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► **To cite this version:**

Magali Hersant, Christine Choquet, Laetitia Bueno-Ravel. Inquiry: relations between research questions and curriculum reforms in France. International Congress on Mathematics education ICME 13, 2016, Hambourg, France. hal-01895017

**HAL Id: hal-01895017**

**<https://hal.science/hal-01895017>**

Submitted on 10 Jul 2024

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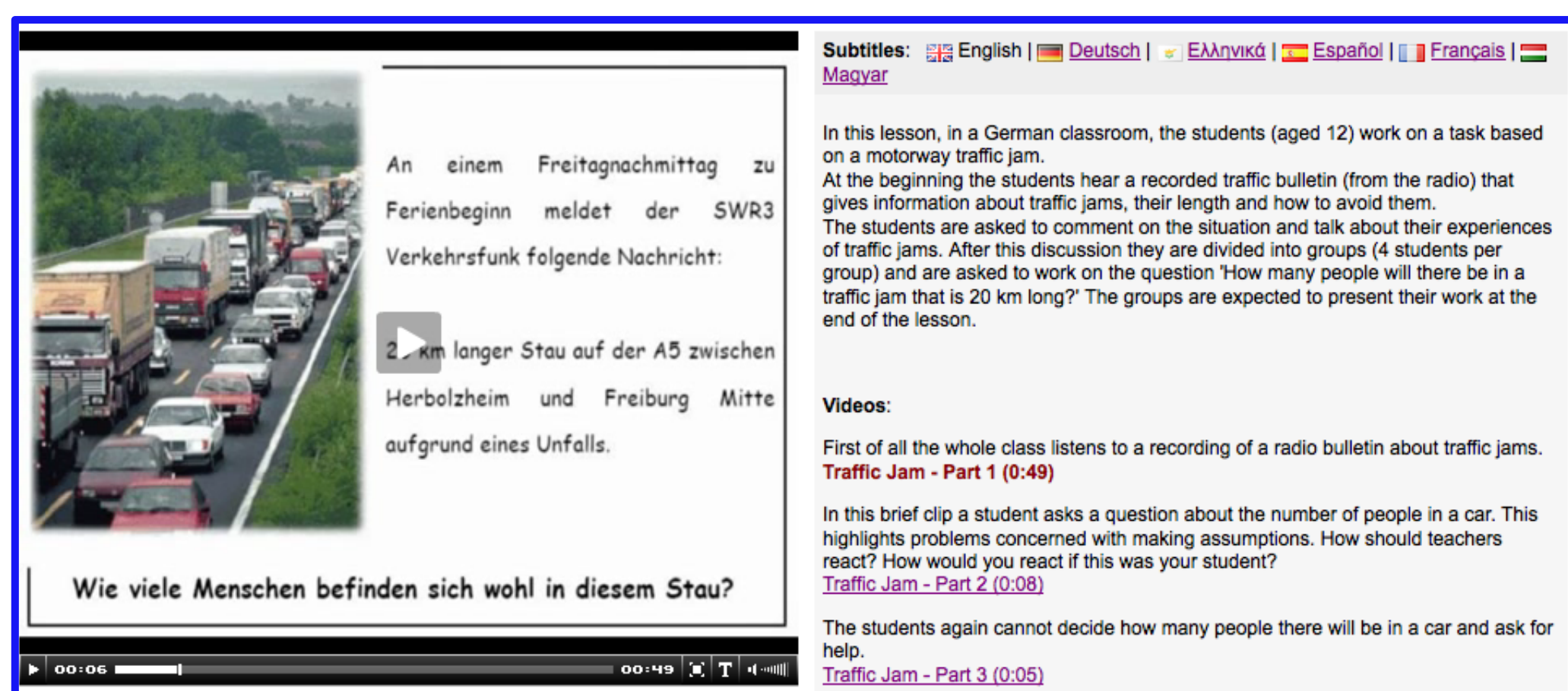
# Inquiry: relations between research questions and curriculum reforms in France

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The DiTacTic project aims at studying the possibility to learn mathematics through inquiry. Our international literature review regarding inquiry provides some insight for understanding French institutional choices for the current curriculum reform. It also raises questions: what does "inquiry" mean in the curriculum? How can we implement an IBML? What about the collective dimension in the inquiry? The following example, built by teachers, deals with these questions.

**The 24h race problem**  
What profit Le Mans city can expect from the cars driving on in this part of the highway until the beginning of the "24h Le Mans Race"?



A problem inspired by Lema project

- 1) First instructions given by the teacher
- 2) Collective view of the movie (twice)
- 3) Individual research (some few minutes)
- 4) Intermediate collective sharing-ideas phase
- 5) Research in groups and presentation of a solution in writing
- 6) Presentation of the groups' strategies, and whole class discussion

Planned implementation



Problem is posed using a video

Quelle est l'heure de départ des 24h ?  
on n'a pas le nombre de voitures.  
est-ce qu'on compte aussi les camions ?  
Il y a 2 côtés à l'autoroute, est-ce qu'on compte sur les 2 côtés ?

Result of the intermediate sharing phase



Students at work

## Discussion : implementation conditions, ressources and formation

Some results in grade 5

- A relevant problem, with an investigation potential
- The students participate in the construction of the problem
- A sharing phase allowing the comparison of the groups' strategies

Emergent questions

- Experimenting and searching a solution are great, but investigation must lead to an identified learning according to the curriculum
- Modelling : what kind of knowledge can be institutionalized in the French primary school curriculum ?
- Does the collective dimension of the inquiry only reside in the research in groups and the comparison of the production ?
- Could ressources help teachers to design investigation tasks ?

### Bibliography

Inoue, N. (2011). Zen and the art of neriage: Facilitating consensus building in mathematics inquiry lessons through lesson study. *Journal of Mathematics Teacher Education*, 14(1), 5-23.  
Mass, K. & Artigue, M. (2013). Implementation of inquiry-based learning in day-to-day teaching: A synthesis. *ZDM: The International Journal on Mathematics Education*, 45(6), 779-795.