# Inspirational session 22

## Session's theme: Curriculum and course development

**Paper number:** 39

**Presenters:** Jane Mullen, Frances Marsden

**Presenters' Organisation:** University of Huddersfield

**Session's chair:** To be announced later.

## Session title: Embedding learning development: staff reflections

**Abstract:**

This paper is based on the reflections of a team of staff who delivered a core module this academic year to over 200 undergraduate first year students on four degrees in the School of Education.  The team is very aware of the importance of supporting students in their transition to degree level study, but were concerned that due to changes in module credits valuable theory was being  squeezed out  of courses. Consequently, a module was written that embedded skill development within course specific theory. This meant not simply including these abilities in the learning outcomes but specifically designing the opportunities for development within the module and providing the necessary input or guidance to enable such development.

It is widely recognised that study skills modules are not well received by students and that  curriculum contents and pedagogy can motivate students to engage and be successful in higher education  (Thomas, 2012:34). With the focus on student centred learning the students created a portfolio of evidence of their learning development and reflected on their learning before writing their first essay. Encouraging and developing the students  academic skills became the responsibility of all the academic staff, but as Clughen & Hardy(2012) acknowledge some found it difficult to balance the time spent on skills development and theory delivery.

This paper evaluates what we have learnt in delivering this module and the effectiveness of an embedded approach to skill development.

Clughen , L & Hardy, C. (2012)  Writing at University: Student and Staff Expectations and Experiences . In Clughen, L & Hardy, C, (eds) Writing in the Disciplines: building supportive cultures for student writing in UK higher education. Bingley: Emerald Group Pub.

Thomas, L. (2012) Building Student Engagement and Belonging in Higher Education at a Time of Change: the final report from the What Works? Student Retention & Success programme. London: Paul Hamlyn Foundation.

# Inspirational session 22

## Session's theme: Curriculum and course development

**Paper number:** 45

**Presenters:** Carolien Van Soom, Lieve De Wachter

**Presenters' Organisation:** University of Leuven, Belgium

**Session's chair:** To be announced later.

## Session title: Academic literacy and math skills predict academic achievement of first year

**Abstract:**

Academic bachelor programs in Science & Technology are characterized by a low academic achievement of first year students. These programs typically require a strong academic preparation in mathematics since math modules of varying complexity are obligatory in all first-year programs. Numerous retention studies focus on cognitive variables such as high school GPA and Math test scores as typical predictors of study success (1-3), and also coaching programs of first year students bachelor of Science programs typically focus on remediation of math skills.

Academic achievement, however, depends not only on math skills. Academic language skills have been shown to be powerful predictors of academic achievement in general (4-9). Also motivational characteristics, such as the level of autonomous motivation and academic self-concept, have been repeatedly associated with academic achievement (10-11).

To improve the study success and the efficiency of coaching programs for first year students in Bachelor of Science programs, we investigated whether entry levels of academic language skills are also important predictors in Bachelor of Science programs, and to what extent motivational characteristics improve a predictive model based on cognitive characteristics.

Regression analyses showed that in all Bachelor of Science programs, the score on an academic language skills test was a significant predictor of early academic achievement, in combination with general prior achievement data and test scores on math skills. Motivational aspects had only a small additional predictive value in regression models.

Implications of these results for academic practice are discussed. Typical coaching programs for first year students in exact sciences focus exclusively on remediating math skills. The observation that academic language skills are an important indicator of students' future academic achievement, also in exact sciences, suggests that a general academic language skills test could be used to inform both science and non-science students about their chances on future study success. Diagnostic math tests have an additional value for science students, since they allow to advise students to take remedial modules to train specific math skills.

References

1. Tyson, W. (2011). Modeling Engineering Degree Attainment Using High School and College Physics and Calculus Coursetaking and Achievement. Journal of Engineering Education, 100, 760-777.

2. Veenstra, C. P., Dey, E. L., & Herrin, G. D. (2008). Is Modeling of Freshman Engineering Success Different from Modeling of Non-Engineering Success? Journal of Engineering Education, 97, 467-479.

3. Zhang, G. L., Anderson, T. J., Ohland, M. W., & Thorndyke, B. R. (2004). Identifying factors influencing engineering student graduation: A longitudinal and cross-institutional study. Journal of Engineering Education, 93, 313-320.

4. Brown, J. D. & Hudson, T. (2002). Criterion-referenced language testing. Cambridge: Cambridge University Press.

5. De Wachter, L. & Heeren, J. (2013), 'Een taaltest als signaal. De ontwikkeling en implementatie van een strategische taalvaardigheidstoets aan de KU Leuven', in: Levende Talen Tijdschrift, 2013/2 (accepted for publication).

6. Dyk, T. Van (2010). Konstitutiewe voorwaardes vir die ontwerp van 'n toets van akademiese geletterdheid. Universiteit Stellenbosch. [Doctoraatsverhandeling]

7. Holder, J.M., Jones, J., Robinson, R.A. & Krass, I. (1999) Academic Literacy Skills and Progression Rates Amongst Pharmacy Students. Higher Education Research & Development 18; 19-30

8. Marx, S. en Huyghe, S. (2011). Eerste analyses van het project TaalVaST. De correlatie tussen taaltest en examenresultaten. Intern rapport DUO. [https://ilt.kuleuven.be/cursus/docs/Eerste_analyses_taalvast_20110902.pdf– consulted on 06/06/12]

9. Peters, E., Houtven, T. Van & Morabit, Z. (2010). Is meten echt meer weten? Taalvaardigheid van instromende studenten in het hoger onderwijs in kaart gebracht. In: Peters E. en Van Houtven T. (red.), Taalbeleid in het hoger onderwijs. De hype voorbij? (pp. 51-66). Leuven: ACCO.

10. Guay, F., Ratelle, C.F. and Chanal, J. (2008) Optimal learning in optimal contexts: the roleof self-determination in education. Canadian Psychology 49; 233-240.

11. Marsh, H. W. & Craven, R. G. (2006). Reciprocal Effects of Self-Concept and Performance From a Multidimensional Perspective Beyond Seductive Pleasure and Unidimensional Perspectives. Perspectives on Psychological Science, 1, 133-163.