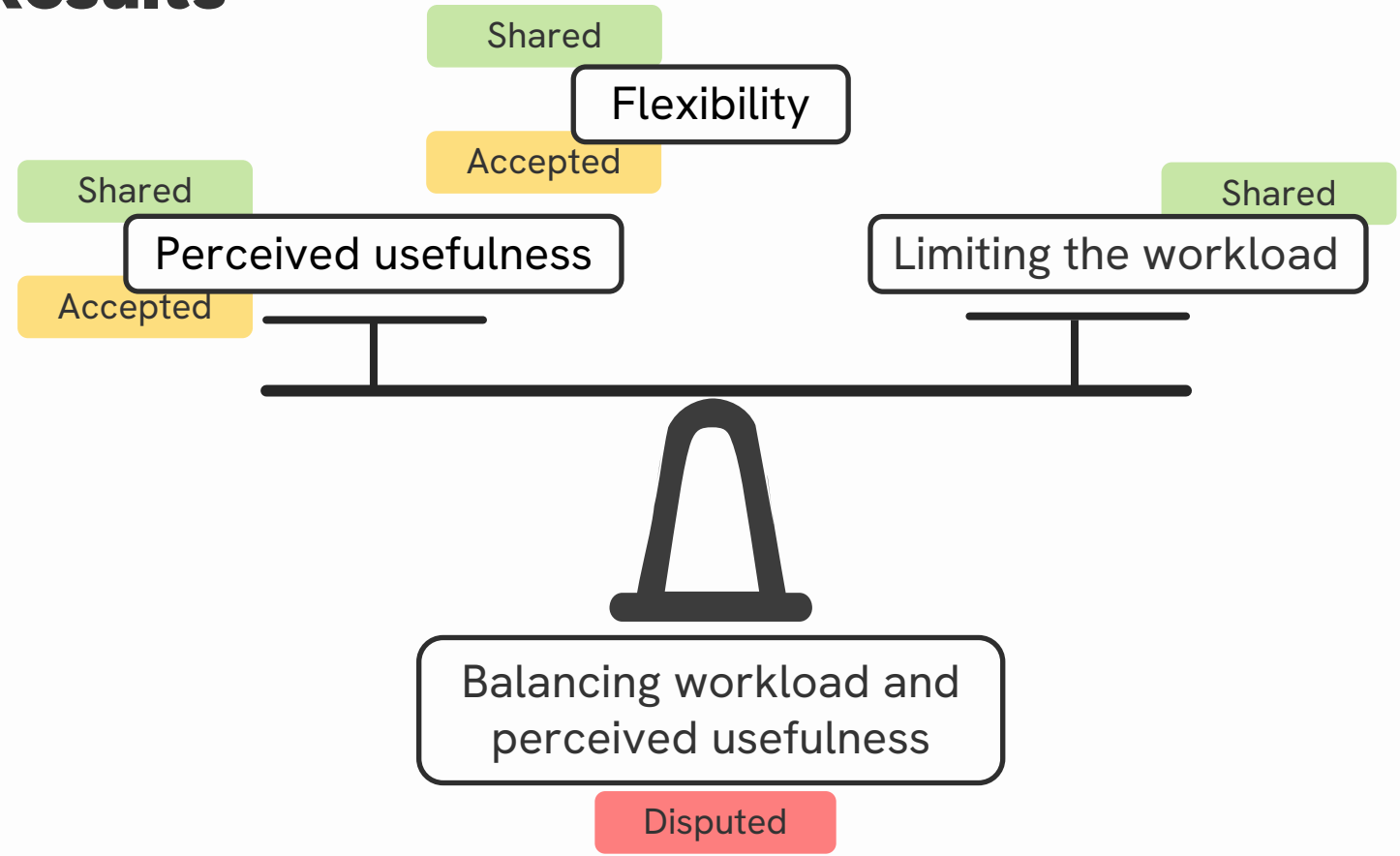
Limiting the workload - Shared



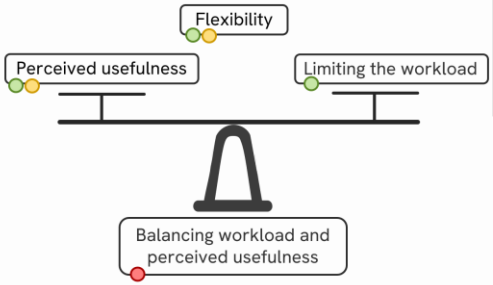
Progress monitoring is time-consuming

"Lucy: It should not be ...
Carol: Time-consuming
Lucy: Yes, that's it, **time-consuming** and that we have to, I think about my multi-age classroom here, my 21 pupils, I'm thinking, if I have to call them one by one while ensuring that the others are not lost.
Victoria: That's it." (FG 1).

Results


Shared
Flexibility
Accepted
Shared
Perceived usefulness
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Disputed

Balancing workload and perceived usefulness - Disputed



Which main goal serve the rubrics?

Name: Rubrics for reading component

		.../...	.../...
Phonological awareness:			
Recognize a sound in different spoken words			
Locate the position of a phoneme or a syllable			
Match words that rhyme			
Identify the first letter or first syllable of a word			
Identify syllables of a word			
Identify phonemes of a word			
Rapid automatized naming[1] :			
Name quickly a series of colors (or pictures, objects)			
Respect the reading direction, from left to right and from top to bottom			
Decode to read :			
Letter-sound correspondence	Vowels		
	Long consonants		
	Short consonants		
Letters: a – e – i – o – u – y – é – è - ê / l – r – m – s – f – n – v – j – z – ch / p – t -			

1. The rubrics as a school report

2. The rubris as supplementary tools for struggling pupils

Balancing workload and perceived usefulness: Disputed



"I have just finished some evaluations and in fact, when I was done, I told myself: I did not use the tool. And I read the tool, I thought, but actually, **I just did all the work for the school reports** [...]. This tool is not actually going to help me." (Carol, FG3)

Which main goal serve the rubrics?

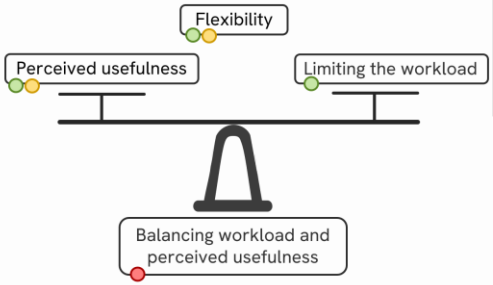
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Balancing workload and perceived usefulness - Disputed



Which main goal serve the rubrics?

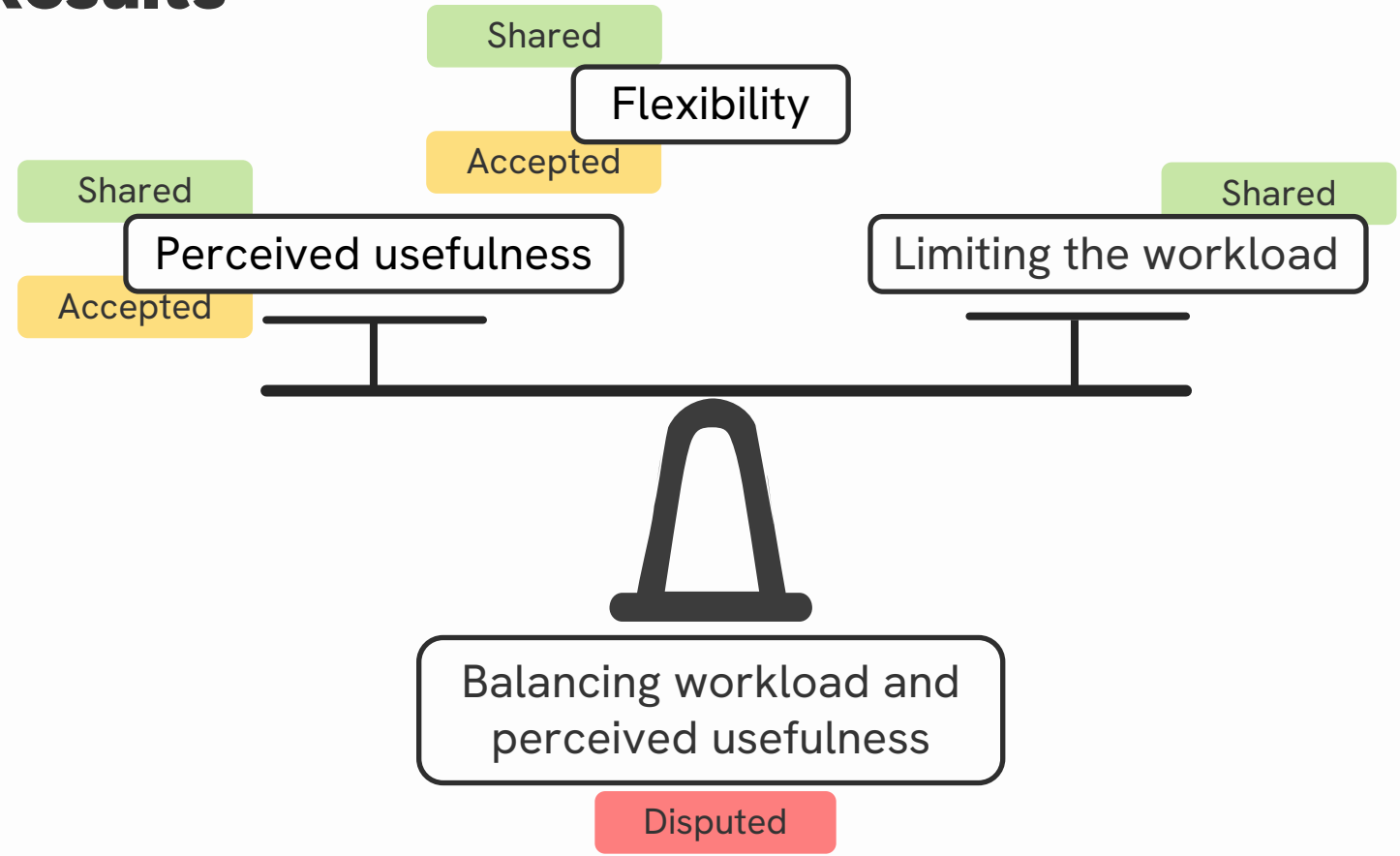
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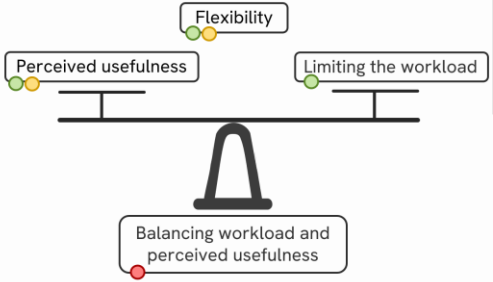
"I really agree with you [about the workload required] but I did not use it for the children who read easily **but [...] for the children with difficulties**, [...] it allowed me to find all the aspects that were still complicated for them." (George, FG 3).

2 The rubris as supplementary tools for struggling pupils

Results


Shared
Flexibility
Accepted
Shared
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Shared
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Balancing workload and perceived usefulness
Disputed

Flexibility- Shared



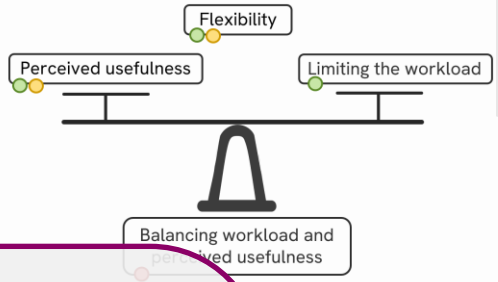
Easily adjustable by teachers

Depending on their program, routines, habits, etc & adjustable to pupils' level and needs

Expertise of the teachers valued

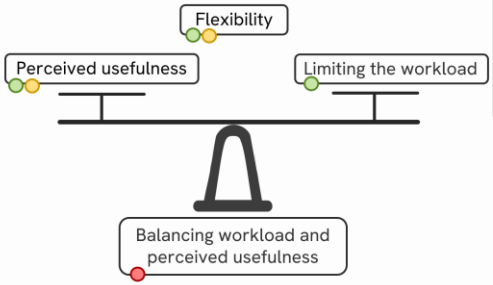
Opportunity to leave comment, hypothesize about the source of difficulties and choose the forms of the data collected

Flexibility- Shared



Carol: They do as they see fit!
Sophia: That's it
Carol: Anyway, you'll do as you please, no?
Sophia and Lucy: Well, yes.
Sophia: **And if teachers can't make it their own, they won't do it, they won't use it anyways**.
Lucy: That's true" (FG 2).

Flexibility - Admitted



Liberty in the format of the evaluation

Grades (in %) or qualitative criteria (Not Acquired/Acquired)

C: Anyway, in certain ways, it doesn't matter when it' is acquired
G: Yes, it's up to the teacher to set their own threshold, I'd say. In any case, they're the one grading in the end, they're the one doing their thing, so .... **It will be difficult to have a consensus on the threshold.** And it's true that by using « acquired – not acquired », it limits that problem because once it is acquired, **there's less room for debate since you either know it or you dont you know**

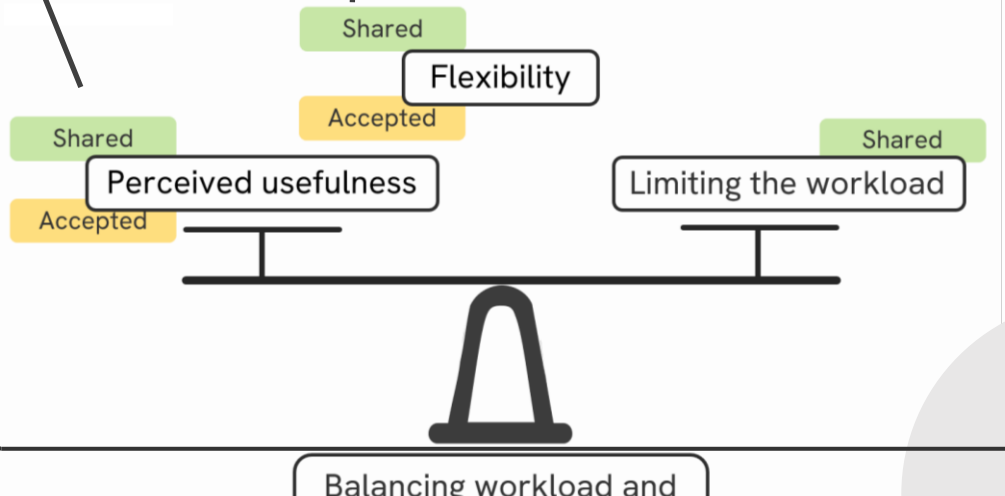
04

In light of the achievement gap

#1 Consequences of flexibility

Goal to « objectively » identifying pupils' level

Flexibility as a condition of implementation

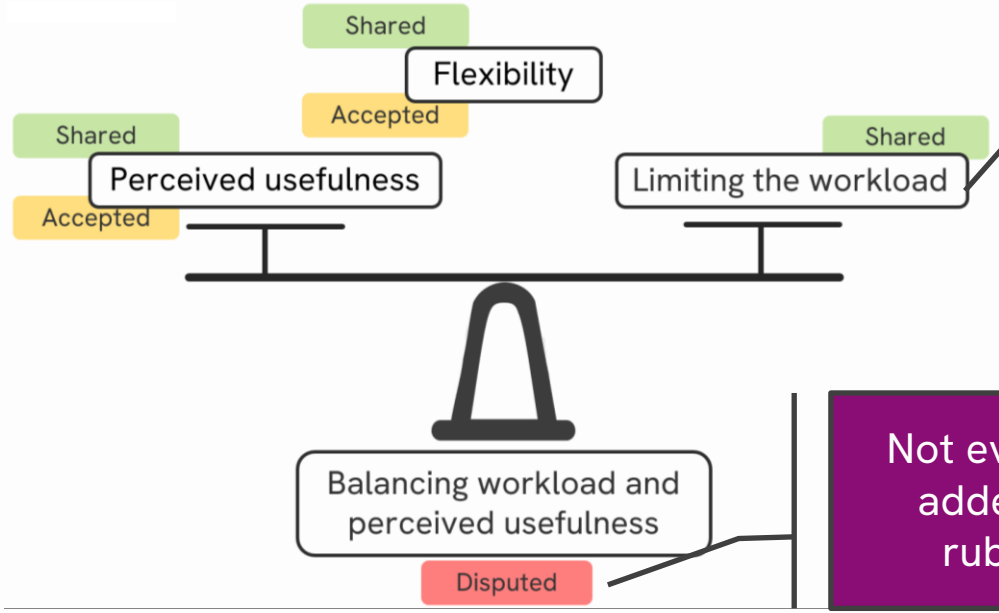


#1 Consequences of flexibility

- Using more criteria leads to less biaises than no rubrics (Chan & Ho, 2019 ; Quinn, 2020)
- Pupils' from low SES background suffer from negative biaises (e.g., lower teachers expectations) (Wang et al., 2018 ; Gortazar et al., 2022 ; von Hippel and Canedo, 2022)

→ When increasing the flexibility of the tools, do the co-developers also risk amplifying the impact of teachers' (implicit) biaises, for which impact(s) on which pupils?

#2 Who benefits most from the tools?



Progress monitoring is time-consuming (e.g. Schelling & Rubenstein, 2021)

Not everyone agrees on the added value of using the rubrics nor on its goal

1. As a school report, for all pupils
2. As an additional tool for struggling pupils

#2 Who benefits most from the tools?

What is fair regarding distributing (limited) educational ressources?

Equality — It should be distributed equally

Need — It should be distributed unequally, focusing on pupils in needs (struggling? Coming from a difficult background?)

Equity — It should be distributed unequally, focusing on deserving pupils (hard working pupils? Smartes pupils?) (link with meritocracy)

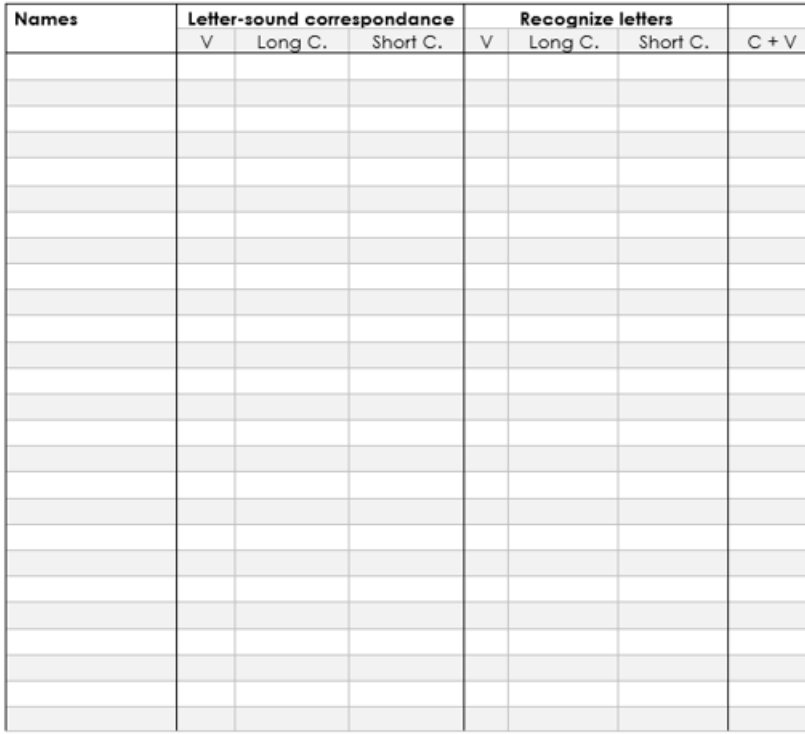
Deutsch, 1975 ; Resh & Sabbagh, 2016 ; Van Vijfeijken et al., 2021

#2 Who benefits most from the tools?

Agreement on the usefulness of the « whole-class tool » to easily create **ability group**

Double effect to:

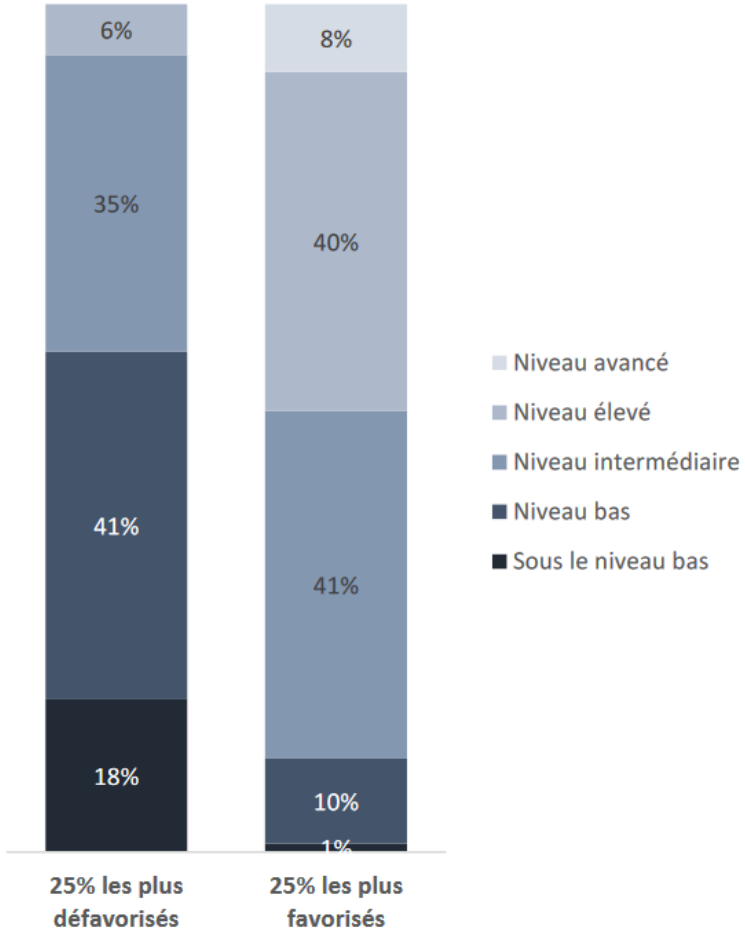
- Promote to anwers pupils' need more accurately (for eg. Zorman et al., 2015)
- Mainly beneficial for high achievers and risk to increase achievement gap (Deunk et al., 2018 ; Denessen, 2017)



Names	Letter-sound correspondance			Recognize letters			
	V	Long C.	Short C.	V	Long C.	Short C.	C + V

V = Vowel, C = Consonant

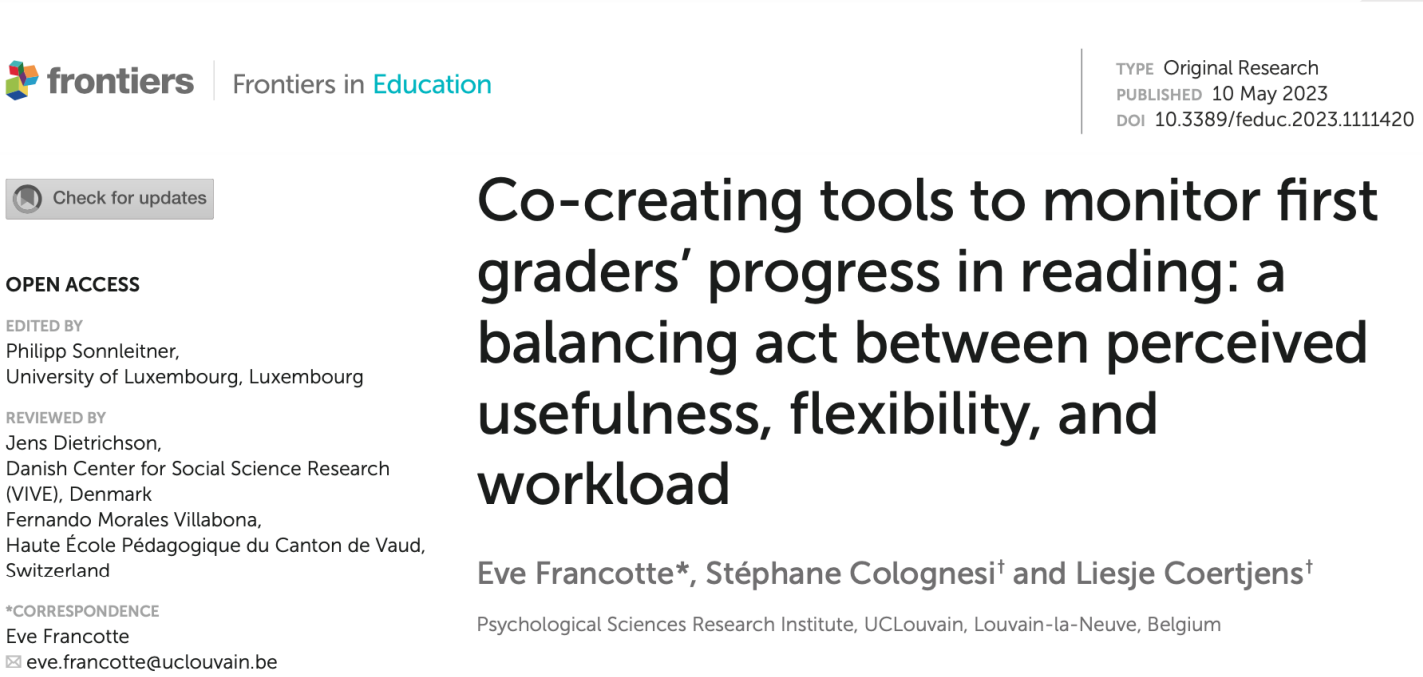
With the consequences that we know



Graphique 21 : Pourcentages d'élèves aux différents niveaux de compétences selon l'origine socioéconomique

Thanks !

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Co-creating tools to monitor first graders' progress in reading: a balancing act between perceived usefulness, flexibility, and workload

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ChatGPT with the only purpose of translation or find alternative wording.

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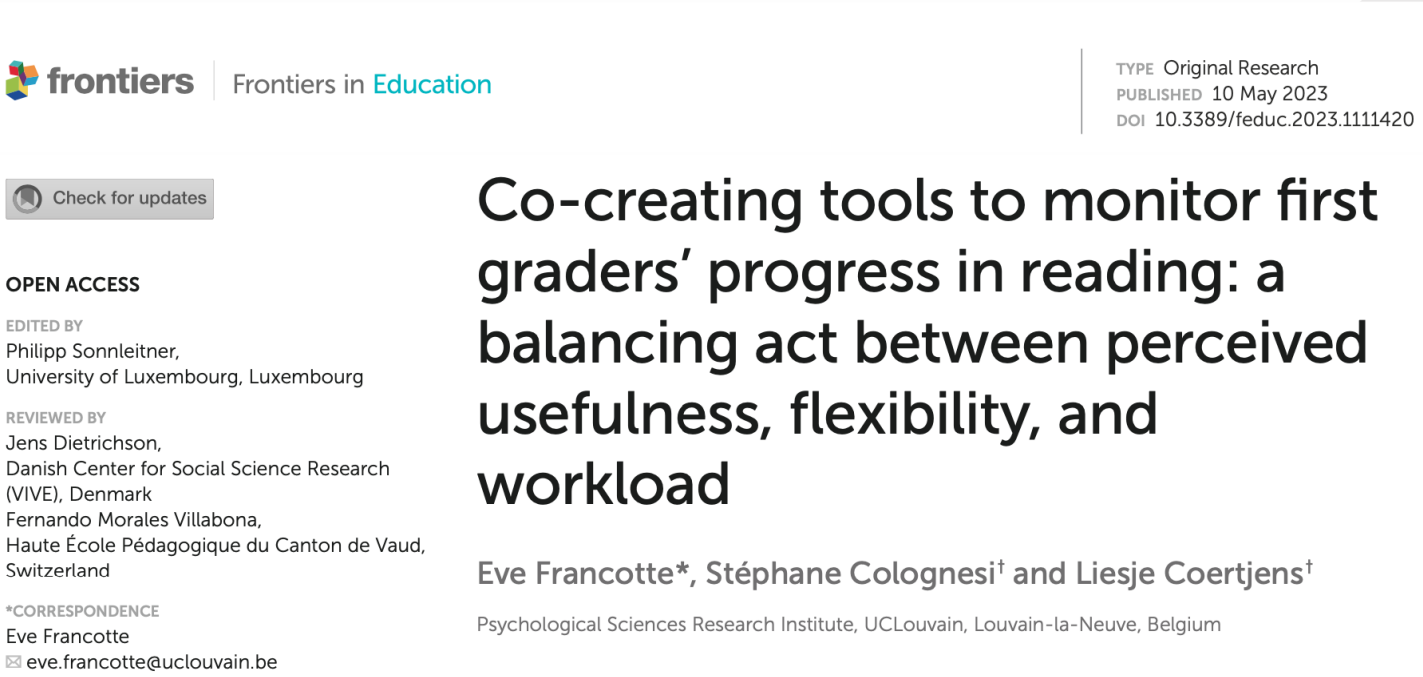
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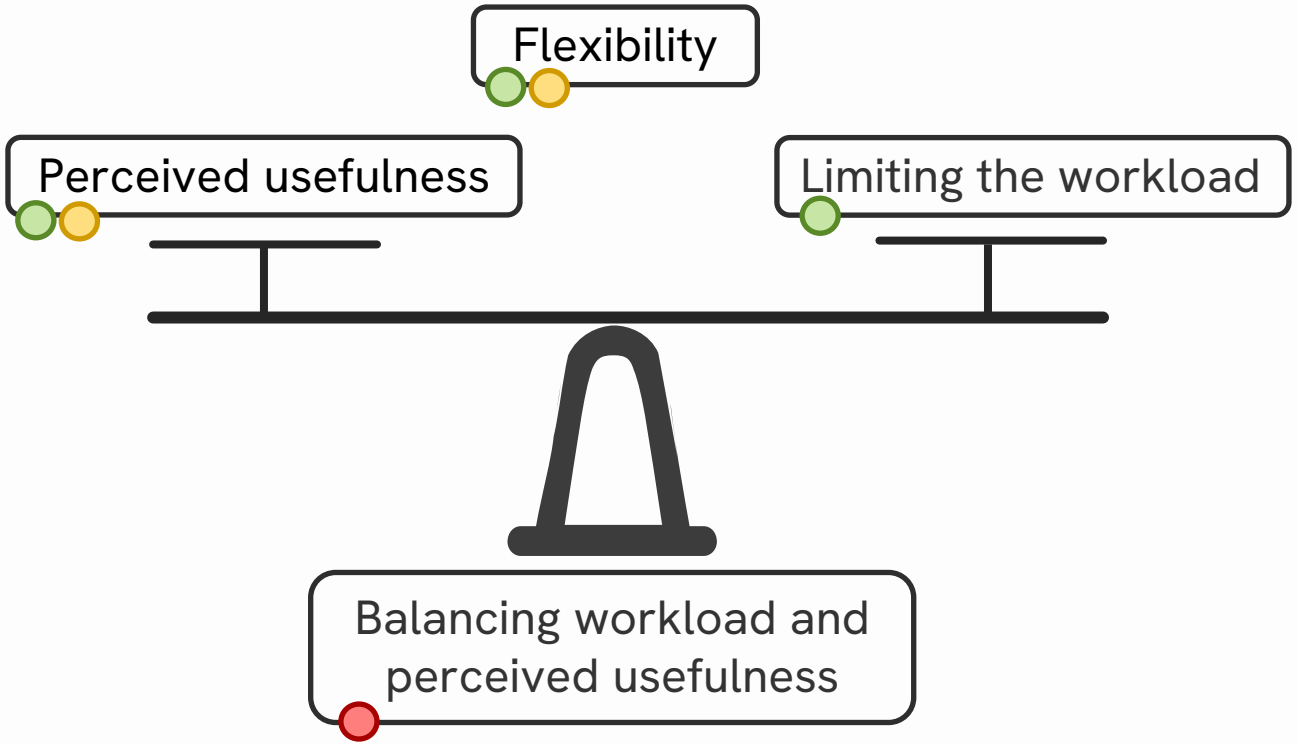
Co-creating tools to monitor first graders' progress in reading: a balancing act between perceived usefulness, flexibility, and workload

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Psychological Sciences Research Institute, UCLouvain, Louvain-la-Neuve, Belgium

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Results

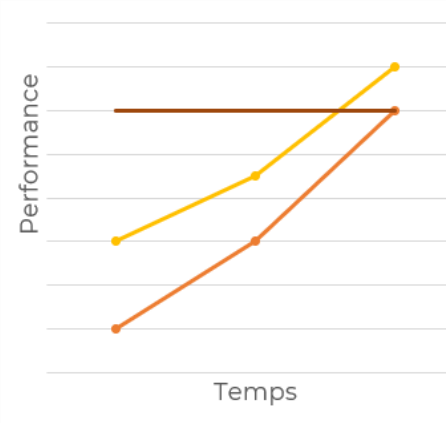

Flexibility
Perceived usefulness
Limiting the workload
Balancing workload and perceived usefulness

Two approaches of differentiation

Convergent

set a common learning goal for all pupils

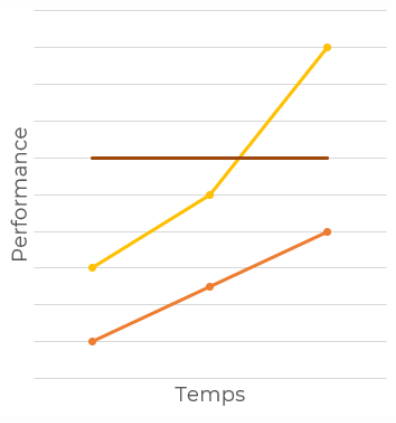
divide unequally educational resources to focus on low-achieving pupils



Divergent

set ability-appropriate, individualized goals

provide the same amount of educational resources to each pupil



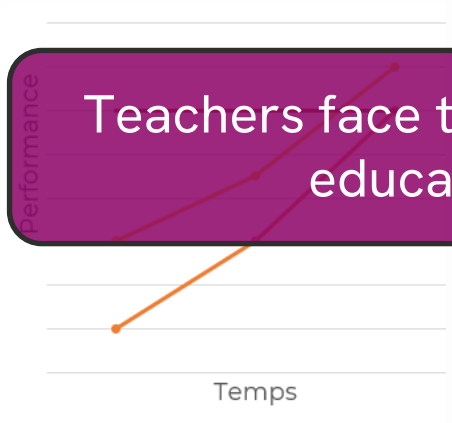
Bosker, 2005 ; Deunk et al., 2015

Two approaches of differentiation

Convergent

set a common learning goal for all pupils

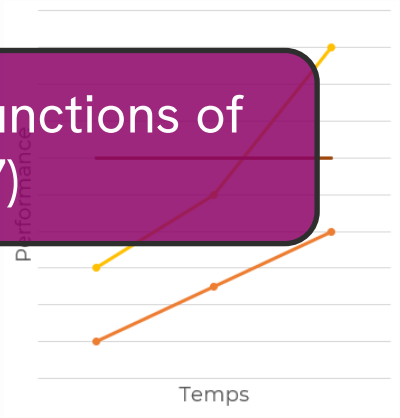
divide unequally educational resources to focus on low-achieving pupils



Divergent

set ability-appropriate, individualized goals

provide the same amount of educational resources to each pupil



Teachers face two (contradictory) functions of education (Denessen, 2017)

Bosker, 2005 ; Deunk et al., 2015

Equality

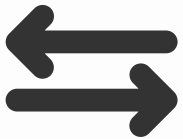
Resources distributed equally

Need

Resources distributed unequally, relative to pupil's needs

Equity

Resources distributed unequally, relative to pupil's merit (in education: hard work & ability)



(School) Meritocracy

Deutsch, 1975 ; Resch & Shabbagh, 2016 ; Mijs, 2016

Learning outcome dilemma

Divergent outcome
- Individualized goals
- Differences increasing

Equal progress

Convergent outcome
- Common learning goal
- Differences decreasing



Equity **Equality**

Support dilemma

Equity **Equality** **Need**



Extra support for advantaged pupils

Equal share of support

Extra support for disavantaged pupils