

Shorter learning time and better performance through predetermined learning time

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Question

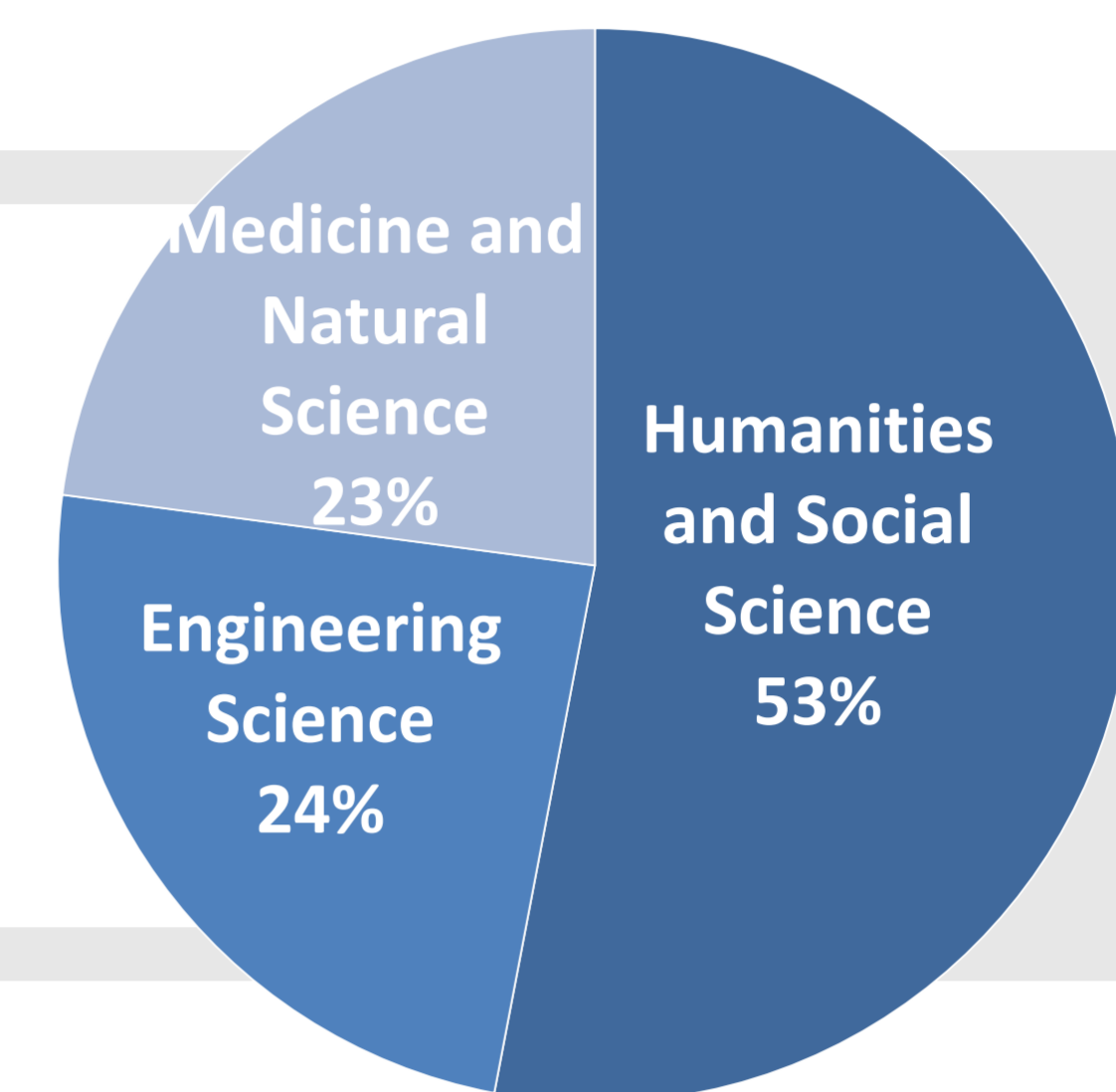
Learners learn more effectively through multimedia learning opportunities (Mayer, 1999). Most studies in the field of learning research have been carried out using short periods of predetermined learning time. The proper influence of learning time, however, has received insufficient attention in previous studies (Schmeck, 2014). This study therefore aims at the following question: **What kind of influence does the predetermined learning time have on the learning with multimedia content?**

Sampling

Recruitment Procedure: Single testing on campus and in the libraries on campus.

N = 83 , f = 51 % , m = 49 %

Average age: 24 years (min. 18, max. 31 years, SD=2,96)



Instruments

- Knowledge Query (own development)
- FAM Questionnaire: Motivation (Rheinberg, Vollmeyer & Burns, 2001)
- The Emergence of Lightning: Text (Schütte, 2012)
- Subjective perception of time (own development)
- The Emergence of Lightning: Quiz (Schütte, 2012)
- Cognitive Load Items (Paas, 1992)
- Subjective Knowledge Assessment (Schütte, 2012)

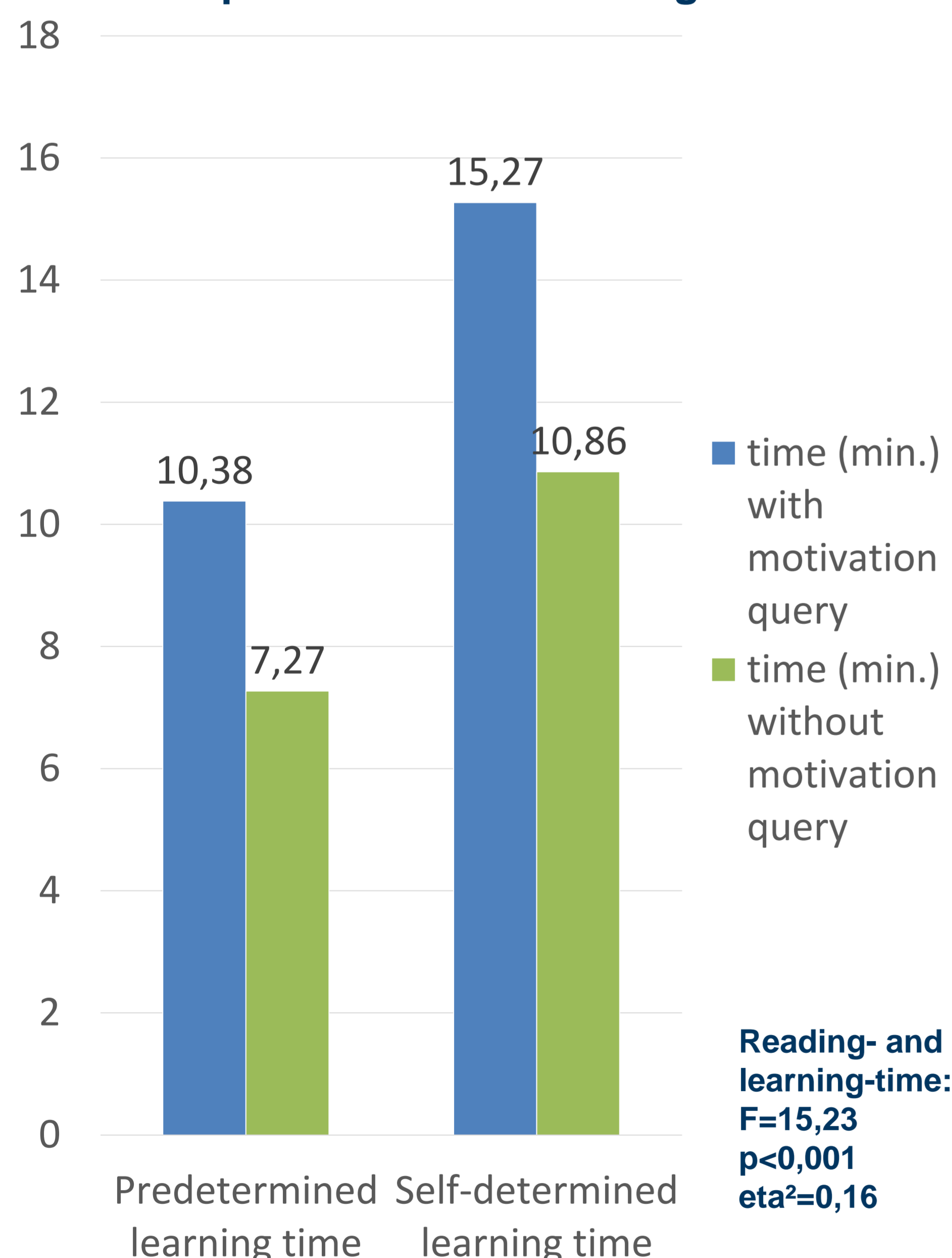
Design

- Solomon-4-Groups-Design:

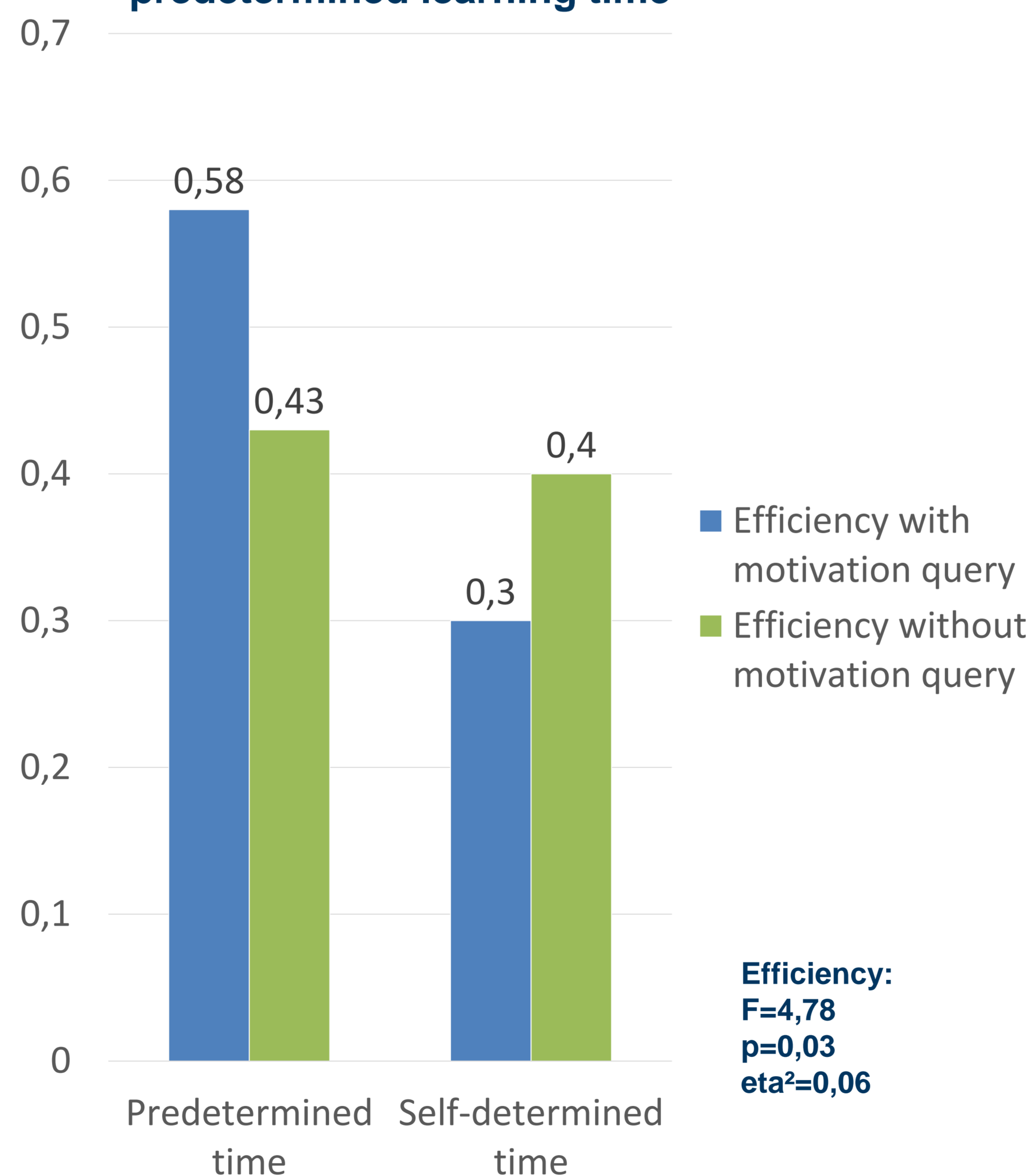
With Motivation Query	Without Motivation Query
Control Group 1 (CG 1): Self-determined learning time	Control Group 2 (CG 2): Self-determined learning time
Experiment Group 1 (EG 1): Predetermined learning time	Experiment Group 2 (EG 2): Predetermined learning time

Results

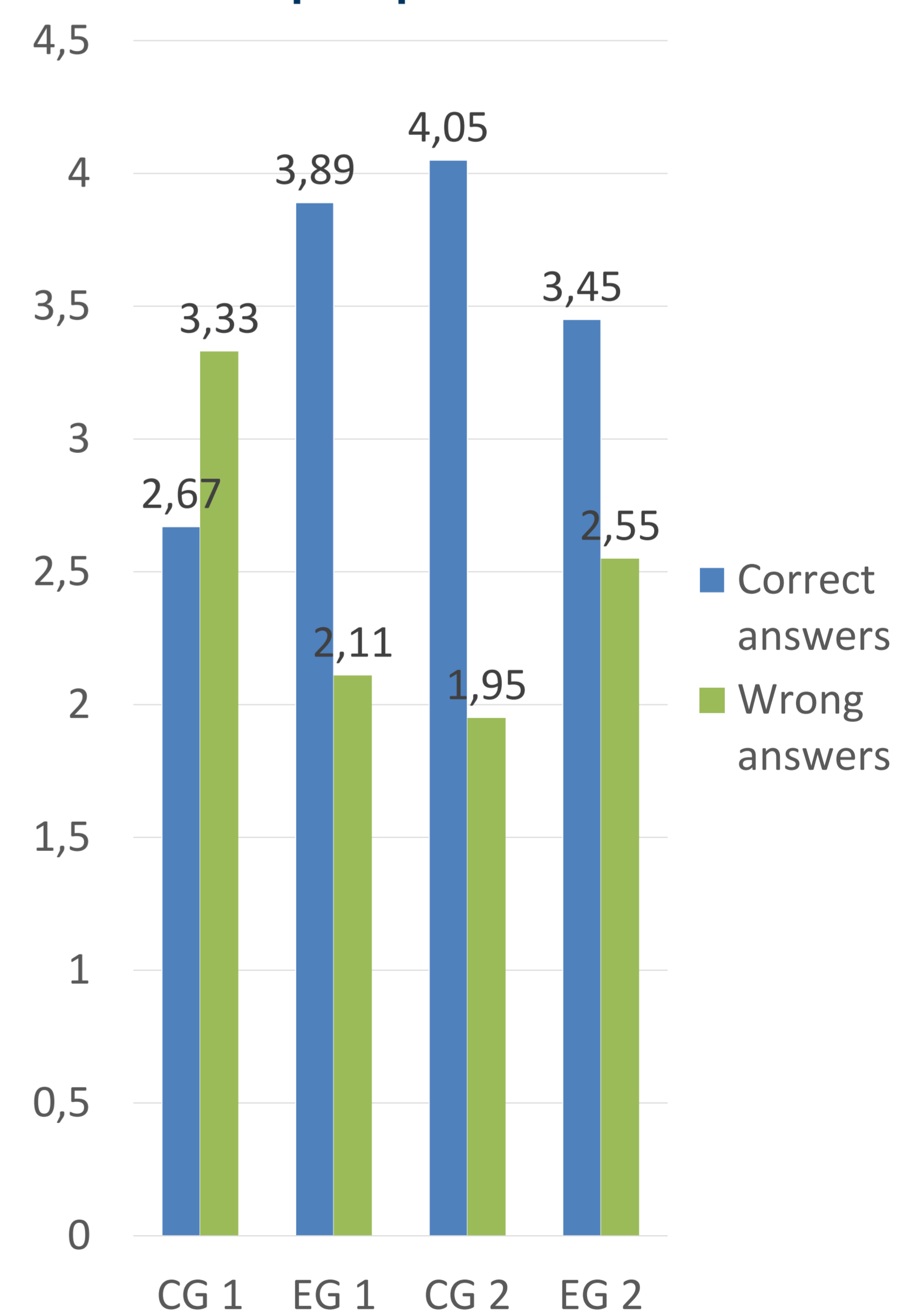
Reading- and learning-time with and without predetermined learning time



Efficiency with and without predetermined learning time



Correct and wrong answers to quiz questions



Discussion

- The Gaussian (normal) distribution of reading and learning time was not given due to some statistical aberrations.
- Motivation query and preexisting knowledge have proven to have a greater influence on the performance in the knowledge quiz than previously expected.
- The predetermined learning time leads to a reduction of learning time.
- The assumption that learners do better in settings with predetermined learning time according to Schmeck (2014) could not be confirmed.
- The results show that learners of all groups have learned the same and that the time factor, both in self-determined and predetermined learning time, does not lead to cognitive overload.