PAPER SUBMISSION

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1. **Title of Paper**
   The Student in Charge!
   Experimental evidence on gender differences in academic achievement and motivation due to a changed student role

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6. **Three (3) Keyword Descriptors**
   Student-led conference, performance and motivation, randomized field experiment

   **a. MSC**
   N/A

   **b. JEL**
   C93, I21

7. **THE ABSTRACT**
   Students are often not part of the discussion on own their learning process and results. This study studies the effect of students being more in charge of their own learning process on academic results and motivation, by means of a student-led conference. In a student-led conference there is a central role for the student, as an active participant in both the preparation and in the conference itself. A certain amount of autonomy is required for preparation and participation in the conference. In the preparation process, students have to ask for, and deal
with, feedback and use metacognitive skills.

| Theoretical or Conceptual Framework (if applicable) | This study combines 3 elements from literature about student-led conferences: metacognitive skills, autonomy and feedback. Mevarech and Amrany (2008) show that explicit attention for metacognitive skills leads to better academic results. According to the self-determination theory of Deci and Ryan (2000, 2006), autonomy is a key element for improving motivation. A student with more autonomous motivation than controlled motivation, uses more metacognitive skills, has more persistence and performs better (Vansteenkiste et al., 2009). Feedback is not effective per se (Hattie & Timperley, 2007). Feedback is only effective when it is non-evaluative, supporting and given at the right time (Shute, 2008). |
| Research Methods, Samples or Data Sources | We use an individually randomized field experiment among 130 10th grade students (about 15 years old) in Dutch secondary education. In the school year 2012-2013 all students in our sample had – as usual – two conferences with their tutor and parents to discuss their academic progress. A conference was scheduled for 30 minutes. The students in the control group had teacher-led conferences; the students in the treatment group had student-led conferences. In preparation for the first student-led conferences 3 sessions of 3 hours was scheduled to prepare the portfolio, only one session was scheduled before the second conference. The student decides what to talk about, leads the conference and adds an evaluation to the portfolio afterwards. Effects are studied on performance and controlled and autonomous motivation, of which a pretest at the start of the school year and an intermediate and a posttest in the week after the conferences, are written. Performance is measured by average grade and math and language grades. Special attention is paid to possible gender effects, as the literature shows these effects might be present (e.g, Blom et al., 2007; Vansteenkiste et al., 2009). Data come from the administrative system of the participating school. |
| Method of Analysis | To determine if student-led conferences have an effect on both motivation and academic performance, we estimate the Average Treatment Effect (ATE) (Rosenbaum and Rubin, 1983). We use independent T-tests and regression analyses |
to determine the ATE. In the multiple regression models we add student characteristics, such as gender, curriculum and previous grades as well as curriculum (arts or science), primary school test score and grade/track in the year before the experiment. We also add class and teacher fixed effects. To the academic achievement model we also add motivation prior to the experiment.

e. Findings

The results show that a student who is more in charge has a significantly higher academic performance, although effects are mainly found for math and not for language. Controlled motivation was significantly lower for these students, and in the short run autonomous motivation was significantly higher. All results, except for autonomous motivation, can be completely attributed to the male students. Interestingly, the result on autonomous motivation is fully due to the female students. Robustness analyses from the year after, where all students had student-led conferences, confirm that the results found in the experiment are due to the treatment.

f. Conclusions, Scholarly or Scientific Significance, and Implications

The existing literature on student-led conferences suggests positive effects on both student performance and student behaviour. Unfortunately, these studies lack statistical causal evidence for these claims. Our contribution is that we use a randomized experiment to show that there are positive effects. The most likely explanation for the significant and considerable effects we found is the powerful combination of three effective tools that are shown to increase academic performance – metacognitive skills, feedback and autonomy. Implementation costs of this intervention are low, given that introducing student-led conferences does not require major adjustments in the curriculum or the school organization.

8. References

Rosenbaum, P.R., & Rubin, D.B. (1983). The central role of the propensity score in observational studies for causal effects, Biometrika 70 (1) 41-55.