



# Rovai's Classroom Community Scale in Dutch as a reliable measure of sense of community in the Utrecht Bachelor of Pharmacy programme

## Validation and comparison between native and ethnic minority students.

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### Introduction

Feelings of social cohesion facilitate collaborative learning, which has been associated with enhanced quality of learning<sup>1</sup>. A study by Joukes & Severiens (2001) shows that ethnic minority students are less socially integrated, which may negatively affect their learning outcomes<sup>2</sup>. A previous study in the Bachelor of Pharmacy programme has suggested that students of non-Dutch origin (around 40%) are less successful in year-1 of their study<sup>3</sup>. We hypothesize that this may be associated with a lower social integration and sense of belonging of ethnic minority students.

### Aims

1. To validate a Dutch translation of Rovai's Classroom Community Scale (CCS).
2. To assess sense of community in ethnic minority versus native students.
3. To evaluate changes in sense of community over the course of year-1.

### Conclusion

The Dutch translation of Rovai's Classroom Community Scale is a reliable tool for assessing sense of community. A decrease in sense of community in ethnic minority students was observed both halfway and at the end of year-1. This decreased sense of community among ethnic minority students suggests that the level of social integration may be a relevant factor for study success.

### Method

Students in year-1 (cohort 2012) of the Bachelor Pharmacy programme, Utrecht University, were asked to fill in a Dutch translation of Rovai's Classroom Community Scale<sup>4</sup> twice, at the end of semesters 1 and 2 (22 weeks and 40 weeks after start of year-1, respectively). This questionnaire is proposed to yield two different factors, namely connectedness (feelings regarding connectedness and interdependence) and interactive learning (feelings regarding the use of interaction to achieve learning goals). Ethnic background was determined on basis of the country where the student, or at least one parent, was born.

### Results

In semester 1, data from 158 respondents were collected, of which 110 were native students and 48 were from an ethnic minority. In semester 2, data from 125 respondents were collected (native: n = 90; ethnic minority: n = 35). Factor analysis confirmed the 2-factor structure of the CCS with the dimensions 'connectedness' ( $\alpha=0.834$ ) and 'interactive learning' ( $\alpha=0.809$ ) after elimination of 2 items (viz items 15 and 17). Separate analyses of these dimensions in native and ethnic minority students showed that the reliability of these two dimensions was comparable for both ethnic groups (table 1). Connectedness and interactive learning were significantly lower in ethnic minority students compared to native students at the end of the first semester (scores  $18.2\pm0.7$  vs  $20.8\pm0.5$ ,  $p=0.003$ ; and  $23.9\pm0.8$  vs  $27.0\pm0.5$ ,  $p<0.001$ , respectively). At the end of year-1, interactive learning, but not connectedness, was still significantly lower in ethnic minority students compared to native students (scores  $24.4\pm0.9$  vs  $27.0\pm0.5$  and  $19.9\pm0.8$  vs  $21.6\pm0.5$ , respectively).

### Discussion

The Dutch translation of Rovai's Classroom Community Scale is a reliable tool for assessing sense of community, which shows good internal consistency in both native students as well as students from non-Dutch origin. Previous research has shown that study success is decreased during year-1 in ethnic minority students within our Bachelor of Pharmacy programme<sup>3</sup>. The current study shows that students from an ethnic minority have a lower sense of community throughout year-1. As feelings of social cohesion are positively related to the quality of learning, these results suggest that less social integration may be a cause for the decrease in study success in ethnic minority students within our Bachelor programme. The next step is to investigate whether there is a direct association between sense of community and study success during year-1 within this student sample. Future research is aimed at studying the effects of interventions that promote social integration (e.g. implementation of fixed teaching groups<sup>5</sup>) on sense of community and study success in both native and ethnic minority students.

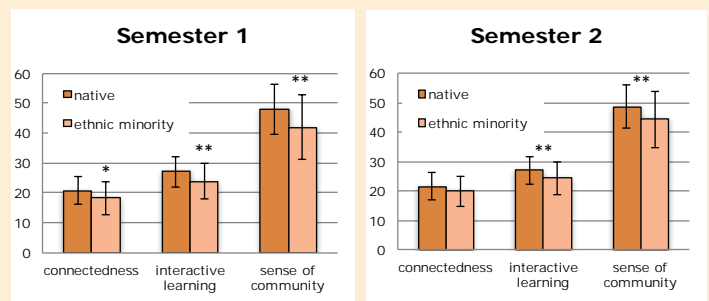


### Validation Dutch translation Classroom Community Scale (CCS)

Factor	Reliability (Cronbach's $\alpha$ )		
	Total sample	native	Ethnic minority
Connectedness	0.834	0.836	0.839
Interactive learning	0.809	0.779	0.805

Validation of the Dutch translation of Rovai's CCS (20 items, 5-points Likert scales) was performed on the data obtained from 158 students in year 1 during semester 1. Reliability was tested using Cronbach's  $\alpha$  both in the whole sample and in the native and ethnic minority groups separately. Results showed good reliability for connectedness and interactive learning in both cases.

### Differences in sense of community between native and ethnic minority students



Using Rovai's CCS, sense of community was evaluated in native and ethnic minority students from year-1 (cohort 2012) at the end of semesters 1 and 2. Results are presented as mean  $\pm$  stdev. Differences between the ethnic groups were assessed using univariate analyses (\*  $p < 0.01$ , \*\*  $p = 0.001$ ).

### References

1. Hommes et al. 2012. Adv in Health Sci Educ Theory Pract. 17(5): 743-757
2. Joukes & Severiens 2001. Delft: Stichting Axis
3. Koster et al 2008. Social Interaction, Learning and Diversity, EARLI, Gothenburg, SIG nr. 21
4. Rovai et al. 2002. Internet and Higher Educ. 5: 197-211
5. Hommes et al. 2014. Plos One 9(4): e93328