

# Nudging the Student for study success:

## A long-term experiment in a Dutch University of Applied Sciences

### Background

The NHTV strategy is to promote ambitious student behavior, and motivate them to attain high levels of study success. In this light Nudge theory appears a promising, low cost method to improve study success. The effect of nudges in education, however, remain unclear.

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### Gaps in the academic Literature

- Evidence on the application of nudges to increase study success is scarce. This holds in particular for evidence on the effect of feedback on study success.
- It is unknown what the effects of injunctive elements in feedback are on study success. Feedback on study results is usually informative, not injunctive. This is in particular true for higher education.
- It is unknown what the effect of comparative feedback is on study success, in particular in combination with injunctive elements.

### Research objective

The objective of this study is to design a technique for the provision of feedback on study results that is considered user friendly by NHTV students and promotes their study success.

### Research question

Is there an effect of personal and comparative study results related injunctive feedback on study success?

### Conceptual model for the present experiment

Nudging (injunctive feedback on grades and ECTS progress) → Performance motivation → Effort (time-on-task) → Study success

### 4 treatment conditions

We use two kinds of feedback: Personal injunctive feedback and Comparative injunctive feedback. Both forms of feedback are provided within the MyNHTV-app by StuComm.

The four conditions are:

- I. Study progress (below)
- II. Progress plus personal (colors)
- III. Progress plus comparative (smileys)
- IV. Progress plus personal plus comparative

#### Study progress



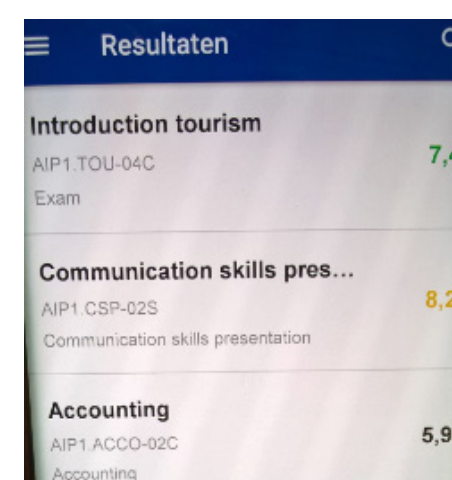
A nudge applied to all Students

Study results overview screen →

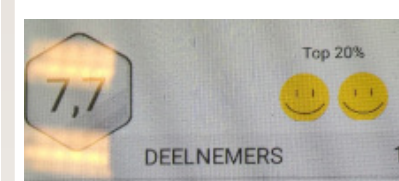
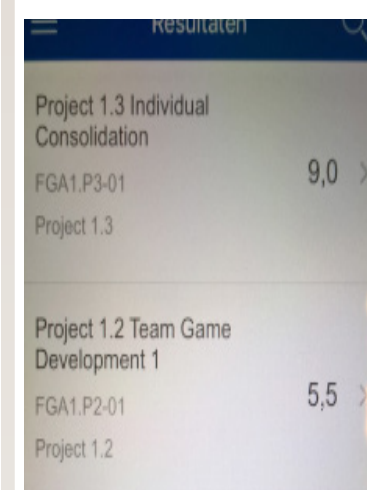
Explanation pop-up screen → →

Study results detail screen →

Personal injunctive feedback is provided by means of colored grades that indicate the level of study success relative to fixed norms.



Comparative injunctive feedback consists of smileys that indicate the level of the student's study success in comparison with other students in the same test.



### Hypotheses

We expect that both kinds of feedback will foster student's performance motivation and effort, and through this foster a positive change in GPA.

### Method

The quasi-experiment consists of four different treatment conditions. Students that downloaded the app were randomly assigned to one of the four nudge combinations.

### Response group

In December 2016 NHTV had 8107 students. Of this group 3640 students downloaded MyNHTV-app.

### Findings

Results are reported over the period December 2016 - May 2017.

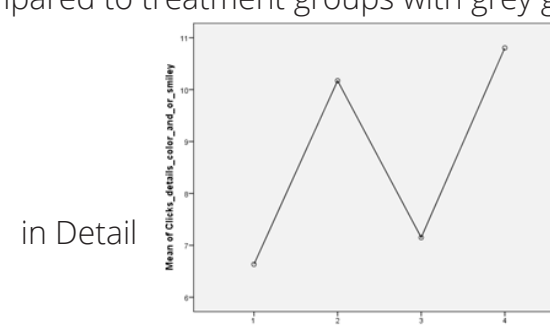
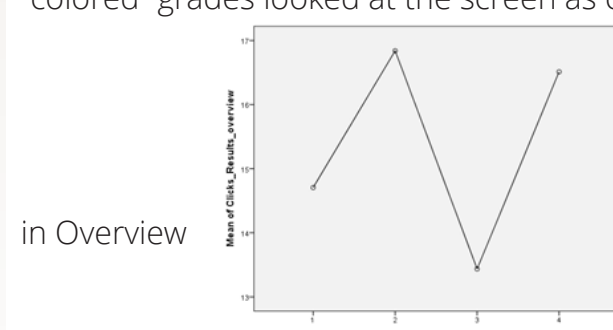
Students mainly use the app to check the Timetable (320.004 clicks). The 'study results overview' and 'detail views' were checked respectively 51.831 and 23.686 times.

There was no effect of the four treatments on the growth in ECTS over a period of four months.  $F(3, 1412) = .46, p = .987$ .

There was no effect of colored vs. grey grades (visible in Results Overview screen) on GPA change over a period of four months (groups 2 and 4 have colors; groups 1 and 3 have grey).  $F(1, 2128) = .071, p = .790$ .

There was no effect of non-competitive vs. competitive feedback (visible in Results Detail screen) on GPA change over a period of four months (groups 1 and 2 have non-competitive feedback; groups 3 and 4 have competitive feedback).  $F(1, 1469) = .2251, p = .134$ .

There was a significant effect in the number of times that students in treatments with "colored" grades looked at the screen as compared to treatment groups with grey grades.



### Preliminary conclusions

During a period of four months students were exposed to injunctive feedback on their study results by means of the use of colors and or smileys in the 'Results' functionality in MyNHTV-app. There were no significant interaction effects between the treatments and the change in GPA nor ECTS credit points.

The only effect that was found was that there were more views on the colored results screen, then on the grey results screen. This could indicate that the colors make it more attractive to have a look at the results, and thus may make students more aware of their study success.

The use of MyNHTV app, especially the functions that were nudged, is still low. A period of four months may also have a limiting influence on the finding of effects. We intend to prolong the experiment, and to promote the use of the functions in the next half year to see how this changes the results of our research. Additionally effects on motivation, effort and user satisfaction will be assessed.