

## Chapter 3

# How Cultural and Learning Style Differences Impact Students' Learning Preferences in Blended Learning

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### ABSTRACT

*In teaching introductory statistics to first year students, the Maastricht University uses a blended learning environment that allows them to attune available learning tools to personal preferences and needs, in order to address large diversity in students. That diversity is a direct consequence of a heterogeneous inflow of primarily international students, transferring from different secondary school systems with large differences in prior knowledge, and transferring from very different cultural backgrounds. In this empirical contribution, the authors focus on the role an adaptive online tutorial as component of the blend can play in bridging the consequences of a broad range of differences such as prior mastery of the subject, cultural background, and learning approaches. They do so by investigating the relationships between the intensity of the use of the e-tutorial and students' characteristics related to nationality, cultural background, learning styles, goal-setting behavior, achievement motivations, self-concept constructs, and subject attitudes.*

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## INTRODUCTION

An increasing number of students choose to study at a university abroad (Healey, 2008, Russell, Rosenthal; Thomson, 2010). In 2007, 3 million students studied abroad, which is almost three times higher compared to the figures of 1990 (Ministerie van OCW, 2010). While until recently Anglo-Saxon countries like the U.S., UK or Australia primarily attracted large numbers of international students, lately also non-English speaking countries are increasingly attracting international students. European internationalization is in the first place a development within Europe itself, due to strong initiatives at the level of the European Community (Rienties & Tempelaar, 2009), but even within that limited geographical space, all challenges that come with intercultural education are fully present (Rienties, Grohnert, Kommers, Niemantsverdriet, & Nijhuis, 2011; Van der Wende, 2003).

A common assumption in higher education is that academic integration, that is, the extent to which students adapt to the academic way-of-life (Tinto, 1975), of international students is not well-aligned with the requirements of higher educational institutes (Asmar, 2005; Barrie, 2007; Jochems, Snippe, Smid, & Verweij, 1996; Morrison, Merrick, Higgs, & Le Métais, 2005; Russell et al., 2010). Recent research has found a mixed picture on whether international students underperform in academic integration and academic performance. For example, a recent study amongst 958 international students at five business schools found that some groups of international students perform really well both in terms of academic integration and academic performance (Rienties, Grohnert et al., 2011). Other international students, primarily non-Western students, seem to have more difficulties to adapt during the first-year at university (Rienties, Grohnert et al., 2011). In other words, some groups of international students find it relatively easy to adjust to higher education,

while other groups of students have considerable transitional and adjustment problems.

As a result, an increasing number of higher educational institutes is tackling these transitional problems by designing either transitional courses before the start of the academic program or complement regular first-year courses with additional learning activities to equip international students with required knowledge, skills and competences to succeed in higher education (Attewell, Lavin, Domina, & Levey, 2006; Brants & Struyven, 2009; Brouwer, Ekimova, Jasinska, Van Gastel, & Virgailaite-Meckauskaite, 2009; Tempelaar, Rienties, & Giesbers, 2009). Information Communication Technology (ICT) has powerful Web 2.0 tools facilitating learners to follow individually tailored blended courses such as mathematics (Brouwer, et al., 2009) or statistics (Tempelaar, et al., 2009), at a time that is suitable for learners. Recent research on blended transitional education using ICT has highlighted that in particular the interactivity, adaptivity and possibilities of rapid feedback of ICT tools and interactive learning environments are important merits when students have large knowledge or skills gaps (Brants & Struyven, 2009; Rienties et al., 2011; Tempelaar, et al., 2009).

Although an increasing number of universities use blended and online tools to facilitate learning for international students, a limited body of research has thus far addressed whether international students learn in a different way using ICT than local students. While a large body of literature exists comparing international students in general (Morrison, et al., 2005; Russell, et al., 2010) or specific international students (Chinese; Eringa & Huei-Ling, 2009; Skyrme, 2007) in particular with local students in academic integration and academic performance, to our knowledge no comprehensive study exists that distinguishes behavior and the use of ICT across a range of culturally diverse international students. In this chapter, using the framework of Hofstede (1980),

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