

# The International Classroom (IC) pilot at the Faculty of Mathematics and Natural Sciences (FMNS): findings and recommendations

## Executive Summary

This executive summary describes the findings (current strengths and weaknesses) of the “International Classroom”<sup>1</sup>, as identified in the English-taught bachelor’s programs of Computing Science (CS) and Industrial Engineering & Management (IEM) at FMNS, and gives recommendations for follow-up for these two pilot programs and for the faculty overall.

The pilots<sup>2</sup> with CS and IEM were conducted in the context of the RUG International Classroom (IC) project. This IC project (running from 2013 until 2019) has the objective to describe and develop evidence of what makes programs international. The goal is to achieve a European accreditation label for internationalization in 2018<sup>3</sup>.

### Target audience

The target audience for this executive summary are primarily the program coordinators, teaching staff, students and support staff at FMNS and secondly staff and students involved in the International Classroom (IC) project and other interested RUG staff and students.

### Tools

The specific tools developed in the IC project are available for FMNS to use for multiple purposes, with assistance from relevant RUG departments if requested: *RUG vision on internationalization, RUG language and culture policy, IC conceptual framework (in testing phase), approach/model for internationalizing learning outcomes (in development)*.

**IC project:** Kevin Haines, Franka van den Hende (research and writing)

**FMNS:** Jos Roerdink, Gerald Jonker (input and co-ordination).

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<sup>1</sup> The definition of the “International Classroom” for RUG developed from the pilots and international research is: “a group of students from diverse backgrounds, working from a rationale for internationalization at program level (vision), using student and staff diversity as a resource, through “purposeful interaction”, including the overall learning environment (formal, informal and hidden curriculum), with appropriate support for staff and students in a multicultural and multilingual environment”

<sup>2</sup> In this context a pilot is a case study of existing practice

<sup>3</sup> For further information refer to IC project website: [www.rug.nl/internationalclassroom](http://www.rug.nl/internationalclassroom).

## 1. Context

In September 2013, 10 Bachelor's programs at FMNS switched to English. The choice was either to reduce the faculty or to get more income from international students and expand. Given the limited period of time, the initial focus was on the English language, international marketing, matching support and setting up a monitoring system. In 2013, the faculty requested to be the next pilot in the IC project in order to further develop the 'international classroom' at FMNS. The previous pilots were with the Bachelor's in Global Health and the Master's in Environmental and Infrastructure Planning. The pilot at FMNS was carried out from April-October 2014. The main issue for the faculty is whether FMNS intends to offer English-taught programs or truly international education, including an international attitude, atmosphere and way of thinking.

## 2. Pilot objectives and methods

For this third pilot in the IC project, the Bachelor's in CS and in IEM were selected. These two programs entered their second year as English Medium Instruction (EMI) programs in September 2014. These programs were selected because they were already quite active in the internationalization of their teaching and were eager to participate in the IC project. This pilot evaluates the progress made so far in terms of the 'international classroom', describing current strengths and good practices as well as weaknesses, and gives recommendations for follow-up for the two pilot programs and for the faculty overall.

Interviews<sup>4</sup> were held with teaching staff including program directors, support staff, students, alumni, and senior management. The key elements covered were: the learning outcomes, teaching/learning didactics and arrangements, curriculum (content and context), assessment, and language aspects for the specific language context<sup>5</sup>. Additionally, many program documents were studied and classroom observations were carried out.

## Pilot outcomes

### 3. Learning Outcomes

**Findings:** both programs incorporate broader perspectives and examples in their teaching, but an explicit international orientation is still lacking in the learning outcomes. Staff interviewed recognizes that learning outcomes need to be made explicitly international. The learning outcomes for CS are already based on international guidelines<sup>6</sup>.

**Recommendations:** the next steps for all international programs at FMNS should be to identify opportunities where and how learning outcomes could be rewritten to be more attuned to international and intercultural learning<sup>7</sup>. Incorporating global employability explicitly in the learning outcomes should also broaden the scope of the programs. According to several "Critical Reflections" written by program staff, employability and career guidance are still issues to improve for the faculty.

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<sup>4</sup> Based on a methodology developed for similar research in Australia, Leask 2011,2013

<sup>5</sup> Lauridsen 2013

<sup>6</sup> ACM/IEEE curriculum guidelines, 2013

<sup>7</sup> Carroll, 2013, 2014

## Teaching and Learning

### a. Didactics

**Findings:** with a more diverse student group (in culture and educational background), the interviewees feel there is a need to raise awareness of differences and for teachers to deal effectively with this diversity. Both programs have good practice examples. For CS, the 2<sup>nd</sup> year project in International Software Engineering (ISEP) works with universities and companies across borders through on-line technology, facilitates interaction in small groups, provides a clear structure and support, and includes individual assessment based on process, products and documents. For IEM, the 1<sup>st</sup> year Integrated Design project (IDP) provides students with choices and an inclusive environment, while the industrial context is extended beyond national borders, using examples of international research.

**Recommendations:** the positives of these good practices could be extended to other programs at FMNS. The major didactic challenge is to design interaction that is educationally “purposeful”<sup>8</sup>.

### b. Arrangements

**Findings:** within the faculty, there are already several teaching and learning arrangements available to support the ‘international classroom’, for example: the opportunity for a study or internship abroad and for international staff exchange. Study abroad is an option in the bachelor’s or master’s, but according to several interviewees it could be promoted, stimulated and facilitated more strongly, and better use could be made of international research connections. International staff exchange is often hindered by capacity problems. There are more opportunities at Master’s level with more free choice and specialization time.

Other good examples of arrangements to support the international classroom are: the tutor group system in CS, the role of Teaching Assistants (TA’s) in tutorials and courses other than lectures, and the overall informal, personalized, small-scale settings.

Many of the interviewees stress the need to be aware of and address international and intercultural aspects in the classroom and be explicit about expectations, for example about: how to study, the grading system, systems like Nestor and Progress, etc.

**Recommendations:** as described under didactics, the “international classroom” needs specific arrangements to facilitate this “purposeful” interaction and use the diversity of the student group as a resource. Although many tools are available in these two programs, these can still be used more effectively for this purpose. Teaching assistants, for example, can only be effective if they are adequately supported. Another example is that working with diverse student groups should always be explained by the teacher, with a good consideration of matching levels of the participating students.

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<sup>8</sup> “Purposeful Interaction”: a model by Haines and van den Hende, 2014, referring to the creation of learning value in the classroom through purposefully designed meaningful tasks, aligned with pedagogical design and skillful interpretation and implementation by the teacher(s).

### c. Content and context

**Findings:** an international environment should be of added value for students preparing for work in a globalized world. Additionally, it should attract the best staff in research. At the moment, however, the academic culture/environment at FMNS is still very Dutch according to many of the interviewees. Staff and students need to become more aware of this inherent 'Dutch-ness' and reflect on their communication and behavior. Many of the interviewees in CS underline that the content of their discipline is the same worldwide, yet when working with clients from different educational and cultural backgrounds, experiences and skills can play a relevant role. There is an overall trend in 'hard sciences' to focus more on the services and soft skills, such as interpersonal skills (collaboration, group work) and communication, which implies increased opportunities to focus on intercultural learning.

**Recommendations:** the programs piloted have started to extend the contexts of learning into more international contexts. There is still ample room for improvement through a more integrated and systematic approach, starting from a vision and explicitly international and intercultural learning outcomes.

## 5. Assessment

**Findings:** the initial approach with the start of the English-taught bachelor's at the faculty was to assess as had always been done, there were no other references available. Meanwhile the faculty has been learning from practice and feedback. There is a shared perception among the interviewees that more diversity of methodology and more explicitness might be needed in assessment. For example, students from outside of the EU seem sometimes more focused on assessment that relies on reproducing answers and can be rather unfamiliar with assessment including analysis, application, or bringing together different ideas. There were a few complaints from students in the 1<sup>st</sup> year about examples of exams or exam regulations being available in Dutch only. How to assess cooperation in (diverse) groups is another issue that needs attention.

**Recommendations:** the recently adjusted RUG policy on assessment (2014) focuses on regular feedback, cumulative assessment and being explicit about non-negotiable issues, while allowing for some adjustment time for international students to new rules and methodology. In sum, faculty experiences combined with this policy paper provide first guidelines, but more detailed and pedagogically aware ideas about variation and standards need to be worked out at faculty and at program level.

## 6. Language

**Findings:** for staff (teachers, student teaching assistants (TA's) and support staff,) support for English Language Provision (ELP) is available through the University Language Centre or through the faculty. Increasingly, meetings at the faculty are in English. Recently, the Faculty Board has also switched to English.

With the students, the level of English seems to vary a lot. Most students are second language users of English. In the programs piloted, the focus is very much on content and there is a need for more feedback on the use of English language in the academic and/or scientific context. In the short term, some students need to make more efforts to study in a second language than others. It seems that students who more regularly communicate in English outside the classroom also have an advantage. A number of students will need specific support in English related to academic skills (e.g. writing a report or thesis, giving presentations). The students' level of English should be tested properly when they start their program. At the end of the program, all students should have reached a certain level of English language skills in the academic context.

Several international students indicated that for non-Dutch students and staff speaking and understanding some Dutch helps a lot for better integration. Many international students take free Dutch language courses (subsidized by "CvB"), but find it hard to learn Dutch. In the new RUG Language and Culture policy, all international students will have the opportunity to study Dutch for max. 150 hours for free throughout their degree program. Learning Dutch is also encouraged for international staff.

A prominent discussion topic within the faculty (e.g. in the steering group and in the faculty board) is the use of English versus Dutch in more informal educational settings. There seems to be a natural tendency to switch to Dutch because of the relatively low number of international students in most programs and the limitations in English language skills amongst students. The TA's who are mostly Dutch so far play an important role in this and would benefit from a combined English/didactic/intercultural training. Some of the faculty student associations (e.g. LUGUS and COVER) play a positive role in creating a more international environment through their communication in English and an open attitude towards all students.

**Recommendations:** the faculty is obviously in a process towards a more mature English Language Provision (ELP) environment, which requires tailor-made support as well as an overall organizational change, including the formal and informal educational settings. The faculty board should give clear guidelines and support in this process. Best practices from student associations, programs and TA's should be shared and extended across the faculty. The *RUG Language and Culture Policy* offers a clear framework and a matching budget to support this process.

## **7. Students (group composition and support)**

**Findings:** In all English-taught Bachelor's programs, the student group has become more diverse in terms of educational- and cultural background. Yet, the numbers of non-Dutch students are still relatively low in most programs. Additionally, there are not (yet) many female students and there is a relatively high proportion of students with some kind of psychological issue (e.g. autism). This more diverse student group also brings more diversity in starting level, e.g. in mathematics. The different levels of English language skills have been addressed above.

It seems obvious to the interviewees that a more heterogeneous group of students needs extra attention, including outside class activities, to accommodate them. The Faculty Board feels an obligation to provide appropriate support. A system of data collection has been set up to monitor

both the formal process (grades, credits, course evaluations) as well as the informal context (experiences, perspectives, mainly through the study advisors). So far, no significant differences have been found in study results between international and Dutch students. The results from the system of monitoring are being used for a continuous process of improvement in support. Different ways of both academic and social support for students are available within the faculty. There is a buddy system and a mentor system run by students. The faculty's Education Support Center, in particular the study advisors, perform an important role in providing appropriate support. Moreover, the student organizations COVER and LUGUS are in an ongoing process of becoming international. This becomes evident from their communication in English and the first international students participating in their boards and committees. However, only a relatively small proportion of Dutch students are involved in the international activities.

**Recommendations:** there are needs for more systematic cooperation and coordination in support between the education support center, the students and the student associations. The education support center was recently restructured and is still in a transition process. Needs for training and support in dealing with a heterogeneous multilingual and multicultural student body need to be known and accommodated. The system of monitoring itself should also be evaluated regularly to see whether relevant data are collected in the right way. It is recommendable to involve students actively in the kind of support they need and include some time for flexibility and adjustment. Both buddies and mentors need more instructions and some training. The role of the student associations in providing social and career-related support and in contributing to the international process should be valued and supported. Good practices should be shared across the faculty.

## **8. Staff (group composition and support)**

**Findings:** the faculty has a relatively high number of academic staff with a non-Dutch nationality. The number of international support staff is much lower. International staff is still underrepresented in boards and committees. The experiences of international staff at the faculty are rather varied. The many international staff in CS appreciate what they call "an informal culture" in which they feel that they are being heard. In other programs [according to faculty board] several international staff have left because they could not make themselves feel at home or did not get used to the "Dutch way of doing things". International staff are attracted by the research groups with a worldwide reputation and the international programs. Many of the interviewees find that international staff and Dutch staff with international experience bring a relaxed, open atmosphere to the classroom. On the other hand, non-Dutch CS lecturers state that international staff is not necessarily better equipped for internationalization and more open to internationalization and change than others.

**Recommendations:** the faculty should share the good practices of international staff across the faculty and take concrete steps to increase the number of international support staff, and the number of international staff in boards and committees. Support is available for teaching through English and for working in an international environment (see under 6. Language), but could be promoted more. This also applies to the opportunity of international staff exchange (see under 4b. Arrangements).

## **9. Admissions and marketing**

**Findings:** the faculty aims to have a diverse and highly talented student body with maximum 35% international students in a program. This ambitious goal brings about new complexities and difficulties in attracting and admitting students. Selection by nationality is not allowed by law. Marketing thus currently focuses on many different countries with different approaches, a good data base and a personalized follow-up system. In admissions, a more heterogeneous group of applicants asks for more specific selection criteria and careful attention to the specific background, level and competences of students. The key issues being discussed are: what are the threshold standards, and how and to what extent can students be upskilled.

**Recommendations:** attract more talented international students from diverse backgrounds and adjust marketing and admissions policy accordingly if necessary.

## 10. Overall recommendations for follow-up

In the two Bachelor's programs piloted, many positives and good practices have been found. At the same time there is ample room for improvement. The overall picture is very much of a faculty and people in transition, currently still at an awareness-raising stage, but heading for deliberate changes. These recommendations for follow-up intend to provide specific guidelines for these next steps.

- Make existing **learning outcomes** more explicitly international and intercultural (and measurable) where appropriate and include the perspective of global employability, starting at the program level
- Share and extend **good practices** (e.g. courses and projects) across the faculty
- Review the current teaching/learning and assessment on the basis of explicit international and intercultural learning outcomes; design **interaction** that is educationally "**purposeful**".
- Develop an integrated **vision** on internationalization at faculty level, and subsequently for programs, attuned to education and research, and derived from the institutional vision
- Build on content and context (e.g. research networks) that are almost automatically international for FMNS programs and **focus on application and communication** aspects of the curriculum/learning environment **to enhance international and intercultural teaching and learning**
- Build on the existing **small-scale informal environment** with appropriate learning arrangements and support e.g. tutor groups, TA's, buddy and mentor groups (possibly label and restructure existing learning concepts as "*Learning Communities*" to be more effective and provide new resources)
- Be explicit about specific **rules, academic culture and systems**, while allowing for some flexibility and adjustment time
- Extend the **training for TA's** in terms of English language, intercultural and didactic skills required with a diverse student group
- Use the opportunities of the recently adopted "*RUG Language and Culture Policy*" to embed **language support and intercultural competences** in programs
- Extend current **support (academic and social)** for staff and students
- Adjust/extend monitoring system for **data collection** and for **evidence** that specific objectives are being reached
- Create favorable conditions (e.g. space in curricula) for **international student and staff exchange** within programs
- **Involve student associations and networks** (alumni, professional field, research networks) to further build an international and inclusive environment
- Take active steps to increase the number of **international staff and students in faculty boards and committees**
- Attract **more talented international students from diverse backgrounds** and adjust marketing and admissions policy accordingly if necessary.



## FMNS internal documents

- ACM/IEEE curriculum guide Lines, 2013.
- Advies FWN-commissie Engelstalige Bachelor opleidingen, 4 juni 2012.
- IEM. A path to internationalization. November 2013.
- International Software Engineering Project (ISEP). An introduction. A. Ampatzoglou. 2014.
- Kritische reflectie Bachelor opleiding Informatie. Faculteit Wiskunde en Natuurwetenschappen. Rijksuniversiteit Groningen. Juni 2013.
- FMNS Course Program for Language Support for Staff. Spring 2013. RUG Language Centre.
- Roerdink, J. 2011. Tutorsysteem Informatica.

## References

- Airey, J. 2011. Talking about teaching in English: Swedish university lecturers' experiences of changing teaching language. In *Ibérica*, 22, 35-54.
- Bonger, S. 2014. Separate Worlds. In TU Delta, 14 April 2014, <http://delta.tudelft.nl/article/separate-worlds/28110>
- Carroll, J. 2014. Tools for Teaching in an Educationally Mobile World. Routledge.
- Carroll, J. 2013. Designing Programs and Courses with an International Perspective.
- Lauridsen, K. M. 2013. Higher Education Language Policy. Working Group under the European Language Council. In *European Journal of Language Policy*, 5(1), 128-138.
- Leask, Betty & Jan Wallace. 2011. Good Practice Report Learning and Teaching Across Cultures. AGOLT: Australian Learning and Teaching Council.
- Leask, B and C. Bridge. 2013. Comparing internationalization of the Curriculum in action across disciplines: theoretical and practical perspectives, *Compare*, 43(1), 79-101.
- NVAO. 2011. Frameworks for the Assessment of Internationalisation ([www.navo.net](http://www.navo.net)).
- Vermunt, J.D. & Verloop, N. (1999). Congruence and friction between learning and teaching. *Learning and Instruction* 9, 257-280.