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PREPARING BUSINESS STUDENTS FOR COOPERATION IN MULTI-DISCIPLINARY NEW VENTURE TEAMS: EMPIRICAL INSIGHTS FROM A BUSINESS PLANNING COURSE

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Keywords: entrepreneurial education, interdisciplinary cooperation, new venture teams

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ABSTRACT

Interdisciplinary cooperation among people trained in technical and economic fields has been identified as an important success factor in new venture teams. However, empirical findings also indicate that individuals often refuse to engage in close and trustful relationships with representatives of other disciplines. Thus the question arises whether education programs on interdisciplinary cooperation may be suitable to prepare students for future activities in multi-functional business start-up teams.

In this study, we investigate the psychological effects of an interdisciplinary business planning course held at the Vienna University of Economics and Business Administration with the intention of promoting cooperation between technology-oriented professionals and business management students. The findings show that this course experience changes the students' attitudinal beliefs with respect to representatives of the technical discipline by reducing stereotypical assumptions. At the same time, the course fosters awareness of the challenges involved in cross-disciplinary cooperation. The more students communicate with their technical counterparts and the more they familiarize themselves with the technical aspects of the project, the stronger these effects become.

Keywords: entrepreneurial education, interdisciplinary cooperation, new venture teams

INTRODUCTION

Formal entrepreneurship education has been intensified in universities over the past four decades. The establishment of entrepreneurial programs and institutions in the university context has been triggered by the expectation that a conducive academic environment can help to develop new generations of business founders. In fact, according to empirical research, the universities and their didactic activities influence the students' decision-making process with respect to new venture creation. (e.g., Gorman, Hanlon & King, 1997; Bécharad & Toulouse, 1998; Hostager & Decker, 1999).

When academic administrators design new education programs, they are well advised to think of the antecedents of entrepreneurial success if they aim to train the students according to these success factors. In this paper, we focus on team heterogeneity in terms of educational and professional backgrounds as a critical factor. After all, multi-disciplinary new venture teams are more likely to make adequate decisions in the founding process (Roberts, 1991; Roure & Maidique, 1986). Although it is important, interdisciplinary cooperation is often characterized by severe disharmony, both in new venture teams and in new product development teams (Griffin & Hauser, 1996; Gupta & Wilemon, 1988; Souder, 1988). Furthermore, when surveying student populations, researchers often find a low level of awareness and appreciation of cooperating with representatives from other disciplines to create new ventures (Franke & Lüthje, 2003). It therefore seems reasonable to include elements of interdisciplinary cooperation in entrepreneurial education programs. The first aim of this paper is to report on a multi-disciplinary business planning course which has been running continuously for two years at the Vienna University of Economics and Business Administration. One unique feature of this course is that business management students interact with technically oriented professionals to develop a business proposal for a technical concept.

The effectiveness of interdisciplinary projects in newly founded and established companies is often influenced negatively by simplistic assumptions and stereotypes regarding other disciplines (Ashforth & Mael, 1989; Dougherty, 1992; Sethi & Nicholson, 2001). One objective of multi-disciplinary courses is therefore to foster personal experiences in interdisciplinary interaction and thus to create "common ground" between individuals from different disciplines (Clark, 1996). However, to our knowledge, the question as to the effects of teaching interdisciplinary experience has not been answered with empirical data. Thus, the second aim of this paper is to provide preliminary empirical insights into the psychological effects of interdisciplinary experience. On the basis of the described course, we will explore the changes in the students' attitudes towards cross-disciplinary cooperation.

The paper starts with a review of research on the role of multi-disciplinary cooperation in new venture creation. In addition, we outline the outcomes that may be associated with entrepreneurship and interdisciplinary education. The next section is dedicated to describing the multi-disciplinary course approach taken at the Vienna University of Economics and Business Administration. We then proceed to describe our research method and present our findings on the psychological outcomes of the course experience. In the final section, the implications of this research are discussed.

INTERDISCIPLINARY COOPERATION IN NEW VENTURE CREATION

Start-up companies seem to benefit from cross-disciplinary founding teams. Logically enough, individual founders are not able to cover all of the skill and knowledge areas critical to the success of new ventures, such as product design, manufacturing, financial planning, market analysis, strategy, and leadership. Empirical findings, in fact, point to a positive relationship between team size and company growth, that is, high-growth new ventures tend to be founded by larger teams (Feesser & Willard, 1990; Picot, Laub & Schneider, 1989; Siegel, Siegel & MacMillan, 1993). However, it is not merely size that matters, it is team

heterogeneity in terms of educational and professional backgrounds that seems to be associated with entrepreneurial success. Teams are especially advantageous if they comprise a wide variety of skills and knowledge, like technological and sales/marketing capabilities (Eisenhardt & Schoonhoven, 1990; Roberts, 1991; Teal & Hofer, 2001). Business founders who have experienced entrepreneurial failure seem to have learned this lesson. When these founders create their second company, they tend to actively incorporate a greater variety of experience in their company (Lamont, 1972). Moreover, venture capitalists obviously act according to this evidence and evaluate the venture team on the basis of their cross-disciplinary character. A recent study demonstrated that when making funding decisions, venture capitalists prefer teams with a mixed background in management and technical fields (Franke, Gruber, Harhoff & Henkel, 2003).

Nevertheless, cross-disciplinary cooperation is often not that easy to manage. Research on multi-disciplinary projects has shown that this type of cooperation is very often characterized by a state of severe disharmony (Gupta & Wilemon, 1988; Souder, 1988). Numerous variables have been identified that may be responsible for these interface problems (Griffin & Hauser, 1996). Several of the most important factors are related to personal barriers. They are rooted in systematic personality, behavioral or motivational discrepancies between the members of different disciplines and functional areas (Dougherty, 1992; Lawrence & Lorsch, 1967; Gupta, Raj & Wilemon, 1986). However, difficulties and conflicts in cross-functional cooperation may not exclusively evolve as a consequence of actual person-related differences. They might also be due to stereotypes which are not based on personal experiences but on simplistic categorizations of the representatives of other disciplines (Ashforth, & Mael, 1989; Sethi, & Nicholson, 2001). It has been shown that individuals have a tendency to confer negative attributes on people of other groups, particularly if the relationship between the groups is competitive in nature (Tajfel, 1982).

In summary, cross-disciplinary teams have a higher propensity for success in the process of new venture formation. At the same time, one has to bear in mind that cross-disciplinary cooperation is likely to be associated with interface problems which, in turn, are due to stereotypical perceptions of members of other disciplines. In the next section, we will discuss whether these perceptions might be open to change through educational programs on entrepreneurship and interdisciplinary cooperation.

THE EFFECTS OF ENTREPRENEURSHIP AND INTERDISCIPLINARY EDUCATION PROGRAMS

In order to encourage more business start-ups, entrepreneurship education has been intensified in universities over the past four decades. While less than ten universities in the USA were teaching in this field in the sixties, estimates today exceed 700 universities (Fiet, 2001; Hills & Morris, 1998; Vesper & McMullan, 1988). This growth in interest and funding is accompanied by an increasing demand for a legitimization of the entrepreneurship field. Recent research findings show that universities and their didactic activities can influence the students' decision-making process with respect to new venture creation (Bécharde & Toulouse, 1998; Gorman et al., 1997; Hostager & Decker, 1999). Given a positive predisposition on the part of the students, training programs and the image of business founders within the university seem to have the potential to increase the propensity of graduates to found new businesses after leaving university (Autio, Keeley, Klofsten & Ulfstedt, 1997; Begley, Tan, Larasati, Rab, Zamora & Nanayakkara, 1997; Brown, 1990; McMullan, Long & Wilson, 1985). However, not only the founding propensity but also the success of the new ventures has been linked to prior entrepreneurship education and training. In part, the knowledge and skills required by entrepreneurs can be taught. In controlled studies, it was shown that entrepreneurship courses help graduates make better decisions in the start-up process (Vesper & Gartner, 1997). Enhancing the students' understanding of the processes involved in the

creation of a new business is therefore an important objective in entrepreneurship education (Gorman et al., 1997; Hills & Morris, 1998).

However, it might not be sufficient to focus exclusively on learning experiences in entrepreneurship. As discussed in the previous section, individuals often refuse to engage in close and trustful interdisciplinary cooperation. This can already be observed in student populations. According to a recent survey among business management students in Germany and Austria, students who intend to found a new business almost exclusively think of service companies in low-tech areas. Only 4.8% of the respondents with higher entrepreneurial intentions expressed their interest in founding a technology-based business (Franke & Lüthje, 2003). Apparently, among business management students there is low awareness or appreciation of interdisciplinary cooperation with technically trained people as a possibility of participating in high-tech ventures. Thus, besides entrepreneurial education, university programs in interdisciplinary cooperation are also needed. As already stated, the focus here is on interdisciplinary cooperation between engineering and business management as the two professional disciplines typically involved in new venture and new product development processes.

One promising educational approach to integrating these two traditionally separate academic fields aims to include interdisciplinary elements in existing disciplinary study majors. These courses provide students with an opportunity to get involved in projects characterized by "real-world" cooperation between members of different academic disciplines. Instead of designing courses either in engineering with business components added or in management with some engineering, these activities foster cross-disciplinary interaction by setting up teams of students from both types of academic institution. Several activities have recently been described in the literature, and all of these course models share a highly integrative interdisciplinary approach: Multi-functional teams work on real-world projects, designing

new products and/or evaluating new products on economic grounds (Cardozo et al., 2002; Lovejoy & Srinivasan, 2002; Welsh & Murray, 2003).

The involvement in real-world interdisciplinary cooperation is a precondition for developing "common ground" between individuals of different educational backgrounds. This common ground can be defined as the sum of mutual or joint knowledge, beliefs, and suppositions (Clark, 1996). Before a given person has the opportunity to interact with individuals from other disciplines, their common ground is mainly the result of stereotypical presumptions (communal common ground). These are activated on the basis of one's own categorization of the individuals in other disciplines. These hypotheses about the knowledge, beliefs and motives of others, in turn, affect the actor's behavior and communication style (Bromme, 2000). As shown in the previous chapter, stereotypical information about individuals outside one's own discipline can be negatively biased and thus act as a barrier to interdisciplinary cooperation. Interdisciplinary courses can help eliminate negative communal common ground based on incomplete and simplistic information. In hands-on projects, students from different fields engage in joint activities and develop common experiences (personal common ground according to Clark, 1996). These activities can help the students become aware of which kind of knowledge they share with the other discipline and may encourage the development of common mental models (Bromme, 2000). Moreover, they might also ease communication and mutual understanding. The students learn to assume an extra-disciplinary perspective and to use metaphors, analogies and other references in order to improve the others' comprehension in communication (Steinheider, 2001). In sum, direct personal contact with individuals outside one's own social entity is likely to reduce negatively biased stereotypes. Several studies show that this kind of personal grounding can only take place if the individuals involved receive real verbal and non-verbal feedback on their actions and communication from representatives of the other disciplines (e.g., Garrod & Doherty, 1994; Isaacs & Clark,

1987; Krauss & Fussell, 1991). Thus, direct and interactive cooperation appears to be necessary.

However, the question as to the effects of interdisciplinary teaching experiences has still not been answered with empirical data. Therefore, in the sections that follow we start with a description of an interdisciplinary graduate course held at the Vienna University of Economics and Business Administration in order to provide business management students with hands-on experience in entrepreneurial and innovation planning. Subsequently, we will explore whether common ground is developed through the course. More specifically, we will investigate the changes in the students' attitudes towards people from other disciplines.

BUSINESS PLANNING COURSE: A MULTI-DISCIPLINARY APPROACH

The interdisciplinary course which is the subject of this study has run continuously for two years at the Vienna University of Economics and Business Administration. It is a graduate-level business planning course distinguished by the fact that it offers business management students an opportunity to interact with technically oriented professionals over a three-month period. The scientists or engineers provide a technological concept. For each of these real-world ideas, a small self-selected team of three to four management students develops a business proposal to evaluate the technical ideas on economic grounds. Each team is supported by course faculty and practitioner coaches experienced in business planning and entrepreneurship.

The course starts with a two-day kickoff meeting involving lectures, group work, presentations by students and small case discussions. In this plenary meeting, the teaching staff provides basic knowledge about business planning with special emphasis on the principles of market analysis and revenue forecasting. The goal is to impart the knowledge that the students need to become proficient in the evaluation and planning of technical concepts. Soon after this classroom session, each student team meets the technical professionals who provide the innovative idea or concept. In this briefing, the engineers or

scientists present their idea. In a discussion with the inventors, the student teams define the precise scope of the project and develop an understanding of the major challenges. At the same time, a confidentiality agreement is signed by all parties involved.

After the first meeting, the student teams begin to work on their projects. This exercise integrates activities such as technology forecasting, customer and competitor research, financial analysis and manufacturing planning, either by conducting their own surveys or working with secondary data. Typically, weekly team meetings are held, some of them with the participation of teaching faculty and the idea sponsors. The student teams make their own decisions with respect to the frequency and type of interaction with the inventors. While some teams have only intermittent contact with the engineers or scientists, other inventors become full members of the team.

Toward the end of the course, as the project results have to be presented to the idea sponsors, the student teams work on a final report outlining the technical and, most importantly, the economic potential of the idea, concept or prototype. The report includes a coherent description of the business idea and products, the definition of a USP, a comprehensive market analysis, a suggestion concerning the strategic positioning of the product, a SWOT analysis, and an abbreviated break-even analysis. The report is the basis for a 'go' or 'no go' decision concerning the commercialization of the product. The course ends with the presentation of key results to the technical professionals.

Insert Figure 1 about here

Over the two years this course has been offered, 30 projects have been handled successfully. The projects stem from different industries and research areas. Almost half of the projects came from the medical equipment and pharmaceutical fields, which reflects the international strength of the Austrian R&D landscape in those areas. Six projects came from the IT/

software field, and the areas of biotechnology and electronics contributed five projects each. Technologies in the projects ranged from magneto-optical switches to manipulating streams of data in fiber-optic networks and the development of new medication systems which allow insulin to be taken orally, for example.

RESEARCH METHOD

Variables

The empirical work presented here aims to provide preliminary insights into the psychological effects of the interdisciplinary course experience. Specifically, we propose that the business management students start to develop cross-disciplinary common ground and thus change their assumptions and hypotheses about representatives of technical disciplines. These attitudinal beliefs are critical variables since they are likely to be antecedents of the future cross-disciplinary cooperation behavior of university graduates. (e.g., Ajzen & Fishbein, 1980). Two attitudinal dimensions are measured here: The first covers central beliefs about the positive and negative aspects of cross-disciplinary cooperation (i.e., the cooperation-related attitude). The second dimension of attitudinal beliefs is directed towards the members of the technical discipline, primarily engineers and technically oriented scientist (i.e., the person-related attitude). In line with the qualitative assessment of existing interdisciplinary programs (e.g., Cardozo et al., 2002; Lovejoy & Srinivasan, 2002), we assume that by the end of the course the students will show more favorable attitudinal beliefs compared to the time prior to the course experience.

We further propose that the development of mutual understanding is likely to depend on the specific quality of the cooperation between a given student and a technical idea sponsor. We focus on two variables which are descriptive of the integrative character of a given relationship and which may be associated with attitudinal outcomes of the course experience: Frequency of communication and role flexibility. In NPD literature, the frequency of

communication between team members has been found to have a positive impact on several psychological variables related to cross-functional cooperation, such as perceived relationship effectiveness, work satisfaction and learning (Fisher, Maltz & Jaworski, 1997; Hoegl & Gemuenden, 2001; Ruekert & Walker Jr., 1987). Role flexibility refers to the efforts of the business students to understand the technical aspects of the ideas and concepts (Jin, 2001). If a given student develops an understanding of the other area of expertise, mutual understanding might evolve and the student will probably be less inclined to adhere to disciplinary stereotypes (Dooley, Durfee, Shinde & Anderson, 2000).

Data collection and measures

This exploratory study was conducted over a three-month period accompanying the multi-disciplinary business planning course in the summer term of 2003. A total of 38 students were enrolled in the course. They were divided up into ten project teams, each working on one technical idea provided by an individual or a small group of engineers and scientists. Survey questions were used as the data collection instrument. Questionnaires were distributed and filled out by the students at the beginning and end of the course.

On the basis of two preliminary studies, we developed multi-item scales to measure the subjects' attitudinal beliefs. First we collected possible items by asking business management and engineering students (n=29 and n=67, respectively) to indicate their three most salient attitudinal beliefs. The items most frequently mentioned were integrated into a subsequent pre-survey (n=25 management students; n=56 engineering students). In this way, we created constructs for different types of attitudinal beliefs and screened them with standard validity and reliability criteria (Cronbach's α , exploratory factor analysis). As a result, four attitudinal constructs were integrated into the final research instrument – two constructs to measure the students' attitude towards interdisciplinary cooperation (3 items / 3 items, $\alpha = 0.69 / 0.83$) and two constructs to measure attitudes towards representatives of the technical discipline (3 items

/ 3 items, $\alpha = 0.70 / 0.69$). Communication frequency was measured by asking about the approximate incidence of direct contact between the student teams and the inventor for each of the three project months (3 items, $\alpha = 0.90$). This procedure is based on the scales used by Ruekert & Walker Jr. (1987) and Moenaert & Souder (1996). The role flexibility of the business management students was measured using a two-item scale ($\alpha = 0.72$). This measure was adapted from the conceptual work of Dooley et al. (2000) and Jin (2001), who define role flexibility as the extent to which a participant assumes extra-disciplinary tasks (working on technical issues in the concepts) in the course of a project.

RESEARCH FINDINGS

Descriptive results

Here we present descriptive results for the two variables measuring the integrative character of the cooperation: communication frequency and role flexibility (see Figure 2). The respondents indicated a moderate level of communication (mean score: 2.80), which means that the teams communicated with the technical professionals on average two to three times per month. The decision to get into direct contact was left to the student teams and idea sponsors. Therefore, some teams communicated at least once per week with their idea sponsors, whereas other teams had less contact in the course of their projects. Altogether, this finding suggests that a key challenge in future course development consists in fostering direct communication between students and technical professionals. By adopting a more active approach to this issue, faculty coaches may be able to avoid having some student teams refrain from communication completely.

Insert Figure 2 about here

The students work intensively on the technical aspects of the ideas and concepts and seem to realize that developing a certain understanding of the underlying technology is a precondition for performing a valid economic analysis of the ideas. This does not mean that the management students become experts in engineering, but it does imply that they open their minds to extra-disciplinary knowledge to a certain extent.

Course effects on perceptions of the other discipline

Changes in attitude. It was proposed that taking part in the interdisciplinary course would have positive attitudinal effects. The course experience was thought to lead to a more favorable perception of interdisciplinary cooperation and the representatives of the other discipline. However, almost no significant changes can be found in an analysis of all course participants' answers (n=38; see left column of Table 1). It has to be taken into account that some of the students participating might have already developed personal common ground with the representatives of technical disciplines prior to this course. Logically enough, a given student with pre-existing personal experience is less likely to realize dramatic changes in his/her interdisciplinary perceptions. Therefore, we excluded from the analysis those respondents who reported having attended interdisciplinary programs prior to this course.

Insert Table 1 about here

When we focused on the students without prior interdisciplinary experience (n=28; see right column of Table 1), we found more significant attitudinal changes. However, the effects are in different directions. On the one hand, after the course the business students see less motivational and trust-related problems in interdisciplinary cooperation. Moreover, the respondents ascribe the engineers and scientists a higher level of social skills and interest in other people. On the other hand, the students perceive more cooperation problems due to divergent knowledge, skills, and working styles than they did before the course. Furthermore,

perceptions regarding the market and application orientation of the technical professionals becomes less favorable. Although proposed differently, these tentative findings may be plausible in light of the discussion of the development of common ground. The two attitudinal dimensions which are rated more favorably after the course pertain to the willingness of the technical professionals to engage in cross-disciplinary work – this "soft" area seems to be open to the development of stereotypical assumptions. The vague and rather stereotypical fear that technical professionals are not interested in other people and in open relations was obviously reduced by personal course experience. The two less favorably rated perceptions are associated with the rather "hard" fact that people from business and technical disciplines are indeed different in terms of knowledge, skills and goal orientation. The personal cooperation experience apparently helps to increase the students' awareness of these differences. In conclusion, the development of personal common ground seems to foster a more realistic view of cross-disciplinary cooperation and the representatives of the technical field.

Impact of cooperation characteristics. We proposed that the reported changes in attitudinal beliefs are associated with communication frequency and role flexibility. Both variables indicate the degree of personal common ground that a given student develops to ease interaction with the technical professionals. The findings in Table 2 show the correlation between the two antecedents as well as the changes in the four attitudinal dimensions.

Insert Table 2 about here

Teams which tried to maintain frequent communication with the idea sponsor realized more significant attitudinal changes. It is important to note that the relationship between communication frequency and perceived cooperation problems due to motivational conflicts and distrust is particularly strong. The frequency of contact seems to be critical to improving

the perceived willingness of technical professionals to engage in a trustful and open relationship.

With respect to role flexibility, dealing with the technical aspects of the idea is significantly linked with the change in two of the four attitude dimensions. Again, the correlation coefficient for the motivation and distrust construct is highly significant. Thus, role flexibility is critical for gaining a more favorable perception of the willingness of technical professionals to cooperate. It seems reasonable that if management students decide to leave their native area of expertise, they will develop better mutual understanding with the idea sponsor.

In summary, it has been shown that the frequency of communication and role flexibility are partly associated with the extent and significance of attitudinal changes. The more the students communicate with the idea sponsors and the more they work on the technical aspects of the idea, the more salient personal experiences are gained and the more the students modify pre-existing assumptions and perceptions (communal common ground) about the other discipline.

CONCLUSIONS

This study provides evidence for the significance of psychological effects in educational efforts which practice interdisciplinary approaches. The empirical findings show that business management students change their attitudinal beliefs toward interdisciplinary cooperation and the representatives of the other discipline. Universities would therefore be well advised to intensify their efforts to implement educational programs which foster the development of interdisciplinary work experience among students. Such courses can help reduce stereotypical perceptions and develop a more realistic view of cooperation challenges; this is particularly true of students without prior interdisciplinary experience. In this way, students would be better prepared to engage in fruitful cross-disciplinary cooperation either in the context of innovation projects or within entrepreneurial teams.

The findings further indicate that the more the business students communicate with the technical professionals and the more they work on technical aspects of the idea, the more the students modify their pre-existing, often simplistic assumptions about the other discipline. Thus, course organizers and faculty have to ensure a high level of direct communication within cross-disciplinary courses. Furthermore, instructors should foster role flexibility, meaning that students have to be encouraged to gain an understanding of the roles of the team members from other disciplines. The ability to understand a non-native area of expertise would come most easily if the business (engineering) student team devoted efforts to analyzing the technical (economic) aspects of the business ideas.

The business planning course described in this paper is one example of successful cross-disciplinary instruction. The review of the course and the preliminary investigation of its perceptual outcomes may help deans and curriculum managers to design promising education programs on interdisciplinary cooperation.

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FIGURE 1
 Interacting groups, interaction over time and key steps in the course

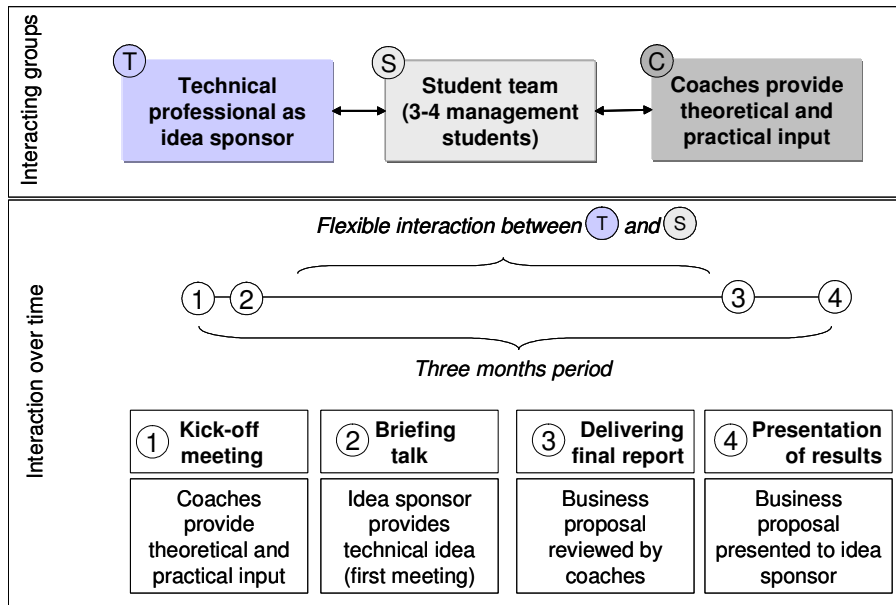


FIGURE 2
Integrative character of interdisciplinary cooperation

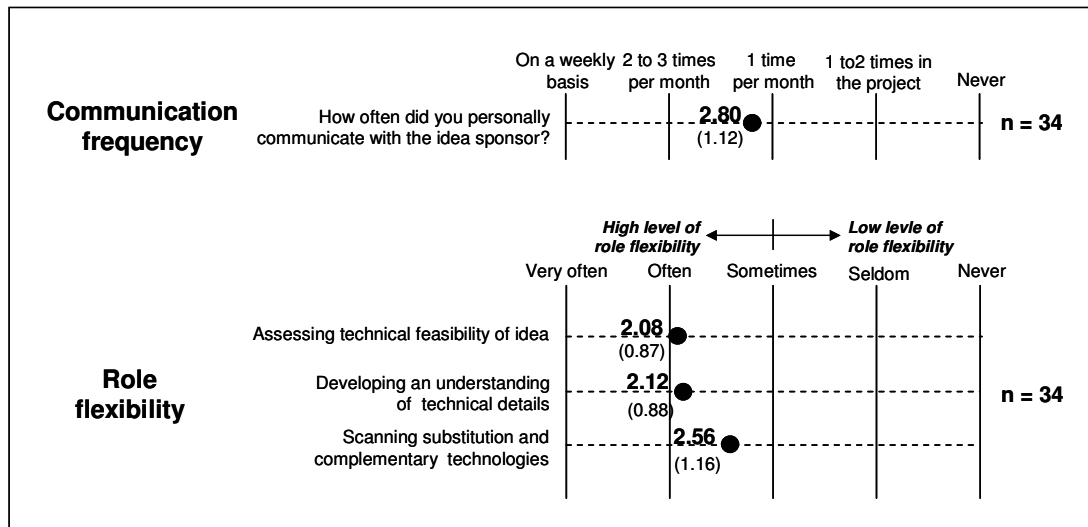


TABLE 1
Change in interdisciplinary attitudes

Average ratings at the beginning and end of the projects ^{a)}							
	All students in the course (n = 38)			Students without prior interdisciplinary experience (n=26)			Attitude becomes:
	Project start	End of project	Sig.	Project start	End of project	Sig.	
Cooperation-related attitudes							
Cooperation problems due to differing disciplinary knowledge/skills	2.54	2.29	n.s.	2.55	2.15	†	less favorable
Cooperation problems due to motivational conflicts and distrust	2.83	3.32	*	2.84	3.34	*	more favorable
Person-related attitudes							
Engineers/scientists' lack of market and application orientation	2.95	2.71	n.s.	2.91	2.57	*	less favorable
Engineers/scientists' lack of social skills and interest in others	3.61	3.77	n.s.	3.50	3.75	n.s.	more favorable

Rating-type scales were used to measure agreement with the statements (1=very true, 5=not at all true)

† p < .10

* p < .05

** p < .01 (two-tailed)

TABLE 2
Correlation between frequency of communication and change in attitudes

	Cooperation-related attitude		Person-related attitude	
	Cooperation problems due to differing disciplinary knowledge/skills	Cooperation problems due to motivational conflicts and distrust	Engineers/scientists' lack of market and application orientation	Engineers/scientists' lack of social skills and interest in others
Frequency of communication	-0.36 * (n=32)	0.46 ** (n=32)	-0.11 (n=32)	0.30 † (n=32)
Dealing with technical aspects (role flexibility)	-0.14 (n=32)	0.35 * (n=32)	-0.29 † (n=31)	0.19 (n=32)

Pearson correlation coefficients with number of respondents in brackets. A **positive** (negative) correlation coefficient indicates that the attitude becomes **more** (less) favorable the more frequently the students communicate with the technical idea sponsor / the more often the students work on technical aspects of the idea.

† p < .10

* p < .05

** p < .01