Abstract

In the face of the economic and financial crisis, business education has become confronted with the question whether it is (partly) responsible for the misconduct of managers and whether business schools only attract students with certain predispositions. While such statements feed media headlines, they lack solid investigations and empirical evidence. To our knowledge, there is hardly any empirical research on the characteristics of business school students. In our view, it is critical for the future development of business school to understand students’ current perceptions of, and attitudes towards, studying at a business school. In a longitudinal study, we assessed business school students' attitude and motivation and their development over the first year of their studies. Among others, we addressed student attitudes towards the issue of Sustainable Development. As a result of our study, the often encountered negative image of business school students cannot be confirmed. Instead it seems advisable to take a closer look at our students at business schools. Indeed, the decline of certain perceptions and attitudes over the course of the students’ first year is worth of consideration. Especially, the decline of students’ attitude towards sustainable development is rather remarkable. As a practical implication of our study, a stronger focus on the sustainable development (SD) of business can be identified as one possible area for improvement.

Key words

attitude, motivation, students, higher education, business schools, sustainable development
Research focus

The financial and the economic crises have catalysed public discussions about the scopes and responsibilities of business schools (cf. Cirka & Corrigall, 2010; Currie, Knights, & Starkey, 2010; Ford, Harding, & Learmonth, 2010; Vince, 2010). While management researchers and economists have recognized and researched such crises relatively early, business schools have by and large failed to integrate such insights into their teaching programmes in a timely manner. As a consequence, we currently see urgent demands for business schools to adapt and even transform their curricula in order to be prepared for on-going and upcoming challenges such as globalization, climate change, demographic shifts, and inequality (Friga, Bettis, & Sullivan, 2003; Wick, Withercombe, & Redman, 2011). Additionally, in the face of the economic and financial crisis, business education has become confronted with the question whether it is (partly) responsible for the misconduct of managers (who were mostly educated in business schools) and whether business schools only attract students with certain predispositions such as extrinsic motivation or low responsibility.

As one consequence, such accusations have prompted considerable soul searching at business schools. “Many now recognize the need to re-examine the role and purpose of business and have students wrestle with complex questions of companies’ responsibilities to stakeholders, such as customers, employees, and society at large, in addition to shareholders” (Datar, Garvin, & Cullen, 2010, p. 100).

Within this debate on the future of the business school, different possible development areas are considered (Euler & Feixas, 2013):

- It is often argued that the ethical dimension of business should be stronger emphasized – this is sometimes associated with expansion of business ethics at the respective schools. These initiatives are based on the assumption that hitherto management education has put much emphasis on the “profit first” doctrine, while ethical standards and moral development processes have been underemphasized (Goshal, 2005; Mitroff, 2004)

- A stronger focus on the sustainable development of business is called for: Instead of the common short-term view of economic success (“shareholder value”), other value references (“public value”, “stakeholder value”, “corporate social responsibility”) should be put in the foreground. In this context, there is also an expansion of the view of business to systemic, particularly social, contexts. One example of this development is the alternative MBA ranking published by the Aspen Institute since 1998, in which the integration of ethical, social and environmental aspects is taken into special consideration in the programs offered by business schools. The often cited demand by Rakesh Khurana (2009) also points in this direction, according to which managers – like physicians – should take a type of Hippocratic oath whereby they undertake to serve society and to manage their companies in a profitable, social and environmentally sustainable manner. In the meantime, students in the 2009 MBA class at a number of top-ranked programs have initiated such an oath including a commitment to integrity, ethics, and social responsibility (Wayne, 2009).

- Accordingly, many bodies propose standards and principles for business ethics, sustainable development or social responsibility. One concrete example is the UN Global Forum creating six principles for “responsible management education” which are supported by major professional institutions and more than 300 business schools worldwide (see www.unprme.org). The first two principles indicate the thrust of the initiative: (1) “We will develop the capabilities of students to be future generators of sustainable value for business and society at large and to work for an inclusive and
sustainable global economy.” (2) “We will incorporate into our academic activities and curricula the values of global social responsibility as portrayed in international initiatives such as the United Nations Global Compact.”

Closely related to this approach but more detailed is the ‘Globally Responsible Leadership Initiative (GRLI)” aiming at a management education that is “relevant & applied, holistic & integrative, responsible & sustainable, inter-disciplinary & multi-level, and ... learning-oriented” (as opposed to teacher-centric).

Also along these lines are various initiatives on the part of international accreditation agencies in the field of management education (EFMD, AACSB, AMBA) to incorporate these ideas into their normative framework. For example, the new EFMD-EQUIS standards and criteria (2013) incorporate a specific chapter on ethics, responsibility and sustainability. As with the chapters on internationalisation and corporate connections, it is a transversal chapter integrated in all the other chapters of the EQUIS framework.

- Further, it is criticized that research at business schools has gone in the wrong direction. While sharpening their academic profiles, business schools increasingly decoupled themselves from management practice. To put it into the extreme: Research in business schools tends to refer to publications in reviewed, discipline-based academic journals. They rarely address problems which go beyond disciplinary boundaries and due to the methodological mainstream do not contribute to any challenges in designing the future. They strive for scientific rigor and neglect practical relevance and thus lose their legitimacy in management practice. So it is hardly surprising that the publications rarely reach management practice, because practitioners do not read academic journals or do not find them useful.

In this context, Goshal (2005, p. 82) noted that business schools have lost a taste of scholarship pluralism, as described by Boyer (1990) as four different kinds of scholarship: discovery (research), integration (synthesis), practice (application), and teaching (pedagogy). Instead, the emphasis in applying the ‘discovery’ concept to the study of business has ended up in eliminating all other forms of scholarship from the world of business schools. As a consequence, the academic table is now reserved only for scientists and institutional structures within and around business schools that are rigidly built around a dominant model based on the sanctity of the academic freedom of business school academics (ibid., 87-88).

- Finally, another criticism that has been continuously raised for several years concerns the pedagogical practice of management education, proclaiming the inadequacy of its objectives and teaching methods. According to its critics, business education lacks an integrative management perspective, tends to neglect critical thinking and deep reflection on issues reaching beyond functional tasks, and represents little or distorted perspectives on values and ethics (Mintzberg, 2004; Mintzberg & Gosling, 2002). Correspondingly business schools are supposed to attract those people whose main ambition is to utilize management education as their ‘golden passport’ to a well-paid career path emphasizing earning rather than learning. In this context, a number of proposals how to enhance teaching at business schools were developed. These include the modification of content, such as new case studies (Goshal, 2005), more advanced teaching methods with the goal of addressing the normative demands mentioned above, for instance service learning (Kenworthy-U’ren & Peterson, 2005; Kohls, 1996; Pless, Maak, & Stahl, 2011).

This last criticism closes the circle to the above mentioned question whether business schools attract students with certain characteristics and whether its content and teaching methods lead to the proliferation of certain attitudes. However, such analyses can only be regarded as vague
guesses on the nature of the students at business schools. To our knowledge, there is hardly any empirical research on the characteristics of business school students – not to speak of the development of students’ perceptions over the course of their studies. In our view, it is critical for the future development of business schools to understand students’ current perceptions of, and attitudes towards, studying at a business school.

In the light of this research gap, our study focuses on three major questions:

1.) How can students at a business school be described in terms of their attitudes and motivation towards university and studying? Are male and female students different in their assessment of attitudes and motivation?

2.) How do students’ attitudes and motivation develop over time? Do students begin their studies with high intrinsic motivation and interest in the subject matter which in the course of their studies delineates to rather extrinsic motives?

3.) How do students assess the business schools activities towards sustainable development? How does their attitude towards these activities evolve over time?

In the following, we will describe our research methodology and then present an overview of our results. We will discuss these results and reflect them based on other empirical evidence. As a practical implication, we will suggest how a management programme could be enhanced with regard to sustainable development.

Theoretical background

Although there were numerous attempts in the past, up to now, no over-arching definition of attitudes can be found. One of the first definitions by Allport (1935) defines “an attitude [as] a mental and neural state of readiness organized through experience, exerting a directive or dynamic influence upon individual's response to all objects and situations with which it is related” (p. 810). A newer definition by Eagly & Chaiken (1993) sees attitudes as “a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor” (Eagly & Chaiken, 2007, p. 1). Most generally, attitudes can be seen as an “evaluation of people, objects or ideas” (Aronson, Wilson, & Akert, 2004, p. 1) which affect the way how we perceive the world, how we think and how we act (Maio & Haddock, 2010, p. 4).

These (and many other) definitions have in common that attitudes are based on an (explicit or implicit) evaluation and that they relate to a certain attitude object. People assess the objects in their direct or indirect surroundings and these assessments result in a positive or negative reaction towards the object (Bargh, Chaiken, Govender, & Pratto, 1992; Fazio, 2007).

An attitude object can in principle be everything that comes to a person’s mind (Bohner & Wänke, 2002, p. 5). „Basically, anything that can be evaluated along a dimension of favorability can be conceptualized as an attitude object” (Maio & Haddock, 2010). For the context of business schools, possible attitude objects are the university as an institution, the process of studying at the university, or the learning process in particular. It can also include attitudes towards certain individual people (e.g. lecturers), social groups (e.g. the administration, the management, the students), or certain subjects (“I don’t like statistics”)

The evaluation process can lead to reactions in three different dimensions concerning the attitude object. So-called ABC-models (affect, behaviour, cognition) assume that the evaluation comprises up to three dimensions (Rosenberg & Hovland, 1966): 1.) cognitive
component (knowledge), 2.) affective component (emotions, feelings) and 3.) behavioural component (behaviour, action) (see Fehler! Verweisquelle konnte nicht gefunden werden.). Such three-component models are currently favoured in comparison to one-component-models which normally focus the affective reaction (Eagly & Chaiken, 1993; Huskinson & Haddock, 2004).

Figure 1: The multi-component model of attitudes (Maio & Haddock, 2010)

It is assumed that attitudes towards certain objects are dominated by one of the three components. In the following, the three components will be illustrated with examples from teaching and learning at university.

**Behavioural component.** If the behavioural component dominates, the assessment of the relevant object is determined by the observation of one’s own behaviour. This assumption is based on the theory of self-observation by Berne (1972). According to Bohner & Wähnke (2002), this component can also be called ‘behavioural response’. With regard to studying, past experience with school-based learning can influence a student’s current attitude towards studying. For instance, poor maths performance in secondary school could lead to a negative attitude towards maths at the university.

**Cognitive component.** If the cognitive dimension of the attitude is in the foreground, the attributes of the attitude object will be evaluated based on the available information, e.g. based on the advantages and disadvantages of the attitude object. Important questions in this context are the subjective emphasis of certain attributes and the completeness of the evaluation. When choosing the attributes to be evaluated, the perceived social norm is also of importance (Fishbein & Ajzen, 1975). An example of a rather cognitive emphasis is the decision for a certain university and study programme. Above all, future students will weigh the advantages and disadvantages of certain institutions and their first attitude will more or less be determined by these cognitive aspects (e.g. information from the media or ranking tables). Usually, future students will neither have any previous experience with the university, nor will they have strong emotions concerning the institution.

**Affective component.** These are based on the assessment of emotions and feelings which are triggered by a certain attitude object (Breckler & Wiggins, 1989). Normally, spontaneous positive and negative emotions are in the foreground for this kind of attitudes. They develop based on the sensual reaction towards the attitude object (Mazur, 2006) or based on societal value systems (e.g. religion, moral, political views). If the first week of studying (introductory week) is experienced as joyful and fun, students are more likely to develop a positive affective attitude towards the university as opposed to a first impression that is characterized by an anxious atmosphere scaring new students with the enormous workload they are facing. The examples show that not all components are relevant for every attitude object at any time. For the first year at university, the behavioural component will, for instance, be of less significance. In a similar vein, the components are not independent from each other. The mixture of all components makes up the attitude. Mostly, this means that all components point in the same direction, i.e. positive affective reactions are combined with positive cognitive
reactions. However, it is also possible that the evaluations are inconsistent. Depending on which dimension is in accordance with the summative evaluation, Bohner and Wähne (2002) allude to “evaluative-cognitive consistency”, “evaluative-affective consistency” and / or “evaluative-behavioural consistency” (Bohner & Wänke, 2002).

In sum, it can be assumed that attitudes are based on the three components described (Bohner & Wänke, 2002): “[…] this revised tripartite, […] analysis also points to cognition, affect, and behaviour, but as three types of evaluative responding that attitude objects elicit” (Eagly & Chaiken, 2007). In the following, it will be described how the three components were measured in our research project.

Research methods

Data was collected at the University of St. Gallen, a Swiss business school, over the course of the academic year 2011/2012. All incoming students (about 1200) were asked to complete a first online-survey before the beginning of their studies (i.e. in August 2011). In total, 820 students completed the first questionnaire, resulting in a response rate of approximately 68% for the first intake. After that, students were asked another three times to complete a similar questionnaire (in November 2011, in April 2012 and in September 2012), resulting in a high mortality rate (as can be expected from longitudinal studies). The following figure gives an overview of the sample.

<table>
<thead>
<tr>
<th></th>
<th>t1</th>
<th>t2</th>
<th>t3</th>
<th>t4</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>820</td>
<td>413</td>
<td>285</td>
<td>191</td>
</tr>
<tr>
<td>age</td>
<td>19.57</td>
<td>19.53</td>
<td>19.56</td>
<td>19.53</td>
</tr>
<tr>
<td>gender</td>
<td>35.4% female, 64.2% male</td>
<td>35.4% female, 64.2% male</td>
<td>33.9% female, 66.1% male</td>
<td>37.1% female, 62.9% male</td>
</tr>
<tr>
<td>nation</td>
<td>CH: 73.9%, GER: 18.8%, other: 7.4%</td>
<td>CH: 70.9%, GER: 22.5%, other: 6.6%</td>
<td>CH: 70.7%, GER: 23.2%, other: 6.0%</td>
<td>CH: 70.0%, GER: 22.9%, other: 7.1%</td>
</tr>
</tbody>
</table>

Figure 2: Overview of the sample

Data was collected using the Attitude towards the Study Environment Questionnaire (ASEQ) (Brahm, Jenert, & Euler, 2013) which was put together using existing instruments and newly developed questionnaire items. The questionnaire embraces 10 instruments measuring the three attitudes components, i.e. affective, cognitive and behavioural aspects, at the same time considering two attitude objects, i.e. the university and studying. The following figure shows how the attitude objects, the attitude components and the instruments are linked.
The instrument was validated in a pre-test with 128 students from a German university. The instrument proved to be reliable both in the pre-test and in the series of data collections of this research (see the following table).

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Cronbach's Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall attitude towards the university</td>
<td>0.724-0.853</td>
</tr>
<tr>
<td>Normative behaviour</td>
<td>0.722-0.793</td>
</tr>
<tr>
<td>Goals of the university</td>
<td>n.a.</td>
</tr>
<tr>
<td>Atmosphere among students</td>
<td>0.781</td>
</tr>
<tr>
<td>Students’ interest</td>
<td>0.716-0.733</td>
</tr>
<tr>
<td>Joy</td>
<td>0.661-0.807</td>
</tr>
<tr>
<td>Anxiety</td>
<td>0.715-0.788</td>
</tr>
<tr>
<td>Previous experience with schooling</td>
<td>0.76</td>
</tr>
<tr>
<td>Students goals for studying</td>
<td>n.a.</td>
</tr>
<tr>
<td>Quality of the lecturers</td>
<td>0.698-0.702</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>0.779-0.846</td>
</tr>
<tr>
<td>Own activity in courses</td>
<td>0.786-0.84</td>
</tr>
</tbody>
</table>

Table 1: Reliability of the Attitude towards the Study Environment Questionnaire (ASEQ).
Data analysis was carried out with SPSS and MPlus (for confirmatory factor analyses). In the following, we will present selected results from our study. For the purpose of comparability, we will present results based on those 107 students who answered all four questionnaires. This sample can be seen as representative of the student population since there are no significant differences between this smaller sample and the 820 students who answered the first questionnaire.

**Results of the study**

Regarding the first research question, the results of our study allow us to describe business students in a quite positive manner: The students can be characterized by a very positive attitude towards the business school and high motivation. They also display high levels of self-efficacy and joy. Their anxiety towards learning was assessed in the medium range (mean (M) of 3.41 on a scale from 1-6, 6 indicating the highest; standard deviation (SD) = 1.16).

Female and male students differ with regard to their self-efficacy, their anxiety and their intrinsic motivation. Female students show significantly lower values of self-efficacy, at the same time scoring significantly higher both in their level of anxiety and intrinsic motivation. Female students also assess the universities activities towards sustainable development more favourable than the male students (see the following Table).

<table>
<thead>
<tr>
<th>Construct / scale</th>
<th>Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>female</td>
<td>37</td>
<td>4.82</td>
<td>.561</td>
<td>t(df) = -2.004(105),</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>p&lt;.05</td>
</tr>
<tr>
<td></td>
<td>male</td>
<td>70</td>
<td>5.06</td>
<td>.608</td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>female</td>
<td>36</td>
<td>3.80</td>
<td>1.166</td>
<td>t(df) = 2.479, p &lt; .05</td>
</tr>
<tr>
<td></td>
<td>male</td>
<td>70</td>
<td>3.22</td>
<td>1.119</td>
<td></td>
</tr>
<tr>
<td>Intrinsic motivation</td>
<td>female</td>
<td>37</td>
<td>5.11</td>
<td>.857</td>
<td>t(df) = 2.027(105), p &lt; .05</td>
</tr>
<tr>
<td></td>
<td>male</td>
<td>70</td>
<td>4.78</td>
<td>.759</td>
<td></td>
</tr>
<tr>
<td>Activities of sustainable development</td>
<td>female</td>
<td>37</td>
<td>4.78</td>
<td>.479</td>
<td>t(df) = 2.227 (97.68), p &lt; .05</td>
</tr>
<tr>
<td></td>
<td>male</td>
<td>70</td>
<td>4.53</td>
<td>.696</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Differences between male and female students at the start of their studies.

Additionally, students’ goals are rather diverse. They rate the development of their competence to solve problems under multiple perspectives (M = 4.54 on a scale from 1–5; SD = .653), their development as a responsible person (M = 4.52; SD = .744), the advancement of their scientific competence (M = 4.41; SD = .758) as high as the preparation for a leadership position (M = 4.59; SD = .706) and the prospect for career success (M = 4.65; SD = .631).

Thus, students can indeed be depicted as motivated by both intrinsic and extrinsic motives.

Concerning the second research question, the development of motivation and attitudes is rather different depending on the aspects assessed. For instance, the attitude towards the university is continuously declining over the first year. Nevertheless, the level reached after one year of studying is still quite high (M = 4.86, SD = 1.10), however, it is significantly lower than at the beginning of their studies (assessed with a t-test for dependent samples; t = 4.103 (105); p < .001). No significant difference can be found for the normative behaviour, i.e. the support that students receive from family and friends. The development of students’

1 Different value of the degrees of freedom since the Levene’s test for Equality of Variances showed that equal variances cannot be assumed (p>.05).
self-efficacy provides a very interesting picture. From the first to the second data collection point, the level of self-efficacy declined considerably; after that, self-efficacy is slowly (and significantly) increasing again (see the following image).

![Figure 4: Development of students' attitude, normative behaviour and self-efficacy.](image)

Joy for learning is assessed at a consistently high level over the course of the first year. The following image does not show that the decline from the first to the second time point as well as the increase from the third to the fourth time point are significant differences (p < .05). Anxiety is at a low to medium level, however, the increase in anxiety is rather strong from the first to the second time point (t = -3.707 (104), p< .001).

![Figure 5: Development of students' joy and anxiety.](image)

Students’ interest for business content and their motivation start out on a very high level. The development of motivation over the first year is rather interesting. While extrinsic motivation is increasing slightly (not significantly), intrinsic motivation first declines strongly and then increases again highly significantly from the third to the fourth time point (from April to
September 2012). In total, the decline of intrinsic motivation over the first year is still significant ($t = 1.995 (105), p < .05$). The development of students’ interest is very similar to this. The following image shows the different developments:

![Graph showing development of students’ interest and motivation.](image)

**Figure 6: Development of students’ interest and motivation.**

The students were also asked how they assess the university’s activities towards sustainable development. The following image shows the development of their assessment:

![Graph showing development of students’ assessment of the university’s activities concerning sustainable development.](image)

**Figure 7: Development of students’ assessment of the university’s activities concerning sustainable development.**

As the image shows, the students initially have a quite positive attitude towards sustainable development. However, their evaluation of the activities for sustainable development – as taken by the business school – declines rapidly (and significantly) from the first time point (August 2011) to the third time point (April 2012). The last decline (from t3 to t4) is not significant anymore.

Discussion
Regarding these selected results, the rather daunting picture sometimes painted by the media that students at business schools are mostly motivated by extrinsic motives such as the prospect of achieving leadership positions later on, cannot be confirmed with this study. Instead, it seems advisable to take a closer look at the specific students at business schools. In our study, students show positive attitudes towards the university and are highly motivated. They can be characterized by both extrinsic (career, leadership positions) and intrinsic motives (scientific competence, problem-solving, and responsibility) at the beginning of their studies. This dual motivation scheme is also identified in other studies on student motivation (Isroff & del Soldato, 1998). It is supported by self-determination theory which emphasizes that intrinsic and extrinsic motivation are not to be seen as opposing ends (Deci & Ryan, 1993). The duality of motives could also be interpreted in the light of Kuhl’s (1992) action theory as there are hints that intrinsic motivation and interest in the subject matter determine students’ motivation to select a certain study programme while both extrinsic and intrinsic goals might be responsible for students’ motivation to continue their studies. Indeed, it seems that both intrinsic and extrinsic motives are of importance for the study process. This finding is in line with other research on the development of student motivation (Jacobs & Newstead, 2000) who found that students are motivated by subject-related and/or by generic activities. Such a dual orientation is only partially incorporated into distinctions such as learning versus performance goal orientation or deep versus surface learning.

Some differences between male and female students’ attitudes towards studying could be identified. The ones identified can be seen as rather typical, in particular regarding self-efficacy and anxiety as other studies also show that women score lower on academic self-efficacy and correspondingly higher on anxiety (Pajares, 1996; Schunk & Pajares, 2002; Wigfield, Eccles, & Pintrich, 1996). However, the gender difference in students’ motivation is far from being confirmed in the literature. For instance, a study by Sadler-Smith (1996) looking at approaches to studying with a sample of business students, found significant differences between male and female students. On the contrary, Wilson et al. (1996) found no significant differences with regard to students’ motives. Comparable to our research, a study by Vallerand & Bissonnette (1992) found significantly higher intrinsic motivation of female students. Their study also showed that male students’ score higher on extrinsic motivation which our study could also confirm when taking into account the total sample available at the first time point (instead of only using those who answered all four questionnaires).

In total, student motivation stays quite stable over the course of the first year. Although self-efficacy, anxiety, interest and intrinsic motivation deteriorate after students’ first experiences with the business school, all in all, motivation remains on or returns to a high level at the end of the first year. On the contrary, the development of students’ overall attitude towards the business school and towards sustainability is rather remarkable. Although sustainable development is identified as an increasingly important area for business schools, students seem to realize that the business school is not as active in this field as they expected at the beginning of their studies. This raises the question on what can be done to make students maintain their interest.

Limitations and Research Implications

The findings of this study are first of all limited to the single institution the sample was drawn. Although the university is typical of a middle-European business school, a sample of students from a different institution or from multiple institutions may lead to different results. Second, the study’s results are limited due to the rather small sample size. Even though the
mortality rate was quite usual for longitudinal studies and the sample proved to be representative of the initial student population, the final sample was nevertheless rather small and due to our limitation to first-year students, only contained a particular student population. Thus, the findings should not be over generalized. Third, the study is based on self-reported data. Other authors have shown that their self-report measures on student experiences in higher education institutions were credible (Gonyea, Kish, Kuh, Muthiah, & Thomas, 2003; Pace, 1985). Nevertheless, a certain bias due to the use of self-report data cannot be completely foreclosed. Finally, the longitudinal development of students’ motivation and attitudes might be influenced by some selection effect since the students who left the business school during the first year did not answer the further questionnaires. We took caution to compare the final sample with the original large sample of 820 students (see Figure 2) and did not detect significant differences. Nevertheless, the findings should be interpreted with these cautionary notes in mind.

In consequence, a number of follow-up research questions can be identified:
- Are students’ attitudes towards the institution and studying different in other business schools or – more generally – in other higher education institutions?
- How do students’ attitudes develop over a longer period of time?
- Which factors do influence the development of students’ attitude?
- Are the self-report measures reliable and valid to assess students’ attitude?

Practical implication: Intervention based on Sustainable Development

Although the results should be treated with caution, there is striking evidence that in some areas there is not just a need for more detailed research but also for designing innovative learning concepts. As one practical implication of the study, the University of St. Gallen plans to include sustainable development (SD) as a major topic into the largest study programme on the Bachelor level. On a normative and strategic basis, this is a highly desired goal. However, it is also clear that business schools are confronted with a number of challenges when attempting to more consistently embed SD into the curricula of their study programmes.

Major barriers seem the perceived irrelevance of SD by academic staff as well as limited staff awareness and expertise (Dawe, Jucker, & Martin, 2005; de la Harpe & Thomas, 2009; Jucker, 2002; Pesonen, 2003). Additionally, negative attitudes towards the topic (i.e. perceived irrelevance) are also an obstacle on the part of at least a proportion of students. As additional research on students at business schools showed, students make a clear distinction between the prevailing “mainstream” taught in the core curriculum and alternative approaches (such as SD) presented in the electives (Jenert, 2011). Currently, however, the courses related to SD, available at many business schools, are mainly taught in the electives. Therefore, a relevant proportion of the student body consider topics related to SD either irrelevant or they perceive the university to be hypocritical about these topics. Some even believe that the university uses such topics as “fig leaves” keeping up a positive external impression (ibid.).

The survey of students’ attitude development during the first year at the University St. Gallen confirmed this impression. These results are in line with the abovementioned findings concerning students’ problematic perceptions of activities related to SD.

As a result of our previous research, we consider it crucial to work on students’ attitudes towards sustainable development as a core part of their studies. Where they currently regard the topic more as a possible and nice add-on to conventional topics of business education, SD needs to be perceived as equally significant. Therefore, an important emphasis will be put on developing students’ as well as faculty’s attitudes towards the topic. This aspect is a major challenge for developing effective educational interventions as attitudes are among the learning outcomes that are most difficult to address in formal teaching and learning scenarios.
When considering re-designing an educational programme, the educational literature suggests that defining key competences and learning outcomes is crucial (e.g. Baartman, Bastiaens, Kirschner, & van der Vleuten, 2007; Bowden & Marton, 1998; Voorhees, 2001). Intended learning outcomes not only provide guidance in the process of curriculum development, they are also “the reference scheme for transparently evaluating student learning and teaching effectiveness” (Wiek, et al., 2011, p. 204). We agree with Wiek et al. (2011, 204) that “… because sustainability problems and challenges have specific characteristics (different from problems addressed in other fields), analysing and solving sustainability problems requires a particular set of interlinked and interdependent key competencies”.

For the proposed project, we draw on these competences; however, in our view, it is necessary to concentrate on interpersonal competences and, in particular, on the development of certain attitudes since they are crucial for students’ decisions in later job situations (e.g. Sanbonmatsu, Prince, Vanous, & Posavac, 2005). In line with this concentration on attitudes, we also focus on students’ competence for critical reflection and interdisciplinary problem solving. These competences pave the way for students’ attitude development. This view on the necessary competences for SD is also in line with recent literature on Education for SD. For instance, Tilbury (2004, p. 101) stated that “The terms “critical reflection,” “values clarification,” and “participative action” have become core components for Environmental Education for Sustainability.” In her view, these generic competences are crucial for students in order to contribute to sustainability while they are at university and later in their professional and personal lives (Thomas, 2009). Additionally, we will stress the competence for working in interdisciplinary teams (Di Gulio, Künzli David, & Defila, 2008) since “most sustainability problems cannot be tackled from the perspective of a single discipline” (Kueffer et al., 2012, p. 11).

Summing up the abovementioned considerations, the following learning outcomes will guide our project2: Students should

- critically reflect upon the paradigms, goals, approaches, and decisions in management;
- solve problems in interdisciplinary teams by connecting concepts and theories from multiple disciplines, cultures, etc. and by taking into account different interacting aspects, e.g.
  - the ecological, social and economic goals of different stakeholders according to the triple-bottom line model (Ferdig, 2007);
  - the temporal dimensions of one’s actions (Wiek, et al., 2011);
- appreciate the importance of individual responsibility and action regarding SD.

These learning goals are in line with the understanding of Education for SD as interdisciplinary, holistic and values-driven. Concerning teaching and learning methods it should be built around critical thinking and problem solving, eventually leading to confidence in addressing the dilemmas and challenges of SD. To make sure that SD is embedded in the whole curriculum rather than in a small number of courses (Thomas, 2009), we will develop a “master plan” with courses that have to implement methods and content with a focus on SD.

Our approach is threefold:

a) develop a concept to embed SD throughout the curriculum of the Bachelor in Business Administration (master plan);

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2 According to our view on curriculum development, it is essential to discuss these outcomes with faculty as part of the project and to adapt them if necessary.
b) support and monitor the curriculum development process in order to derive principles, relevant also for other study programmes when implementing SD in Higher Education

c) evaluate the effectiveness of the concept with regard to students’ competence development in SD (in accordance with the learning outcomes).

In order to reach the learning goals mentioned above, three basic educational principles are suggested – referring to general educational principles that have proven effective in promoting sustainability and critical reflection in Higher Education (Euler & Feixas, 2013; Kajikawa, 2008):

- The alteration of action and reflection, i.e. ensuring practical experiences in educational settings and providing opportunities to critically reflect on them (Kolb, 1984; Kolb, Boyatzis, & Mainemelis, 2001; Schön, 1983).

- Observational learning / modelling, i.e. learning from role models’ reactions to SD (Bandura, 1986).

- Transformative learning which encompasses problem solving by “defining a problem or by redefining or reframing the problem.” (Mezirow, 2000, p. 20). More broadly, transformative learning is about critically examining habitual expectations and potentially revise them (Cranton, 2006, p. 19).

These principles will be implemented with different teaching and learning scenarios. Examples include

- interdisciplinary student projects (bringing together students from different subjects, if possible from different universities, also including) solving real-world sustainability problems (Brundiers & Wiek, 2011);
- sustainability conferences and summer schools;
- educators and tutors as role models for sustainability (e.g Dawe, et al., 2005);
- service learning activities, working on sustainability issues in practice contexts (e.g. for public and private organizations) which expands SD to the informal learning context (Kenworthy-U’ren & Peterson, 2005; Pless, et al., 2011; Thomas, 2009).

The second part of our approach focuses on the curriculum development process itself by deriving relevant principles for other study programmes embedding SD in their curriculum. Drawing on the literature on curriculum development and change management, we will document the necessary measures in order to involve faculty, administration and university management.

Management education is in the stage of transition. There are encouraging examples outlining new approaches, yet at the same time there is often inertia to be overcome. While change is on the agenda it’s the implementation that enables progress, not just programmatic ideas.
Literature


