The contribution of Social Capital to educational innovation: an exploratory longitudinal study

C.G.J.M. (Corry) Ehlen, MSc, Open University of the Netherlands, PhD. student
Dr. Marcel van der Klink, Open University of the Netherlands, Associate professor
Dr. H.P.A. (Els) Boshuizen, Open University of the Netherlands, Professor

Valkenburgerweg 177,
6419 AT Heerlen
P.o.box 2960,
6401 DL Heerlen, The Netherlands

Full Paper. Prepublication draft. No copy without permission of authors.
Corresponding author: C.G.J.M. Ehlen.
corry.ehlen@gmail.com
Abstract

This paper intends to provide insight into the processes of large-scale educational innovation from the perspective of the concept of social capital. It also provides insight into HRD interventions that enhance innovation power by stimulating social capital. For this purpose a three-year large scale innovation project with 8 schools and 8 corporations was investigated with the use of a four dimensional model of social capital. The research study entailed the investigation of the structural, relational, cognitive and action dimension of social capital, both on the innovation process and the innovation results. A mixed-method approach was applied resulting into mainly qualitative data. The findings show that this social capital model not only is able to reveal invisible and intangible processes of the main actors, but offers guidelines too for developing fruitful HRD interventions.

Keywords

Social capital, educational innovation, innovation network, learning process, designing process, HRD intervention.
Introduction

The concept of social capital

Organisations are increasingly considered to be a key source of social capital, emphasising the importance of social networks, partnerships, collaboration, interaction and knowledge sharing they provide (Kessels & Poell, 2004). Organisations are seen as networks and knowledge is a state in a system of interconnected individuals, thus knowledge is described as being imbedded in social relationships (T. de Jong & Kessels, 2007). HRD scholars acknowledge that social capital is a relatively under-researched concept which could be fruitful for understanding of the relationship between social capital, knowledge productivity and educational innovation and the construct of social capital should be operationalised (J.W.M. Kessels & Poell, 2004; Kostova & Roth, 2003). In other scholarly fields, like economics and educational change theory, more attention has been paid to social capital.

Over the past 20 years substantial attention has been devoted to the social capital theory, since it contributes significantly to our understanding of the determinants of success of complex innovations in various sectors and countries (Field, 2005; Tsai, 2001). The appeal of the concept stems from its intriguing integration of social connections with productive value.

In spite of the impressive amount of academic research undertaken in the last decade on social capital (Akçomak, 2009; Borgatti & Foster, 2003; Claridge, 2004) the specific dynamics of social capital in innovation groups remain unclear. In addition, not much research has been done on the role of interventions in change processes from the perspective of social capital (T. De Jong, 2010; J.W.M. Kessels, 2004).

Social capital and educational innovation

The model proposed by Nahapiet and Ghoshal (1998) can be considered as the one that is most widely acknowledged in different scientific disciplines. This three-dimensional model illustrates how social capital contributes to educational innovation by creating intellectual capital: the structural, relational and cognitive dimensions lead to the combination and exchange of intellectual capital and that creates new intellectual capital.

Although studies show the impact of the three dimensions on innovation, a consistent use of terminology concerning the investigated facets, conditions, and dimensions still seems to be lacking. What is called structural in one study, is mentioned cognitive or relational in another. Studies mainly focus on the structural dimension, while the relational and cognitive dimensions remain under-researched (De Jong, 2010). Research on the multi-dimensionality and coherence of aspects is still scarce.

Based on the model of Nahapiet and Ghoshal we developed an extended model of social capital (see Figure 1), in which we added a fourth dimension: the activity dimension. Social capital is considered as a dynamic cluster of many dependent processes focused on transfer of resources between members of groups, creating
something new. The idea that social capital evolves and can be described as a dynamic process seems to be fairly new. In our vision the four dimensions are interdependent, forming together the social capital: the foundation is the group or the network (first dimension), in which standards and affections arise (second dimension) that enhance willingness to transfer resources (third dimension), that brings about activities to create new value (fourth dimension). Although the network is a necessary condition for the rise of ‘capital’, it is not a sufficient one. The affective-normative aspect of the network, this colouring and quality, is essential too. Even if these two first conditions are met, valuable resources to exchange have to be available, like knowledge and knowledge products. It is this cognitive dimension that is so important for the creation of new intellectual capital or collective knowledge (Nahapiet & Ghoshal, 1998). By suitable actions, as combination and exchange of knowledge, there can be created new ‘capital’.
Here we describe on an aggregated level the different components of the model, and we start at the bottom:

1. ‘Favourable conditions and HRD interventions’: are accidental and consciously created circumstances that increase the social capital within the innovation group.

The following four components entail the four dimensions of Social Capital:

2. The ‘structural-conative’ dimension addresses properties of the social system, containing the impersonal configuration of linkages between people or units: the network ties, network configuration, hierarchy, commitment and time spend.

3. The ‘relational-affective-normative’ dimension addresses aspects of personal relationships: trust and trustworthiness, goals, norms and sanctions, obligations and expectations, identity and identification.

4. The ‘cognitive-(im)material’ dimension reveals knowledge and other resources existing in the network or available by the network in the context of knowledge sharing and knowledge creation.

5. The ‘activity’ dimension is the combination and exchange of the ‘resources’ leading to common activities in creating new value.

Leading to:

6. The ‘innovation process’, this entails activities like designing and programming activities, including necessary learning activities.

7. The ‘outcomes of innovation’, these are the innovative products, processes and services that are created for organisation and individual member.
Research questions

The goal of this study is to further operationalise the social capital model, to demonstrate its dynamics in the processes of knowledge productivity and innovation and to discover favourable HRD interventions for enhancing the social capital:

Research questions are:

1. How do the four dimensions of social capital contribute to the process and results of the educational innovation?

2. Which favourable conditions and HRD interventions from the perspective of social capital, lead to an improvement of both the process of innovation and the outcomes of innovation?

Design

Previous studies revealed (Claridge, 2004; Grootaert, Narayan, NyhanJones, & Woolcock, 2004) that investigating social capital requires a research design that should include more than simple cause-and-effect relationships, or investment and return of social capital. Measurement involves not only assessing the nature or extent of networks and trust, but also gaining insight into their contributing factors and what makes social capital ‘work’ in a particular community. Triangulation remains a key way to maintain the rigour and reliability of social capital measurement (Cavaye, 2004). For this reason an interpretative research approach (Reason, 2006; Yin, 2003) was adopted in which the network members are seen as active participants to find answers to key research questions.

Therefore a mixed-method approach was applied. Because previous studies showed that innovation results only become visible after months or even years (De Jong, 2010) a longitudinal approach was applied. Different kinds of instruments were used to collect mainly qualitative data to ensure sufficient insights into the innovation process, its results and the conditions affecting the process and results. The social capital model (see Figure 1) was used as the conceptual framework. We hereby took in mind that it is not a matter of discovering ideal indicators of social capital. It is a matter of using imperfect descriptions and indicators, and developing the confidence to work with inherent imperfections and uncertainty (Cavaye, 2004 pg 20).

Setting and participants

A large-scale three-year innovation project, which could be followed closely from start to finish, was selected. The project was a collaborative initiative of a vocational educational sector and businesses in the leisure branch in the Netherlands. The project aimed at connecting vocational training and education more closely to the needs of the leisure branch. This branch is characterised by a large diversity of SMEs. All acknowledge the need to advance competences of their staff, for example concerning their service-oriented behaviour.
Goal of the project was to initiate a new Academy focusing on students at all levels as well as on employees of the sector, as a coordination point of the existing educational streams. Therefore a set of products had to be developed collaboratively. The intended products were: a career development centre, improved teaching methods for work-based learning, and an assessment centre.

Three innovation groups were involved in year 1 and 14 groups in year 2 and 3. The project was managed and supervised by a project management team and a steering committee, in which the members of the board or managers of 16 organizations involved.

**Instruments**

A broad variety of instruments was applied of which the most important are: participative observations (three innovation groups in first project year), in-depth interviews (20 persons in second and third project year), questionnaire (20 persons in first project year), survey (30 persons in third project year), analysis of project documents.

All instruments were applied for collecting data on the seven categories of the research model (see Figure 1), resulting into a large set of different kinds of data. In fact the incremental change was assessed and by doing so the change in social capital that has occurred over time, for example, how networks, cognition and trust have changed between the start and the end of the project (Cavaye, 2004).

The survey at the end of third project year focused mainly on the general value of the innovation process and results reached by the individual members and the organisations, consisting of seven sub-scales.

Scale 1. Achieved new individual knowledge: of educational methods, of processes and interests of educational and business partners.
Scale 2. Personal learning effect: learned to know new colleagues in education and business, learned to cooperate and to innovate.
Scale 3. Improved innovation capability: consulting and negotiating, creating atmosphere, relationships, weighing interests, communicating and presenting.
Scale 4. Increased personal value for the organization: more valuable for student, colleague and organization, more satisfied with job, more perspectives.
Scale 5. Value of new educational products for the organization: products are applicable, will be developed and implemented, are improvement or innovation.
Scale 6. Value of personal relationships: trust, shared vision and goals, transparency, sociability, knowledge, joined activities.
Scale 7. Value of cooperation between the organizations: cooperation is important, better then expected, has to continue, leads to innovation.

The research took place from August 2008 until August 2011. The use of instruments was only partially pre-designed, following the naturalistic inquiry method and qualitative inquiry (Cooperrider, Whitney, & Stavros, 2003). The specific instruments and the moments of application were adaptive to observed developments in the innovation process and were discussed with management team and chairs of the
innovation groups, whose acceptance was essential for partnership with the researcher. As suggested by Cavaye (2004) the network members themselves were engaged in the measurement of social capital over time within innovation groups. Methodological studies of social capital suggest that it is not so much the collected data that are important but the collective rethinking and evaluation that comes from it.

**Analysis**

The measurement of social capital fundamentally involves complexity and diversity. Analysis and data collection were continuing and alternating processes. The quality of these processes were guaranteed by collaboration with chairs and management team, by member check and reflection. In the first year two researchers performed the research in close cooperation. The data were analyzed by means of a detailed categorisation system of the seven elements of the research model, based on the research questions. This analytic framework was developed and refined throughout the research process (Glaser & Strauss, 1967/2008). The four dimensions of social capital were linked to the stages of the innovation process and to its results. Also the influence of the conditions and HRD interventions on the social capital, on the innovation process and on the results were analysed, using SPSS and Atlas-ti.

**Results**

The findings will be presented on an aggregated level and distinguished into five phases that entail the entire innovation process. For each of these phases, the main tasks, events and outcomes and the contribution of the four dimensions of social capital, -the structural, the relational, the cognitive and the action dimension-, are described.

These five phases are displayed in Table 1, together with some of the main characteristics per phase.

Table 2 gives an overview of the social capital dimensions and of the conditions and HRD interventions per phase.
Table 1 The main characteristics of the five phases of the innovation process

<table>
<thead>
<tr>
<th>Phase</th>
<th>1 preparation</th>
<th>2 orientation</th>
<th>3 design</th>
<th>4 production</th>
<th>5 dissemination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>1 and 2</td>
<td>3</td>
<td>3</td>
<td>4 and 5</td>
<td>6</td>
</tr>
<tr>
<td>Structure</td>
<td>initiation</td>
<td>formal project</td>
<td>formal project</td>
<td>formal project</td>
<td>voluntary network</td>
</tr>
<tr>
<td>Task</td>
<td>formulating urgency; finding partners and funding; preparing project;</td>
<td>understanding goal and task</td>
<td>concretization general concept</td>
<td>designing and realizing pilots</td>
<td>looking for continuation of cooperation</td>
</tr>
<tr>
<td>Outcomes</td>
<td>consortium, project plan, project structure</td>
<td>trust, mutual understanding</td>
<td>general frameworks of educational products; new knowledge and experience</td>
<td>14 initiatives, 9 realised; organizational benefits; personal learning effects</td>
<td>sustainable and owned development</td>
</tr>
<tr>
<td>Social capital status</td>
<td>collecting social capital</td>
<td>building social capital</td>
<td>investing social capital</td>
<td>increase and devaluation of social capital</td>
<td>sustainable profit?</td>
</tr>
<tr>
<td>Characteristic</td>
<td>from passion to power</td>
<td>courtship</td>
<td>co-creation</td>
<td>realities</td>
<td>sustainability</td>
</tr>
</tbody>
</table>
Table 2 Main elements of social capital dimensions, conditions and HRD interventions per phase

<table>
<thead>
<tr>
<th>Phase</th>
<th>1 preparation</th>
<th>2 orientation</th>
<th>3 design</th>
<th>4 production</th>
<th>5 dissemination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural dimension</td>
<td>pioneer team; network; funding</td>
<td>clear position and task; autonomy and authority</td>
<td>different interests between top and bottom</td>
<td>educational interests dominate; autonomy problematic</td>
<td>small voluntary network</td>
</tr>
<tr>
<td>Relational dimension</td>
<td>passion; personal relations; commitment</td>
<td>developing norms, shared values, goals and procedures</td>
<td>group solidarity, expulsion between groups and committee</td>
<td>tensions between top and bottom; motivated groups</td>
<td>personal sympathy and passion; shared values</td>
</tr>
<tr>
<td>Cognitive dimension</td>
<td>project-, and change skills</td>
<td>exploring resources, values and motivation; learning jargon</td>
<td>few educational knowledge and innovation capability; unused business expertise</td>
<td>perceptions between business and education differ</td>
<td>shared knowledge and resources</td>
</tr>
<tr>
<td>Activity dimension</td>
<td>networking, enticing</td>
<td>acquaintance; collaboration</td>
<td>linking and bridging; designing and learning</td>
<td>unusual innovation activities</td>
<td>sustainable change</td>
</tr>
<tr>
<td>Favourable conditions</td>
<td>passion, urgency, funding</td>
<td>time for acquaintance</td>
<td>solidarity and enthusiasm</td>
<td>enthusiasm; pleasure in cooperation; support</td>
<td>passion, reciprocity, urgency</td>
</tr>
<tr>
<td>HRD interventions</td>
<td>networking; looking for partners</td>
<td>encouraging ownership, accepting needs of acquaintance</td>
<td>mental support; training; brokering between interests</td>
<td>participative research; acceptance of little innovation</td>
<td>spread leadership, support</td>
</tr>
</tbody>
</table>
Phase 1. The development of the initial idea into a project plan.

Two teachers of vocational education schools can be regarded as the project pioneers. Their shared ambition was to create a better connection between education and business and to realise tailor-made education for their students.

During the two-year preparation phase the pioneers formulated urgency and objectives, found supporters, designed a plan, appointed project management and succeeded in finding a funding organization to supply a project grant. The funding organization demanded a larger consortium of participating schools as well as companies. This urged the pioneers to seek interested parties outside their immediate own networks. Finally, this phase resulted into three tangible outcomes, a functioning consortium, an approved project plan and a proposal for a project structure.

These outcomes allowed the project to move on to the next phase, but on the same time caused problems in the long run. For example, the large number, their diversity and the regional dispersal of the participating organizations appeared to impact negatively the effective realisation of the project goals as the following interview fragment with one of the initiating pioneers highlights:

“At the time the numbers of participants increased, the project lost its initial direction. You try to acknowledge all different kinds of contributions but then it becomes a very large range of activities you want to develop, and that is not always conducive for the project. Because of this broad scope the project was approved, but for me it was a bit too broad. There was competition between the involved participants.”

The development of the initial idea can be viewed from the perspective of social capital. During the preparation phase the structural dimension of the project changed from informal bottom-up to formal top-down. Although both pioneers own networks was the starting point for involving other partners they lost their leading position, or they gave up their central position in favour of a steering committee and project management that succeeded into receiving funding.

Concerning the relational dimension, the power of the project was built on the trust and common ideas of both pioneers. They were able to get their own schools and networks enthusiastic and experienced support, appreciation, reciprocity and trust in their plan. Gradually functional relations replaced more personal relations and commitment of new members turned out to be more opportunistic than passionate. The ‘passion’ of the pioneers was replaced by the ‘power of the project’:

“The enthusiasm and engagement became a project and a reviewed project and again a reviewed project and at a certain moment you think, what is it all about?”

With respect to the cognitive dimension it proved to be fairly difficult for the pioneers to write a project plan that met the grant criteria because their knowledge and skills were insufficient. For that reason they hired external experts to support them to reach the necessary quality.
Concerning the activity dimension progress during this phase only had been achieved because of sharing the resources of the project partners: goodwill, contacts, knowledge and own finance. Networking appeared an important activity, but the most important actions were that both pioneers showed their passion, trust and beliefs to realise their ideas.

In short: the relational dimension was strong, the cognitive dimension proved to be weak, the structural dimension was quite risky and the activity dimension was necessary.

Phase 2. Orientation: “Courtship”

The aim of the first project year involved the design of three products belonging to the core of the New Academy: a career development centre, methods for work-based learning and an assessment centre. Three innovation groups started to design but progressed more slowly than expected beforehand. The observations and interviews revealed that the group members felt an urgent need to get to know their fellow members' backgrounds, their work, what they were proud of and what they wanted to achieve. For this ‘courtship’ was no time foreseen but the project management acknowledged this need. As a consequence the meetings of the groups took place in a pleasant atmosphere. At the end of this phase the global outline of their tasks and the level of expertise of the group members had become clearer. In fact this process of ‘courtship’ appeared also necessary for the steering committee, that was exploring and discovering its own tasks. So, the main outcomes of this second phase were trust, mutual understanding and a rough idea of the work ahead.

From the viewpoint of social capital the following aspects appear to be significant. Concerning the structural dimension the autonomy of many group members from schools, mostly teachers, appeared to be limited and they had to consult their manager for consent. In contrast, the members of the companies all owned a formal mandate of their employer. The pioneers did not have any special position anymore, but were ‘just’ chair and member of an innovation group. Steering committee and project management were looking for their own role and position.

The relationships in the innovation groups were growing. They were enthusiastic to cooperate, were genuinely interested in each other and believed in the project:

“The project brought things together, which is of course the best you can have. Because you do not communicate with one single partner, no, all partners are seated around the same table. And for me that was of upmost importance. In fact, we all shared the same goal”.

Norms and procedures became established and the project management encouraged a sense of ownership and warm personal relations. “Make it your project” was their device. The relations within the steering committee were formal and differences in interests became visible. Nevertheless the project management tried to create good relations between all parties.
With regard to the cognitive dimension this project phase was mainly exploring the potential ‘cognitive resources’ within the three innovation groups. In this phase the role of each member in the group became more clearer:

“The strength of our group was the clarity about the contribution of the separate members, which resulted into a coherent overview (...). Every member had his own role and everyone saw the bigger picture of the entire group. It was just a very strong group”.

However for most members co-creating educational products appeared to be unknown and beyond their own competences. This lack of experience made the innovative task sometimes like ‘searching for a needle in a haystack’. Also the capability to structure meetings turned out to be an important skill. In some groups the lack of these skills caused substantial frustrations with a negative impact on the progress. Missing was a common language, even among teachers, and as a consequence it took a long time to achieve common understanding.

As a result, the main activities in this orientation phase appeared to be individual learning and discovering, and co-creation of a result-oriented group with shared language and goals.

In short: the relational dimension was strong, the structural dimension showed weaknesses, the cognitive dimension was explored and the activities were growing.

**Phase 3 Designing in co-creation**

During this phase the concept of the New Academy appeared to be too abstract for the participants. The initial idea to create products on a generic level that could be customised to different schools and companies, targeting different groups of potential users, turned out to be rather ineffective. Exploring the further concretization of the concept belonged to the core activities during this phase. The project management supported the groups and offered training, while the steering committee monitored progress and time schedule.

Yet, during the plenary meeting at the end of the first year the three innovation groups proved to be proud of their results and proposed to implement these results in pilots in some home organizations, in line with the intended project plan, although it was recognized that structure and content had still to be designed more concretely. Nevertheless some group members were uncertain about the acceptance of these designs in their own home institution. Despite of the achieved results, the project management was worried about the slow progress in two of the three groups, the groups without the pioneers.

In terms of the structural dimension two aspects were relevant. Firstly, the issue of autonomy, then managers started to raise concerns regarding a possible too close cooperation between the participating schools, resulting into one New Academy. Secondly, with a new chair coming, the strategy of the steering committee became the driving project force, rather than the passion and ideas of the teachers. As a result, the project management had to broker between top (steering committee) and bottom (innovation groups), power and passion.
At the relational level the data from observations and interviews showed that the innovation groups stand close to each other and behind their results. However, differences in values and goals between steering committee and innovation groups caused negative emotions and expulsion. Deceptions influenced the coherence, but thanks to the positive relations group members stayed committed to their task:

“I felt gradually that each of the institutions ‘preached to the converted’ whereby the importance of the pupil and of the future employer remained subordinate to the importance of school and / or government. Do not give up, have confidence remained my motto”

From a viewpoint of the cognitive dimension some major obstacles appeared, all routed in the lack of sufficient expertise regarding educational topics and innovation skills. Although there were debates about hindrances, nobody resisted against the development of the New Academy. Two innovation groups experienced problems in fulfilling their project tasks: “there was much difference in level of input by the teachers and the company’s”.

Data from observations show that group members were, for example, not really able to work in an effective and efficient manner on gathering and interpreting relevant information for designing new products. In their daily work most teachers worked with fixed methods and prescribed procedures, which contrasts strongly with acting as creative designers in solving ill-structured problems. Unfortunately the expertise from business members seemed not compatible in these design processes and this miss-fit caused de-motivation.

Regarding the activity dimension the degree of active involvement, the linking and bridging activities were most conducive for the project. Data from observations and interviews showed that not every member had an equal active role in the design of new products. “I had the feeling that not everyone had an equal contribution”. Yet they attended all meetings, and mentioned they themselves learned a lot from being engaged.

In short: the cognitive dimension appeared most important, but vulnerable. The activities were intensive, thanks to the positive relations and in spite of structural changes.

Phase 4. Production: ‘Realities’

In this production phase 14 pilot groups started, designed by partner organisations and allowed by the steering committee, in which members of the initial three innovation groups, that were disbanded, were allocated. Remarkable, all the pilots were initiated by schools, none by business partners. Nine pilots proved fruitful, of them seven located within educational institutions, one within a business, and one mixed. Five stopped for reasons as illness or declined enthusiasm. The pilots attracted new group members from schools and from business, while employees and students were involved at the realisation of the programmes. Possibilities and barriers of the New Academy hereby became step by step clearer. The project management supported, coordinated tactical and strategic activities of the steering committee and reported to the grant supplier.
During this phase, one and a half years after the official start, an event happened that deeply influenced the further course of the project. A midterm audit of the grant supplying organization stated that there was not enough progress and goals were too ambitious. Steering committee and project management felt corrected, adjusted the project plan and changed their perception of the pilots: they started to look with the eyes of the auditor:

“The passion that was visible in the pilot group, I did not recognize that in the steering committee. It is ‘we have signed for the project and it must be financially correct’.

Unfortunately the perception of the results differed strongly. Although the members of the pilot groups were, on average, positive about the achieved outcomes (see 1) for organisation and individual growth, the steering committee and project management found the results not enough innovative. However, at the final plenary meeting, confronted with positive evaluations of members and researcher, they redefined this perception:

“I am afraid that I was wrong the last year, because I did not look in this way to the project”.

This phase knew many structural changes. First, the contacts with colleagues in the schools stimulated the ‘bonding’ effect of cooperation. Second, project management started detailed guiding and monitoring. Third, members of the steering committee mainly focused on the pilot in their own institution instead of finding a general focus. Fourth, the changing policy environment interfered: reduction of students, competitive institutions and other internal projects. Fifth, there were many position changes, within groups, project management team and steering committee.

These structural changes influenced relations and emotions. Barriers, such as the gap between new plans and the existing structure of the school or legal governmental rules, and conflicts of interest between educational partner institutions, turned enthusiasm into deception:

“It is a pity, a waste of time and money. The dream is stopped by the establishment of the educational world. There is no helicopter view, but a culture of minding your own shop”.

This all devaluated the relational capital between groups, management and committee: “It is a dead horse” was said. Business partners slowly lost interest because they did not feel an innovative spirit in the educational sector. Norms of the auditing organization seemed to be more driving than the ideals of the innovators. Nevertheless, many motivated and active participants stayed involved and were bearing the project.

Interviews show an important difference between the cognition of the businesses and the educational sector. Common language and common ground were too small. The differences in formal structure between educational institutions with rules, laws, codes and interests and the structure of the business domain appeared to be an important hindrance for co-creation.
“Wanting to is not the same as being able to or allowed to. To develop and tackle things is for schools far away”, said a business member”.

This phase demanded many unfamiliar activities of the group members. Participants mentioned during interviews that the capabilities they developed by working together on the spot meant a sustainable increase of their own professionalism regarding educational methods, networking, strategic insight and capability to design. While the steering committee was waiting the end, the project management tried to mediate between groups, committee and auditors, a task that needed more time to have had more influence.

In short: structural circumstances caused devaluation of relational capital, cognitive aspects appeared problematic but productive, many necessary activities were unfamiliar.

Phase 5. Dissemination: “Looking for Sustainability”

During the last plenary meeting there was a spirit to continue and realise the ideals, despite the palpable disappointment. An interactive opinion-pol showed high motivation. Responding this commitment, the steering committee formed two coordination groups, “to take care of sustainable implementation and dissemination of the new products, processes and services” (Final report LLA, 2011).

So the commitment and passion created a new project structure on a voluntary basis and at smaller level, again the pioneers and their directors took this initiative.

For most members the project had created strong relations between each other, profitable for further cooperation. For instance the two pioneers regretted working at two educational institutions that did not have any relation to each other: “Otherwise this project would have been so different…”

In this voluntary phase the participants started with more common understanding, knowledge, skills and expertise than in the previous three years. Members had acquired more cognitive capital, now knew the other participants’ resources and had experienced what was possible.

An important activity was to express trust in cooperation.

In short: structure, relation and cognition was strong, a positive basis for co-creation.
Table 3  Educational and individual value achieved by the innovation project

*Values: on a Likert scale from 1 to 5: 1= low, 5= high*

<table>
<thead>
<tr>
<th>Number scale</th>
<th>Name variable</th>
<th>N items</th>
<th>N</th>
<th>Crombach alpha</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Achieved new individual knowledge</td>
<td>5</td>
<td>30</td>
<td>.86</td>
<td>2.94</td>
<td>0.75</td>
</tr>
<tr>
<td>2</td>
<td>Personal learning effect</td>
<td>5</td>
<td>30</td>
<td>.82</td>
<td>2.91</td>
<td>0.79</td>
</tr>
<tr>
<td>3</td>
<td>Improved innovation capability</td>
<td>6</td>
<td>29</td>
<td>.90</td>
<td>2.50</td>
<td>0.81</td>
</tr>
<tr>
<td>4</td>
<td>Increased personal value for the organization</td>
<td>5</td>
<td>30</td>
<td>.73</td>
<td>2.64</td>
<td>0.77</td>
</tr>
<tr>
<td>5</td>
<td>Value of new educational products for the organization</td>
<td>5</td>
<td>29</td>
<td>.92</td>
<td>2.70</td>
<td>0.84</td>
</tr>
<tr>
<td>6</td>
<td>Value of the personal relationships</td>
<td>7</td>
<td>30</td>
<td>.84</td>
<td>2.58</td>
<td>0.78</td>
</tr>
<tr>
<td>7</td>
<td>Value of cooperation between the organizations</td>
<td>4</td>
<td>30</td>
<td>.77</td>
<td>2.74</td>
<td>0.70</td>
</tr>
</tbody>
</table>
Discussion and Conclusion

As this research is still work in progress we can only present the first preliminary conclusions and discussion. The aim of this study was to use the social capital model as a conceptual and analytic tool to reveal how its four dimensions contribute to the process and results of educational innovation. We also examined which favourable conditions and HRD interventions from the perspective of social capital lead to improvement of both the process and outcomes of innovation.

Our findings demonstrate that the model of social capital proves to be an effective framework for analysing educational innovation. It reveals invisible and intangible but influential processes of the main actors. We showed that the dimensions of social capital are interacting constantly as interdependent factors, that social capital evolves and can be described as a dynamic process. The activity dimension makes the social capital works and produces ‘profit’. The study shows that this dimension can be seen as a valuable contribution to the model of Nahapet & Ghoshal.

With regards to the structural-conative dimension, it can be concluded that the cluster of networks involved should not be very large. Also knowledge of ongoing development of the innovation process in other networks is important. A positive influence is also found for the connection of the innovation task with regular work and cooperation between work members. Group members need to have the support of their leaders and to have enough authority in their home organisation. Negative influence was exerted by personal changes in groups and above all power used by grant suppliers and steering committee.

In the relational-affective-normative dimension passion and motivation appeared important. Especially the pioneers showed to be the main innovators. Positive personal relationships and a pleasant atmosphere, common goals and shared values were drivers for continuation of the process, even in difficult periods, when there was little support from the leaders. A positive innovation climate also asks for a positive relationship between top and bottom.

To achieve results the cognitive dimension appeared most important, as the intellectual level and collectively owned knowledge are the available resources. Early achievement of goals is dependent on the extent of these resources, which sometimes is not sufficient. Even if the available knowledge is large, results are dependent on the innovative capability, which can be improved during innovation activities. This study showed that the appreciation of final results can differ between the actors involved. Steering committee, and grant supplier mainly expect the planned results, whereas the innovators mostly are satisfied with the results that are possible in the given circumstances, and are accepted by the users.

The most important HRD interventions of the project management appeared to be appreciative and stimulating guiding, e.g. intensive contact with innovation groups and steering committee, focusing on learning and training, brokering between different interests and accepting the level of the results reached. HRD interventions were not only provided by the project management, but also by group chairs and group members. In fact HRD was spread over more actors involved.
The participative mixed method used in this study appeared suitable to gain insight in the multi-dimensionality of educational innovation. Cooperation of all actors seemed necessary to get a coherent view of processes and results, and proved to be an activating intervention that enhanced educational change. A point of discussion can be, however, the cost aspect of using different qualitative and quantitative methods over such long period.

This study offers new possibilities for further studies on social capital and innovation. Implementing the research model in other settings would be of interest and further validates its use in this line of research. Nevertheless, the stated hindrances and facilitating factors of an innovation process, as well as the perspective of social capital, are of great importance for HRD practitioners. They serve as guidance for improvement of future projects of organizational innovation.
References


