



# Developing teacher qualities deliberately

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Wetenschap

# Lerarenagenda 2013-2020: *de leraar maakt het verschil*





## A few questions

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1. How much do teachers actually matter?
2. How do they develop themselves?
3. How do you become an expert?
4. Implications for training teachers?





## ad 1: Teacher impact on student achievement

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Student: 50-60%

School leader, school organization, peers: 10-15%

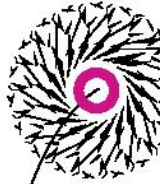
Teacher: 10-15%

Strong, **malleable** factor!



## ad 1: Teacher impact on student achievement

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Least effective teacher: 0,5 school year learning gain

Most effective teacher: 1,5 school year learning gain

Student has (much) **bad luck** or **luck**!





## ad 2: Teacher career in terms of effectiveness

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- Growth towards average effectiveness level takes long
- Support from professional environment helps
- After 25 years: less impact on students





## ad 2: Development **basic** didactical **skills**



**Complex** didactical skills: problem during whole career



## ad 2: So, it would be fantastic if ...

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Sooner competent and effective

Growth in basic skills continues

Complex didactical skills also mastered

Low probability bad luck: less variation, higher average





## ad 3: How does one become an expert?

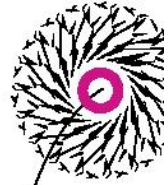
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## ad 3: How does one become an expert?

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Not by repeating what is **mastered already**

By practice and experience: **natural** ceiling ('**okay plateau**')

Without **deliberate** practice **no exceptional** skills

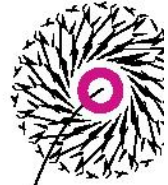
Develop **mental models**





## ad 3: Principles Deliberate Practice

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1. Have and keep a strong motivation to improve
2. Out of comfort zone: compare with ideal
3. Precise improvement goal
4. Long term practice: short but intense
5. Coach: ideal behaviour, learning tasks, feedback





## ad 4: Translated to teacher training?

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- Focus on **professional core skills in continuous** learning progression for teachers
- **Standards** for professional skills
- **Learning-theoretical** foundation
- **Feedback** instruments



## ad 4: Deliberate Practice & Four Components Instructional Design (4C/ID)

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Professional **standards** <-- cognitive **task analysis**

Learning-theoretical foundation:

- **whole-task**-approach
- from **simple** to **complex**
- diminishing **support**

# ad 4: How this is done in our ELAN-projects

Rekenen

Deel 6b, blok 1, week 2

Taak 4a

Leerdoel

Opgave

VN ▲ AN ▲ Tot ▲

	1										2										4		
	a	b	c	d	e	f	g	h	i	j	a	b	c	d	e	f	g	h	i	j	a	b	c
Benjamin A.	■	■	■	■	■	■	■	■	■	■	□	□	□	□	□	□	□	□	□	□	■	■	■
Bente D.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Jara van D.	■	■	■	■	■	■	■	■	■	■	□	□	□	□	□	□	□	□	□	□	■	■	■
Jarno F.	■	■	■	■	■	■	■	■	■	■	□	□	□	□	□	□	□	□	□	□	■	■	■
Julia R.	■	■	■	■	■	■	■	■	■	■	□	□	□	□	□	□	□	□	□	□	■	■	■
Kelvin K.	■	■	■	■	■	■	■	■	■	■	□	□	□	□	□	□	□	□	□	□	■	■	■
Kesse B.	■	■	■	■	■	■	■	■	■	■	□	□	□	□	□	□	□	□	□	□	■	■	■
Kevin H.	■	■	■	■	■	■	■	■	■	■	□	□	□	□	□	□	□	□	□	□	■	■	■
Kirsten C.	■	■	■	■	■	■	■	■	■	■	□	□	□	□	□	□	□	□	□	□	■	■	■
Lieke B.	■	■	■	■	■	■	■	■	■	■	□	□	□	□	□	□	□	□	□	□	■	■	■
Liv van der M.	■	■	■	■	■	■	■	■	■	■	□	□	□	□	□	□	□	□	□	□	■	■	■
Lotte K.	■	■	■	■	■	■	■	■	■	■	□	□	□	□	□	□	□	□	□	□	■	■	■
Luke V.	■	■	■	■	■	■	■	■	■	■	□	□	□	□	□	□	□	□	□	□	■	■	■
Luna J.	■	■	■	■	■	■	■	■	■	■	□	□	□	□	□	□	□	□	□	□	■	■	■
Luuk V.	■	■	■	■	■	■	■	■	■	■	□	□	□	□	□	□	□	□	□	□	■	■	■
Mylo R.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Olivier C.	■	■	■	■	■	■	■	■	■	■	□	□	□	□	□	□	□	□	□	□	■	■	■
Phileine A.	■	■	■	■	■	■	■	■	■	■	□	□	□	□	□	□	□	□	□	□	■	■	■

Legenda

- In 1x goed
- Uiteindelijk goed
- Fout
- Gemaakt (nog niet nagekeken)
- Nog niet gemaakt
- Vandaag aan gewerkt
- Laatst aan begonnen

Leerdoelen

- Optellen en aftrekken tot ±1000
- Vermenigvuldigen  $8 \times 32(6)$
- Standaardprocedures: complexe situaties
- Sommen tot 100 - Halveren en verdubbelen
- Sommen tot 100 - Somtype  $40 + 3$  en  $25 + 40$
- Sommen tot 100 - Somtype  $24 + 52$  en  $24 + 56$
- Sommen tot 100 - Somtype  $38 + 25$
- Meetinstrumenten aflezen - Klok kijken
- Sommen tot 100 - Algemeen



## ad 4: Feedback instruments

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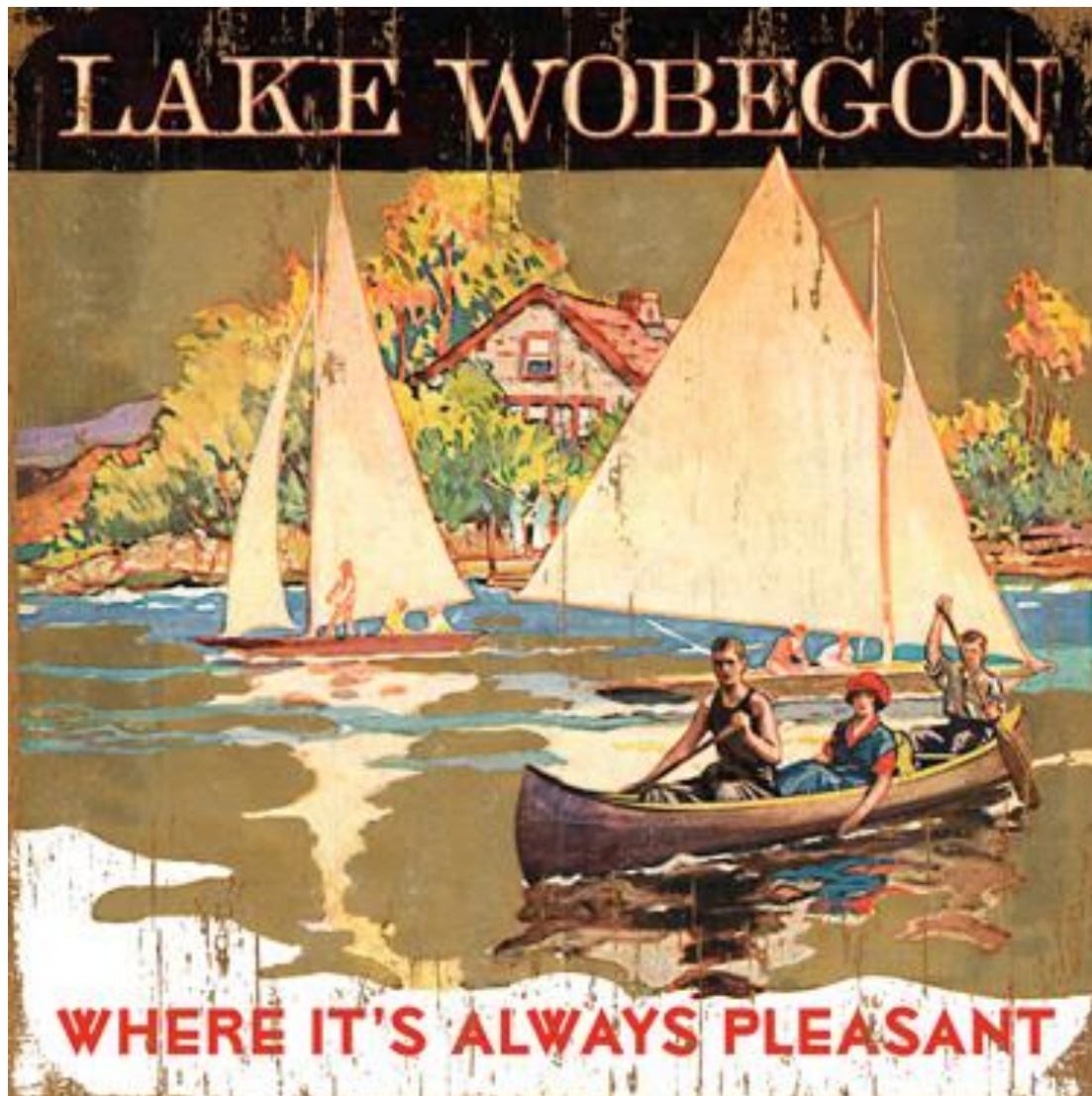


How can a teacher learn where he/she can improve?

Self-evaluations autonomous professionals?

Not such a good idea

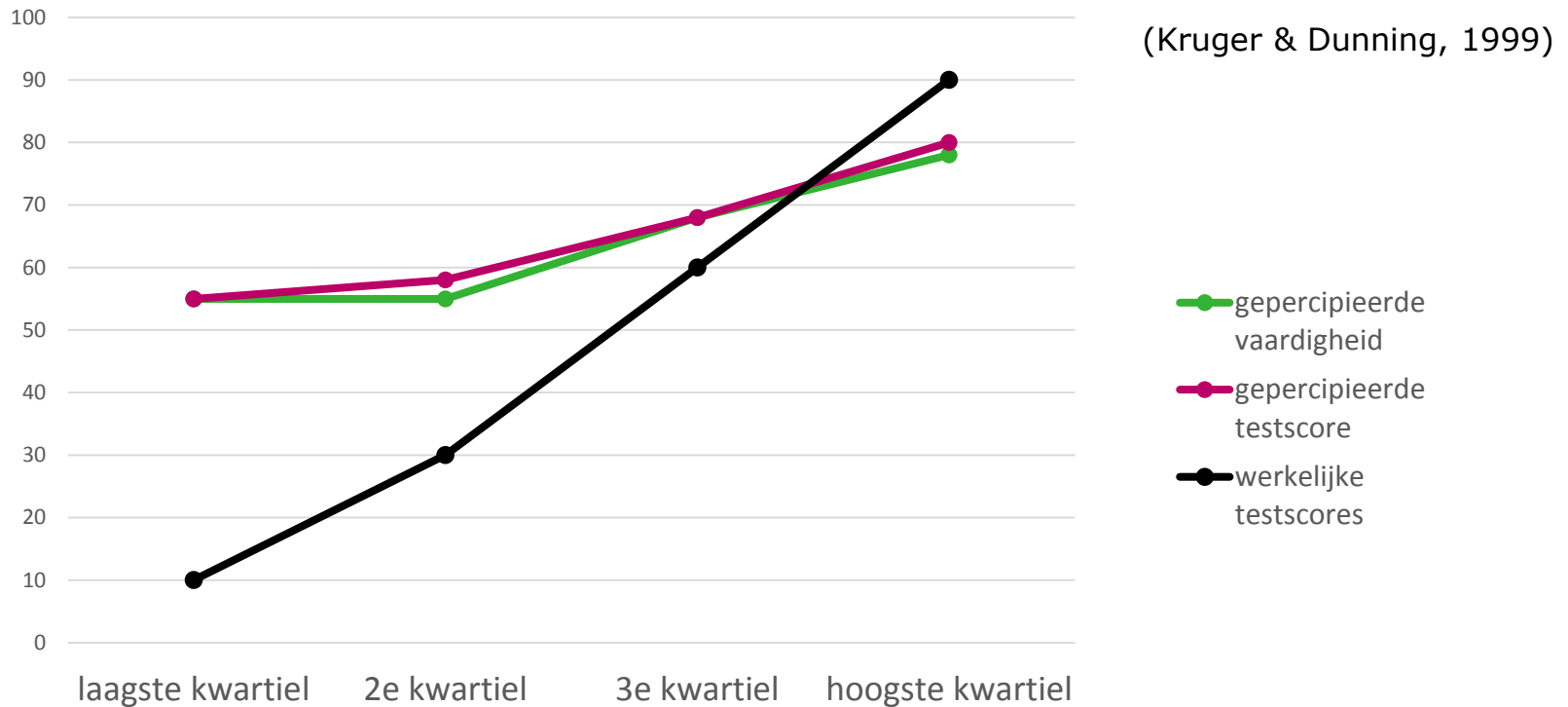




**"All the women are strong, all the men are good looking,  
and all the children are above average."**



## ad 4: Self-evaluations in general



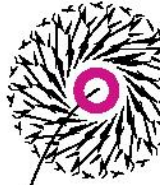
Often not aware of the need for improvement

*"It takes one to know one"*



## ad 4: Research by the Dutch School Inspectorate

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Teachers:

Positive image of their basic didactical qualities

Schools:

Little data and policy regarding their didactical skills

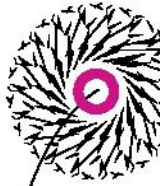
*"Everyone needs quality feedback to improve"*





## ad 4: Feedback instruments

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Lesson observations: require much; many 'tips'

Student perceptions: many observations; few 'tips'

Different perspectives on teaching quality





## ad 4: Technological opportunities for feedback

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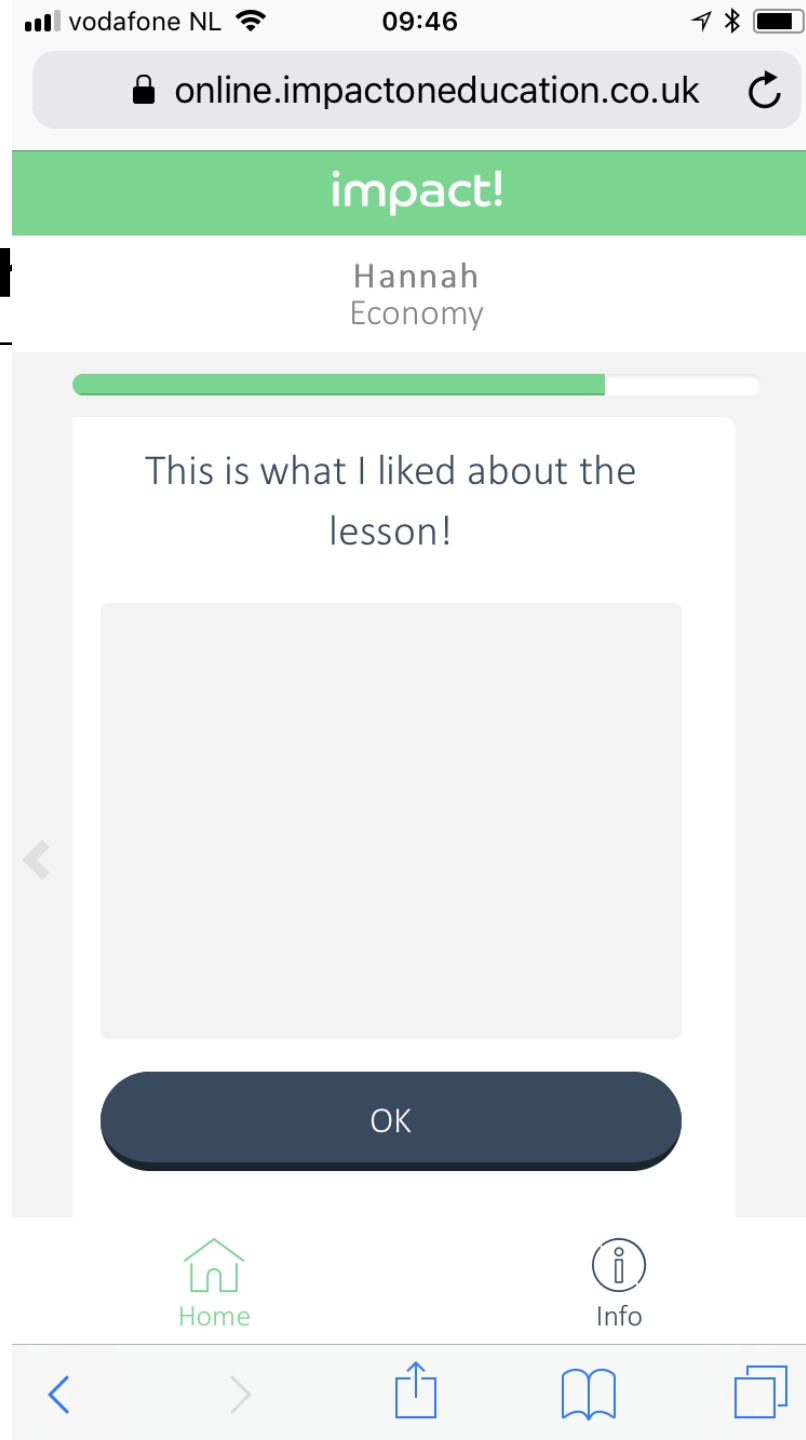
For lesson observations:



For student perceptions:



## Example: Th



# **Feedback to teachers with Impact! tool**

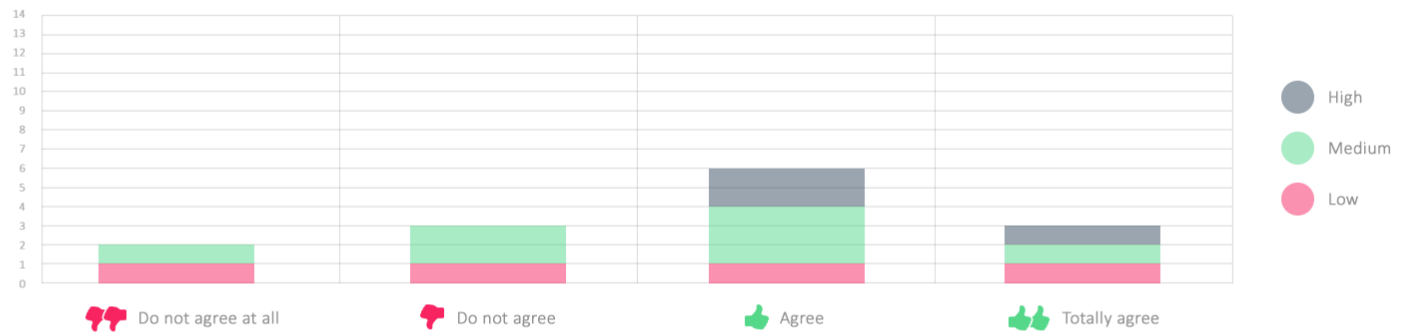
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Back

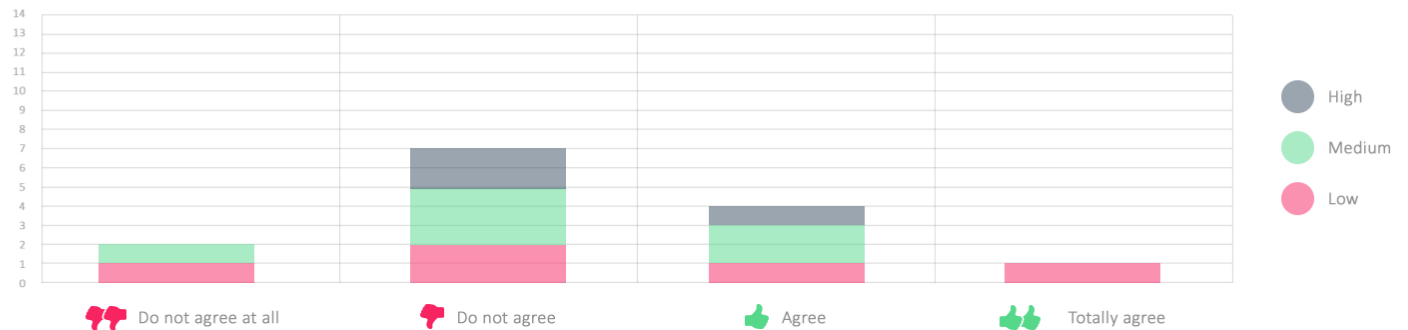
Biology, 26-09-2017, 12:05 - 12:15

Average score throughout the lesson

The teacher clearly indicated what I was going to learn.



The teacher connected what I already knew with the lesson well.





Lessons



Questionnaires

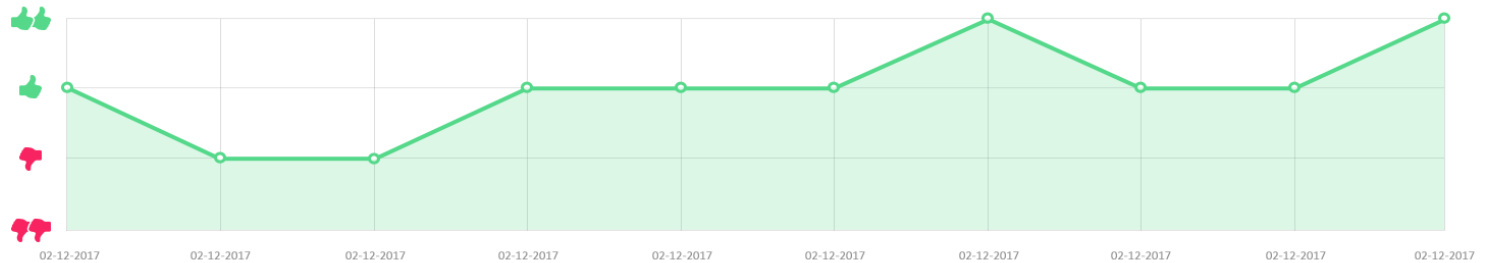


Score

### Score trend per question

✓ The teacher clearly indicated what I was going to learn.

^ The teacher explained the subject matter in such a way that I understood it well.



✓ The teacher clearly indicated what I was going to learn.

✓ The teacher explained the subject matter in such a way that I understood it well.

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Lessons

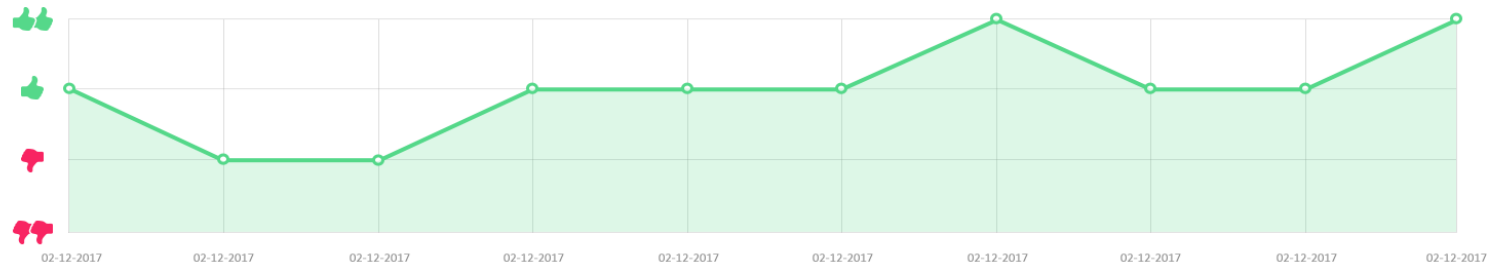


Questionnaires



Score

## Score trend

[View trend per question](#)

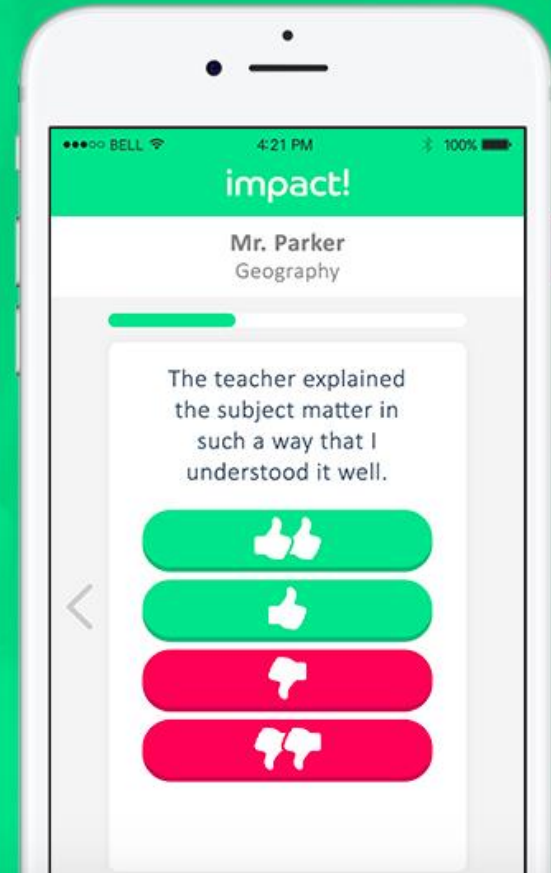
## Score overview



Date	Time	Class	Subject	Average	
28-09-2017	12:00 - 12:15	2a	Biology		<a href="#">View scores</a>
28-09-2017	12:00 - 12:15	2a	Biology		<a href="#">View scores</a>
28-09-2017	12:00 - 12:15	2a	Biology		<a href="#">View scores</a>
28-09-2017	12:00 - 12:15	2a	Biology		<a href="#">View scores</a>

# Impact! on education by means of student feedback!

Impact! is an easy tool for students to provide feedback to their teacher about the lesson taught. The teacher can directly see the feedback. This can give insight into the strengths of the lesson and where improvement is still possible.

[DISCOVER MORE](#)



## ad 4: Human factor in feedback technology

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Social science:

- feedback acceptance and improvement motivation
- organisational 'support & pressure'
- competences for feedback utilization



# Equip teachers even better for their complex task by means of ...

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1. Task analyses -> standards -> training
2. Instruments for feedback
3. Technology <-- human factor
4. School organisation that 'learns' and improves
5. Intelligent government: €€€, evidence-based

