

To NWO / NRO and the Programmaraad Fundamenteel Onderzoek (PROO)  
part of the Netherlands Organisation for Scientific Research (NWO)

cc NRO stuurgroep and executive board NVvW and chairperson KWG  
now also cc NewScientist.nl and Kennislink.nl (on pi – archi – tau) and Kennisnet.nl (on ICT  
infrastructure and computer algebra) and Onderwijsinspectie (Inspectorate) (on their task)

Concerning: Fundamental research (PROO) and mathematics education research (MER)  
**Reminder of my letter of April 15 2016**  
July 12 2016

Dear director dr. Kaldewaij, PROO-council chair prof. Wubbels and other members of the  
PROO-council,

Allow me to introduce myself **again** as an econometrician (Groningen 1982) and teacher of  
mathematics (Leiden 2008). My research since 2008 on mathematics education (MER) is of  
fundamental nature, fitting PROO. When you haven't heard about my research yet, then this  
is not because of lack of quality of this research. Results can be found on my website, in  
Dutch at <http://thomascool.eu/Papers/AardigeGetallen/Index.html> and in English at  
<http://thomascool.eu/Papers/Math/Index.html>.

I sent you a letter on April 15 this year:  
<http://thomascool.eu/Papers/Math/2016-04-15-Letter-to-NRO.pdf>

**I have not received a reply yet.** For research in education it would be relevant that you  
would reply. This present letter of mine is a **polite reminder** and request that you reply  
indeed.

Let me take the opportunity of this reminder to **include some news** since April 2016.

It so happened that I met dr. Kaldewaij on June 20 2016 at a conference "Onderwijs meets  
onderzoek". This generated an email exchange in **Appendix A and B**. Perhaps Kaldewaij is  
under the impression that this fully answers all issues in my letter of April 15 2016. **Thus let  
me also explain that such would be a misunderstanding.** A reply is still required.

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## **(1) Meeting dr. Kaldewaij at "Onderwijs meets onderzoek", June 20 2016**

I met dr. Kaldewaij at a conference "Onderwijs meets onderzoek", June 20 2016, organised by the **NVvW** (the Dutch association of teachers of mathematics), *Freudenthal "Head in the Clouds Realistic Mathematics" Institute* (FHCRM) <sup>1</sup> and SLO.

Talking bilaterally Dr. Kaldewaij said that he could not recall my letter. We met for the first time, and there might have been a confusion. The encounter was not so efficient. <sup>2</sup> Nevertheless, we agreed that I would send him a reminder email. You can find part of this in **Appendix A**.

Dr. Kaldewaij replied on this on June 29, see **Appendix B**.

Just to be sure: **This is not a reply on my letter of April 15 2016, and this should not be represented or be seen as if it were.**

Let me mention these points:

- Kaldewaij repeats the objectives of NRO: "**Aangezien onze opdracht als regieorgaan beperkt is tot regie/programmering, financiering en kennisbenutting (...)**"
- This NRO mission is precisely the reason why I addressed NRO on the issues of my letter of April 15 2016.
- Unfortunately, Kaldewaij draws the false inference of limiting his reply only to the conditions for funding by PROO: "**(...) beperk ik me in deze reactie tot de voorwaarden voor subsidieverlening.**"
- The reference to "deze reactie" might suggest that there would also be another reaction later on but he closes with a statement that makes this unlikely.
- Unfortunately, Kaldewaij restates the conditions for funding, notably for PROO, and **does not answer to my criticism** that these conditions are scientifically unwarranted. (See also Section 5 below.)
- Unfortunately, Kaldewaij thus also doesn't answer to the other points in my letter to NRO April 15 2016.

In my decent, accurate and modest opinion <sup>3</sup> I judge this reply by Kaldewaij to be **inappropriate and lacking in respect for science.**

Sometimes I make mistakes and generally I ask understanding for such mistakes, and thus I must also allow for understanding of a mistake by Kaldewaij. It is important however that he shows awareness of his mistake, however, otherwise the risk of recurrence is larger. NRO likely would agree that it wouldn't help to have a director of NRO who lacks respect for science.

Also, my letter to you of April 15 2016 stated about the June 20 conference:

"The conference will be opened by NRO-director [sic] Kaldewaij, and it is not inconceivable that he is abused to give the event a scientific flavour. I would think it incorrect when Kaldewaij would support 8 years of abuse of my work since 2008 in the M-MT-MER community by also burking my analysis and not formulating a protest

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<sup>1</sup> <https://boycottholland.wordpress.com/2016/01/24/graphical-displays-about-the-math-war>

When one is used to writing FI = FHCRM then one can drop the quotes on HCRM.

<sup>2</sup> I was forced to summarise some findings, and I could not rely on issues having been studied by Kaldewaij, whence there has been the risk that Kaldewaij might have thought that I would state views without proper argumentation. However, for his reply email, I must presume that he studied the material.

<sup>3</sup> I state this as teacher of mathematics and researcher in mathematics education, while my econometrics degree also comes with a position as teacher in economics, and while I have done my fair share in explaining aspects in economics to the general public too, see e.g. <http://thomascool.eu/SvHG/DenS/Index.html>.

about what is happening. Hopefully Kaldewaij will consider to study my analysis and check what he can transfer to the conference." (page 9 of the letter of April 15)

Well, this negative outcome is precisely what happened. Thus, I advise the supervisors of NRO to check what happened with my letter of April 15, and why Kaldewaij did not respond to it and wasn't even aware of it on June 20. There might be a simple explanation. It is more complex that Kaldewaij was reminded of the letter and replied with such error on June 29.

Let me first update the information and then return to this lack of respect.

This update might be somewhat complex, for it contains:

- difference between general education and the special position for mathematics education
- difference between research mathematics (RM) and mathematics education research (MER)
- difference between MER and mathematics education ideology (MEI): and the question how NRO deals with the "math wars"
- difference between java applets and computer algebra
- difference between Onderwijs2032 and "21<sup>st</sup> century skills" and computer algebra
- difference between (personal) examples and structural misstate
- difference between NRO and NVvW ("Onderwijs meets onderzoek").

## **(2) Update w.r.t. VOR, (research on) teacher education, KNAW and CPB, NVvW**

Updates for you would be these letters:

- <http://thomascool.eu/Papers/Math/2016-05-09-Letter-to-VOR-and-Trainers-of-teachers.pdf>
- <http://thomascool.eu/Thomas/English/Science/Letters/2016-05-17-Letter-to-KNAW-and-CPB.pdf>
- <http://thomascool.eu/Thomas/English/Science/Letters/2016-05-25-Letter-to-KNAW-and-CPB-supplement.pdf>
- Also in relation to the "Onderwijs meets onderzoek" event of June 20:  
<http://thomascool.eu/Papers/Math/2016-06-28-Letter-to-NVVW-with-Red-Card.pdf>

## **(3) Perhaps an eye-opener by pi, archi and tau, July 2016 – Part 1**

The following will discuss some qualifications and work by some persons. This is not ad hominem but concerns competence and professional standards. This evaluation required much time and attention of me, since it deals with persons. When I state that a person is not qualified for teaching or research then this might surprise but it should not be misjudged as an oversimplification, for, I looked at the qualification and work with time and care, and one only needs to check the evidence.

The following might open some eyes. If not, at least it is relevant for you to know about this too. <http://thomascool.eu/Papers/AardigeGetallen/2016-07-04-Nav-JanHogendijk-en-DonQuichot.pdf> In this issue, **Frits Beukers** is quoted.

### **(a) Relevant for NRO: A NRO project by Beukers & Doorman on DWO with applets**

- Relevant for NRO is that professor of mathematics **Frits Beukers** has no qualification for either teaching or research, while Beukers supervised a **NRO project**, <https://www.nro.nl/kb/odb08008-digitale-wiskunde-omgeving-op-havo-en-vwo-onderwijsbewijs> (DWO). The text of the project is reproduced in **Appendix C**.
- Relevant for NRO is that Beukers is quoted my NewScientist.nl and Euclides on pi versus tau, which was **both** cause for me for finding this link to NRO, **and** useful to you as an

eye-opening case that Beukers had no qualification for teaching or research. NRO might require me to look into the NRO project, but NRO should understand this this would require time and funding.

- Relevant for NRO is that this NRO project was executed by **Michiel Doorman**, who works at the *Freudenthal "Head in the Clouds Realistic Mathematics" Institute* (FHCRMI), while my letter to you of April 15 2016 requests you to stop funding "research" from FHCRMI. Doorman has no qualification for teaching or research either, but only a "thesis" and "PhD title" from the FHCRMI environment. Compare homeopaths promoting homeopaths or astrologers promoting astrologers.
- This project ran in **02/04/2009 tot 31/08/2012**, while I advised to a parliamentarian enquiry in **2008** and published "Elegance with Substance" in **2009**, see: <http://thomascool.eu/Thomas/Nederlands/Wetenschap/Artikelen/2008-04-17-WiskundeOnderwijs.pdf> and <http://thomascool.eu/Papers/Math/Index.html>
- It is likely that this DWO contained material that I identified as crooked "mathematics", see below. Part of the NRO funds were used to create applets, see **Appendix C**:

"Voor de uitvoering van de experimenten zijn de oefeningen van twee hoofdstukken (lineaire vergelijkingen, kwadratische vergelijkingen) uit de meest gangbare wiskundemethodes (Moderne Wiskunde, Getal & Ruimte) vertaald naar **Wisweb-applets** in de Digitale Wiskunde Omgeving (DWO)."

- (a) See below for my early warning on the software jungle and preference for computer algebra, as better than the inflexibility of applets.
- (b) See "*Elegance with Substance*" (EWS) (2009, 2015) and "*Conquest of the Plane*" (COTP) (2011) for linear equations.
- (c) See for quadratic functions (and equations): <http://www.wiskundebrief.nl/738.htm#5>  
This was developed in 2016 but let me mention that this could have been found by an empirical researcher who had a project running on this topic for three years in 2009-2012 and who had EWS and COTP available

#### (b) Relevant for NRO: An eye-opener about Beukers's lack of qualification

Let me review this document on tau-archi-tau and Don Quixote (it has 21 pages in Dutch).

The June 2016 edition of Euclides, **journal of the NVvW**, issue 91-7 page 7, referred to a discussion about the use of mathematical constant pi ( $\pi = 3.14\dots$ ) versus tau ( $\tau = 2\pi = 6.28\dots$ ).

- The editors of Euclides reported from an earlier discussion in NewScientist.nl of March 14 2016: <http://www.newscientist.nl/nieuws/opstand-tegen-%CF%80>
- The latter appears to be a recycle of an article from March 5 2011: <http://www.georgevanhal.nl/artikelen/opstand-tegen-%CF%80>
- My consideration since 2008 is that  $\tau$  looks too much like  $r$ , the common symbol for the radius, whence this will give horrible math exams, especially in the handwriting of pupils. My own suggestion since 2008 is to use **archi** ( $\Theta = 2\pi = 6.28\dots$ ).  
<https://boycottholland.wordpress.com/2012/02/18/mathematical-constant-archimedes>  
Legacy from 2008: <http://thomascool.eu/Papers/Math/TrigRerigged.pdf>
- Empirical research should show what works best, and this might also be another sign.
- The editors of Euclides know about my view on pi versus archi versus tau, but they do not mention this. This is burking. In 2010 they also allowed a reference to Don Quixote, which is misrepresentation, verbal abuse and slander: <http://thomascool.eu/Papers/Math/2010-12-Euclides-86-3-p130-131-a.jpg>
- It appears that NVvW is a seriously sick association. See in Dutch <http://thomascool.eu/Papers/AardigeGetallen/2016-03-11-NVvW-is-een-ernstig-zieke-vereniging.pdf> and part in English <http://thomascool.eu/Papers/Math/2016-06-28-Letter-to-NVvW-with-Red-Card.pdf>.

The NewScientist.nl quotes **Frits Beukers**, and the editors of Euclides restate his quote without the comment that Beukers has no qualification for teaching or research.

However, the combination of *Frits Beukers* and *education research* should ring alarm bells.

- Professor of mathematics **Frits Beukers** has been supervising a **NRO project**, in 2009-2012 (with an edit in 2015), see above, while he is not qualified for research in education.
  - Beukers is quoted in above articles on pi versus tau in 2011 with repeat in 2016 (did they check that he still had the same opinion ?), that this discussion is *silly* (onnozel).
    - He is right that it doesn't matter for mathematicians.
    - However, it does matter for education in mathematics how we introduce students (pupils) to the notions about the circle, when they must master these concepts for the first time.
    - What is the best approach must be determined in education research. For this, Beukers has no qualification.
  - Thus Frits Beukers doesn't understand the educational angle on pi versus archi versus tau, and he sabotages a discussion by barging in onto a subject that he has no training for. He has no qualification for teaching at that level and neither for research in education at that level.
  - Beukers is chairman of the PWN-education committee, but he must be representing the universities, since he has no training on primary or secondary education: <http://www.platformwiskunde.nl/onderwijs.htm>
    - Please observe that PWN has presented a misleading report to the minister of education: <http://thomascool.eu/Papers/AardigeGetallen/2016-03-22-Minister-krijgt-een-misleidend-Deltaplan-Wiskunde.pdf>
    - This PWN-education committee has also **Kees Hoogland**. Kees Hoogland has neither accepted the failure of RME and in 2016 abuses the biography by **John Allen Paulos** for purposes of RME, and I haven't seen criticism by Beukers: <https://boycottholland.wordpress.com/2016/03/26/abuse-of-john-allen-paulos>

#### (c) Relevant for NRO: The difference between research mathematics and mathematics education research

Let me provide some amateur comments to provide context. My proposal is that there will be a parliamentary enquiry that will look at these points more closely.

- Amateur history: In the 1920s teachers in mathematics observed that they would not continue in *mathematics research* but specialise in *teaching*. The NVvW separated from mathematics society KWG in 1925 to become an independent association with its separate journal *Euclides*. Eventually, some professors developed an interest in supporting those students and prospective teachers, and started looking into what they would be teaching. Eventually this developed also into university sections for teacher training. Nowadays there would be standards on mathematics education and its research. Many mathematics professors like Frits Beukers don't understand this.
- Amateur psychology: Perhaps the Dutch word "hoogleraar" = "high teacher", is confusing, as it suggests a generalisation to a higher degree of competence while it actually is a specialisation to the academia. Frits Beukers' wife does remedial teaching. We can welcome this mutual interest, but interest is not the same as qualification. This combination happens more often. **Hans Freudenthal** had a wife involved in Jena-plan schools. One can imagine the mutual interest. However, interest is not the same as qualification.

#### (d) Relevant for NRO: NRO project execution by Michiel Doorman

Said **NRO project** has been executed by **Michiel Doorman** at *Freudenthal "Head in the Clouds Realistic Mathematics" Institute* (FHCRMI). However, as I informed you in my letter of April 15 2016, Freudenthal Institute is a bastion of *ideologues* on "**realistic mathematics education**" (RME) and should not be at a university.

- In 2015-2016 Doorman is **member of the board of NVvW**, as said a seriously sick association: <http://thomascool.eu/Papers/Math/2016-06-28-Letter-to-NVvW-with-Red-Card.pdf>

- In the discussion below I must conclude that Doorman has the RME ideological bend and is no proper researcher. This takes a bit more space below. This discussion serves two purposes. For NRO it is an example of FHCRMI. For the 2016 annual meeting of NVvW it provides perspective on the functioning of the NVvW board.

#### **(4) Qualifications and work by NRO-"researcher" Michiel Doorman**

The discovery of the NRO-project caused me to look a bit deeper into the qualifications and work by NRO-"researcher" Michiel Doorman.

Every step of digging deeper generated another problematic issue. This created so much material that this letter to you would have become too long, and hence I reported on this yesterday on my weblog.

<https://boycottholland.wordpress.com/2016/07/11/pierre-van-hiele-and-michiel-doorman-doorman-misleads-indonesia-too>

The following is a limited summary of that weblog text.

Google shows a "keynote speaker presentation" of Doorman for **Yogyakarta** in 2016:

<http://seminar.uny.ac.id/icriems> Below picture is reproduced from

[http://seminar.uny.ac.id/icriems/sites/seminar.uny.ac.id.icriems/files/DSC\\_5548.JPG](http://seminar.uny.ac.id/icriems/sites/seminar.uny.ac.id.icriems/files/DSC_5548.JPG)

There is a "proceeding" text of two pages that is short enough to quote in **Appendix D**. The presentation sheets are not subtler, though perhaps the spoken text was, but that would be unlikely given the text and sheets.

#### **(A) Doorman promotes RME while it has failed.**

- (1) Doorman (in **Appendix D**) quotes mostly RME-"researchers" and considers a question of TIMSS 2003 with an international score of 38% and a Dutch score of 74% and claims, misleadingly:

"This cannot fully attributed to the implementation of RME, but it strengths the feeling that this approach contributes to the quality of mathematics education."

- (2) However, consider the **KNAW 2009 report on arithmetic education**

<https://www.know.nl/nl/actueel/publicaties/rekenonderwijs-op-de-basisschool>

This concluded that there is no convincing evidence that there was a difference in results between RME and traditional math ed (TME).

Scientists would have concluded that FHCRMI should not be at a university, but the KNAW committee was headed by mathematician Jan Karel Lenstra who is no scientist but mathematician without qualification for teaching or research, and the KNAW committee failed to draw the proper scientific inference (and rather resorted to the "polder model").

- (3) Then consider my criticism of KNAW in 2014 and supplement in 2015:

<http://www.wiskundebrief.nl/721.htm#5> and above letter 2016 to KNAW and CPB.

- (4) See also why other critics of KNAW fail to draw the proper conclusion:

<http://thomascool.eu/Papers/Math/2015-09-15-Breach-by-Jan-van-de-Craats-and-Ben-Wilbrink-wrt-scientific-integrity.html>

Doorman's 2016 text is *unrepentingly supportive of RME* while the evidence shows that it is a failure, and while there also is a sound scientific explanation why it is a failure: namely a confusion of *processes of learning* with *applied mathematics*.

- Learning goes *from concrete to abstract* and *from vague to precise*.  
<https://boycottholland.wordpress.com/2015/09/03/pierre-van-hiele-and-stellan-ohlsson>
- See here on the confusion by Hans Freudenthal on applied mathematics:  
<http://thomascool.eu/Papers/COTP/Index.html> (2011, Ch. 15.2 Didactics, p 201)  
<http://thomascool.eu/Papers/NiceNumbers/Index.html> (2015, p 101)

- RME is barking up the wrong tree when the true problem is the difference between "mathematics" (created by abstract thinking mathematicians) versus mathematics (developed by empirical research into what students can understand), see the paradigm shift <http://thomascool.eu/Papers/Math/2016-05-09-Letter-to-VOR-and-Trainers-of-teachers.pdf>

**(B) Doorman refers to (intellectually stealing) Freudenthal instead of (victim) Van Hiele**

Subsequently, in the presentation sheets 44-49 (if I have this correctly), <http://seminar.uny.ac.id/icriems/sites/seminar.uny.ac.id/icriems/files/M%20Doorman.pptx> Doorman refers to mathematics professor Hans Freudenthal as the originator of the notion of "anti-didactic inversion", while the notion and actual *empirical theory and evidence* was given by mathematics teacher Pierre van Hiele in his thesis in 1957. What happened is that Freudenthal intellectually appropriated the idea without proper reference. Doorman repeats that misrepresentation. The big problem w.r.t. Doorman is that I alerted him to this in December 2015, and that his reply to this dodged the question. When Doorman would have corrected properly then I would have regarded this particular issue as settled, but he made the issue worse by not looking into this properly. See page 8: <http://thomascool.eu/Papers/AardigeGetallen/2016-03-11-NVVW-is-een-ernstig-zieke-vereniging.pdf>



## (5) *Perhaps an eye-opener by pi, archi and tau, July 2016 – Part 2*

In the above I first looked at the qualifications of **Frits Beukers** and subsequently looked at the qualifications of **Michiel Doorman**. Apparently NRO thought that these qualifications were sound, but the effect for NRO Project ODB08008 is **garbage in, garbage out**.

### (a) A general situation

In the **NRO project** with **Frits Beukers** and **Michiel Doorman** we see the same cocktail that has been wreaking havoc in mathematics education and its research, the combination of:

- *abstract thinking mathematicians* and
- *ideology on education*.

### (b) Special circumstances w.r.t. beta sciences and computers

There are some circumstances that "cement" the cocktail (or make it addictive), namely concerning the sciences and ICT.

- Please observe that the sciences (physics, biology, ...) are easy victims of RME. The sciences provide so-called "contexts", and few researchers in science education really look into (or care about) mathematics education research. One would expect that the sciences would kick out the ideologues of RME because they don't follow the methodology of science, but when the sciences don't look into what the ideologues are doing then this explains the morass.
- Robbert Dijkgraaf (physicist) as president KNAW apparently was involved in setting up the KNAW 2009 committee, but the network of Alexander Rinnooy Kan (operations research) generated chairman Jan Karel Lenstra (operations research) who has no qualification for teaching or empirical research (he does his "operations research" in mathematical manner).
- The NRO project is about "a digital mathematics space" (DWO). The DWO at Freudenthal "Head in the Clouds Realistic Mathematics" Institute (FHCRMI) consists mostly of Java applets. These constrain the students to the particular mold created by the designer. Sometimes this might work, as you better not mix your salad by using your bicycle. For mathematics this constraining however is unwise, and it is wiser to adopt a system of **computer algebra**, though use this wisely, see <https://boycottholland.wordpress.com/2015/12/08/computer-algebra-is-a-revolution-but-21st-century-skills-q>.  
PM. At Freudenthal "Head in the Clouds Realistic Mathematics" Institute (FHCRMI) **Paul Drijvers** is known to have looked at computer algebra. It leads too far here to look into this failure. Drijvers has been appointed to "professor" at FHCRMI but see my protest that he shouldn't have been appointed at a university.

### (c) Conclusion on how the NRO project highlights key points for understanding

This issue of the NRO project with Beukers and Doorman highlights these points:

- (i) NRO gives subsidies and "status" to so-called "researchers" who are no proper researchers, and are not qualified for education or education research.
- (ii) NRO has a crooked rule on PROO funds **that impedes my fine research** (like on archi: first design and re-engineering before doing any testing). This impediment is:
  - (a) not only in the research itself
  - (b) but also for the use of funds for open access peer reviewed journals
  - (c) and the possibility to attract other researchers to the paradigm shift
  - (d) and also in reputation, that I cannot refer to NRO-funded research and such publications and potentially find employment at university,



- (e) and also in reputation how people treat my questions and findings (burking, Don Quixote, use inconsiderate arguments to send me off to go jump into the lake).<sup>4</sup>
- (iii) Why does NRO **assume ex cathedra and without theory and evidence**, that a teacher of mathematics (with also a background in methods, as an econometrician) cannot do fundamental research ? Doesn't there exist the fine example of mathematics teacher Pierre van Hiele (1909-2010) who did similar fine work ?
  - (iv) Why does NRO assume that mathematics education research is "normal and decent science" while the evidence is that there are these math wars ? (Remember from my letter of April 15: "In 2007-2009, in the heyday of the math war between RME and TME, Kaldewaij was Head of secondary education at the Inspectorate." Nowadays, that math war has gone underground.
  - (v) Isn't NRO aware of the special position in the education of all other subjects for mathematics education (learning how to deal with patterns, models and abstractions, and developing a psychological self-image of confidence and competence on this) ?
  - (vi) What are **teachers** to think about such "researchers" (Beukers and Doorman) and their "results" ? Will teachers at the annual convention of NVvW vote for such "researchers" to become members of the board ? NRO is not responsible for what other people infer, but NRO is responsible for giving subsidy to "researchers".
  - (vii) What are **journalists** to think about above combination ? Will journalists quote such "researchers" more easily ? NRO is not responsible for what other people infer, but NRO is responsible for giving subsidy to "researchers".
  - (viii) Perhaps NRO has the attitude "we do what we like about interpreting our mission, and it is up to other people to think whatever they think", but please answer these questions so that outsiders know what you really think and do instead of the beautiful advertisement about your "mission" about "research in education".

## (6) *Syllogism on pain*

Let me return to "tears in the classroom" on page 2 of my letter to you of April 15 2016.

### (A) There is the following syllogism on education:

Some cases of "mathematics" (instead of mathematics) cause verbal abuse.  
 Some cases of verbal abuse hurt as much as sexual abuse.  
 ----- Ergo  
 Some cases of "mathematics" (instead of mathematics) hurt as much as sexual abuse.

The latter would be logically correct, but the latter intersection might also be empty, since there is no explicit report about this particular combination. This however only concerns the *extent* of the pain and assault on self-image. It already has been established that there is pain involved.

<sup>4</sup> An example is in **Appendix E**. Given this present discussion w.r.t. Onderwijs2032 and ICT, I thought it a good idea to enquire at **Kennisnet.nl** whether I could talk with some of the people there about the ICT infrastructure on mathematics education – while mathematics education is relevant for all subjects in education. However, they presume that it is not useful to speak with me: "Kennisnet heeft uiteindelijk maar beperkte capaciteit, waardoor we onze activiteiten moeten richten op vraagstukken die breed leven. Het feit dat in de vele gesprekken die wij met onderwijs en marktpartijen hebben, geen specifieke knelpunten m.b.t. ict-ondersteuning en wiskunde worden genoemd, betekent dan ook dat wij hier voornamelijk geen aandacht aan kunnen geven." Observe that the reference to "specifiek" is distractive, since their mission statement is also: "Het geven van strategisch advies". Indeed, given the attitude of FHCRMI w.r.t. RME, DWO and RME and "21<sup>st</sup> century skills" it may be likely that people who Kennisnet.nl speaks with haven't heard much about computer algebra since 1990. There is ample reason to change this. If Kennisnet.nl claims to be the expert on ICT infrastructure, it would be relevant to speak with them on this. Kennislink.nl catalogues my enquiry also as an "incident" but my context remains the advice for a parliamentary enquiry.  
<http://www.ipetitions.com/petition/tk-onderzoek-wiskundeonderwijs>

A future society will wonder how current society allowed this situation of pain and torture to continue. My suggestion to NRO is to look at this issue with priority.

### **(B) Parallel with Catholic Church abuse scandal**

There was the scandal in the Catholic Church with priests and monks in boarding houses, sexually abusing children entrusted to their care.

"The statement, read out by Archbishop Silvano Tomasi, the Vatican's permanent observer to the UN, defended its record by claiming that "available research" showed that only 1.5%-5% of Catholic clergy were involved in child sex abuse." Guardian 2009, <https://www.theguardian.com/world/2009/sep/28/sex-abuse-religion-vatican>, also [https://en.wikipedia.org/wiki/Roman\\_Catholic\\_sex\\_abuse\\_cases\\_by\\_country](https://en.wikipedia.org/wiki/Roman_Catholic_sex_abuse_cases_by_country)

As far as I understand, it wasn't an issue of sadism, that these abusers derived enjoyment from the pain by their victims. When we draw a parallel with mathematics education, then it is not an issue of sadism.

The main issue is the egotism and betrayal, of putting one's own needs above those of the children entrusted to one's care.

The parallel for mathematics education is that teachers of mathematics, trained for abstraction, put their preferred way of doing mathematics education (realistic or traditional) egotistically above the needs of the children entrusted to their care. Instead of doing so, the first thing to do would be to determine empirically what works best.

The parallel is also that I reported this misstate in 2008 to the board of NVvW, the Dutch association of teachers of mathematics, and that this board, instead of being alarmed, allowed the misstate to continue. See the collected responses to EWS: <http://thomascool.eu/Papers/Math/2009-10-15-Reacties.pdf> Instead, the board of NVvW allowed people to misrepresent my work and slander about my person, still up into 2016. <http://thomascool.eu/Papers/Math/2016-06-28-Letter-to-NVVW-with-Red-Card.pdf>

### **(C) The data that support above syllogism**

Lyons & Beilock (2012) reported on

"When Math Hurts: Math Anxiety Predicts Pain Network Activation in Anticipation of Doing Math",

with this key statement from the abstract:

"Our data suggest that pain network activation underlies the intuition that simply anticipating a dreaded event can feel painful."

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0048076>

PM. The Dutch NewScientist.nl reported on the pain study here:

<http://www.newscientist.nl/nieuws/wiskundevrees-is-pijnlijk>

My point is that we should not speak about "math anxiety":

- This doesn't quite concern mathematics but so-called "mathematics".
- What is in the programme has a lot of crookedness, and students are right that they should have misgivings. <http://thomascool.eu/Papers/Math/2016-05-09-Letter-to-VOR-and-Trainers-of-teachers.pdf>
- A better term is " "mathematics"-anxiety " or "torturing students".

Fiori (1999) "Math-Abused Students: Are We Prepared to Teach Them?", Mathematics Teacher, v92 n5 p403-06 May, has this abstract:

"Discusses students whose mathematics anxiety resulted from past abuse, verbal or physical, by a teacher or parent while doing mathematics. Presents two examples of math abuse, the resulting math anxiety, and how the issues were addressed."

<http://eric.ed.gov/?id=EJ590287> and

[https://www.jstor.org/stable/27971020?seq=1#page\\_scan\\_tab\\_contents](https://www.jstor.org/stable/27971020?seq=1#page_scan_tab_contents)

With the march of psychology into education ("don't target the person but mention what is problematic in behaviour"), we may presume that verbal abuse has been reduced, but:

- see the paradigm shift that many problems derive from "mathematics" instead of mathematics (e.g. the pi – archi - tau case): <http://thomascool.eu/Papers/Math/2016-05-09-Letter-to-VOR-and-Trainers-of-teachers.pdf>
- there is still much to improve about the attitude "Okay, you might not understand mathematics but at least learn how to solve the sums".

In 2007 there was this report on a finding by Martin Teicher: "Verbal beatings hurt as much as sexual abuse", <http://news.harvard.edu/gazette/story/2007/04/verbal-beatings-hurt-as-much-as-sexual-abuse>

## **(7) Conclusion**

NRO should not suppose that I am employed at NRO and that I would report my findings and criticism in the manner that fully fits the NRO mindset. When judging funding proposals, perhaps NRO has the task to force every submission into its fold, but, my approach is that of a scientist and not of a funds allocator, and this letter is science in general, and NRO has to respond to it in scientific manner.

Thus, I expect from NRO a reply to my April 15 letter and this letter of July 12 that absorbs the new information provided there. Let NRO clarify how this new information affects what Kaldewaij states: **"onze opdracht als regieorgaan beperkt is tot regie/programming, financiering en kennisbenutting"**. For example, stop funding "research" from FHCRMI. Stop relying on "experts" who are no researchers but ideologues. Distribute copies of "Elegance with Substance" to teachers and researchers so that they can start thinking about the paradigm shift too. Schedule research into the direction of "Neoclassical Mathematics Education" (NME). Write to the minister of education that there should be a Simon Stevin Institute, and that the current structure of NRO is inadequate.

Since I am proposing a paradigm shift in mathematics education and its research, I am quite understanding for readers who have not absorbed this shift yet, and who still must embark upon a study to do so. This might be problematic for director Kaldewaij with his background as teacher of Dutch and development into linguistics and education in general, thus, without this understanding about the general role for mathematics since he thinks about "mathematics". The key point remains: do not dodge the questions but deal with them.

I kindly request PROO-secretary De Haas to forward this letter to the PROO council members of whom I haven't found an email address on the internet.

I will include this letter on my website.

Sincerely yours,

Thomas Cool / Thomas Colignatus  
Econometrician (Groningen 1982) and teacher of mathematics (Leiden 2008)  
Scheveningen  
<http://thomascool.eu>

## **Appendix A. Reminder email by TC to Kaldewaij**

Date: Tue, 21 Jun 2016  
To: kaldewaij at nwo.nl  
From: Thomas Cool / Thomas Colignatus  
Subject: N.a.v. "onderwijs meets onderzoek" Fundamenteel onderzoek (PROO) en onderzoek aan onderwijs in wiskunde  
Cc: (...)

Geachte dr. Kaldewaij,

Wij spraken elkander kort gisteren op "onderwijs meets onderzoek".

Onder (1) hieronder is mijn aanbiedingsemail aan NRO van 15 april. De brief staat hier:

<http://thomascool.eu/Papers/Math/2016-04-15-Letter-to-NRO.pdf>

U kon u deze brief niet herinneren maar we hebben pas gisteren kennisgemaakt, dus wellicht is er een verwarring. Het aanbiedingsemail spreekt over "gelieve kennis te nemen" maar ik verwacht een antwoord, zoals t.a.v. de mogelijkheid als leraar wiskunde tot het indienen van voorstellen tot fundamenteel onderzoek, ook al sta ik nu niet voor de klas en ben ik niet gepromoveerd.

(...)

## **Appendix B. Answer by Kaldewaij to the reminder email**

In the following message, the emphasis is mine.

From: "Kaldewaij, J. [Jelle]" j.kaldewaij at nwo.nl  
To: "Thomas Cool / Thomas Colignatus"  
Subject: RE: N.a.v. "onderwijs meets onderzoek" Fundamenteel onderzoek (PROO) en onderzoek aan onderwijs in wiskunde  
Date: Wed, 29 Jun 2016

Geachte heer Cool,

In uw e-mail en in de verwijzingen die u daarin hebt opgenomen stelt u zeer veel zaken aan de orde **met in meer of mindere mate een mogelijke** betrokkenheid van het NRO.

**Aangezien onze opdracht als regieorgaan beperkt is tot regie/programmering, financiering en kennisbenutting, beperk ik me in deze reactie** tot de voorwaarden voor subsidieverlening.

Ten aanzien van de subsidieverlening zijn er specifieke voorwaarden gesteld aan indieners en de inhoud van het onderzoek. Zoals u terecht stelt hoort hier over het algemeen de inbreng van onderzoekers uit universiteiten of andere onderzoeksinstituten bij, zeker waar het fundamenteel onderzoek betreft. Voor praktijkgericht onderzoek hebben we in een enkele ronde de mogelijkheid geopend voor netwerken van docenten in te dienen.

Wilt u kans maken om via ons subsidie te verwerven, dan is het noodzakelijk om aan dergelijke criteria te voldoen. Hiernaast bestaat nog het Leraren Ontwikkel Fonds (LOF) van de Onderwijscoöperatie voor het indienen van ontwikkel- en onderzoeksvoorstellen; daarvoor geldt evenwel de noodzaak om als docent werkzaam te zijn.

Op dit moment zien we geen andere mogelijkheden om uw deelname aan onderwijsonderzoek te bevorderen. Daarmee lijkt ons een afspraak waarin u het kernprobleem ten aanzien van onderwijs in wiskunde toelicht, niet zinvol.

Ik wens u succes met het vervolg van uw activiteiten.

Met vriendelijke groet,

Jelle Kaldewaij

dr Jelle Kaldewaij | Directeur | Nationaal Regieorgaan Onderwijsonderzoek | Postadres:  
Postbus 93461, 2509 AL Den Haag | Bezoekadres: Laan van Nieuw Oost Indië 300, 2593 CE  
Den Haag | j.kaldewaij [at] nwo.nl | www.nro.nl | Tel: 070 344 0738

### **Appendix C. NRO-project ODB08008: Digitale Wiskunde Omgeving op HAVO en VWO – OnderwijsBewijs**

<https://www.nro.nl/kb/odb08008-digitale-wiskunde-omgeving-op-havo-en-vwo-onderwijsbewijs/>

QUOTE

#### **Digitale Wiskunde Omgeving op HAVO en VWO – OnderwijsBewijs**

NWO-projectnummer: ODB08008  
Titel onderzoeksproject: Efficiënt wiskunde oefenen  
Looptijd: 02/04/2009 tot 31/08/2012  
Status: Afgerond  
Laatste bewerking: 06/10/2015

Leerlingen die algebraïsche vaardigheden oefenen in een digitale leeromgeving zouden betere leerprestaties leveren, zo is de verwachting. In dit onderzoek kon dat niet worden aangetoond. Leerlingen die in een Digitale Wiskunde Omgeving werkten presteerden niet beter dan leerlingen uit de controlegroepen die met pen en papier werkten. In een experimenteel onderzoek onder tweedejaars havo/vwo leerlingen is nagegaan of het oefenen van algebraïsche vergelijkingen met de computer effectiever is. Voor de uitvoering van de experimenten zijn de oefeningen van twee hoofdstukken (lineaire vergelijkingen, kwadratische vergelijkingen) uit de meest gangbare wiskundemethodes (Moderne Wiskunde, Getal & Ruimte) vertaald naar Wisweb-applets in de Digitale Wiskunde Omgeving (DWO). Uit de nulmeting bleek dat de DWO-groep begon met een achterstand. Deze achterstand haalden ze in de loop van het experiment in, maar in het tweede deel van de retentiemeting bleken ze weer op achterstand te staan. De interventie had dus niet het beoogde effect. De onderzoekers opperen een aantal mogelijke verklaringen. Het leren met de computer is wellicht vluchtiger, dat wil zeggen dat leerlingen al klikkend sneller tot een oplossing komen. Ze denken dan mogelijk minder na over wat ze doen, waardoor de redenering achter de oplossing niet beklijft. Bij de interventie werd gebruikgemaakt van correctieve feedback in plaats van procedurele feedback. De laatste is mogelijk beter voor het ontwikkelen en verstevigen van wiskundestrategieën. Bovendien kregen de DWO-leerlingen persoonlijke accounts, zaten daarom vaak alleen achter de computer en werkten weinig samen. Dit kan een negatief leereffect hebben. Tot slot lieten de docenten zich waarschijnlijk inspireren door de didactische aanpak van de online-modules en gebruikten de systematische aanpak ervan ook voor de pen-en-papier opdrachten.

#### **Projectleider(s)**

Naam	Instelling	E-mail
Prof. dr. F. Beukers	Universiteit Utrecht	F.Beukers at uu.nl

### Projectuitvoerder(s)

Naam	Instelling	E-mail
Dr. L.M. Doorman	Universiteit Utrecht	m.doorman at uu.nl

### Publicatie(s)

Efficiënt wiskunde oefenen in een digitale omgeving  
<https://www.nro.nl/wp-content/uploads/2014/11/Effici%C3%ABnt-wiskunde-oefenen-in-een-digitale-omgeving.pdf>

### Relevante links(s)

Didactief-special OnderwijsBewijs (december 2014),  
[https://onderwijsdatabank.s3.amazonaws.com/downloads/Special\\_Onderwijsbewijs\\_Didactief\\_december\\_2014.pdf](https://onderwijsdatabank.s3.amazonaws.com/downloads/Special_Onderwijsbewijs_Didactief_december_2014.pdf)

Efficiënt wiskunde oefenen in een digitale omgeving, <http://www.fisme.science.uu.nl/ffdwo>  
WisWeb van de Universiteit Utrecht, <http://www.fisme.science.uu.nl/wisweb>  
Digitale Wiskunde Omgeving, <http://www.fisme.science.uu.nl/dwo>

UNQUOTE

### **Appendix D. Keynote Speaker Michiel Doorman Yogyakarta 2016**

Proceeding of 3<sup>rd</sup> international conference on research, implementation and education of mathematics and science, Yogyakarta, 16–17 May 2016,

<http://seminar.uny.ac.id/icriems> ("keynote speaker's presentation files")

[http://seminar.uny.ac.id/icriems/sites/seminar.uny.ac.id/icriems/files/DSC\\_5548.JPG](http://seminar.uny.ac.id/icriems/sites/seminar.uny.ac.id/icriems/files/DSC_5548.JPG)

<http://seminar.uny.ac.id/icriems/sites/seminar.uny.ac.id/icriems/files/prosiding/4%20Michiel.pdf>

QUOTE (pdf U-26:27)

*What Can Mathematics Education Contribute To Preparing Students For Our Future Society?*

Michiel Doorman, 2016

### **Abstract**

Mathematics education has to prepare students for society, work and further study. One of the goals of education is to support students in developing mathematical skills and understandings that can be used flexibly in new or unfamiliar problem situations. Characteristics of support that contribute to this goal appear to be the integration of open problems and rich contexts that evoke inquiry by students in textbooks, and the careful use of didactic models that link up with students' intuitive inventions. Teachers have an important role in guiding students through these open problems and in introducing these didactic models. To support teachers, such open problems can be accompanied with lesson plans and suggestions for meta-cognitive prompts."

### **Text**

Mathematics education has to prepare students for society, work and further study. However, international studies show that much of what is taught in school seems to be lost when you assess it not immediately after the lessons or in different contexts. An example is a question about fractions in the TIMSS 2003 Study for grade 8 students: A scoop holds  $\frac{1}{5}$  kg of flour.

How many scoops are needed to fill a bag with 6 kg of flour? The international average of a full credit for this item was 38%.

Such low scores must have us reflect on what we teach and how we teach it. Obviously, **citizens in current society should not be able to solve this scoop problem by heart, [emphasis by TC]** but you would expect that students are able to solve it with pen and paper at hand. The steps underlying the calculation are rather elementary and fundamental for proportional and algebraic reasoning in a wide range of topics in mathematics education at secondary school. Why are students lost when they don't remember the algorithm?

An approach to mathematics education that tries to provide for learning trajectories that support students in understanding and tracing concepts and skills is Realistic Mathematics Education (RME). Rather than beginning with abstractions or definitions to be applied later, this approach starts with rich contexts that ask for mathematical organization [1]. Well-chosen problems offer opportunities for students to learn to inquire and to develop informal, highly context-specific models and problem solving strategies. These informal solving procedures then function as foothold inventions for formalization, generalization and inquiry-strategies. Didactic models that link up with students' inventions are introduced in generalizing activities to promote level raising [2]. As a consequence, during these activities the model and the situations being modelled co-evolve. Modelling in this view is a process of reorganizing both activities and the situation and drives the learning process of the students [3]. The aim of this approach is that students are involved in the (re)invention of mathematics and that they are able to trace the structure and representations of mathematical concepts and skills.

In addition to this learning-oriented importance of the use of rich contexts, the relevancy of what is learned can also be highlighted. Research findings show that students experience and understand the functionality, purpose and utility of disciplinary knowledge in the workplace [4]. For this to happen however, it is important that tasks within workplace contexts also fit the goals of the curriculum. In the context of work the use of science and mathematics can emerge from the activities and tasks of the workplace [5].

Both RME and the connection to the world of work will make mathematics and science more meaningful and relevant to students. In a classroom where students inquire problem situations create mathematical inventions, students take an active role, pose questions, explore situations, find their path to solutions and communicate their reflection. Such approaches aim to promote students' curiosity, engagement and learning in-depth [6]. For this to happen, teachers need to extend their teaching repertoire. One of the challenges for professional development is to connect the learning of new teaching strategies or pedagogies with teachers' practices within the classroom. Teachers should feel the need and have the resources to adopt new ideas and to implement them in their daily practice. Classroom materials, like tasks for students, can play a crucial role in this implementation process.

Tasks have the potential to reflect innovative aims and to inspire and support teachers in implementing these aims [7]. However, whether a teacher recognizes and exploits this potential of a task and how she/he transforms it into her/his teaching is a complex process and highly depends on the adaptability of the task to his or her practice [8]. Well described lesson plans and meta-cognitive prompts appeared to be powerful tools for supporting teachers in implementing new and innovation-oriented tasks [9]. In the Netherlands RME influenced the current textbooks in primary education. The full credit score of Dutch students on the above scoop-item was 74%. This cannot fully [be] attributed to the implementation of RME, but it strength[en]s the feeling that this approach contributes to the quality of mathematics education.

## References

[1] Van den Heuvel-Panhuizen, M., & Drijvers, P. (2013). Realistic mathematics education. In S. Lerman (Ed.), *Encyclopedia of Mathematics Education* (pp. 521-525). New York: Springer.

[2] Van den Heuvel-Panhuizen, M. (2003). The didactical use of models in Realistic Mathematics Education: An example from a longitudinal trajectory on percentage. *Educational Studies in Mathematics*, 54(1), 9-35.

[3] Gravemeijer, K., & Stephan M. (2002). Emergent models as an instructional design heuristic. In K. P. E. Gravemeijer, R. Lehrer, B. v. Oers & L. Verschaffel (Eds.), *Symbolizing, modeling and tool use in mathematics education*(pp. 145-169). Dordrecht, The Netherlands: Kluwer Academic.

[4] Ainley, J., Pratt, D., & Hansen, A. (2006). Connecting engagement and focus in pedagogic task design. *British Educational Research Journal*, 32(1), pp. 23-38.

[5] Hoyles, C., Noss, R., Kent, P., & Bakker, A. (2010). *Improving mathematics at work: The need for techno-mathematical literacies*. London: Routledge.

[6] Maas, K. and Artigue, M. (2013). Implementation of inquiry-based learning in day to day teaching: a synthesis. *ZDM The International Journal on Mathematics Education* 45, pp. 779-795.

[7] Kieran, Carolyn, Doorman, L.M. & Ohtani, Minoru (2015). Frameworks and Principles for Task Design. In Anne Watson & Minoru Ohtani (Eds.), *Task Design In Mathematics Education -an ICMI Study 22*(pp. 19-81) (63 p.). Cham Heidelberg New York Dordrecht London: Springer.

[8] Remillard, J. T. (2005). Examining key concepts in research on teachers' use of mathematics curricula. *Review of Educational Research*, 75, pp. 211-246.

[9] Wijaya, Ariyadi, Van den Heuvel-Panhuizen, M. & Doorman, Michiel (19.03.2015). Opportunity-to-learn context-based tasks provided by mathematics textbooks. *Educational Studies in Mathematics*, 89(1), pp. 41-65

UNQUOTE

### ***Appendix E. Asking Kennisnet.nl for an expert-to-expert talk***

For the following I referred to a paper of mine, but perhaps I should have given more details, to alert Kennisnet.nl to my expertise w.r.t. ICT. I presumed that there would be no reason to refuse a talk, and, if they would consider such a refusal, then they would first do a background check. It would be somewhat strange to first have to do an "entrance exam" before a public institution would be willing to speak with someone with a professional background.

In this case they refuse to speak with me because I indicated that there would be an issue w.r.t. ICT infrastructure for education related to mathematics education, and they hold that there would be no such issue "because nobody who they talk to have mentioned such and issue".

I am reminded of Ignaz Semmelweis (1818-1865) who discovered that women after giving birth died from "childbed fever", because doctors didn't wash their hands. Semmelweis was the only one to observe this, and hospital directors apparently refused to speak with him "because nobody who they talk to mentioned such an issue". Wikipedia: "Semmelweis's practice earned widespread acceptance only years after his death, when Louis Pasteur confirmed the germ theory and Joseph Lister, acting on the French microbiologist's research, practiced and operated, using hygienic methods, with great success. In 1865, Semmelweis was committed to an asylum, where he died at age 47 of pyaemia, after being beaten by the guards, only 14 days after he was committed."

[https://en.wikipedia.org/wiki/Ignaz\\_Semmelweis](https://en.wikipedia.org/wiki/Ignaz_Semmelweis)



Date: Fri, 24 Jun 2016 09:07:07 +0200 TC -> Kennisnet.nl .....17  
Date: Tue, 28 Jun 2016 15:15:07 +0000 Kennisnet.nl -> TC .....17  
Date: Wed, 06 Jul 2016 08:47:33 +0200 TC -> Kennisnet.nl .....18  
Date: Wed, 06 Jul 2016 08:50:03 +0200 Kennisnet.nl -> TC .....18  
Date: Wed, 06 Jul 2016 11:02:44 +0200 Kennisnet.nl -> TC .....19  
Date: Wed, 06 Jul 2016 14:18:13 +0200 TC -> Kennisnet.nl .....19  
Date: Mon, 11 Jul 2016 11:05:01 +0200 Kennisnet.nl -> TC.....20

**Date: Fri, 24 Jun 2016 09:07:07 +0200 TC -> Kennisnet.nl**

To: a.tenbrummelhuis at kennisnet.nl  
From: Thomas Cool / Thomas Colignatus  
Subject: Wie bij u doet de ict-ondersteuning van wiskunde ?

Geachte heer Ten Brummelhuis,

Ik heb pas vorige week ontdekt dat Kennisnet bestaat ... De vraag die opkomt wie bij u de ict-ondersteuning van wiskunde doet. Ik zou het fijn vinden wanneer er een gesprek mogelijk zou zijn.

Ik heb in 1999 het probleem hieromtrent al uitgelegd aan de hand van de situatie bij economie, maar sinds 2008 heb ik ook de onderwijsbevoegdheid voor wiskunde zelf.

<http://econpapers.repec.org/paper/wpawuwpgt/9904001.htm>

Mijn website is inmiddels verplaatst van dataweb.nl naar thomascool.eu, zie eventueel

<http://thomascool.eu/Papers/Math/Index.html>

Met vriendelijke groet,

Thomas Cool / Thomas Colignatus  
Econometrist en leraar wiskunde  
Scheveningen

**Date: Tue, 28 Jun 2016 15:15:07 +0000 Kennisnet.nl -> TC**

From: "Support Kennisnet"  
To: Thomas Cool / Thomas Colignatus  
Subject: Wie bij u doet de ict-ondersteuning van wiskunde ?

Beste Thomas,

Hartelijk dank voor je mail.

Graag wil ik vragen of je je vraag zou kunnen specificeren. Wat is precies de vraag waar je nu tegenaan loopt? Dan kan ik kijken of we hier intern een specifiek antwoord op hebben.

Ik hoor het graag. Alvast hartelijk dank.

Met vriendelijke groet,

**XYZ**  
Medewerker Customer Services

T 0800-321 etcetera  
W kennisnet.nl

Paletsingel 32, 2718 NT Zoetermeer  
Postbus 778, 2700 AT Zoetermeer

**Date: Wed, 06 Jul 2016 08:47:33 +0200 TC -> Kennisnet.nl**

To: "Support Kennisnet"  
From: Thomas Cool / Thomas Colignatus  
Subject: Re: Wie bij u doet de ict-ondersteuning van wiskunde ?

Beste XYZ,

Mijn vraag was: "De vraag die opkomt wie bij u de ict-ondersteuning van wiskunde doet. Ik zou het fijn vinden wanneer er een gesprek mogelijk zou zijn."

In de link uit 1999 die ik aan Ten Brummelhuis gaf, beschrijf ik dat schrijvers van software (en dan mogelijk ook ict-ondersteuners van wiskunde bij Kennisnet) tegen het probleem aanlopen dat wiskundigen en pakketten voor computer algebra vaak andere notaties gebruiken, soms maar een beetje verschillend, maar toch wel degelijk anders.

Mijn voorstel om dit op te lossen was werken aan een internationaal protocol. Anderen hebben dit probleem ook gezien en hebben mathml gemaakt, maar ik vrees dat dit nog niet echt de oplossing is.

Ik zie nu bijv. ook bottlenecks bij de Tussentijdse Diagnostische Toets.

Kortom, het lijkt me informatief voor beide partijen wanneer ik zou kunnen spreken met degene(n) die bij u de ict-ondersteuning van wiskunde doen.

Met vriendelijke groet,

Thomas Cool / Thomas Colignatus  
Econometrist en leraar wiskunde  
Scheveningen

**Date: Wed, 06 Jul 2016 08:50:03 +0200 Kennisnet.nl -> TC**

To: Thomas Cool / Thomas Colignatus  
Subject: [#88897]: Re: Wie bij u doet de ict-ondersteuning van wiskunde ?  
From: "Kennisnet support"

Thomas Cool / Thomas Colignatus,

Bedankt dat je contact met ons hebt opgenomen. Dit is een automatisch antwoord ter bevestiging van de ontvangst van je ticket. Ons team zal zo snel mogelijk contact met je opnemen. Zorg bij reacties dat de ticket-ID in het onderwerp blijft, zodat we je reacties kunnen volgen.

**Ticket-ID:** 88897

**Onderwerp:** Re: Wie bij u doet de ict-ondersteuning van wiskunde ?

**Afdeling:** Servicedesk (SD)

**Type:** Issue

**Status:** Open

**Prioriteit:** Incident

Je kunt de status of bijwerking van deze ticket online bekijken op:  
<https://support.kennisnet.org/Tickets/Ticket/View/88897>

Met vriendelijke groet,

Kennisnet

**Date: Wed, 06 Jul 2016 11:02:44 +0200 Kennisnet.nl -> TC**

To: Thomas Cool / Thomas Colignatus

Subject: [#88897]: Re: Wie bij u doet de ict-ondersteuning van wiskunde ?

From: "Kennisnet Binnendienst"

Beste Thomas,

Ik heb even navraag gedaan bij collega's.

Onze activiteiten – ook op het gebied van standaardisatie – zijn met name gericht op sectorbrede vraagstukken, en niet op specifieke vakken. Dat is meer het domein van docentenvakverenigingen, instituten als Freudenthal, marktpartijen, etc. Wij hebben dan ook geen medewerkers die zich specifiek richten op ict en wiskunde.

Mijn collega's gaven ook aan dat in de vele gesprekken die wij hebben met onderwijs en marktpartijen op dit punt geen knelpunten worden genoemd. Wij hebben dan ook geen aanleiding (en overigens ook geen ruimte/capaciteit) om met dit onderwerp aan de slag te gaan.

We kunnen je op dit gebied dus helaas niet verder helpen. Ik vertrouw erop je hiermee voldoende te hebben geïnformeerd.

Met vriendelijke groet,

XYZ

Binnendienst

T: 0800-321 etcetera

W: kennisnet.nl

Paletsingel 32, 2718 NT Zoetermeer  
Postbus 778, 2700 AT Zoetermeer

Ticketgeschiedenis **Thomas Cool / Thomas Colignatus** (Klant) Geplaatst op: 06 July 2016 08:47:33

(...)

**Ticketgegevens**

**Ticket-ID: 88897**

**Afdeling: Binnendienst (BD)**

**Type: Issue**

**Status: Afgesloten**

**Prioriteit: Incident**

Helpdesk: <https://support.kennisnet.org/Binnendienst>

**Date: Wed, 06 Jul 2016 14:18:13 +0200 TC -> Kennisnet.nl**

To: "Kennisnet Binnendienst"

From: Thomas Cool / Thomas Colignatus

Subject: [#88897]: Re: Wie bij u doet de ict-ondersteuning van wiskunde ?

Dag XYZ,

(1) Sectorbreed geldt dat wiskunde in allerlei vakken gebruikt wordt. Dat is toch algemeen bekend ?

(2) Een probleem is dat docentenvakverenigingen of Freudental Instituut zich niet bewust lijken van het probleem. Bijvoorbeeld heeft het Freudental Instituut allerlei subsidies gekregen en die benut voor Java, terwijl de aanpak via computer algebra veel logischer is (want dan toepasbaar op meer locaties). Moet voor ieder vak (natuurkunde, economie) steeds weer het wiel uitgevonden worden ?

(3) Je stelling "Mijn collega's gaven ook aan dat in de vele gesprekken die wij hebben met onderwijs en marktpartijen op dit punt geen knelpunten genoemd" kan toch ook betekenen dat men zich daar nog niet van bewust is ? Vervolgens, waarom accepteer je niet dat ik een partij ben, die een knelpunt noem ? Ben ik geen leraar wiskunde die boeken over didactiek schrijft ? Ik gebruik Mathematica. Scholen hebben geen Mathematica. Dan kunnen ze mijn boeken niet gebruiken. Wat gebruiken scholen dan ? Niets, want ze zijn zich het probleem niet bewust. Java applets gebruiken ze wel, maar dat is zeer beperkt.

(4) Ik hoop niet dat je in mijn schoenen bent gaan staan en de vraag hebt gesteld alsof je volledig zou weten wat de situatie is. Je opmerkingen t.a.v. het voorgaande geven al aan dat je die kennis niet hebt.

(5) Mijn vraag was niet "medewerkers die zich specifiek richten op ict en wiskunde" maar "wie bij u de ict-ondersteuning van wiskunde doet". Wellicht leidt mijn opmerking tot de directeur die voor alles verantwoordelijk is, maar dat mag van mij. Mij leek het dat de heer Ten Brummelhuis een goed aanspreekpunt was, maar wellicht is het iemand anders.

(6) Ik heb voor alle zekerheid nog eens gekeken naar jullie mission statement, en daar staat wel degelijk "Het creëren van een landelijke ict-basisinfrastructuur" en "Het geven van strategisch advies" en "Het bieden van expertise". Dus het moet mogelijk zijn om met iemand van jullie te spreken over ict-ondersteuning van wiskunde, zoals gebruikt in allerlei vakken en digitale onderwijsmiddelen.

Zou je het derhalve nog eens willen proberen ?

Met vriendelijke groet,

Thomas

**Date: Mon, 11 Jul 2016 11:05:01 +0200 Kennisnet.nl -> TC**

To: Thomas Cool / Thomas Colignatus

Subject: [#88897]: Re: Wie bij u doet de ict-ondersteuning van wiskunde ?

From: "Kennisnet Binnendienst"

Beste Thomas,

Dank voor je reactie. Naar aanleiding daarvan heb ik de voor dit thema relevante collega's (incl. een van de leden van ons MT) nogmaals geraadpleegd.

Kennisnet heeft uiteindelijk maar beperkte capaciteit, waardoor we onze activiteiten moeten richten op vraagstukken die breed leven. Het feit dat in de vele gesprekken die wij met onderwijs en marktpartijen hebben, geen specifieke knelpunten m.b.t. ict-ondersteuning en wiskunde worden genoemd, betekent dan ook dat wij hier vooralsnog geen aandacht aan kunnen geven.

Het spijt mij dat mijn consultatie niet tot een andere uitkomst leidt.

Met vriendelijke groet,

XYZ  
Binnendienst  
T: 0800-321 etcetera  
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Ticketgeschiedenis **Thomas Cool / Thomas Colignatus** (Klant) Geplaatst op: 06 July  
2016 14:18:13

(...)

Ticketgegevens  
**Ticket-ID: 88897**  
**Afdeling: Binnendienst (BD)**  
**Type: Issue**  
**Status: Afgesloten**  
**Prioriteit: Incident**

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