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Kangaroo Seminars for Knowledge Transfer in Fast-Growing Research Fields

Abdolkarim Sadrieh^{a ‡}

Marijke Kloob^a

Miriam Mezger^b

and

Lisette Schulz^a

^aUniversity of Magdeburg and ^bUniversity of Cologne

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Abstract

We introduce, discuss, and provide an empirical appraisal of *kangaroo seminars* as a new instrument for knowledge transfer in fast-growing research fields. By promoting active project-based and cooperative learning, kangaroo seminars combine educational goals with the institutional goal of fast knowledge transfer between academic institutions and private and public enterprises. The key feature that sets kangaroo seminars apart from other case-based and project-based educational formats is a two-phase concept with an intensive learning course updating the students' abstract knowledge in phase one and a collaborative applied project in phase two. The project collaboration is realized by giving the student teams the opportunity to obtain an inside view of the cooperating enterprise in radically short, but highly focused internships. These internships inspired the term "kangaroo seminars," because we like to compare the role of the participating students to that of kangaroo offspring seeing the world from a position inside the pouch of the kangaroo mother, i.e. seeing the project case from a position inside the participating enterprise's organization. Our empirical appraisal is based on four kangaroo seminars in online marketing that we conducted from 2008 to 2010 cooperating with 22 small and mid-sized enterprises. Our experience shows that the desired three-way knowledge transfer procedure can be established properly and that it leads to high levels of self-reported satisfaction amongst the participating students and firms. Furthermore, firms not only report high levels of compliance with the solution concepts developed in the seminars, but also record substantially higher growth rates of their workforce (about 16%) than the overall growth of employment in the region (under 1%). Combining the high level of satisfaction and the growth rates reported by the firms, we cautiously conclude that the kangaroo seminars may have played a positive role in the economic development of the participating enterprises.

Keywords

active teaching techniques, innovative teaching methods, alternative teaching approaches,

JEL Codes

A20, D83, O30

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[‡]Please, contact the corresponding author by email: sadrieh@ovgu.de

Faculty of Economics and Management, University of Magdeburg, Postbox 4120, 39016 Magdeburg, Germany

1. Introduction

Knowledge accumulation sometimes comes in outbursts. A new tool, a new method, a new paradigm, or a market innovation triggers high levels of creativity and research activity, occasionally amplified by state subsidization or private venture capital. As knowledge accumulates in such fast-growing research fields, small and mid-sized enterprises increasingly have difficulties to keep up with the speed of research development, because innovations arrive at a higher frequency than any of the classical knowledge transfer procedures can cope with at a feasible cost.

In this paper, we introduce the *kangaroo seminar* as an alternative knowledge transfer method that enables a practicable and cost-effective transfer of knowledge from universities to small and mid-size enterprises in fast-growing research fields. Our discussion demonstrates that main difference between kangaroo seminars and other knowledge transfer methods is the special configuration that gives students a pivotal role in a short-term, high-intensity interaction between the research institution and the corresponding members of the business organization. The advantage of having students as the carriers of knowledge is not only the extremely low cost of labor, due to the incentivization with grades, but also the high-degree of open-mindedness and adaptability that facilitate a total customization of the knowledge transfer mechanism for the client.

In the first part of the paper, we define, describe, and discuss the kangaroo seminar concept. Comparing this new knowledge transfer method with some of the other tools that are frequently used in fast-growing research fields, we provide a theoretical discussion of the advantages and disadvantages of using kangaroo seminars. Our analysis can be used as a basic framework with which the viability of the method for specific settings can be assessed.

In the second part of the paper, we present an empirical study based on four kangaroo seminars that we conducted from 2008-2010 at the University of Magdeburg in the field of online marketing. Online marketing represents a characteristic case of a fast-growing research field, in which innovations occur at a much higher rate than the frequency of the typical on-the-job or advanced training cycles of most small and mid-sized enterprises. Hence, online marketing is an ideal test-bed for assessing the effectiveness of the kangaroo seminar method. Our students interacted with 22 small and mid-sized enterprises, transferring their knowledge and creating cutting-edge online marketing concepts that were customized to each clients specific business needs.

The results of our empirical assessment are clearly positive. All participating firms reported being at least “satisfied” and a majority even reported being “very satisfied” with the results of the collaboration. The firms involved enjoyed growth in an economically distressed time. They increased their workforce by an average of almost 16 percent at a time when the general rate of employment growth was below 1 percent. Interestingly, the majority of firms indicated that cooperation with the students had – at least to some extent – contributed to their success. Hence, it does not seem surprising that all interviewed firms reported that they would recommend the kangaroo seminar to other firms.

On the students’ side, we also recorded a high degree of training effectiveness and satisfaction. The majority of the participating students moved on to be employed in marketing and e-commerce jobs. Our survey also shows a high degree of student involvement in the kangaroo seminar. About 75 percent of the interviewed students report that the kangaroo seminar provided them with relevant training for their future jobs and 63 percent even reported that the kangaroo seminar had been pivotal for their vocational choice.

While we can provide clear evidence for the successful application of the kangaroo seminar to the field of online marketing, our experience only allows us to make guesses about the effectiveness of the knowledge transfer method in other fast-growing research fields. The exceedingly positive assessment of the seminars by the firms and the students seems to indicate that similarly positive results may be achieved in other fast-growing research fields that give students a knowledge advantage over experienced professionals. The high degree of satisfaction that we observe does not seem to be tied to specific contents, but seems to stem from the cooperative and collaborative knowledge transfer procedure that we establish in the kangaroo seminars. Of course these conjectures remain to be tested in future studies. We are currently planning a series of studies using kangaroo seminars in other fast-growing research fields of mechanical engineering, life sciences, and electronics.

2. Definition and discussion

In this section, we define and discuss the kangaroo seminar as a method of knowledge transfer. The broad definition that we use is based only on the essential, but generic features of a kangaroo seminar, without specifying the exact timing and structure of the interaction. It outlines the structure of the educational format and allows us to compare it to other collegiate teaching formats.

2.1. A definition of kangaroo seminars

A kangaroo seminar is an active and cooperative educational format for academic institutions and a method of knowledge transfer to non-research organizations. The kangaroo seminar speeds up the standard two-step knowledge transfer from research to students and from students to firms and non-profit organizations by connecting all three parties for the duration of an academic term. Figure 1 depicts the knowledge transfer process. Instead of using an increased frequency of academic hiring to keep up with the growing knowledge base, the firms and non-profit organizations (“kangaroo firms”) report their demand for knowledge to the academic institution (“kangaroo school”). The kangaroo school transfers up-to-date knowledge in the demanded field to the students (“kangaroo students”). The knowledge transfer to the students is universal, i.e. general and theory-based, providing a valuable asset to the students beyond the specific requirements of the case that they are assigned to work on in the kangaroo seminar.

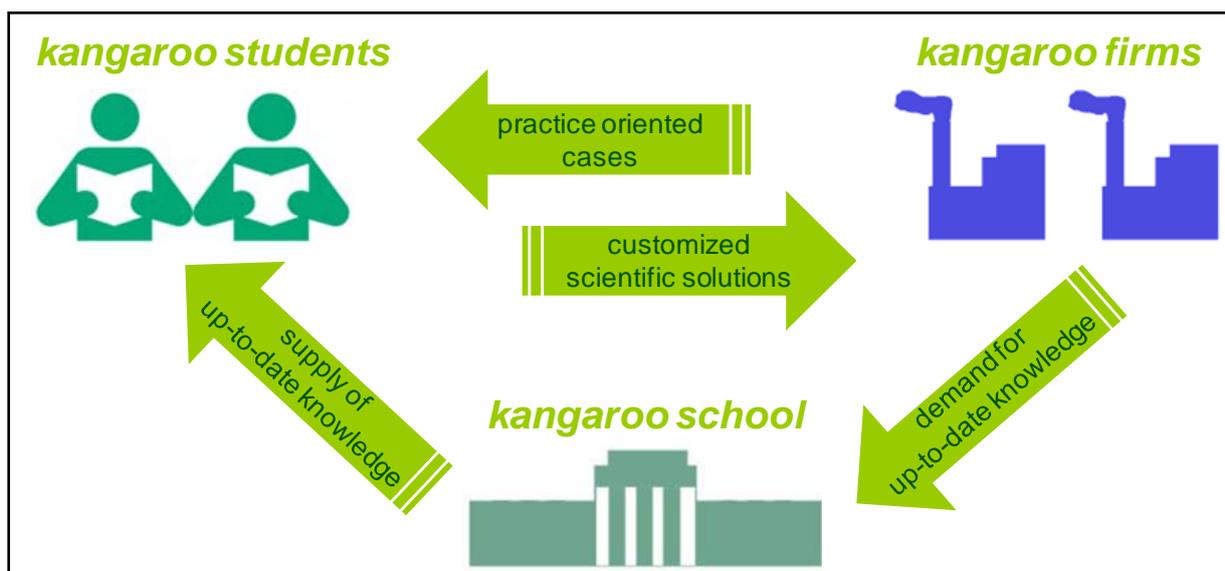


Figure 1) Knowledge transfer in kangaroo seminars

After the academic course on the subject matter, the kangaroo students interact with the kangaroo firms, first defining the questions and goals, then using the acquired scientific knowledge to create customized concepts that precisely fit the cases presented by the kangaroo firms. Hence, an essential feature of the knowledge transfer in a kangaroo seminar is that the seminar is not focused on solving the problem of a single firm that sponsors the case, but instead provides students with generic knowledge that each student team can apply to their own case. This feature makes it possible to combine the educational goals of abstract knowledge provision and case-based knowledge application with the institutional goal of knowledge transfer between academic institutions and private and public enterprises.

A proper application of the abstract knowledge to the specific case of a kangaroo firm can only succeed with a close and first-hand view of the kangaroo firm's products, markets, and organization. To attain a first-hand inside view, the students need to be integrated in the corresponding units of the firm, e.g. in the role of short-term interns. The optimal duration of the internship depends on the complexity of the case and of the firm's situation, but it generally should not be shorter than a couple of working days and not longer than a study term. A shorter duration would not allow students to gain sufficient insight in the firm's specific situation. A longer duration would eliminate the possibility to cooperate in the framework of a seminar and to use grades as incentives for the participating students. The first-hand view aspect of the internship procedure has inspired the term *kangaroo seminar*, because we like to compare the role of the participating students to that of kangaroo offspring seeing the world from a position inside the pouch of the kangaroo mother, i.e. seeing the case from a position inside the participating firm's organization.

Summarizing we can define kangaroo seminars as follows:

Definition – Kangaroo seminar

A kangaroo seminar is a case-based, active, and cooperative educational format that derives its cases from the actual demand of the collaborating non-academic organizations (usually small and mid-sized firms and non-profit organizations), especially in fast-growing research fields. The knowledge transfer from the academic institution (kangaroo school) via the students (kangaroo students) to the involved group of non-academic organizations (kangaroo firms) has the following essential features:

- Demand and supply of knowledge: The kangaroo firms have a demand for knowledge in a fast-growing research field. The kangaroo school can provide education (i.e. knowledge transfer) in that field.
- Seminar preparation: The kangaroo firms and the kangaroo school interact to set the general framework and specify the generic issues of the knowledge demand.
- Abstract knowledge transfer: The kangaroo school prepares and teaches a course that provides kangaroo students with universal (abstract and general) knowledge in the research field.

- Practice oriented application: After having acquired the universal knowledge, the kangaroo students are integrated in the kangaroo firms in small teams (2 or 3 students each) and cooperate with both the kangaroo firm and the kangaroo school to specify questions and goals and to analyze the environment that determines the firm's case. The students apply their universal knowledge to the case and derive a specific solution concept.
- Specific knowledge transfer: The knowledge transfer to the students involves intensive teaching of universal knowledge (theory and generic application) in the first part of the kangaroo seminar. The internship and the case study in the second part of the kangaroo seminar supply students with knowledge on practice oriented applications. The second part of the seminar also helps the firms to update their knowledge base and provides them with a solution for their specific problem in the corresponding case.

2.2. A comparison of kangaroo seminars to other collegiate educational formats

Table 1 and Table 2 summarize the main features of the most commonly used collegiate educational formats, with the kangaroo seminar added to the end of the list. The choice of an appropriate teaching format will obviously not only depend on educational and institutional goals (Table 1), but also on the desired interaction type and the educational level (Table 2). There is no doubt that the assessment of the quality and the characteristics of the educational formats are a matter of debate. In fact, a large part of the literature on education research is motivated by the quest for an assessment of different teaching formats. The entries in the two tables are based on the literature discussed below.

Abstract (non-specific) knowledge is frequently taught in lectures or using literature-based seminars or reading groups (Becker 1997). By adding exercises to the lectures, students can be trained in the generic application of the abstract knowledge, i.e. without having a specific real-world problem at hand (Becker 1997; Gullason 2009). To enhance the training in practice oriented applications, academic institutions sometimes used case-based seminars and active learning courses, i.e. courses in which (previously learned) abstract knowledge is either used to solve real-world problems or to make decisions in simulations of real-world decision situations (Carlson and Schodt 1995). While case-based and active teaching are successful in teaching knowledge application, they are more time consuming in conveying abstract knowledge than the other classical formats (Carlson and Schodt 1995; Becker 1996). Whether case-based formats can be administered to classes of any size is still debated in the literature,

but it seems that class sizes are generally largest in standard lecture formats (Carlson and Schodt 1995). This adds to the cost advantage of standard lectures and may explain why most of academic teaching is administered in the lecture format (Becker and Watts 1996).

Table 1) Comparing goal achievement by kangaroo seminars and other collegiate educational formats

educational format	educational goals			institutional goals	
	abstract knowledge	generic application	practice oriented application	update firms' knowledge-base	solve firms' specific problems
lectures plus exercises	strong	strong	-	-	-
literature-based seminar (reading groups)	strong	weak	-	-	-
case-based seminar (active learning)	strong	medium	strong	-	-
project seminar (firm sponsored seminar)	weak	weak	strong	medium	strong
kangaroo seminar	strong	medium	strong	medium	strong

While any form of tertiary education leads to a broad knowledge dissipation in the long-run, none of the educational formats discussed so far are designed for an immediate knowledge transfer from academia to firms and other professional organizations. For an immediate knowledge transfer to take place there must be some form of direct contact of the knowledge carriers with the workforce of the firms. This contact may occur in an on-the-job training or in an off-the-job advanced training program, in which teachers from the academic institution train the workforce directly. Alternatively, if the teachers of the academic institution and the workforce do not engage in direct interaction, the only possibility to realize the institutional goals is to employ students as intermediaries, who accumulate, customize, and dissipate the necessary knowledge. Project seminars that are sponsored by a firm put students into exactly this role, creating an active and collaborative learning experience, by letting students work on (parts of) a specific problem, for the solution of which the firm is seeking help. While project seminars provide the students with outstanding opportunities for active learning, especially with respect to the practice oriented application of their knowledge, they often have schedules that are too tight to allow for high levels of abstract knowledge transfer.

Like all other seminar formats, project seminars also have the advantage of establishing a rather intensive interaction between teachers and students (Carlson and Schodt 1995; Becker and Watts 1996). Intensive interaction increases the cost of education, because it requires

small class sizes. But, intensive interaction also increases student participation and involvement, which in turn allows class time reduction (Van Scyoc and Gleason 1993).

Table 2) Comparing the reach of kangaroo seminars and other collegiate educational formats

educational format	interaction type			educational level	
	class size	broadcast teaching	cooperative learning	undergraduate	graduate
lectures plus exercises	any size	lectures textbooks	team assignments	any level	any level
literature-based seminar (reading groups)	small	individual presentations	team presentations	senior	any level
case-based seminar (active learning)	medium or small	-	team work role-playing	intermediate or senior	any level
project seminar (firm sponsored seminar)	small	-	collaborative team work	senior	any level
kangaroo seminar	small	lectures textbooks	collaborative team work	senior	any level

Kangaroo seminars combine the virtues of active learning courses and project seminars by shortening the duration and increasing the intensity of the abstract knowledge transfer (first part of the kangaroo seminar) and by downsizing the extent of collaboration with the firm on the firm specific application (second part of the kangaroo seminar). To keep both parts of the course at a high level, the time reduction is compensated with an intensification of the academic work. The intensification is achieved by using small class sizes and cooperative learning methods. Strictly speaking, kangaroo seminars combine cooperation (team learning) and collaboration (mutual discovery learning) techniques. Since the team work is consistently accompanied by instructor feedback, teams learn to apply their knowledge cooperatively, helping and supporting each other throughout the learning process. At the same time, since each case is new and ultimately unique, there is learning collaboration between the kangaroo school, the kangaroo students, and the kangaroo firms, mutually discovering the most appropriate solution for the firm's case.

Evidently, pre-requisites to this type of an intensive teaching environment are that the group of participating students is small and that sufficient many kangaroo firms are recruited to provide each team of students with a case. Both requirements are cost-intensive, underlining that kangaroo seminars cannot be the recommended format for mass instruction in the early stages of academic programs, but are well-suited as one of the final courses that bridge over to post-academic labor.

3. An empirical assessment

In this section, we present an empirical assessment of the kangaroo seminar as a method of knowledge transfer. We conducted a series of four kangaroo seminars in online marketing from October 2008 to April 2010 at the University of Magdeburg. The study that was financed by the federal funds of the German government was focused on testing kangaroo seminars as a new tool for the faster dissemination of knowledge from research institutions to the local industry. Online marketing proved to be a well-suited topic, because it is one of those fast-growing research fields, in which it is increasingly difficult for small and mid-sized enterprises to keep up with the development of knowledge. In what follows, we first describe organizational details of our kangaroo seminars, before proceeding to the results of a post-project survey of the kangaroo students and firms.

3.1. Organizational details of the kangaroo seminars in online marketing

As displayed in Figure 2, our kangaroo seminars in online marketing follow a simple timeline that corresponds to the general seminar structure as described in the previous section. Every seminar begins with a *recruiting phase*, in which we announce the seminar, collect the applications of the interested firms and students, and select the participating teams. All of the firm applicants in our seminars were regional small and mid-sized enterprises or non-profit organizations. We announced the kangaroo seminars mainly with personalized postal or electronic mail to the managing directors of the regional firms and organizations. A kick-off symposium on online marketing and a few other local publicity events supported the direct mailing campaign. The participating students were recruited from the pool of senior students in the business and management programs of the University of Magdeburg. Only students with a major in marketing or in e-commerce were considered. The candidates were asked to send formal applications by e-mail, including a CV, an academic report card, and a brief statement of purpose.

The selected kangaroo students participate in the *crash course*, in which their online marketing knowledge is established and updated. The crash course provides an intensive learning environment that enables the kangaroo school to refresh and extend students' knowledge quickly and effectively. A brief oral presentation wraps up the crash course, informing the school on the educational success and of the areas that require additional support. The fact that the minimum oral test score in our seminars was well over 80 percent and the overall average well over 90 percent seems to indicate that our crash courses were extremely effective and students were strongly motivated. The strong student motivation may

either be due to the self-esteem that is induced by the selection process (it was an honor to be a kangaroo) or due to the prospect of being confronted with high expectations at the kangaroo firm. Perhaps both effects interact and enhance each other to some extent.

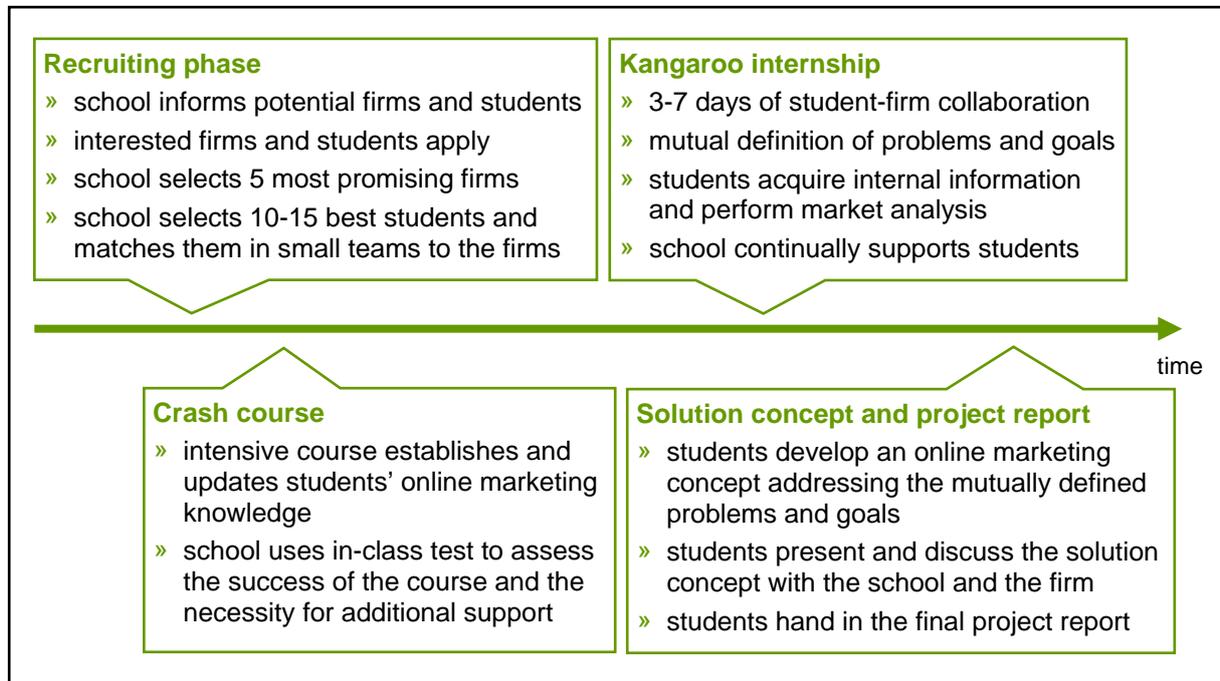


Figure 2) Time line of a kangaroo seminar in online marketing

Having passed the crash course, the kangaroo internships commence. The internship plays a pivotal role in the kangaroo seminar setup, because it brings the generic knowledge of the students in contact with the firm specific information. During the three to seven days that the students spend in the cooperating organization, they work together with firm's managers to define the problems that the firm faces and the goals that the firm plans to pursue in online marketing. Open feedback communication with the kangaroo school supports the students and the firms, helping them define cases that are as rich and realistic as possible, but focused enough to render them feasible and solvable at least to some extent. The solution concept found in this three-way interaction is one that the students finalize and present as their proposal for an implementable online marketing concept. The oral presentation of the concept to the school and the firm wraps up the interaction phase. The kangaroo seminar ends with the students handing in their final project reports.

3.2. Results of a post-project survey

Ideally, the kangaroo firms will stay in contact with the school (and perhaps with some of the students) after the project terminates. The medium- and long-term feedback from the firms

allows the school to appraise the quality of the knowledge transfer and to assess the economic effects of kangaroo seminars. Furthermore, the feedback can provide valuable information for the students, because it enables them to evaluate their concept proposal and to learn from its strengths and weaknesses. Obviously, receiving post-project feedback not only from the firms, but also from the students will furthermore help the school to appraise the educational and vocational success of the kangaroo seminars.

In the rest of this section, we report on a post-project survey that we conducted after all kangaroo seminars had terminated. The survey was conducted using computer-aided telephone interviews (CATI) based on a small questionnaire that was mainly focused on eliciting the post-project development of the firms and students and their degree of post-project satisfaction. A list of the participating firms as well as the complete set of our surveys' questions and responses are contained in the appendix.

3.2.1. Students' post-project satisfaction

Due to the high degree of mobility amongst our alumni, we only managed to contact 24 of the 55 students, who participated in our kangaroo seminars. All of the 24 contacted students, however, responded to the full set of questions. The first of the four central questions that we asked was concerned with the vocational choice. As exhibited in Table 3, about 83 percent of the interviewed kangaroo students have chosen marketing or e-commerce as their vocation. This indicates that the selection process (both the self-selection of and school's selection amongst the applicants) has been highly efficient, mainly taking in those students, who can later draw on the knowledge accumulated in the kangaroo seminars for their professional careers.

Table 3) Students' responses to the question: "In which area are you working or looking for a job?"

	marketing	e-commerce	other	don't know
absolute frequency	6	14	2	2
relative frequency	0.25	0.58	0.08	0.08

Table 4 shows that the almost perfect match between the seminar contents and the vocational choice is not only a pre-selection effect, but is also driven by – at least supported and enhanced by – the interaction in the seminar. When asked to which extent they found the kangaroo seminar to be "helpful," all interviewed students responded positively. In fact, 18 of 24 (75 percent) found the kangaroo seminar "relevant" for the vocational choice and 15 of 24

(62.5 percent) went even further, saying that the kangaroo seminar had been “pivotal” for their vocational choice.

Table 4) Students’ assessment of the relevance of kangaroo seminars for their vocational choices

Concerning your vocational choice, was the kangaroo seminar	yes	no
helpful?	24	0
relevant?	18	6
pivotal?	15	9

Finally, the generally positive attitude of the students towards the kangaroo seminars is also reflected in their responses to the question whether they would recommend the kangaroo seminar to others. Recent literature suggests that asking for the recommendation intention may provide the easiest way to measure total customer satisfaction (Brown et al. 2005). All 24 kangaroo students that we interviewed responded positively to the recommendation question. Hence, by this metric, we can report a 100 percent student satisfaction rate.

3.2.2. Firms’ post-project satisfaction

To assess the satisfaction of the firms with the kangaroo seminar, we contacted all 22 firms that had been involved in the project. Due to one case of non-response, our overall response rate is at about 95 percent. Some of the item response rates are slightly below. The survey focused on three main issues: (i) the firms’ satisfaction with the kangaroo seminar, (ii) the extent of concept realization, and (iii) the firms’ economic development after the project.

We included two items in the survey to assess the firms’ satisfaction with the kangaroo seminars. As shown in Table 5, we achieved a 100 percent satisfactions score in the classical direct assessment, i.e. the responses of all 21 interviewed firms were in the top 2 boxes, i.e. “very satisfied” or “satisfied,” with a majority of almost 62 percent indicating the highest level of satisfaction.

Table 5) Firms’ responses to the question: “How satisfied are you with the kangaroo seminar’s results?”

	very satisfied	satisfied	partially satisfied	not satisfied
absolute frequency	13	8	0	0
relative frequency	0.62	0.38	0.00	0.00

The second metric we use to measure satisfaction is the recommendation intention. Just as in the case of the students, we measure a 100 percent recommendation rate also for the

interviewed firms. Hence, even if we cautiously consider the one non-respondent firm as neutral or dissatisfied, the overall satisfaction level of the kangaroo firms is clearly above the 95 percent level.

While there is no doubt about firms’ high level of satisfaction with the kangaroo seminars, this does not necessarily mean that the online marketing concepts that students generated in the course of the seminar are actually implemented by firms. Table 6 displays the distribution of the firm’s answers to the question on the extent of concept implementation. Almost all of the interviewed firms report to have implemented the online marketing concepts suggested by the kangaroo students at least partially.

Table 6) Firms’ implementation of students’ kangaroo seminar concepts

To which extent did you implement the online marketing concept suggested by the students in the kangaroo seminar?	almost completely	partially	hardly
absolute frequency	6	14	1
relative frequency	0.29	0.67	0.05

To control the validity of this result, we asked a set of detailed questions concerning each of the online marketing instruments separately. For each instrument we asked whether it is actively used. We compared these post-project reports to the pre-project reports that were contained in the firms’ application documents. Figure 3 displays the “before and after” comparison of the media usage. We observe an increase in the usage of every single instrument, with huge growth rates in some cases. While there is no way to rule out that these firms may have increased their online marketing activities even without the participation in a kangaroo seminar, the high level of satisfaction that the firms report indicates that the increased online marketing activity was at least guided – if not driven – by the interaction in the kangaroo seminars.

The ultimately most interesting question is whether the increased online marketing activity that has been guided by the knowledge transfer in the kangaroo seminars will lead to an improvement of the firms’ performance. Obviously, there is no simple way to measure the change in firms’ performance that is due to the interaction in the kangaroo seminar. Even if we could obtain exact performance measures from the firms, which we cannot, the multiplicity of factors would make it almost impossible to single out the economic impact of being involved in a kangaroo seminar. Nonetheless, we use the development of employment in the firms as a very coarse metric to analyze their performance. If we find that kangaroo

firms exhibit an employment growth that is above the general economic development of the region, we can claim to have an admittedly rather noisy signal for the positive effect of participation in a kangaroo seminar.

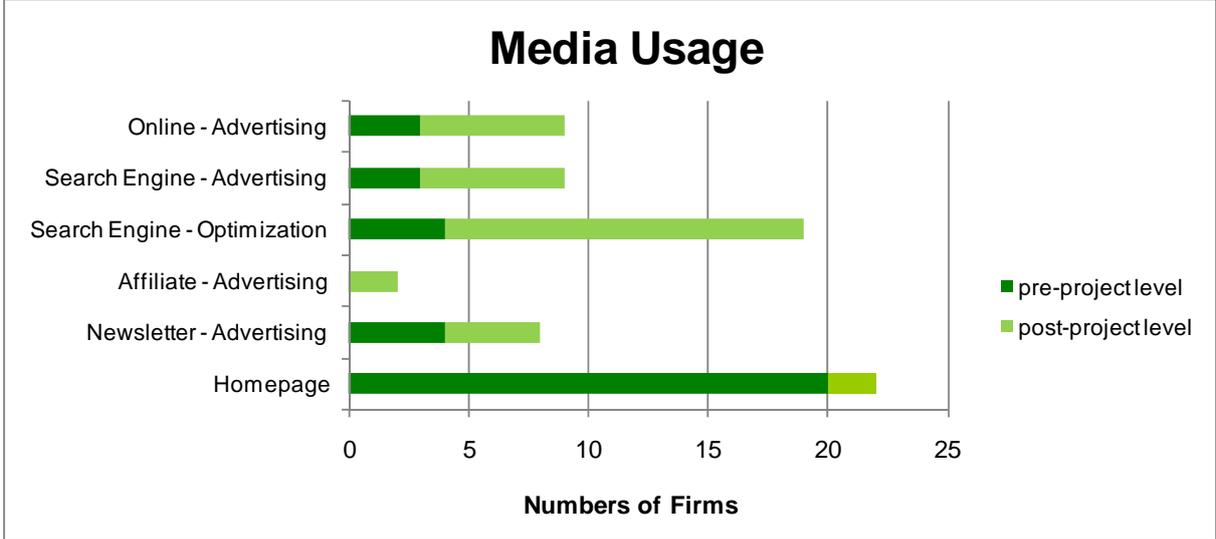


Figure 3) Firms' online media usage before and after the kangaroo seminar

To analyze the pre- to post-project change in the employment of the kangaroo firms, we asked the interviewed firms for the number of their employees in the post-project phase. Comparing these figures to the numbers the firms had stated in their pre-project applications, we found an average employment growth of almost 16 percent. Only one firm reported a workforce reduction (-20 percent), while 11 firms reported employment growth and the remaining 9 firms reported no change in employment. Overall this seems to be a much more positive development than the general employment that grew at a rate of below 1 percent during the period in the region. The data of the German Federal Employment Office show a slight increase of 0.7 percent in registered employment from June 2008 to June 2010 in the region of Sachsen-Anhalt, where almost all of the kangaroo firms are located (Bundesagentur für Arbeit 2011). While the sample size is too small to draw statistically reliable conclusions, we find the more than 15 point difference between the statewide average employment growth rate and the average employment growth rate of the kangaroo firms a notably positive signal.

4. Conclusion

Combining an intensive teaching format for abstract knowledge transfer and a project-based active learning format for collaborative knowledge application, the kangaroo seminars that we introduce in this paper require high levels of effort from teachers, students, and participating enterprises. Our theoretical discussion concludes that these high requirements may be

justified, when kangaroo seminars are employed in fast-growing research fields. In these fields, kangaroo seminars can substantially speed up the transfer of knowledge from science to the field, by accomplishing two knowledge transfer steps during a single academic term. First, abstract and updated knowledge is transferred to students in the intensive teaching phase. Next, the students drive the knowledge transfer to the field by applying their knowledge to the project case defined in collaboration with the participating enterprises.

Our empirical appraisal of the four kangaroo seminars in online marketing that we conducted from 2008 to 2010 reveals that the desired three-way knowledge transfer procedure can be established properly and that it leads to high levels of self-reported satisfaction both amongst the participating students and firms. More importantly, firms not only report high satisfaction levels, but also high levels of compliance with the solution concepts that were developed by the students in the seminars. Hence, the knowledge transfer seems to have an actual impact on firm behavior. Finally, comparing the economic development of the participating firms to the general trend, we find that the majority of participating enterprises recorded higher growth rates of their workforce than the overall growth of employment in the region. On average participating firms increased their workforce by almost 16 percent, while the growth rate reported for the regional economy during the same time period was well below 1 percent. Obviously, due to the small sample size, this comparison can only be indicative. But, combining the high level of satisfaction that the firms report with the indicators for a positive economic development of these firms, allows us to cautiously conclude that the knowledge transfer that was brought on by the interaction in the kangaroo seminars may have actually helped to encourage economic growth in the participating enterprises. Clearly, more research will be needed to establish stronger empirical evidence for this conjecture in the future.

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Appendix 1 – List of participating Firms

Name	Location	Sector	Workforce pre-project	Workforce post-project	Date of participation
BIO Mitteldeutschland GmbH	Halle (Saale)	biotechnology consulting	5	4	Autumn 2008
Brandschutz-Service Uwe Schlichtiger	Magdeburg	fire protection trade and services	2	2	Spring 2009
CAMPUS live	Leuna	internet services	3	6	Spring 2009
Carbonit Filtertechnik GmbH	Salzwedel	water filtration production and services	20	24	Autumn 2008
Die p. A. – Die private Arbeitsvermittlung & Personalleasing GmbH	Magdeburg	personnel services	1935	1940	Autumn 2008
ER+TE Stahl- und Metallbau GmbH	Zerbst (Anhalt)	steel and metal construction	28	31	Spring 2010
Euroglas GmbH	Haldensleben	glass pane production	550	550	Autumn 2009
Fehr Umwelt Ost GmbH	Halle (Saale)	waste management	550	560	Autumn 2009
Gollmann Kommissioniersysteme	Halle (Saale)	machinery and plant manufacturing	65	70	Autumn 2008
KD-Elektroniksysteme GmbH	Zerbst (Anhalt)	electronic systems production and services	30	40	Spring 2010
Konstruktiver Glas- und Metallbau Zerbst GmbH	Zerbst (Anhalt)	glass, steel, and metal construction	11	11	Spring 2010
KS wet2 technology AG	Dessau-Roßlau	chemical industry	4	4	Spring 2009
Landesweingut Kloster Pforta GmbH	Bad Kösen	wine production	25	25	Spring 2010
Mewes & Götzl Wägetechnik GmbH	Haldensleben	scales technology production and services	14	15	Autumn 2009
Novoplast Schlauchtechnik GmbH	Halberstadt	plastics manufacturing	62	67	Autumn 2009
Ostprodukte-Versand	Tangermünde	mail order trade	4	10	Spring 2009
PARITÄTISCHE INTEGRAL gGmbH	Magdeburg	charity (non-profit organization)	20	20	Spring 2009
Steinke Orthopädie-Center GmbH	Halberstadt	orthopedic products trade and manufacturing	80	91	Autumn 2009
Technologie Transfer Zentrum	Magdeburg	consulting services (non-profit organization)	7	7	Autumn 2009
Tiedge GmbH	Groß Ammensleben	carpentry	6	no response	Autumn 2008
Vetter Büro + Objekt GmbH	Coswig	office furniture and fixtures	5	5	Autumn 2009
Vetter Touristik Reiseverkehrs GmbH	Zörbig	travel services	80	80	Spring 2010

Appendix 2 – Firms’ Questionnaire (including response summaries)

To which extend did you implement the online marketing concept suggested by the students in the kangaroo seminar?

almost entirely	partially	hardly
6	14	1

How satisfied are you with the kangaroo seminar’s results?

very satisfied	satisfied	partially satisfied	not satisfied
13	8	0	0

Would you recommend the kangaroo seminar project to other firms?

yes	no
21	0

Summarizing your experience with the kangaroo seminar in one sentence, what would you say?

Kangaroo firm (interviewee)	Responses (translated from German)
Bio Mitteldeutschland (H. Wolf)	It was a great experience! The kangaroo seminar offered both the firms and the students the opportunity to experience a new method of knowledge transfer. The students were very flexible and worked goal-oriented.
Brandschutzservice Uwe Schlichtiger (U. Schlichtiger)	We received numerous well-founded, new insights that we are currently implementing. It was great experience! 50% of the suggestions have already been implemented. We plan to do more and have already commissioned an advertising agency.
Campus live	An active knowledge transfer with young, dynamic, creative, and flexible students. Some of the suggestions, however, did not meet our requirements and some could not be implemented due to budget restrictions.
Carbonit (Dr. P. Westerbarkey)	Interesting, informative, and insightful! The students presented their knowledge very comprehensibly. We would definitely participate in such a project again.
Die p.A. (H. Lietze)	Interesting project that quickly and concisely transferred knowledge on online marketing. We would be happy to participate again.
ER+TE Stahl- und Metallbau GmbH (M. Erxleben)	Keep it on! You need to seize such opportunities. We grade it a straight A. It is very helpful to receive feedback from an external point of view.
Euroglas (J. Pasemann)	The students delivered a good baseline with their concept and we are currently working on it. The cooperation was very agreeable. It was worth our while. We would be happy to participate again!
Fehr (S. Winkel)	A cost-effective and good employee, who came up with good new ideas for the firm.
Gollmann	Many good impulses. We were able to see beyond known horizons. The students had good suggestions. A success for both sides!
KD-Elektroniksysteme GmbH (R. Kleinodt)	The students worked very constructively, had many new ideas and made many suggestions. Our expectations were definitely fulfilled.
Konstruktiver Glas- und Metallbau Zerbst GmbH (R. Erxleben)	The students showed us our many new possibilities concisely. They expanded our viewpoint and therewith enriched our firm.

KSwet2	Generally satisfied, but in the end without an impact.
Landesweingut Kloster Pforta GmbH (Ch. Kloss)	A variety of suggestions from students, who luckily were no wine-lovers, keeping a helpful distance to the product. Some approaches were not viable in practice.
Mewes (S. Schulze)	We are very satisfied with the students in all respects. The communication worked perfectly.
Novoplast Schlautechnik GmbH (G. Pflaum)	It was a very productive cooperation between the students and us. It is always positive, when an external player brings fresh ideas into an organization! We would be happy to participate again!
Ostprodukte-Versand (T. Klipp)	We are grateful that such projects are financially supported and found it very useful. While we cannot link our success directly to a specific source, the connection with the seminar seems obvious.
Paritätische Integral GmbH (J. Zirkel)	Great! The project pushed us way ahead! We are happy that we were part of it. Before the project, our homepage was not even shown on Google. Now it is. Maximum improvement!
Steinke Orthopädie-Center GmbH (F. Schultz)	We got to know many new online marketing elements.
Technologie Transfer Zentrum (Dr. S. Springer)	Great idea! It was fun listening to the innovative ideas of the students and to test their implementation.
Tiedge	
Vetter Büro & Objekt GmbH (T. Vetter)	The students brought a “young” perspective to our firm. It was very creative. The students’ ideas were integrated into a new project.
Vetter Touristik Reiseverkehrs GmbH (K. Vetter)	An enrichment for both sides. The students were a good match for our product.

What media are you currently using?

	pre-project*	post-project	difference
Homepage	20	22	+2
Newsletter- Advertising	4	9	+5
Affiliate- Advertising	0	2	+2
Search Engine-Optimization	4	19	+15
Search Engine - Advertising	3	9	+6
Online-Advertising	3	9	+6
*The data for the pre-project levels are taken from the firms’ applications at the outset of the kangaroo seminar project.			

Appendix 3 – Students’ Questionnaire (including response summaries)

What is your current occupational status?

completing my studies	on a job	seeking a job	on an internship	not specified
13	4	3	3	1

Are you still living in Magdeburg? (If not, where are you living now?)

yes	no
15	9

In which area are you working or looking for a job?

marketing	e-commerce	other	don't know
6	14	2	2

Concerning your vocational choice, was the kangaroo seminar helpful? Was it relevant? Was it pivotal?

	yes	no
helpful?	24	0
relevant?	18	6
pivotal?	15	9

Would you recommend the kangaroo seminar project to other students?

yes	no
24	0

Summarizing your experience with the kangaroo seminar in one sentence, what would you say?*

It was a big challenge to deal with the firm and our own team, but it was lots of fun and a useful experience.
Finally, theory and practice linked in one lecture!
It was lots of fun and very inspiring to get away from the dull daily routine at the university and to work in a real business.
Finally, a touch of reality ;-)
The kangaroo seminar helped me apply my abstract knowledge advantageously in practice.
It was interesting, but also quite exhausting. It was worth the trouble.
The kangaroo seminar offers the unique opportunity to cooperate with real firms in the market.
Interesting cooperation in a team and with a firm.
The seminar gives insight into working life and adds new experiences.
The practice oriented project work was extremely motivating for me.
A balance of theory and practice.
A crash-course in online marketing combined with a sensible practice oriented application. A teamwork and coordination training.
It was especially good to get out of the lecture hall and into contact with “real” firms.
Practice orientation and theory. Great experience.
The seminar offered a good basic knowledge in online marketing and provided a first experience in the cooperation with firms.

Offers students an exciting first insight into online marketing... for my vocational choice, it was the right decision.
The seminar strengthened my interest for marketing in general and gave me the opportunity to broaden my online marketing knowledge to a great extent.
Not only theory, but also fun and success!
The kangaroo seminar offers students the opportunity to apply their theoretical knowledge in practice. Personally, I had no other lecture, in which I (sustainably) acquired as much knowledge in such a short time.
Hard work. Must get lucky with the firm. Then, you gain much more experience than is usual at the university.
It was lots of fun, was very instructive, and influenced my vocational choice (part-time job) decisively.
The kangaroo seminar was a great work experience. Within a few weeks, I was on the level of professionals in e-commerce. Furthermore, I learned quite a bit about the interaction when consulting a firm.
It was lots of fun. I learned a lot and it helped me to reassess and confirm my vocational choice for the future!

Are there additional comments (positive or negative) that you would like to make about the kangaroo seminar?*

The online advertising crash course at the beginning was very effective, because everyone had to deal intensively with the topics in online marketing and all team members were on the same level when the actual project work started. Besides, I found the seminar to be a successful link between theory and practice, because one could apply the acquired knowledge immediately.
Project work with external impact can help universities to lose their outdated image in the economy.
It would be nice to have feedback from the firms on the extent to which they have implemented our online marketing concept.
It was a lot of hard work, because the team work did not go well. Maybe it was not worth the trouble, since all seminar participants were graded A in the end.
I hope there will be seminars of this type also for other areas in marketing.
From all of my seminars, the kangaroo seminar was my favorite. Thanks for that.
I believe that in this seminar I learned many new and vocationally relevant topics that will soon receive more and more attention in marketing.
Thank you!
Great seminar, keep it up!
Our firm contacts could have been more punctual, but they were very friendly. Unfortunately, we did not get any detailed information on key figures (number of hits, firm strategy, or detailed budget).
We cooperated with a mid-sized firm with more than 500 employees. As far as I know, they did not follow any of our advice. In my opinion, it seems more sensible to cooperate with more flexible firms, i.e. smaller firms.
I would be happy to see that the kangaroo seminars are continued. In my opinion, there is alternative way of writing a thesis that would be more exciting. The mixture between theory and practice application was great!
For me, the kangaroo seminar was the best course ever!
This seminar was a real addition in the daily routine of our theory jungle. One could finally combine the dry and the interesting stuff, not only experiencing many connections, but also surprising effects. The good cooperation between the firms and the students was especially supportive. The seminar's impact on oneself and on the project was of equal importance.
(a) There were too many students at the first presentation meeting. (b) Great opportunity to learn.
Too bad that the seminar will be discontinued.
The kangaroo seminar helps you to test your knowledge and better assess yourself. Furthermore, it was my first serious team work project. I learned the rules of team work, allowing every team member to stay motivated and putting the abilities of every team member in the focus of the project. This experience helped me both during my subsequent 5-month internship at the Volkswagen AG in Wolfsburg and in my studies at the CSU, since most of the projects in the MBA program are also team work based. The typical lone warrior that is often seen at universities does not exist in working life. Team work is a necessity today and the kangaroo seminar provides the basis for successful team work throughout a semester.
Many thanks for allowing me to participate in this seminar!

*Responses are translated from German.

Otto von Guericke University Magdeburg
Faculty of Economics and Management
P.O. Box 4120 | 39016 Magdeburg | Germany

Tel.: +49 (0) 3 91/67-1 85 84
Fax: +49 (0) 3 91/67-1 21 20

www.wv.uni-magdeburg.de