

## **Creating Value through the Foundation of Enterprises: Implications for Entrepreneurship Education at Universities**

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### **1. Value creation through the foundation of enterprises**

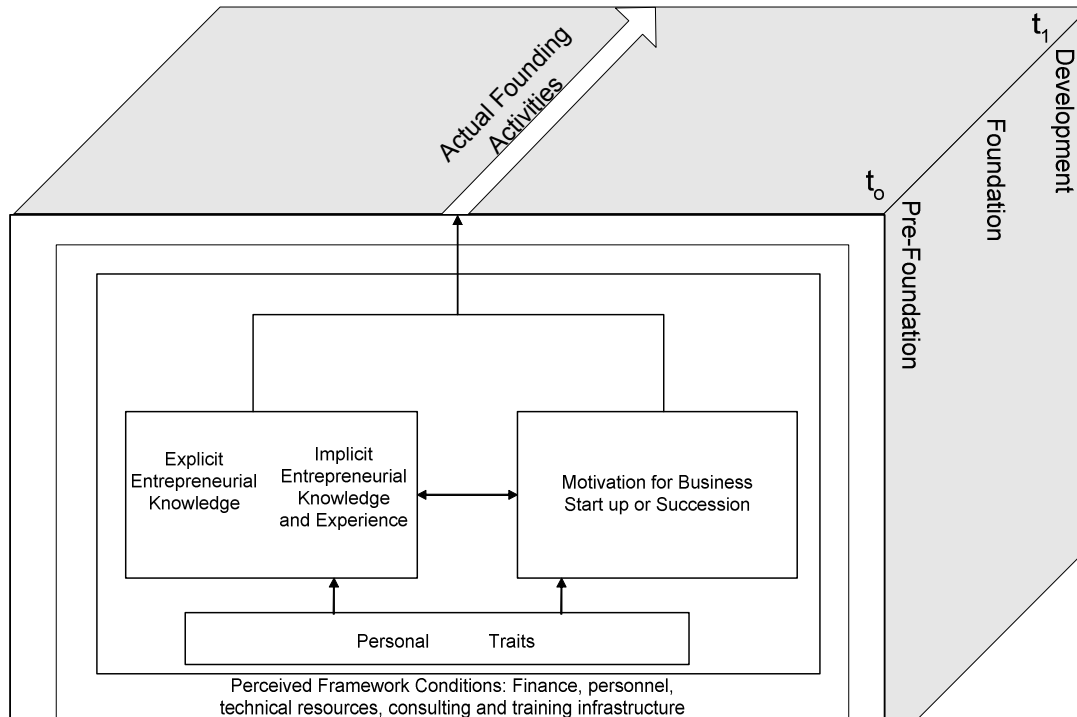
Raising the motivation for entrepreneurship as well as increasing the number of foundations and improving the support for young entrepreneurs during their first stages of the foundation-process is of high importance for the economy and employment policy (European Commission, 2004; Mugler, 2003, pp. 264).

New enterprises create jobs and value not only in their respective industry, but also in related industries. Other industries also benefit from the related raise of the purchase power. F.i., a newly founded company in Austria directly creates an annual value up to 140.000 Euro, and indirectly, through related industries, up to 90.000 Euro. When the secondary creation of value of 90.000 Euro through the improvement of the purchase power is also added, a new company creates a value of approx. 324.000 Euro per year. However, the value created strongly depends on the industry the company is operating in (JW, 2003, 9)

Foundations by graduates, especially in technology-driven industries (Europäische Kommission, 2002), are of special importance. Numerous factors sum up to the fact, that graduates of (technological) universities are predestined to have a lasting entrepreneurial success, a rapid growth and therefore a more than average contribution to the creation of new jobs. These factors are f.i. high professional and theoretical competence, the tendency towards team-foundations, the eagerness to co-operate with research-institutions and universities or the development of innovative business ideas and of innovative services and products during the writing of the theses. Therefore, the systematic and early identification of promising ideas and teams for future foundations as well as support measures for founders and young entrepreneurs have top level priority (Storey, 1992, pp. 3).

### **2. A framework of factors influencing the competence of founders**

The decision to take actual measures for a business foundation or succession or during the development phase and especially the quality of these measures depends on several factors (see Fig. 1).



The individual “competence for founding” depends on entrepreneurial knowledge: *Explicit knowledge* includes professional/theoretical knowledge. Here, a differentiation has to be made between knowledge that is needed only once for the process of foundation, and the knowledge needed to run and to develop a company . Besides from professional/theoretical knowledge, methodological and social-communicative competencies also have to be taken into account. *Implicit knowledge*, such as “know how” and “know whom” about the respective industry and practical experience are of major importance to the success of foundations (Johannisson, 1992, pp. 72; Argyris, 1999, pp. 123.). However, the transfer of implicit knowledge is far more difficult (Nonaka/Takeuchi, 1997, pp. 71; Anderseck 2003, pp. 295). A sufficient level of *motivation* is also required for taking actual actions of foundation. The *personal traits* of the (potential) founders also have an influence on the motivation to found, on the type of foundation and the duration of the planning phase for the start up (Müller 1999, pp. 106.). The will to accept risk and the selective perception and assessment of risk and the derived action plans are only some examples of the influence of personal traits. Other examples would be the motivation to learn and the individuals’ choice of the way of learning. They affect the selective perception and assessment of framework conditions (f.i. the consulting and training infrastructure, financial sources, subsidies and support programs for founders, development of the industry or the overall economic situation). However, personal traits can be influenced to a minor extent and only in the long run. During the course of time all these factors of influence change, which influences decision in the foundation as well as in the development phase.

### 3. Selected empirical results

Based upon the framework (Fig. 1) chapter 4 discusses measures for universities to expand the potential for foundations and to support foundations of their students, alumni and academic staff . . The discussion is based upon the results of a representative survey of students (n = 526) and staff members (n =86) conducted at the Technical University of Graz/Austria focussing on their motivation, know how and experience concerning the foundation of their own enterprise.<sup>1</sup> In this chapter some selected results from the study are presented:

- Job opportunities and the framework conditions are in general seen to be (very) positive for the foundation of new enterprises in Austria.
- In general most undergraduate students have already gained some professional experience from traineeships, working in projects, , part-time jobs or field studies . Students of technical universities ,on the other hand, nearly without exception have job experience from dual vocational training or employment during their studies. A considerable percentage already has gained some form of entrepreneurial experience: 18% work in a family enterprise, 6% are part-time entrepreneurs)
- Being an entrepreneur as a professional alternative is explicitly excluded only by every fourth student. The potential for foundations can altogether be estimated at about 30% of all students and staff, whilst about 10 % already have prepared a business plan and or developed a prototype or are already part-time entrepreneurs during their studies.<sup>2</sup>
- The share of students with a foundation idea exceeds even the number of the people that are (basically) willing to found. 63% of the staff members and 49% of the students have an idea in mind for a possible foundation. But approx. only one half actually has the intention to build up an enterprise. This underlines the high potential for foundations and the importance of further education for graduates.
- An unique feature of the technical studies is that foundation ideas mostly originate from the student`s or staff members own field of research or from a closely related topic. The ideas for foundations are more diverse amongst students of other universities (Ennöckl, 2002).
- Most of the students see the foundation of their own company as a real alternative to employment after graduation only after several years of experience. In accordance with other studies, gaining two to five years of practical experience is seen to be useful. Primarily, a team-foundation would be the preferred option for students.
- Austria has, just like Germany or Switzerland, an extensive supporting infrastructure for prospective founders and a variety of appropriate initiatives<sup>3</sup>. Students as well as

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<sup>1</sup> See in detail Bauer/Kailer, 2003; Kailer/Bauer, 2003, 2004. A survey focussing on post-graduates was conducted by Holzer/Adametz (2003).

<sup>2</sup> This is similar to results of studies at other universities and universities of applied science (Otten, 2000; Ennöckl 2002, Kailer 2002, Schweizerisches Institut für KMU/Start-HSG, 2004)) or technological universities (Voigt, 2004; UnternehmerTUM, 2004).

<sup>3</sup> See f.i. Kailer/Pernsteiner /Schauer , 2000; Buchinger, 2002; Sternberg/Bergmann, 2003.

staff members, however, have vast information deficits with regard to existing regional or national support programmes and initiatives.

- It is not surprising, that the chamber of commerce is considered as the most important source for information concerning foundations. The guilds and the information centers of the founder service with their widespread offers in further education and consulting are considered as the second important source for information. More than half of the persons consult the web (f.i. virtual information centers). Also experts from banks, tax consultants and lawyers often are considered to be important sources of information for potential entrepreneurs.

#### **4. Discussion: Entrepreneurship Education at Universities**

What can be deduced from these results for entrepreneurship education at (technical) universities (see Koch, 2002) in order to increase the entrepreneurial potential and to support start-ups of students, graduates and staff members?

The study shows a significant correlation between the existence of a foundation idea, the general attitude towards entrepreneurship and the intensity of foundation activities. Workshops to create or to *clarify ideas* for foundation and tools for the self-assessment of the entrepreneurial potential (Erpenbeck/von Rosenstiel, 2003, pp. 97) therefore will influence the students' motivation to become entrepreneurs themselves.

Especially students at the end of their studies often have developed prototypes, f.i. during the completion of their theses. It can be assumed, that this development wasn't connected to a specific intention to found a company. Therefore, it is important to check whether there is a market for this innovation or foundation idea (Röpke, 2002, pp. 158). During the elaboration of a business plan lacks of competences and information deficits become obvious. Therefore people are more likely to look for partners to fill these gaps (mostly in the fields of technical or commercial expert knowledge, practical experience, leadership, sales techniques, industry-related know how and network contacts or finance. *Workshops on writing business plans* as well as individual consulting therefore should be included in the study programme on a voluntary basis. In the course of the creation of the business plan, of course also it can also turn out that there is no market for the prototype or the innovation, and therefore the start-up plan should be abandoned. This disappointment should be regarded as an important learning experience: The practice that was gained through the creation of the businessplan, in areas such as market research, planning personnel and financial resources or PR and marketing activities sure proves to be useful in a later foundation idea.

The approx. 6 % of students which are already *part-time entrepreneurs* represent an important source of testimonials for other students. Hence they should be integrated actively into the course of studies (f.i. for discussions of “live cases of good practice”).

Generally there is less interest in foundation among *female students*. According to the main obstacles for a foundation mentioned especially by women, the establishment of a network and special mentors would substantially raise their interest in entrepreneurship.

Only a very small percentage of students or staff members takes into consideration to take over an existing enterprise. although there exists a “successor gap” in all EU member states

(Gavac et al., 2002; Liebermann, 2003; European Commission, 2004). In order to improve these figures, a *special service for business succession* should be installed to provide information about existing companies, tools to assess companies and about networks of entrepreneurs.. Consultancy services for (potential) successors should also be offered (Lang-von Wins, 2004, pp. 214).. Since practical and industry related know how and leadership experience are of crucial importance for business successors, these services should be especially accessible to graduates.

The *main anticipated hindrances* for founders<sup>4</sup> are:

- Acquiring starting capital
- Financial risk
- Legal problems and “bureaucracy”
- Lack of practical experience<sup>5</sup>
- Lack of industry-related know-how and of contacts with potential suppliers and customers

Anticipated hindrances like "bureaucracy" during the foundation process and lack of external support can be relatively easily be dealt with by information. More support is particularly needed for technology intensive start-ups which require a larger amount of starting capital.<sup>6</sup> These founders need support during their search for (venture) capital or appropriate funding programmes and subsidies. Assistance promoting the contact to business angels and experienced entrepreneurs as cooperation partners is a crucial service especially for future founders with limited industry-related know-how.

The striking relation between personal contacts with entrepreneurs and the personal attitude towards entrepreneurship, shows the importance of *continuous contacts between (young) entrepreneurs and students*. This might be enhanced through

- Integration of live case studies by entrepreneurs in courses<sup>7</sup>
- Personal contacts via field studies and interviews with experienced entrepreneurs.
- Discussions or social events with young entrepreneurs
- Traineeship programmes for “nascent entrepreneurs” within start-ups and established SME (Freeman, 2000)
- Masters theses and field projects in cooperation with companies or start-ups

Two out of three students would prefer to found an enterprise with *a team with a broad range of different competencies* (f.i. a combination of technical and commercial knowledge as well as industry-related experience and contacts). However, the following problems have to be taken into account:

- Among the supporters of team foundations nearly one half has problems in finding suitable partners to form a foundation team. This is likely to be an important factor for the postponement of foundation decisions and the failure of start-ups.
- The founder teams in most cases consist of friends and colleagues from the same

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<sup>4</sup> These were rated as (very) important by more than the half of the students.

<sup>5</sup> Only mentioned by students.

<sup>6</sup> See also Europäische Kommission, 2002, pp. 27.

<sup>7</sup> These „live cases“ should cover different development phases to illustrate the varying challenges and competencies needing during the lifespan of an enterprise (Pleitner, 1996, pp. 531).

courses of study. Thus, the portfolio of competences is often very restricted.

- Long-term group effects often are not considered thoroughly enough when forming a founder`s team. Besides from personal sympathy, especially a wide range of business contacts and experience in the industry are of importance. Furthermore the impact of individual psychological traits (like risk behavior, behavior under stress and in conflicts, team-working ability) as well as the fit of the personnel and professional goals of the individuals with the goals of the start-up have to be taken into account. Founder`s checks (on a psychological basis) and counselling during the team building phase might be helpful in these cases.

The selection of a team with a *well balanced team competence portfolio* can be considered as more important than the further development of individual competencies of team members. This can be achieved f.i. by:

- Development of team-competence by using team-oriented didactic arrangements of the teaching events (e.g. team projects and presentations, team training)
- Feedback with special focus on the individual profiles of interests and competences and on the personal capabilities for cooperation and team-work, for example through (self-) assessment and founder`s tests (Schallberger,
- Support during the process of finding appropriate teampartners with special focus on the involvement of older team members with vast experience in the industry and with management experience. Additionally, contacts to mentors, co-financers, venture capitalists and business angel networks have to be established here.

Considering the goal of promoting technology-oriented start-ups, the combination of business and technical knowledge is very effective. This can be enhanced through *combined project teams*, where students from technical and economic universities or courses *cooperate in business planning*. Moreover, interested companies, business angels or venture capitalists can be included in such programs. They could act as experts or mentors or provide financial resources.

An overview about the present support (sources of information, further education, coaching, financial support, subsidies) and about the selection of external experts for foundations can be given during lectures in the undergraduate programme. Also other important topics, such as patents and copyright, can be dealt with. In order to establish a first personal contact with external *experts, venture capitalists and business angels*, representatives of these groups systematically be *involved in the course programme*.

As far as *external support* is concerned, there is a special need for

- advice with regard to funding and financing
- contact with customers, suppliers and business angels
- coaching during the planning, founding and early development phase
- information concerning patents and protection rights
- (subsidized) hardware and office infrastructure
- further education (main topics: law, business, leadership, strategy)

It has to be examined, in how far these contents can be integrated into the regular courses of study (as compulsory or elective subjects) as students try to complete their studies within a reasonable time-span.

If these contents are offered as post-graduate programs, there is wide range of possibilities from short courses and specialized workshops to post-graduate MBA-Courses in Entrepreneurship. Students would prefer a modular course program, which deals with basic issues as well as the writing of business plans and issues relevant in the development phase (f.i. recruiting personnel.).

Especially for undergraduates costs play an important role. Also, time is for students (who have to combine all extracurricular activities within the time schedule of their compulsory lectures ), as well as for graduates who are already entrepreneurs, of high importance. Intensive courses like "Summer Schools for Founders" are not suitable for young entrepreneurs but only for students. Special "founder-days for technicians" or other events (f.i. a "founders fair") with representatives from organisations for founders and staff from universities can also be organized on the campus.

It is hardly surprising, that students most frequently prefer the "familiar" ways of learning such as attending lectures. Students with entrepreneurial ambitions as well as part-time entrepreneurs, however, are mostly attracted by courses with participation of practitioners, focusing on practical experience, hands-on tools and contacts with (young as well as experienced) entrepreneurs. Coaching is seen as very important by nearly three out of four staff members. An obvious trend can be derived from the results of the study: The clearer the intention to found an enterprise, the more intensive is the interest in measures which are directly aimed towards *practice-oriented advice* for founding and running start-ups. Therefore the also *qualification and the experience of the external and internal lectors* involved is quite important

Generally speaking: The services offered for the promotion of entrepreneurship must take consideration the different levels of motivation and information. The offers shall therefore cover a wide range from motivating events like discussions with entrepreneurs , support in the elaboration of business ideas and the writing of business plans, team recruiting and development as well as consulting during the early development phases of the start-up. Financial and time constraints as well as different levels of experience have to be taken into account when planning the contents and didactic arrangements for specific target groups..

Undergraduate students often are not very eager to attend any extra-curricular event without the possibility to acquire a *certificate or credit points*. The situation is even more difficult when courses are attended by students from different faculties. In this case it is of utmost importance that *all* students can earn credit points or certificates, so special arrangements have to be made on inter-faculty level. Also for graduates certificates plays an important role as a proof of their entrepreneurial competence when negotiating with banks and venture capitalists. Therefore these post-graduate certificates should be developed in co-operation with these institutions, in order to guarantee a widespread acceptance. It also has to be taken into consideration that the admission to academic incubators or support programmes combined with financial subsidies could be combined with compulsory consulting or checks by experts in order to be able to benefit from these services in a full extent.

Considering the period of several years between graduation and the establishment of the own company (in order to acquire practical experience or capital), continual information, services and consulting especially for graduates as well as *post-graduate courses* and workshops are of crucial importance. The effect could be reinforced through the establishment of an *alumni network*. Here it might be especially useful to cooperate with existing support institutions and young entrepreneurs networks.

The motivation to found varies f.i. with the chosen course of studies, the progress of studies and the family background. When we take in consideration that the financial resources of universities in most cases are very limited, the support measures should be *concentrated on target groups* with a positive attitude towards entrepreneurship, f.i. doctoral students and staff members with short-term contracts or students who already have developed prototypes and are now seeking a possibility to market them.

Spin-offs from universities can be supported by the establishment of *academic incubators* or founder centers. These centers differ widely concerning their strategic approach. The focus either can be put on financial and infrastructural support, or on coaching and development of entrepreneurial competencies. However, this raises the question of the professional qualifications of the staff for their (future) role as coach, process consultant or team developers (van der Ham, 1999, pp. 137)

As most of the prospective young entrepreneurs want to found in the region they study or live in, a *locally focussed programme* seems most efficient. Nevertheless, cooperation networks with support institutions from neighbouring regions as well as internet-services (virtual founder centers, distance learning programmes, tele-consulting) and existing young entrepreneurs networks could be used to support young entrepreneurs which have moved in other regions.

### **Literature:**

Anderseck, K: Duale Ausbildungskonzepte – Ein Weg zum Abbau der Praxisferne in der Entrepreneurship Education, in: Achleithner, A.-K./Klandt, H./Koch, L./Voigt, K.-I. (Eds): Jahrbuch Entrepreneurship 2003/04, Springer Publishing, Berlin 2004, pp. 291 – 305.

Argyris, C.: Tacit Knowledge and Management, in: Sternberg, R./Horvath, J. (Eds.): Tacit Knowledge in Professional Practice, Mahwah N.J./London 1999, pp. 123 – 140.

Bauer, U./Kailer, N.: Gründungsneigung von Technikern am Beispiel der Technischen Universität Graz und ausgewählten Wirtschaftsingenieurstudiengängen, BWL-Research Paper Series No. 7/2003, Bauer, U. (Ed.), Graz 2003

Buchinger, S.: Gründerland Österreich, Bundesministerium für Wirtschaft und Arbeit (Ed.), Vienna 2002.

Ennöckl, J.: Hemmende und fördernde Faktoren der Unternehmensgründung durch Studierende, unpublished Master Thesis, University of Linz 2002.

Erpenbeck, J./Rosenstiel, L. von (Eds.): Handbuch Kompetenzmessung, Schäffer-Poeschel Publishing, Stuttgart 2003.

European Commission - DG Enterprise 2004 Annual Management Plan, Bruxelles 2004.

Europäische Kommission – GD Unternehmen (Ed.): Hightech-KMU in Europa, Beobachtungsnetz der europäischen KMU 2002, Nr. 6, Bruxelles 2002.

Frank, H./Korunka, C./Lueger, M.: Fördernde und hemmende Faktoren im Gründungsprozeß, Wirtschaftsministerium (Ed.), Vienna 1999.



- Freeman, S.: Partnerships between small and medium enterprises and universities that add value, in: Education + Training, Vol. 42, No. 6/2000, pp. 372 – 377.
- Frey, U./Halter, F./Zellweger, T.: Bedeutung und Struktur von Familienunternehmen in der Schweiz, Schweizerisches Institut für Klein- und Mittelunternehmen an der Universität St. Gallen, St. Gallen 2003.
- Holzer, F./Adametz, C.: TUG-AbsolventInnenbefragung 2003, unpublished end report, Technical University of Graz (Ed.), Graz 2003.
- Johannisson, B.: University training for entrepreneurship: Swedish approaches, in: Entrepreneurship & Regional Development, No. 3/1991, pp. 67 – 82.
- Junge Wirtschaft Österreich: Neue Unternehmen: Wachstumsmotor und Wirtschaftsfaktor, Vienna 2003.
- Gavac, K./Kanov, H./Kamptner, I./Mandl, I./Voithofer, P.: Unternehmensübergaben und –nachfolgen in Österreich, Österreichisches Institut für Gewerbe- und Handelsforschung (Ed.), Vienna 2002.
- Ham, van der M.: Action Learning als zentrales Element unseres Business-School-Programms, in: Donnenberg, O. (Ed.): Action learning, Klett-Cotta Publishers, Stuttgart 1999, pp. 146 – 160.
- Kailer, N.: Studierende als Gründer – Gründungspotenzial, Gründungsaktivitäten, Unterstützungswünsche, in: IGA Zeitschrift für Klein- und Mittelunternehmen (Internationales Gewerbearchiv), Vo. 50, No. 3/2002, pp. 161 – 173.
- Kailer, N.: Unterstützung von Familienunternehmen: Problembereiche, Bedarfslage und Ansatzpunkte zur Erhöhung von Effizienz und Effektivität von Fördermassnahmen, in: IGA Zeitschrift für Klein- und Mittelunternehmen (Internationales Gewerbearchiv), Vol. 51., No. 3/2003, pp. 182 – 195.
- Kailer, N./Bauer, U.: Berufsziel Unternehmer? Gründungsneigung, -wissen und –aktivitäten von TechnikerInnen, in: WING-business, 35, 4/2003, pp. 26 – 29 (part I) and WING-business, 36, 1/2004, pp. 20 – 23 (part II), Graz 2003/4.
- Kailer, N./Pernsteiner, H./Schauer, R. (Eds.): Initiativen zur Unternehmensgründung und –entwicklung: Konzeptionelle Überlegungen und Fördermassnahmen auf dem Prüfstand, Linde Publishing 2000.
- Koch, L.: Unternehmergeausbildung an Hochschulen: in: Zeitschrift für Betriebswirtschaft, Ergänzungsheft 2/2003, pp. 25 – 45.
- Lang-von Wins, T.: Der Unternehmer – Arbeits- und organisationspsychologische Grundlagen, Springer Publishing, Berlin 2004.
- Liebermann, F.: Unternehmensnachfolge: Eine betriebswirtschaftliche Herausforderung mit volkswirtschaftlicher Bedeutung, AWA Series No. 2003/3, Amt für Arbeit und Wirtschaft des Kantons Zürich (Ed.), Zürich 2003.
- Mugler, J.: Klein- und Mittelunternehmen in europäischer Perspektive, in: Achleithner, A.-K./Klandt, H./Koch, L./Voigt, K.-I. (Eds): Jahrbuch Entrepreneurship 2003/04, Springer Publishing, Berlin 2004, pp. 249 – 268..
- Müller, G.: Eigenschaftsmerkmale und unternehmerisches Handeln, in: Müller, G.: Existenzgründung und Unternehmerisches Handeln – Forschung und Förderung, Empirische Pädagogik Publishing, Landau 2000, pp. 105 – 122.

- Otten, C.: Unternehmensgründungen aus Kölner Hochschulen, Wirtschafts- und Sozialgeografisches Institut der Universität zu Köln, Working Paper, Cologne 2000.
- Pleitner, H.-J.: Unternehmerpersönlichkeit und Unternehmensentwicklung, in: Pleitner, H.-M. (Ed.): Bedeutung und Behauptung der KMU in einer neuen Umfeldkonstellation, Rencontres de St-Gall 1996, St., Gallen 1986, pp. 531 – 546.
- Röpke, J.: Der lernende Unternehmer – Zur Evolution und Konstruktion unternehmerischer Kompetenz, Marburg 2002..
- Schallberger, P.: Junge Gründerinnen und Gründer: Motive, ökonomisches Denken und Möglichkeiten der Förderung, Synthesis Report No. 10, Leitungsgruppe des NPF 43 in Zusammenarbeit mit dem Forum Bildung und Beschäftigung und der Schweizerischen Koordinationsstelle für Bildungsforschung (Eds.), Bern/Aarau 2004.
- Schaeper, H./Briedis, K.: Kompetenzen von Hochschulabsolventinnen und Hochschulabsolventen, berufliche Anforderungen und Folgerungen für die Hochschulreform, Hochschul-Informationssystem (Ed.), Hannover 2004.
- Schweizerisches Institut für Klein- und Mittelunternehmen an der Universität St. Gallen/START-HSG: Swiss Survey on Collegiate Entrepreneurship 2004 – Auswertung einer Erhebung an sechs Schweizer Universitäten und Fachhochschulen, St. Gallen 2004.
- Sternberg, R./Bergmann, H.: Global Entrepreneurship Monitor – Unternehmensgründungen im weltweiten Vergleich – Länderbericht Deutschland 2002, Cologne 2003.
- Storey, D.: Should we Abandon the Support to Start-Up Businesses?, Working Paper No. 11/1992, Centre for Small & Medium Sized Enterprises, University of Warwick, Coventry 1992.
- Voigt, E.: Gründungsbereitschaft und Gründungsqualifizierung – Ergebnisse der Studentenerbefragungen an der TU Ilmenau, Technische Universität Ilmenau (Ed.), Ilmenau 2004.