RAAK International

Innovation from inside out



'Sparks' - a methodology to foster cultures of innovation in education so that communities of professionals can engage creatively with "wicked problems"

A brief research report
February, 2014

Dr. J. Thölke; lector Innovation of learning in organizations, HAN
Dr. F. Herder-Wynne; senior researcher, HAN

CONTENTS

A WORD OF APPRECIATION 1

1. THE NATURE OF WICKED PROBLEMS & THE COLLECTIVE CHALLENGE 2

2. SPARKS OF INNOVATION 3

3. RESEARCH DESIGN .....
   - 3.1 Research questions .....
   - 3.2 The development of an awareness based framework for participative action research .....
   - 3.3 Data collection and analysis .....
   - 3.4 The ongoing articulation of Sparks as an innovative learning and change process .....

4. FIVE PORTRAITS: THE CREATIVE JOURNEYS OF THE PARTICIPATING TEAMS .....
   - 4.1 Dominicus College: 'With numbers alone you cannot convince people' .....
   - 4.2 Valuas College: 'History gets in the way.....what does it take to really engage with a partner?' .....
   - 4.3 Ralph Allan School: From an expert in systemic pedagogy to a student in organizational learning .....
   - 4.4 Citadel College: 'A matter of growing up.... from Prosecco to Champagne' .....
   - 4.5 ILS; On the edge of the playing field: from learning individuals to a learning organization .....

5. RESULTS .....
   - 5.1 First order outcomes (R1) .....
   - 5.2 Second order outcomes (R1) .....
   - 5.3 Reflection on Sparks as a method to support innovation from inside out (R2) .....
   - 5.3 Reflection on awareness based action research .....

6. REFLECTION AND DISCUSSION .....
   - 6.1 The role of Leadership for Sparks' communities .....
   - 6.2 Educational systems; a new typology .....

LITERATURE .....

APPENDIX .....

A WORD OF APPRECIATION

This RAAK International project could not have been possible without the funding of the Dutch ministry of education and the willingness of the decision makers invited by SIA (Alliance for Innovation) to explore this 'different' but innovative approach.

We would also like to thank the HAN University of Applied Sciences for providing us with the space and opportunity to do this work within the Research Centre for Quality of Learning of the faculty of Education. In particular, we thank Gerbert Sipman, Femke Timmermans, Judith Polman en Marius Kingma for their hard and valuable work collecting and analyzing data.

The research project would certainly not have been possible without the participation and support of the HAN teacher training institute (ILS) and the schools of Ralph Allan (Bath), Alliantie (with Dominicus and Citadel both in Nijmegen), and OGVO (with Valuas College in Venlo).

Many thanks go to the Sparks facilitators Annemarie Westerbeek, Astrid van Dael, Jan Smits, Hilde Swets and Susan Koenders. Incredible what you achieved with the Sparks groups.

Daan Andriessen helped us to sharpen our ideas on awareness based action research.

Last but not least, we would like to thank the **ecl** foundation and in particular Terry Ingham for his support. We built on **ecl**'s knowledge and experiences with regard to the systemic approach in education and with regard to systemic innovation in particular (the CreAte process).

It was an exciting and valuable dive in the unknown!

1. THE NATURE OF WICKED PROBLEMS & THE COLLECTIVE CHALLENGE

Our education systems have an amazing natural capacity for creativity. All children begin their school careers with sparkling imagination, fertile minds and a willingness to learn, (Robinson, 2009) and our teachers step into the education system passionate about their task. When these two forces come together our classrooms, schools teachers and students experience creative flow. But so often we – or that which we tend to call "the system" – gets in our own way and the flow stops. We get stuck in the conviction that what we really feel we must do is impossible because of external restrictions (not enough hours/money, the demands of the inspections/ministry, the ability of the students, or the parents). We lose the creativity and the passion is squeezed out. Children drop-out, for example in the EU in 2009 more than six million young people, 14.4% of all 18 to 24 year olds, left education and training with only lower secondary education or less (EU,2009; European Foundation, 2010). Teachers and school leader's burn out. According to OECD figures from 2005, up to one third of all newly recruited teachers resigned or "burned out" in their first three to five years of teaching. Instead of solving these issues we push the problems around in the system ('*it is always the others who are responsible*') from students, to teachers, parents, school leaders or the government.

Somehow from a promising start we create together problems that seem intractable, problems which have come to be defined as "wicked" (see textbox 1 for definitions of "wicked problems").

> *'Wicked problems occur in a social context; the greater the disagreement among stakeholders, the more wicked the problem. In fact, it's the social complexity of wicked problems as much as their technical difficulties that make them tough to manage. Not all problems are wicked but confusion, discord, and lack of progress are telltale signs that an issue might be wicked. Wicked problems often crop up when organizations have to face constant change or unprecedented challenges. They're the opposite of hard but ordinary problems, which people can solve in a finite time period by applying standard techniques. Not only do conventional processes fail to tackle wicked problems, but they may exacerbate situations by generating undesirable consequences' (Camillus, 2008 in Harvard Business Review).*
>
> *'I here define tough issues as complex challenges that those involved perceive as essential but often persist in organizations despite repeated efforts to fix them. Their complexity is multifaceted: not only is their content ambiguous and multidimensional, but they require the involvement of many actors with different interest, viewpoints and affiliations'* (Vermaak, 2013).

Textbox 1: The nature of wicked problems

The term "wicked" relates to the intractability and resistance of the problem to being solved. Wicked problems are the opposite of "tame" problems, which given sufficient time and brainpower are solvable (Vermaak, 2013). On a geopolitical level, the conflicts in the Middle East are an example of a wicked problem. From a medical perspective, many somatic diseases are 'wicked.' However, almost any social system knows these kind of challenges. In education, school drop-out, how to increase parental engagement or how to deal with 'problem behaviour' in the classroom may be considered wicked.

The effort to solve one aspect of a wicked problem very often reveals or even creates problems in another part of the system because of complex interdependencies. For example, in a four year study of inter-organizational collaboration across public, private and voluntary sectors by Fischer at the University of Oxford, the UK government's efforts to steer the process led to the undermining of a successful collaboration, producing an organizational crisis which led to the collapse of a national

mental health initiative (Fischer, 2012). In the Netherlands, the law of "suitable education" ("Passend Onderwijs") for every child may illustrate this fact: In the ambition to create good education for each child and to make the support for so called "difficult" children less complex (and expensive), it was decided that schools must be able to handle more problematic children themselves. However, this law has consequences, for schools, external carers', teacher training institutes and many others. In particular the cost cutting (one year after the law was enforced) increased the pressure in the classroom to such an extent that for many teachers the limit was reached: too large classes with too many children requiring special care! (Van der Meer, 2011). According to Vermaak, tackling wicked problems requires a different approach, one that is capable of addressing the undercurrent (the behavioral and cultural patterns) in a social system (see figure 1).

Ambiguous "causes", a multitude of perspectives and the role of the undercurrent creating the wickedness makes addressing such problems unattractive. Given the natural resistance to doing this, wicked problems are not spoken about out loud - because of the vulnerabilities of individuals and the collective. In order to keep a wicked problem in place, individuals and collectives develop a rich arsenal of psychological and group dynamic games (of which "resistance" is one of the many games). Part of the wickedness is that a problem recreates itself in the way that teams (and leaders) respond to any intervention to change it. In this sense "wicked problems" behave as a living entity, unconsciously held in place with force by the collective.

BUT wicked problems are also a reflection of the "creative source" present in the system. In terms of learning and development, if the system can learn how to handle such problems it can strike GOLD.



Figure 1: The undercurrent in organizations

In this research project, we took up the challenge to collectively work on wicked problems in order to delve that gold. To do so, in an earlier project we developed a method we called 'Sparks of innovation' (Thölke *et al*, 2013). It aims to include systemic principles into the learning and problem solving of (teacher) teams. Systemic principles – as we will explain later on in this report – hold the key for discovering the root causes of wicked problems. It is the dynamics at this level of the iceberg that cause group dynamics, psychological games and repeating patterns of behavior.

In terms of research, we were interested in whether the method leads to concrete results (does it work in educational contexts?) (R1). Secondly, we wanted to explore ways to support school systems

in dealing with wicked problems (and therefore: how to improve Sparks of innovation as a method? R2).

2. SPARKS OF INNOVATION[1]

Creating cultures of innovation that can handle wicked problems is a new phenomenon about which little is known and it is this that stimulated the development of 'Sparks of Innovation' within the center of expertise at the HAN (Thölke *et al*, 2012; Thölke *et al* 2013).The main focus of the research team was to support schools to create cultures of learning and innovation. In such a culture, wicked problems are addressed and learned from (instead of being neglected, pushed away or externalized). Members of the organization take responsibility for renewal and conservation. The method combines creating ownership, commitment, task orientation AND care for the individuals and system as a whole.

Sparks is grounded in the systemic-perspective (Hellinger, 1998, Weber, 2002), its first pillar. The systemic-perspective is embedded in holistic traditions of science (e.g. complexity theory, systems thinking, cybernetics, chaos theory) and strives to look at the behavior of 'wholes' instead of the parts alone. For instance, in family therapy the behavior of an aggressive child may better be understood by including in our investigating its position in relationship to its parents, brothers, sisters, the family history etc.

Moreover, the systemic-perspective (which is related to but should not be confused with "systems thinking" Beer, 1985, Senge, 1992), focuses on the phenomenological investigation of direct experience through sensation, reflection, and intuition. Its basic premise is that in systems of human interaction there exists an invisible field of information (Horn & Brick, 2009) consisting of the basic dynamics in a system (the underlying but unwritten rules of the game). These dynamics or patterns of behaviour can be made visible through for example working with constellations (Hellinger, 1998). In a constellation, a facilitator works physically with people and artefacts as representatives of elements in a system. In particular, the representatives create a systemic field in which hidden patterns are revealed. This phenomenon is comparable with parallel processes and the phenomenon of transference and counter transference in psychotherapy or group dynamics (Hjort, 2010; Jurg, 2010). Sparks actively includes working with these parallel processes at personal, team and organizational levels.

From a systemic perspective, certain rules must be observed for the healthy functioning of an organization. (Boszormeny-Nagy, 1998; Hellinger, 1998). We call these the systemic principles (figure 1):

- ***Belonging.*** Everything that is part of a social system has an equal right to a place within the system. Systems tend to exclude certain persons, ideas, behaviour in order to be able to maintain the status quo. Exclusion can come in different guises. For instance, a member of the board who left the organization may still influence the behaviour of the members. Not recognizing this influence leads to psychological and group dynamic movements - 'stuff,'

[1] 'Sparks' the name, was inspired by the book 'Vonken van Verlangen' (Sparks of desire) by Wibe Veenbaas and Joke Goudswaart (2002)

tension, the games people play[2], etc. In organizations in which resistance is not allowed (for instance, against a certain decision, vision or change process) there will be a status quo of 'stillness' and 'fear.' The cost can be tension in work relations, high rates of absence, or a lack of collective learning. Everything that we exclude (that has a right to be included) leads to disturbance and hidden costs. Development in this sense means including 'the other.' Inclusion does not mean putting it central (some people can talk forever about the pain of the past) but to address it in a respectful manner.

- ***The balance of give and take***. In any exchange there needs to be a balance between give and take. For instance, between effort and reward, loyalty and being seen as a person. This is by no means a 'factual' balance. If people in an organization feel that they give too much (a high work pressure), they try to redress the balance by taking something from another part of the system e.g. grumbling a lot, asking for a lot of attention, stealing office equipment such as printing paper. Development in this sense is to find the dimension of imbalance and address this issue seriously.

- ***Order.*** There is a respected order of positions within any system. There are official and unofficial ordering principles in any system. People in a system unconsciously follow the most powerful ordering principles. For instance, in hospitals specialists have often more influence than the managers (despite the official hierarchy). Disturbing this balance creates friction at a group dynamic and psychological level. Development with regard to this principle is to make current ordering principles explicit. Being aware of and to some extent accepting the current ordering principles, opens the possibility to change.

These basic principles guide a skilled facilitator to be able to work with systemic interventions to make visible the hidden dynamics and to work with them to create a healthier system. The systemic perspective requires 'presence' (or in other words 'mindfulness') which is by nature inclusive, appreciative and solution focused.

The second pillar of the Sparks methodology is based on a particular approach to working with organisations, translated by Scharmer (2009) into Theory U. This deep learning process begins in the left side of the U, sensing into "what is". It is a phenomenological process encouraging cognitive, embodied, emotional and intuitive awareness. It invites learners to explore and then let go of their mental models in order to be able to truly connect with others. '*This process of letting-go (of our ego and self, in which self means all the learning's that made us who we are today) and letting-come (our highest future possibility: our Self) establishes a subtle connection to a deeper source of knowing (Buber, 1970). The essence of presencing is that these two selves - our current self and our best future Self - meet at the bottom of the U and begin to listen and resonate with each other. Once a group crosses this threshold, nothing remains the same. Individual members and the group as a whole begin to operate with a heightened level of energy and sense of future possibility. Often they then begin to function as an intentional vehicle for an emerging future*' (see www.ottoscharmer.com/publications). From the stillness, insights, solutions, ideas or movements may arise that are the first steps in a fundamental

[2] Berne, E. (1964).

change process. The next step is the prototyping step in which small experiments with change lead to additional learning and adaptation. Through experimental exploration the new insights become applicable in the real world. In the final step of performing, the new insights are brought into the full reality of the organization.

Like Scharmer we see organizations as living systems (Maturana and Varela, 1987; Miller, 1978). Living systems have intrinsically a life giving, creative source. It is this source that enables them to be self-sustaining, a quality that Maturana calls 'autopoiesis'. If this is so, if living systems are self-sustaining and if organisations can also be considered as a living system, then it behoves anyone wanting to change a system to acknowledge that helpful interventions are more about re-connecting a system to its creative source than about 'fixing'. As facilitators, we must appreciate what is (without judgment). Appreciating a system unconditionally opens the doors for development (often a difficult task within restrictive systems). Innovation and change, diagnosis and implementation go hand in hand.

Sparks is also grounded in a particular systemic understanding of the "interior point of departure", which Scharmer refers to as the "blind spot". Shapiro and Carr (1991) showed us in their research how individuals tend to repeat patterns of early family life in organizations, phenomenon they called, 'Lost in familiar places'. These patterns define the lens through which we see the world. But by definition we as individuals cannot see our own blind-spot; we need the mirror of "the other" in order to see ourselves and how we create the world. We cannot see how we are both part of the problem and the solution. Such blind spots become revealed within the group as participants systemically explore relationships and in not avoiding tough conversations (Issacs, 1999). Sparks is founded on the premise that to be able to make purposeful change in education, we must first collectively make visible the hidden dynamics that entangle or block and the hidden resources that can help to realize change/ innovation.

Working within a collective, exploring together where we are both part of the wicked problem and part of the solution and from this place seeing new possibilities is exactly what Sparks is about. It combines the fields of learning and co-creation and views the group or team as a stepping stone between individual and collective learning (Ropes and Thölke, 2010). The method enriches Theory U with the systemic perspective and recent knowledge about working with teams in communities of practice, innovation and learning groups (Thölke et al., 2009; Verbiest, 2012, 2002; Wenger, 1998).

Consciousness creates ownership, we believe and it is from this place that co-creation starts. And still, the transformation from awareness to action requires participants to step into a creative journey that takes them beyond cognitive knowing to places which are at times just plain awkward. Wierdsma (1999) calls this '*de plek van de moeite'* (the place of pain/effort).

3. RESEARCH DESIGN

3.1 Research questions

In the proposal we described a multi-layered approach (figure 2). There is the sparks process at each school with the questions (R1): *What is the concrete contribution (+/- effect) of the Sparks facilitation method for the wicked problems coming from the schools? How can we increase innovation from inside*

out?). There is the general question (R2) related to how the method Sparks of innovation works in order to support schools in solving wicked problems: *How can we explicate the method? What are the working ingredients of Sparks? How does it support teachers?* Regarding the latter we collected many practical insights and – during the research design process - have been able to explicitly articulate the sparks method in a way that can now be used in teacher training settings. To do so, we first had to develop an awareness based framework for participative action or design research capable of capturing the data that would enable participants to tackle wicked problems AND that would allow researchers to do research that is intrinsically in service of the researched AND the researchers (Thölke et al., 2012). All in all it was a challenging and explorative endeavor.

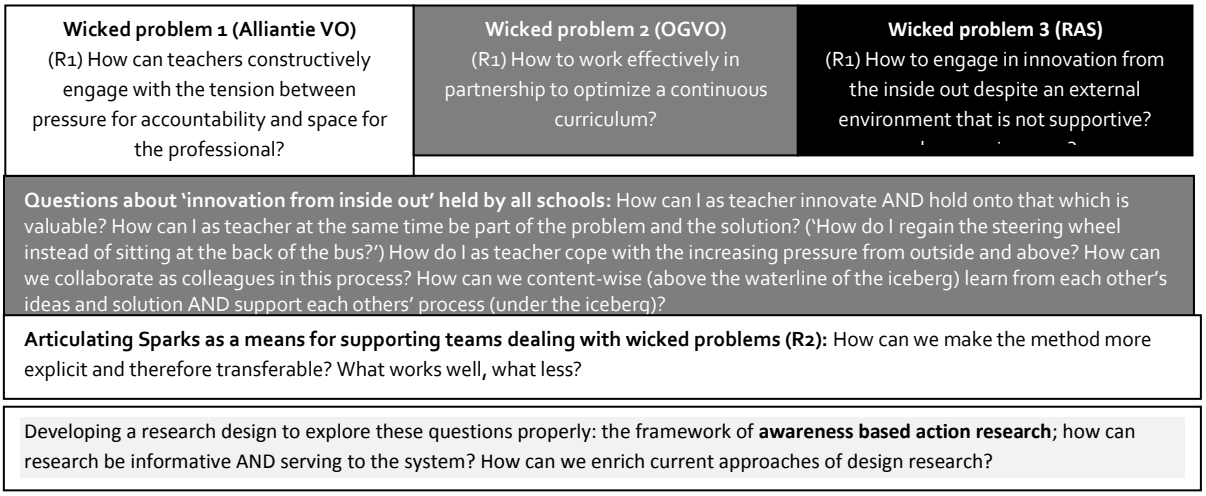


Figure 2. Layers of the research

3.2 The development of an awareness based framework for participative action research[3]

The mainstream reductionist point of view in science has brought great insights but it is insufficient to help us deal with the challenges of many of our real life phenomena. With the increased understanding of our interconnectedness, we need more inclusive scientific approaches in order to make sense of the world and of the organizations we work in. Scharmer (2009, p. 16) points to this when he writes: *'(…) it is now time for social scientists to step out of the shadow and to establish an advanced social sciences methodology that integrates science (third-person view), social transformation (second-person view) and the evolution of self (first-person view) into a coherent framework of consciousness-based action research*.' In later work he refers to this research as awareness-based action research (see www.presencing.com). He builds on the work of Ken Wilber (2001) whose integral approach embraces the most significant research paradigms of our time and includes the role of human consciousness. He explains that his awareness-based action research *'(…) incorporates three methods: phenomenology, dialogue, and collaborative action research. All three address the same key issue: the intertwined constitution of knowledge, reality, and self*'. And all of them follow the dictum of Kurt Lewin, the founder of action research, who observed, '*You cannot understand a system unless you change it*' (Scharmer, 2009, p.19).

[3] This section is summarized in a paper for the 8th International Conference on Researching work and learning; University of Stirling UK (Thölke et al. 2013).

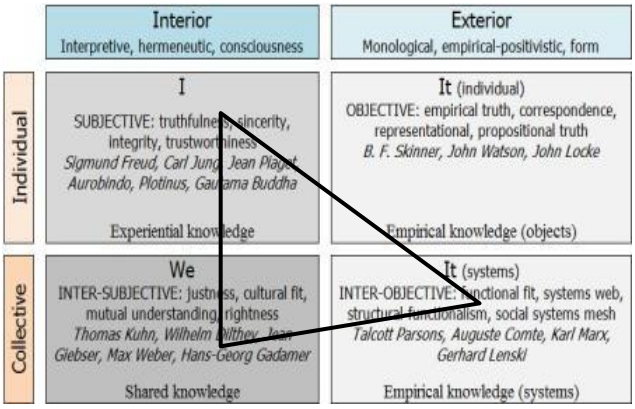


Figure 3: Awareness based action research (after Wilber, 2001)

The result is not so much a triangulation of methods but an integration of paradigms (see triangle in figure 3). As a paradigm works as a filter to select that which we consider as worth being measured, a triangulation of paradigms opens the possibility to illuminate the blind spots in between. In this project we attempted to follow these thoughts and bring it into practice.

3.3 Data collection and analysis

During the research, different types of data were collected: reflective accounts, interviews, transcripts of constellations, field notes, emails and questionnaires. The data was collected at different moments during the research project. Figure 4 shows an overview.

Knowledge-exchange conferences, research workshops, research interviews and the writing of reflective accounts and begin and end measurements made it a very intensive process. The data led to preliminary case descriptions (portraits, see section 4) which were shared with the participants for collective meaning making. The cross case analysis emerged after the final conference in many conversations between the participant schools and the researchers. We applied conventional content analysis on the data (CIMO[4]) and experimented with systemic methods (see 5.3). In some aspects we have had to adapt our research design slightly. For instance, pre- and post test interviews had to be taken by telephone for those participating teachers who did not fill in their questionnaires. Research workshops showed to be really helpful in collective meaning making and were added during the process. The final conference was a great moment to share common insights but at the time of the conference we did not have all the data prepared for a profound cross case analysis. From a research point of view, this made the last conference extremely valuable for collecting more data. But from a learning point of view for the schools, it was less

[4] Denyer, Tranfield, & Van Aken, 2008: Context of the Interventions, the Principles used in the interventions, the Mechanisms triggered by the interventions, and the Outcome produced by the interventions.

valuable.

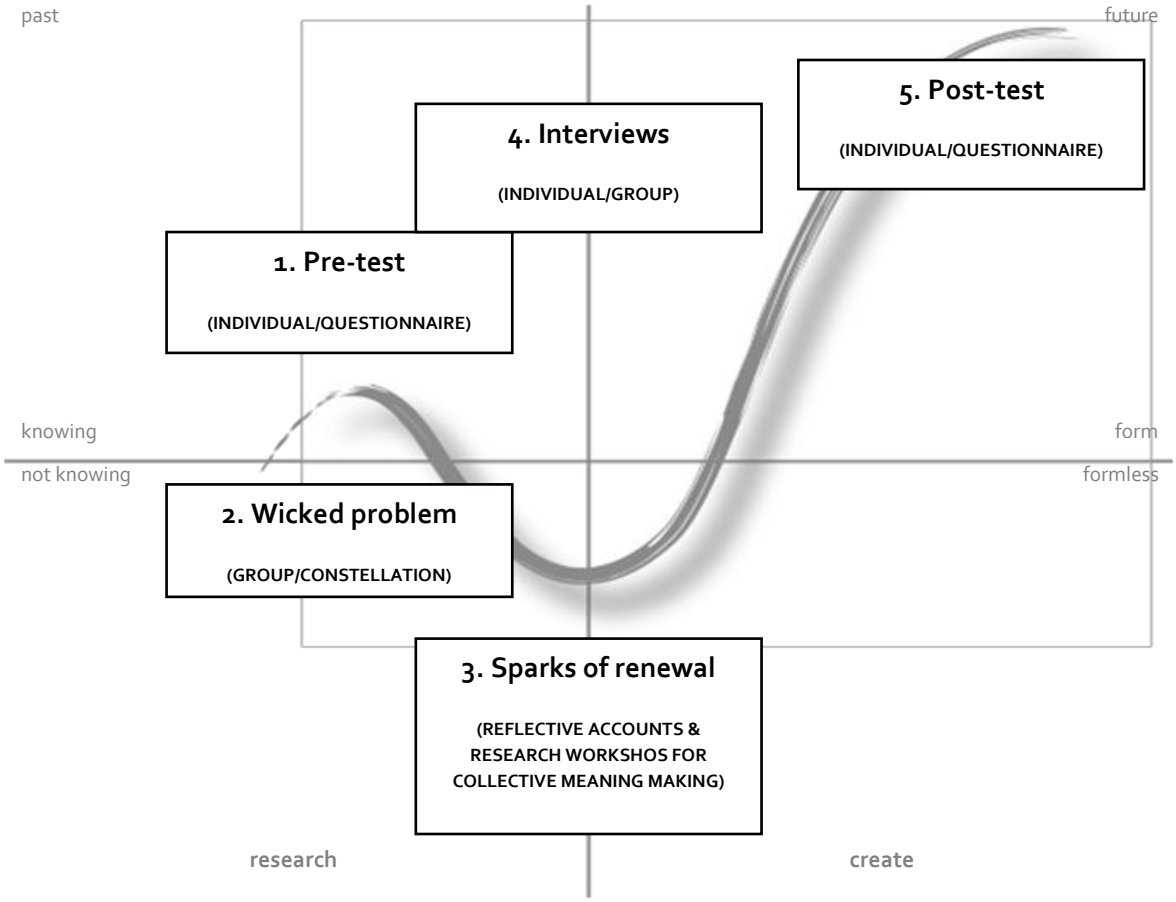


Figure 4. Research flow based on the creAte model (ecl, 2011).

3.4 The ongoing articulation of Sparks as an innovative learning and change process

One of the aims of the project was a further articulation of Sparks, a method that has been used now for some years in our practice. During the research process, researchers, facilitators, and participants engaged in a dialogue of articulation (R2): *'What is the essence of Sparks? How can we explain Sparks to others? What are the working ingredients? What works less?* Although the main principles and theoretical foundations were shared in readings and presentations at the start, researchers and facilitators alike developed the Sparks concept in co-creation. In this sense, the practical know how and concepts of Sparks formed an 'input' to the research projects and a more elaborate articulation formed (the output). The research team finally worked with the following brief of Sparks (textbox 2). A further evaluation of the method will be presented in the Results section.

Sparks - a Methodology for co-learning, co-creation and co-research

Sparks is a practical 'hands on' methodology that enables facilitators to work purposefully with teams of professionals 'in context.' It combines the learning and change model of Scharmer, the systemic perspective as in the CreAte model of ECL. It is rooted in the bodies of knowledge of participative change, in particular: working with communities of practice/innovative teams/learning communities, etc.

Sparks has four components:

1. **Learning communities:** A collective (team, group) within an organization holding a burning question e.g. a teacher team 'in context'. The question addressed must be important (not just) to the organization, but also to the team and to each individual within the team.
2. **A creative journey** that the group is willing to step into that visits elements of the curve of Theory U (but not necessarily in a linear way). This requires the group to step into the unknown and be open to ways of knowing beyond the cognitive such as the emotional, felt sense and intuitive.
3. **Systemic facilitation** of change processes. The facilitation of Sparks is vital requiring:

    - Systemic sensitivity: the capacity of the facilitator to be open to ways of knowing beyond the cognitive, to model this for the group and to invite the group to step into the unknown. Included here is also the ability to explore different perspectives through embodied techniques, for example working with constellations.
    - Holding creative tension: the capacity of the facilitator to hold the tension as the group rides the highs and lows of a creative process. This also requires a high toleration for 'not knowing'.
    - Systemic mastery and the inner journey: the capacity of a facilitator to allow herself to become immersed by the system, to work creatively with parallel processes, '*regress in the service of discovering connections between her own experience and the organizational context*' (Shapiro & Carr, 1991), interpret this inner experience and resolve via the 'inner journey' so that she can intervene in service of the process. This capacity is related to the extent that a facilitator is aware of her own inner point of departure (Scharmer, 2009), the extent to which she is willing to examine her own beliefs and their validity.
    - Presencing: the capacity of the facilitator to be present in the here and now: alert and responsive to the movements towards health that the system reveals. Scharmer describes this as the ability to take 'action in an instant'.

4. **Working with participative change and small interventions**. Analysis and implementation go hand in hand. We don't believe in planned change but together we can change the organization. Buttom up and top down.

Textbox 2: A preliminary articulation of the Sparks methodology

4. FIVE PORTRAITS: THE CREATIVE JOURNEYS OF THE PARTICIPATING TEAMS

The Sparks process in the RAAK project began with the participating schools bringing in a burning question; a question related to their "wicked problem" in which there was a sense of "being stuck". We illustrate this briefly by describing the processes of the four Sparks groups using the framework: FROM (the original burning question), VIA (the wickedness, being stuck) TO (some of the steps out of the wickedness).

4.1 Dominicus College: 'With numbers alone you cannot convince people'

(FROM) Dominicus College joined RAAK with the question*: How can teachers constructively engage with the increasing pressure for "accountability" AND have space to deliver high quality lessons? How do we find the balance between control/transparency AND professional space? What is my role as teacher in this? How do we escape the dilemma of increasing work pressure?* As soon as the Sparks team had started it became clear that this question – although formulated by the teachers themselves together with school leadership – was not enough to impel the group into action.

(VIA) The wicked problem began to reveal itself in the hopes and longings of both students and teachers. For example, final year DC students when asked if they would chose to return to the school often said no, explaining their perception of a cognitively excellent school lacking in warmth. This was a doubly barbed comment given that the VWO[5] examination results were a source of major concern for the school, with a very real possibility that the school would be placed under "curatele" (custodianship of the department of education). The wicked problem also revealed itself in the heart's desires of the teachers, '*I would like to (re)discover passion in my work (*spoken with tears*)*'. But it also revealed itself in the games that were played to keep it hidden during the sparks journey. For example saying yes to the principal but expressing misgivings later to the departmental head, '*it was only after the sessions that colleagues came to me "in confidence"*'; being cynical and avoiding processes that demanded feeling, (participant during a constellation:) '*I don't want to interrupt your game, but I do not see how things change if I take another position in the room. I can say what I have to say from this chair*'; or the mechanism of moving quickly away from processes that touched the heart, as one facilitator participant described: *'As we are getting close to reflective silence, in contact with emotions, we fast-forward back to the cognitive'.* It showed during the goody-goody ("braaf") approach to the sparks process where participants (and facilitators) were diligent in doing their homework, but not willing to engage in exploring their own part in the problem; where the group was willing to explore everywhere except where the real pain was – in the heart, to dance over eggshells rather than directly confronting the person with whom there was an issue. It also showed itself in the many layers of space that were given or not given: space for contact with students at the beginning of a lesson; space not given by the upper school coordinator for teachers to bring ideas directly to the principal (in order to protect his teachers from disappointment). Sparks began to reveal that the real wickedness lay in the school culture. During a constellation in the conference at Bath, the Dominicus Sparks team reformulated their question into *How can we create a vibrant learning community (for ourselves and our students)?*

(TO) A deep understanding that culture changes gradually; '*patience brings fish, take your time, learn from the other schools*'. An understanding that the creation of a vibrant and warm culture requires:

- Time for contact, for example a mentorship relationship between teacher and student extending beyond one year
- The inclusion of relationship, a participant wrote: '*there is something going on in this group, something inspirational. How much they have formed as a conscience group – such a strong connection a warmth amongst them, love even*'
- A capacity for tough conversations with each other (horizontal dialogue) and with the leadership (vertical dialogue). For instance, a teacher wrote about how he approached the principal: '*we had some wishes for mentorship that could not be realized, I was angry, because it touched me. I would like to feel that you support me on the ideas I have. That is how we can make some steps forward'*
- Ownership, in the words of the same principal: *'What I see is that the team around the head of VWO department is more a team now. They work with other people take the initiative and the responsibility. They feel they can take decisions themselves, they feel they can do it. This can be the start of a cultural change within the school'.*

[5] VWO is pre-university level

In a final interview with the head of the upper school, he said: '*team members now look beneath the surface and feel free to articulate what they see. There is trust, we know each other better. We are confident that we can make changes. For example, we realize how essential the role of the Mentor is and so we are creating a new mentor team, a team of teachers who really want and have the capacity to be good mentors. This gives "new élan"'.* Moreover, the subgroup Mentors for year 4 come together outside of school hours to cook together. A participant wrote: ' *This gives such a fantastic team feeling that we have decided to extend it to years 5 & 6'.* In reflection on the results he said*: 'If I go back to our original idea, to become a vibrant community then I see that this slowly emerges, things are changing. It's a point of no return'.* Another example*:* in a round-the-table with 6th year students (organised by a RAAK teacher) the students spoke about how they do not know the principal. When asked if they were willing to speak this directly, they answered 'yes'. Their question to the principal was: *"we don't see you, do you see us, do you know me?"* A participant told us in an interview*: 'The students are basically articulating what we (the teachers at Dominicus) re-discovered, about the importance of relationship. I notice that we confidently express this – also towards the leadership, "with numbers you cannot convince people, go into contact with people, show also the vulnerable parts of yourself.'* And the "numbers" are excellent now: 91% pass rate at VWO and 100% at gyamnasium. Still, questions remain, as made explicit by the teachers: '*how can we transfer what has been learned to colleagues not involved? It isn't finished yet*'.

4.2 Valuas College: 'History gets in the way…..what does it take to really engage with a partner?'

(FROM) Valuas College brought in the following burning question: *How can we build sustainable bridges between the lower school (VMBO) and the upper school (MBO) so that the "delivering" teachers and the "receiving' teachers both, are able to do their work optimally? How can we organize cross-fertilization and tailor-make our education?* The Sparks team consisted of teachers of Valuas College (lower school) and Gilde (upper school), two schools who had for many years tried to develop a continuous curriculum. However, in particular Valuas (and its board, OGVO) were not satisfied with the progress. From the start of the RAAK project at OGVO the definition of the problem was influenced by members of Valuas, given that members of Gilde could not join preparatory meetings for '*practical*' reasons. Commitment from both schools at board level was not enough to create buy-in to the project.

(VIA) The beginning of this project revealed the wickedness in its full extent. OGVO began with the ambition to improve the continuous curriculum between Valuas and Gilde. Soon it showed that the two parties had different perceptions of '*what is a good continuous curriculum'* and that – in order to work on this subject – old patterns of cooperation had to be revisited and a new relationship invested in first. Valuas needed to step over prejudices that had become self-fulfilling prophecies, ('*Gilde does not really want us to work on a better continuous curriculum'*). The story of the '*absence of Gilde*' became a major, almost insurmountable issue, especially when Gilde really did step out two months after the project had begun. Even the sparks facilitators became sucked into the pattern trying first everything to convince Gilde to continue in the quest. Several constellations showed however that before working on a continuous curriculum, Valuas had to tackle another question, namely: *How can WE really engage with our partner school? Starting with ourselves, what could be*

possible interventions towards Gilde to create a bridge to communicate with each other again? The failing attempts to be in contact led to anger and grief on the one hand, but also to the explicit desire to succeed in order to provide good education for the students (the creative source).

(TO) Some of the teachers of Valuas had been involved for more than 10 years in this unfruitful pattern. By really recognizing their part in the problem (instead of only blaming others), they decided to step back from this project. They realized that by unconsciously blaming the other party, they had excluded them from joining. New, younger teachers with less '*history*' were asked to join at Valuas and Gilde. Interestingly, this move provided the opportunity for the '*first generation'* to reconnect again in other projects. The head of OGVO said during a research workshop: *'It seems that there is a small opening in a formerly closed door'.* In the initial proposal, the Sparks process at OGVO was to involve two rounds with different teams. Since in practice the real problem turned out to be different than as first described, we organized the first round with the team of Valuas ('only') working around the question of what does engagement with a partner school really require of us? In a second phase we facilitated a fragile (re)start between the two parties and brought them in contact with other successful best practices of continuous curricula between the partners (e.g. the curriculum of the ICT department). Most importantly the Valuas teacher team has regained its inner composure, '*I/we have come to understand and accept that not everyone has the same motivation as us. There can be many reasons as to why Gilde does not step in and I can acknowledge that now. The relationship is no longer a source of irritation. We no longer throw ourselves against a brick wall, we can stand back and see what is possible and also concentrate on what needs to be done for our students in the transition.*' This new found strength translates further, '*as a team we are now able to engage openly with each other. We are open-minded, we listen to each other – we express different points of view without sticking our heels in the sand.*' And for the students?: '*learning to first of all be quiet in my own mind helps me to be quiet with and open to my students'*. Even very simple things have an effect helping teacher and students to step out of the "madness of the day". Things like, '*opening the lesson well with a welcome, closing the lesson well, getting students involved in clearing up, thanking them*'. Participants say that, '*Raak had an impact'*, but just as with Dominicus there is the question of how to bring this to the rest of the school and in particular, how better to involve the leadership?

4.3 Ralph Allan School: From an expert in systemic pedagogy to a student in organizational learning

(FROM) Ralph Allen School was looking for a way to *'Create sustainable space for innovation from the inside out in a continuously changing and increasingly demanding environment'*. This school joined RAAK as a leader, with years of experience of working on innovative education approaches applying a systemic perspective. In close cooperation with **ecl** they have developed exciting approaches to peer mentoring and found innovative ways to include parents. However, there remained a real gap between leadership engagement with innovative projects and the rest of the organization (and in particular the teaching staff).

(VIA) Naming the wicked issue did not immediately lead to solving it. RAS instead organized their Sparks process around the innovative projects, avoiding the central "project" (creating a culture of innovation), themselves and their own learning. By so doing they re-created their pattern of

focussing on individual innovation projects and hence were unable to reach out to the entire school community. Being ahead of the other schools did not really help the process. On the contrary, it left the leadership on a pedestal unable to own its vulnerability with respect to the core challenge: how to engage staff in making the extraordinary vision of the RAS leadership practical? The power of that vision and the position of the leadership also made it very difficult for facilitators or catalysts to challenge and they too became '*sucked into'* the RAS story. Naming the elephant or acknowledging the gold became impossible (for all concerned), leading to frustration, exhaustion and guilt, '*I'm feeling guilty and burdened*'. RAS made a deep journey that allowed them to acknowledge their source: the desire to create, '*An environment that prepares members of the school community to be lifelong learners and achieve social and personal well-being through questioning, discovery and learning'* and the wicked problem: forgetting to include themselves and their own learning, the resulting fragmentation and entanglements as ideas are outsourced to others. They looked also to their past where trying to engage staff in systemic innovation was not always fruitful. As a consequence, islands of innovation emerged. In the Sparks process they discovered their own role with regard to not developing a broad culture of innovation within the school (instead of blaming the increasingly demanding external environment only). Their question had become: *How can we (sustainably) unlock the creative capacity of our school?*

(TO) RAS made the journey from being an expert in systemic innovation to being a student in creating a learning organization. As a parallel process in the RAAK process they moved from being the object of research (the Dutch University observes us and therefore we want to show us from our 'best' side) to becoming an active and vulnerable participant in the meaning making. They discovered that in their desire to include, they had forgotten to include themselves. Exactly here is where they found gold – by including themselves in the painful sharing AND in the '*gentle gaze'* that they so often give to '*the other'* (primarily students) it allowed the leadership to come down from the pedestal to engage and '*acknowledge what is'*. Their shared caring of students turned out to be a powerful creative source that could overcome the patterns of exclusion. The learning's are being immediately applied, for example within the Parent Circle, '*It was brilliant to attend the opening year 7 assembly and for M and N to stand up and speak to all the parents about the Parent Circle. It genuinely felt as though I was able to step back, leave it to them and that innovation was starting to happen from the inside out.*' The two stage process at RAS also had a different form than originally planned. Whilst the first Sparks group consisted of project leaders of innovative products (never actually forming "a learning group") the Sparks group transformed into a stable and committed group of leaders and several involved key staff members during the second phase. The systemic sensitivity of this core group together with the commitment of the school leader (who took an active part throughout) makes us wonder what this school could yet achieve, '*working this way requires high alertness and active listening. Asking the magic question, inviting magic in – what would you need to do to be genuinely excited about the future? The importance of holding purpose under pressure in an educational setting'*.

4.4 Citadel College: 'A matter of growing up…. from Prosecco to Champagne'

At the Alliantie group of schools, phase one and two of the Sparks process went as planned. Dominicus handed over the process half way to **Citadel College** (a second school in the Alliantie conglomerate). However, handing over was more difficult than originally considered (for details see case descriptions).

(FROM) For Citadel the main question was: '*How to improve the transition for students from HAVO 3 to 4?*' This fast growing school was confronted with disappointing exam results for students transitioning from the lower to the upper school. The Citadel question was sharpened by the principal and the team leader of the teachers responsible for HAVO 3/4. The concern was shared with the entire team and in a memorable team meeting most of the teachers agreed to step in a Sparks process. The team leader was supported by the principal but did not feel fully at ease in his role. Stepping into a process with unclear outcome made him feel uncomfortable. Together with the principal they agreed this to be a learning experience for the team AND the team leader.

(VIA) Team leadership and the role of the team members played an important role throughout the process. *How much room is there for us to define the problem ourselves?* The support of the principal – with al good intentions – seemed to feel like pushing in a certain direction. Although the team really saw and agreed the importance of the burning question (the disappointing results of HAVO3/4) it showed that the question was much more 'wicked.' Some team members even felt that they were made personally responsible for 'the problem,' and they started to be defensive. During the Sparks process, the principal was willing to step away from his urgent question, '*For some time it was my assumption that, that which frustrates me, frustrates you (the teachers) too. I assumed that all that was needed was a little cooperation and that together we would be able to create something beautiful. I assumed that my role was to throw down the gauntlet. The result of this approach was sobering! It doesn't work this way. I have learned that I need first to listen to how others perceive the problem. And then reflect on how perhaps to combine what I see as important with what they see as important, whereby I can place them in their power and invite them to engage with what I see.'* Until the Citadel teacher's team was given the space, the permission even, from the leadership to own the question and to look at it in their way, the process faltered. It showed that the main issue was that the "problem HAVO3/4" was a result of the fast growth of the school. The relatively young teacher team needed (to feel) the support and trust of the school leadership in order to solve the problem. In particular for the relatively inexperienced team leader, the interplay between school leadership and his role as team leader became an important item within Sparks. The real wickedness was a relational issue: '*How to facilitate students from childhood to adulthood?*' From a systemic perspective this question repeated itself in several other relations*: 'How to facilitate a young leader in his autonomy? How to facilitate young teachers in taking their autonomy?* Trust and adequate support became major themes in this Sparks group. The role of the principal (K.) was pivotal: 'Reflecting on my own role was a turning point in the process', said the principal (K.): '*it really pushed me back in my chair. It really caused me think. It was my biggest learning point'.* In the reflections of the teachers they write, '*that K. was so vulnerable during the conference, allowing us to say what we thought and felt; that made a deep impression'.* The result was that teachers began to see that, '*at times we could hide behind being a team. We found it awkward to have a question/challenge imposed on us from above. During the conference it became clear that we too have a part in these questions/problems. The*

project is about us, if you want to change something from the inside out, then we have to stop blaming others and begin to look at ourselves.'

The team leader had not been present during the conference but at the very next sparks session he too modeled this holding behavior and the courage that it requires. He asked to take a place at the center of the circle of teachers telling, '*there is something that I want to say*'. He spoke to what he has heard from his team and how that touches him. He spoke to his team's desire not to lose what is precious: passion for education and for each other; the drive and the dream to make this a beautiful school, to have fewer '*musts'* and more spontaneity. He spoke with conviction about the tension he experiences between the rules (the musts) and what they really want to create together. He reflected on the space that there is to talk about this and the possibility that together they could find their own way to solve this. He said, '*I am convinced that we could do great things together'*. There was silence.

Later in his reflections on this moment he noted, '*being vulnerable, allowing others to see the inside of me. Awesome moment!'* Other teachers joined him at the center of the circle to acknowledge and to build on what he had said. From then onwards, '*the whole team was motivated to go further, from then on we began to develop as team. We really began to communicate'.*

(TO) In this Sparks process we were witnesses to a process of growing up within a really young and fast growing team/school. One of the team members expressed it as: '*the team has grown from Prosecco to Champagne'*.The energy of this young team was a constant creative source. Using their judgments and resistance, '*inspite of the hurdles or maybe – because of the hurdles we have taken together'*, as a means to reflect (but also to allow teachers not to participate) created an environment of trust among the participants of the team. The process also helped the team leader to be more aware of his role and to adequately take his position and task. For the principal it was a lesson to temper his enthusiasm and eagerness and to give room for the younger leader to step into his task.

4.5 ILS; On the edge of the playing field: from learning individuals to a learning organization

(FROM) Within the HAN, the ILS organization was the first to explore the Sparks concept. Three years in advance of starting RAAK, we experimented with Spark groups within this teacher training institute. Sparks was seen by leadership as a way to support the transformation of ILS facilitators in the field from being experts in a certain subject (e.g. math, history, Dutch) to facilitators of learning processes. Outcomes of these processes were for instance, honoring the collective history of the institute which carried both the roots of today's fragmentation (island forming among centers of expertise) AND the strengths of the institute (e.g. enormous commitment and expertise). The Sparks teams engaged in dialogues between the different subject departments and organized gatherings where intangible aspects such as warmth, empathy, connectivity and spirituality where included (this in an organization which was experienced by many as being cold and instrumentalist). Maybe the most important outcome of these first Sparks groups was the emergence of a small but committed community of ILS teacher trainers who wanted to apply the principles of Sparks more broadly in the teacher training institute. This community and the lectorate saw the RAAK proposal as a perfect chance to continue their ambition within the ILS organization.

However, the RAAK project was written under great time pressure. The ILS management supported us enthusiastically in finding the right partners within their own network. In advance, a concrete goal for the participation of the ILS organization was not discussed. Neither was the role of the ILS – besides involving the enthusiast teachers in research and the possibility to learn from the other schools – sufficiently defined. Instead of fitting the RAAK project in a wider vision of the teacher training institute, we jumped more or less ad hoc into the project.

(VIA) As a consequence, the teacher trainers involved reported that they were on the one hand learning a lot but suffering conflicts of loyalty on the other. The facilitators stepped into the RAAK project with enthusiasm *('I knew that this is what I really want, I did not want to miss the party'*), but got stuck in organizational patterns such as unclear expectations, too few hours for too much work, feeling over asked, but most of all: not really being seen/valued in their contribution. On the other hand, the research team seemed incapable of articulating the value of Sparks clearly to the organization. One of the researchers said in an evaluation: *"We put so much energy into getting in contact with the external partner organizations (the schools) but we somehow neglected ILS itself".*

Most of the learning was of a personal kind such as: *'The quagmire of the organization showed to be for a great deal my own quagmire. To me, it is all about learning how to define and make explicit my own limits'.* In their reflections, the facilitators wrote that they learned much about the feeling of being stuck in organizational patterns and about finding agency even in the stuckness.

The more the facilitators spent time with their RAAK teams, the more they were confronted with their new role and the difficulty of combining it with their formal role in the ILS system. One of the facilitators wrote: *'If I do more for Sparks, I have to do less for my work at the ILS, and my colleagues are not happy with that.'* Personal patterns and organizational patterns intertwined: '*I really had to learn not to hide myself in my cave (switch to the automatic pilot) and connect only half to my tasks. If I keep doing this, I continuously create expectations that I cannot live up to. It is a vicious circle which leads to "childlike" emotions. We really have to learn to make good contracts with the right conditions'.* For instance, it showed that the mismatch between hours allocated and real working time was a broader issue within the ILS organization: *'It is never enough and almost always a lot too much,* even if I want it to be different, *I really have to timebox everything, also writing reflections such as these. (…) there are so many balls we have to hold up in the air'.*

(TO) Towards the end of the project, the ILS facilitators asked for a meeting with the management team in order to reconnect to the 'heart' of the ILS and to openly make our mission explicit. The 'Sparks' research team and the ILS facilitators tried to re-contract with the ILS management. In this meeting, the facilitators shared both their learning's and the complexities faced. The facilitators reported that they really learned to co-create in a deep and connected way. To quote a few of their reflections: '*I show much earlier in the process my own doubts, feelings, perspective and experiences. I use my vulnerability as an instrument to connect to people and actually getting them to make a move'.* Another facilitator wrote: '*What I realized is that we continuously have to re-contract between ourselves as ILS facilitators how to go on in this process; taking things (the contact or agreement) for granted leads to psychological games. RAAK helped us to learn how to do this in an adult manner, between equal partners'.* Working on adult relationships – instead of choosing the automatically expert perspective - was a key learning in their project: *'I realized that – if I choose to really connect (and so take responsibility for my own disconnection), it leads to a lot more depth in the facilitation.*

Today I use these skills in my facilitation everyday at the ILS. For instance, I had a conversation with a student from Curacao. The student (a long-term student) had problems finishing the study on time. We did a short constellation and I became witness to a powerful story. I got more connection and 'valuable' information than I ever have in the last four years.'

Although everybody agreed that RAAK brought something valuable at an individual level, we still found it difficult to translate and distill the value of Sparks into concrete action for ILS as an institute: how to distil individual learning and make it valuable for the collective? We could not really align the learning's of the Sparks project ('working on adult relationships') with the strategic priorities of ILS. Nevertheless, the ILS management team gave us the opportunity to pursue our quest with the group of Senior SLB teachers (the most experienced student mentors). Jointly we formed a 'new' Sparks team to translate the individual learning's of the ILS facilitators into their mentoring practice. In particular, the Senior SLB teachers realized that without a good contract with management regarding the real ambition of this project (choosing a position in the perspective on collective learning: *'the quality of relationships – next to the knowledge base - as a key of good education*') and an engagement in adult relations with other ILS colleagues (e.g. coming out with what we really think is needed, getting involved in meaningful conversations about learning and facilitation), there can be no sustainable future for Sparks within the ILS organization. At the time of writing, the group of seniors was organizing extra trainings for student mentorship and rewrote the guide book for mentoring at the institution. The wicked problem that emerged was: *'How can we create a better balance between providing knowledge/expertise and engaging in real contact with students? How can we develop within the ILS a* ***shared*** *vision/understanding with regard to SLB?* Developing shared visions on educational aspects is a real challenge within the ILS. 'Diversity' may be both the strength AND the pitfall of the institute.

5. RESULTS

In our proposal we differentiate between first and second order goals (R1). First order goals aim at solving a particular 'wicked problem' while second order goals increase the capacity of the participants (individuals and collectives) to engage in 'innovation from inside out.' With regard to first order goals much has already been recorded in the portraits. Below we summarize these finding's.

5.1 First order outcomes (R1)

Screening the data for tangible (first order) results leads to an impressive list of resulting 'Sparks.' Table 1 gives an overview. In this sense, we conclude that Sparks worked in these contexts.

*RAS, **ecl** and Skillsforce* a. Have designed a 12 week peer mentoring program together with Ralph Allen School. The program trains students to support their peers, learn about themselves and gain a better understanding of learning relationships. Specifically, the following skills were attended to: Engage in conversation, Questioning techniques, How to get clarity and understanding, imagine outcomes and learn how to plan. Some 50 students have followed the program (in 3 cohorts). In conversation with researchers the students articulated the many things that they had learned from the program, including but not limited to their mature understanding about the creation of trust in a relationship: *'trust is a strong and important bond between two people, it allows them to be open to each other, open to conversation'; 'Trust is delicate; it takes time to build and needs care attention. It is fragile, you cannot ignore it'; 'It helps, the bond made during the sessions, I can use it, it resources me'.* b. Developed and piloted a Parent Circle that supports parents with children in transition; enabling them to support c. At a technical level **ecl** has elaborated on describing the flow in the Clarify phase of CreAte *(Ingham, 2011).*
Dominicus College a. Created a vibrant learning community, *'I see this, things are changing, that is very evident'.* b. Team members are able to look below the surface and feel free to articulate what they see c. "Agency", the confidence that it is possible for them (teachers) to make changes d. Re-envisioned Upper School plan e. Re- envisioning of the Mentor team (*'new élan'*) f. Literature research into "whole child, whole system" approach g. 5VWO student questionnaire looking at the school experience h. Round-the-table discussions between teachers and 6th year students. Conversation leadership and 6th years, *'we don't see you, do you see us, do you know me?'* i. A contribution to the 91% pass rate at VWO and 100% at gymnasium j. Lasting online relations between students of Dominicus and Ralph Allan
Citadel College a. Have articulated the elements that contribute to the kind of creative learning environment they would like as a team. See the parallel between what they as teachers wish to experience and what Havo4 students would like in the classroom. b. Practiced the skills and habits needed to create this kind of learning environment. c. Have taken the first step to put this into practice by formulating together the year plan, '*the annual plan is a team product, yes I set the boundaries (the playing field) but it is a product of the team itself'* (team leader). d. "Only 6 of 41 did not pass! RAAK has also been a lever for further research in 4havo."
OGVO a. A new "team" has been created (with less entanglement and weight of the history) working across the schools system: between Valuas (VMBO) and Het Gilde (MBO) b. March 2013 Open day, MBO and VMBO standing together, '*underlying cohesion, both parties proud*' (chairman of the board OGVO). c. Several other newly started projects between the two schools have a new, better start ('*we are beginning to harvest the fruits*..') d. Learning's from the ICT lower and upper school cooperation have been shared e. A composed Valuas teacher team that engages openly with each other, listening to each other – no longer becoming stuck in opinions
ILS a. A new Sparks team consisting of dedicated senior mentors b. Rethinking the vision of SLB teachers and developing trainings for SLB teachers based on Sparks. c. Spark facilitators apply parts of the method in their lessons.

Table 1: First order results of the Spark teams (R1)

5.2 Second order outcomes (R1)

With regard to second order outcomes (the learning about innovation from inside out) it is more difficult to show evidence. First of all, the study had an exploratory nature. Second, there is no longitudinal evidence collected. Third, we depended in our 'measuring' on the written accounts and interviews of the participants. However, since we also asked principals whether they see changes in their teams, and because we and participants could compare each other's directly in different settings, we believe that our findings are more than purely self referential.

The research showed that by following the Sparks methodology, participants have learned and practiced some of the habits that underpin a culture of innovation and change. Their application has brought insights that have led to learning for the individual/team or school.

In particular we can conclude that schools have gained insight into their wicked problem, its organic nature, how it emerges from and is part of the school, how the school creates its wicked problem and how it is held in place by '*the games we play*'. Participants (in their reflective accounts) write that they see not only the patterns of behavior in their own school, '*extraordinary how with total strangers it is possible to create an exact replica of the situation playing out within our school'* but through working with constellations have experienced the patterns in other schools, '*incredible how organizational and thought patterns can be so persistent, it is through my colleagues that I can see this and learn about myself and my own patterns*.' There is understanding that the wicked problem is a reflection of the creative power of the school and some insight into how to shift to a healthier, less stuck place. Participants (teachers) realize that tackling such problems requires them to go on a creative journey that takes them into the unknown and that this requires them to be open to ways of knowing that go beyond the cognitive. In the words of one teacher, '*I have become more comfortable sharing my reflections and not worrying whether others do or don't like what I say'*. The learning group enables participants to place 'their' story into the bigger story, '*If I stand back, I can see the whole picture, this makes the innovations sustainable'*. In this sense we experienced that ownership and actorship increased. Table 2 gives an overview of second order results.

- By introducing the systemic perspective (the parts and the wholes), participants were invited to act more autonomously (instead of being stuck) without losing contact with the rest of the organization. The '*theory helps to regain a sense of actor-ship, a sense of right place in relationship by changing perspectives and broadening the mind*.'
- Sparks creates ownership! In particular because Sparks approaches each issue from a personal and a collective level ('*in what way am I part of the problem and thus part of the solution?*'), externalization is immediately addressed and people are invited to take responsibility for their own share in the wickedness. Sparks, if applied consciously, makes interdependencies visible and does not leave room for pushing problems around.
- Facilitators, leaders and participants learned to deal constructively with resistance. We actively worked with cynicism and patterns of not wanting to engage in something new; facilitators AND the participating teachers. Some teachers have undergone a personal transformation (a reconnection to their purpose and passion and at times, a regained sense of agency). This is also true for teacher teams.
- The systemic approach enables experiential learning; it crosses school boundaries (learning from one case or question is learned by all the participants). Participants have now a point of reference with regard to how it feels to be stuck and what it means to step out of wickedness. For the future, it opens the capability to realize when one is caught in a pattern.
- Presencing helps to shift out of a stuck pattern. It means taking the time to stand still and see the whole story. '*It is in silence that insights arise. We literally felt that in the group.'*
- Sparks improved the capacity to reflect together and the capacity for tough conversations, *'time for reflection and contemplation with each other'; 'we learned how important it is to show vulnerability. Others can then actually see you. It was an awesome moment. If you are honest with yourself, you can be honest toward the other.'*
- Learning about (phenomenological, generative) listening, '*I've very recently learned that listening is something good. It is more than hearing words. Now that I listen to this conversation I notice that we're all saying the same thing… I actually don't need to say anything.'*
- Increase of tolerance/endurance/patience of the highs and lows of a creative journey, '*Patience brings fish, take your time (learn from the other schools)*'
- A capacity for tough conversations, '*We had some wishes for mentorship that could not be realized, I was angry, because it touched me. I would like to feel that you support me on the ideas I have. That is how we can make some steps forward*.'

Table 2: Second order learning results (R1) with regard to innovation from inside out

5.3 Reflection on Sparks as a method to support innovation from inside out (R2)

The data provide evidence that Sparks helps in making visible the hidden dynamics (the wickedness) within an organization and if applied well, Sparks can be a powerful instrument in the process of generating a culture of learning and change. Below we summarize (a) what worked, (b) what worked less according to the participants and the principals. In our reflections (5.3 and 6) we focus on experimenting with awareness based action research and some insights regarding Sparks at a leadership and organizational level.

a) Sparks – what worked?

It is difficult to pinpoint the exact 'working ingredients of Sparks.' Nevertheless, the data provide some insight into 'what worked' for participants and facilitators with regard to facilitating innovation from inside out:

- The notion of a **creative journey** (whether it is Theory U or CreAte) provides sufficient structure to let go of the restrictions of a planned approach.
- Sparks equips facilitators with Systemic sensitivity and with tools to act upon hidden (wicked) dynamics. ***Organizational constellations*** increased depth and the speed of insights (no long discussions were needed). The ability to include phenomenological methods really deepened our understanding of hidden dynamics of wicked problems. Other supportive instruments were stillness, mediation, changing perspectives and dialogue sessions.
- In order to step into a Sparks process, ***clear psychological contracts*** about expectations need to be made, especially because it is not a 'usual' education project with clear milestones and measurable goals. Therefore, the rules of engagement need to be discussed. Sparks enables this from the start. Hidden and false contracts such as: 'You are the expert, thus tell us how it works' or 'I participate but do not engage,' are immediately addressed and dealt with. However, each group asks for a different approach. Textbox 3 shows an example at Dominicus.

In the first meeting, the facilitators met much skepticism. The participants expected the facilitators to explain the rules ('tell us what to do'). Sitting in circle the facilitators introduce possible rules of engagement for the sparks journey. The facilitator had prepared a set of seven basic rules (e.g. openness, prepared to listen, no immediate judgments) and wrote it on a paper. Each teacher was given a '*rule*' with the request to present it to the group. The process of engagement and choice is up to the teachers. The facilitator wrote later about this session: '*In the first instance it felt strange: what is the intention. [as if the teachers thought,] Is it really up to us? Only after we had made it absolutely clear that there were no written instructions did the teachers step in to the lead. Each rule was discussed at length, translated, explained and clarified until finally all seven rules were laid down in a circle.'* The teachers added four more rules: *"light", "airy", "humour" en "honesty.'"* The facilitators found it '*exciting and tense*' ('will the teachers step into the lead?). Holding this creative tension, allowing the silence, allowed the group to step in a '*process that went beautifully*!' (facilitators' logbook). The contributions during this first session came from a reflective place, the facilitator wrote. Quotes of the participants were: 'I see relationships, and that doesn't happen too often' '[great] ' to be able to see what is going on underneath*', 'what we are doing here impacts on us all', 'I often put the brakes on my intuition', 'here there is something to learn.'* At the end of the process one teacher led a discussion on how to keep the rules alive. Agreed was 'now and then to stop and reflect and speak honestly with each other'.

Textbox 3: Discussing the psychological contract with a Sparks group

- Working with ***parallel processes*** and ***the inner journey*** are very powerful concepts for the facilitator, enabling him/her to be drawn into the hidden patterns (to allow their discovery) and yet be able to extricate herself from the undercurrent and intervene adequately. These two concepts play a key role in successful facilitation (see examples in textbox 4). On the other hand,

by not using these concepts as facilitators, most likely the wickedness increases (as we experienced during phase 1 at OGVO).

***Parallel process**: Example 1. At OGVO the first meeting started without the key partner from the upper school. She was absent on pregnancy leave. In this very meeting, our female facilitator felt left out. Her voice was not being heard by the other facilitators and researchers. The underlying topic of dealing with **exclusion** revealed to be a key pattern throughout the process. Example 2. At Ralph Allan we needed 6 months just to start with the Sparks group as a whole in one room. The group consisted of project managers and leaders of innovative systemic school projects but they all focused on their project. There was no common ground and it seemed that everything stood in the way of forming a learning group (time, schedule, interest). The most important step this school had to make was to share knowledge and to move from sparkling hotspots of innovation to collective learning. At the same time in the beginning there was only little contact between the English and the Dutch research and facilitation team. It showed that the research goal which had been agreed in advance - to mutually learn from each others – got lost during the process.*

***Inner journey work:** At OGVO one of the partners decided to step out of the project because of other priorities. This touched deeply one of the facilitators who (as a young mother herself) was* struggling with having insufficient project time. She wrote in her logbook: *"It belongs to the phase in my life that I want to be more at home than in my work. I don't want to feel guilty. One of my colleagues inspired me enormously with regard to her feelings of being a mother and working at the same time. She taught me about humility. […] In former times I could be so jealous of mothers who don't work. It was great to have a place to speak this out. But also to hear during supervision, the story of another colleague who consciously decided together with his wife that she will stay at home and he will take care of the income. And that this was ok. I had to think of the story of my own mother, who did not have a higher education. In fact, she wanted to study Dutch to become a teacher [but this was not possible, at this time]. When she finally found peace in her role as an assistant to the local doctor, she had to stop because she was pregnant. I took the message of my mother – the importance of work - very seriously. I even feel guilty when I enjoy being at home." This reflection helped the facilitator to look more freely at the situation of the partner in the OGVO case.*

Another example of working with the Sparks principle 'inner journey' was explored during an economy class of one of the facilitators. The class prepares the students for their internship in a real school. Part of the lesson was to share each others autobiography in order to realize how strong the influence background has on today's behavior in an organization: *You take yourself with you when you go in the class! (Parker Palmer).* The facilitator started by telling her own story. She told about her roots and brought a photo of herself as a child. She shared her own difficulties with 'managers', the parallel with her father who was smart but too poor to obtain an education*. 'In short, I visualized the inner journey which formed me as a professional. I was nervous, but it was deep and meaningful.'* When one of the students began blethering (probably because that is what they often do in class) she immediately confronted him with his behavior with strength and respect (instead of emotional entanglements): '*To me this is a valuable story, I ask you to respect this!'* It worked immediately, the student was and stayed silent without losing attention.

Textbox 4: Examples of parallel processes and inner journey work

- The capacity of the facilitator ***to be present*** in the here and now, working with '*what shows up in the moment*' is inspiring for the participants and enables effective interventions. It paved the way for real encounters (ontmoeting).
- Participants and facilitators are encouraged to explore from a point of 'not knowing.' ***Holding this creative tension*** is difficult BUT necessary for a team's success. Being in a research process helps, as it takes away the pressure to perform.
- With regard to facilitation, it seemed to be crucial to work with pairs (**double facilitation**) and with supervision.
- The process of **co research** showed to be an interesting additional feature. It not only helped to sharpen our articulation of the Sparks methodology. Being part of a research project also increased the commitment and ownership of the participants. Collectively we developed a more adequate language to work with wicked problems.

b) Sparks - what worked less well, needs attention or could be improved?

- *Weak connection to the organizations leadership* (see also our discussion below). Sparks cannot be the only element in creating a culture of innovation and change. However powerful, if Sparks is

not adequately embedded in a larger (strategic) organizational discourse, change will remain at the personal level. Working with Sparks asks from leadership to engage in the applied language and principles themselves.

- *Neglecting the wickedness included in how the problem is presented*. Although we were prepared to work with parallel processes, we did not take sufficient time to explore 'how the wicked problems were included in the very starting conditions and how the participants recreated the wickedness in front of our eyes'. For instance, in the very first meeting at OGVO the representant of Gilde was absent. There was a lot talking *over* her and not *with* this person. The talking *with* was delegated to the facilitator of the ILS. The starting question of Dominicus, on the other hand, was formulated together with the team but really carried by management only. 'Goody-goodiness' and the 'pocket veto' (saying yes and doing no) showed itself from the first moment on. At RAS the first meeting had much of a gathering at a train station with people walking in and out. A lot of information on projects was shared but the common goal (creating a shared culture of innovation) was not explored. Hence, at every case the key to discovering the wickedness was apparent from the start – n front of our very eyes - but we were not able to see this. On the one hand, one could conclude that a facilitator needs time to experience the wickedness before becoming aware of it. On the other hand, in future projects we will take much more space and time to explore the beginning conditions and what we can learn of these situations, the relations we see and the language used. We will take the power of wicked problems – to continuously recreate themselves in our language and group behavior – a lot more seriously.
- *Theoretical language and talking "about" instead of with.* To describe a Sparks process in advance, without experiencing it, is difficult. In our preliminary talks and during the workshop in Bath we realized that the best way to show the power of Sparks is to dive into actual questions and work with them as practically and as personally as possible. The language of theory U, CreAte and the systemic perspective helped to get a grant from the government and to convince management but was less suitable on the work floor. Examples, stories and real time adaptation are the key to inspire people, not so much theory. Talking about theory usually led us directly into cognitive debates and fragmentation (the one against the other) of a dualistic worldview. Following this path – in general – increased the wickedness in a situation.
- *Transfer of Sparks skills.* The principles of Sparks are not simple to apply. Facilitators and researchers need intense training and support to work with this method adequately. In this sense, we tended to ask too much of the facilitators we had trained and overestimated what we could transfer to teachers. '*The success depends on the ability of the facilitator'* insisted one of the governors. However, we believe that one does not have to be a master to work with Sparks principles in practice. For instance, using presencing techniques in advance of a gathering, to apply 'the inner journey' or to engage in a meta perspective during a conversation are small activities that each member can do. But there may be natural limitations, as expressed by one principal, '*you saw people now and then wipe away a tear as they listened to the appreciation of their colleagues. It places people in their power, increases their self-confidence, lays the foundation to take the next steps together. <u>But you or I would not easily hold that kind of conversation</u> in a normal meeting. That kind of instrument; that is what I mean by worth its weight in gold, if we were also able to work with processes that allow us to look under the waterline'*.

  The more we put the methodology in practice, the more skilled, the more excited facilitators, participants and researchers became. The Sparks process did not turn the participants into

experienced facilitators, but it opened a field of future learning (textbox 5 account of interview Citadel).

> ***Team Leader**: 'There is one question I still have: 'how do we go further?' We had now several time an external facilitator with specific Sparks skills. What I realize is that it is now my task as a team leader – and of course also the task of the team - not to continue our old habits tomorrow and in the future. It is our responsibility to stand still and reflect once in a while. I also really experienced that this way of working leads to surprising results – it works. However, as a team leader I still do not feel competent to do what you guys did. I really would like to have some more tools and skills. Just the confidence that – whenever we feel stuck – I can stop the game and propose to look at the issue from another angle, for instance in a systemic way, just to see what kind of additional insights we can come up. Up to now I do not have the confidence that I can do that. On the other hand, I would really like to learn that. I think that these skills are valuable not only for me but for all team leaders at our school.*
> ***Principal:** 'If you are as a leader capable to steer such a process you have gold in your hands. However, there is still a world to win….."*

Textbox 5: Opening a field of learning

- The *school context* does not favour innovation from the inside out (see also 6.3). Within a school context all time is allocated to tasks and there is little discretionary time. In this sense, we encountered a culture in which hours schedules (school agenda) and positions created everything but a culture of innovation and change. It is admirable how much the participants were willing to invest in spite of this context. Often in school organizations, '*slowing down'* is not appreciated. For participants and management alike, stepping into this rather new and exciting world seemed more to consume valuable time than to create reflective space. Yet, it is only in the slowing down that we can start to see and appreciate the patterns. A key reflection for us, the researchers was that we also needed to '*slow down'* in order to see and appreciate the whole of what was going on, the direct "results" and the results in the in-between.

5.3 Reflection on awareness based action research[6]

It was our ambition to develop a framework for awareness-based action research a concept introduced by Scharmer (2009:16) but not yet put into practice. To do so:

1) We applied *design based action research* as described by van Aken (1994) or the design based research collective (2003). In design based action research a 'design' (e.g. a method such as Sparks) is collectively applied. In this action and reflection process the design is gradually adapted. The wicked problems of the schools were a means to develop the method. All participants were fully aware of this 'double' focus. Using research workshops in which we actively worked with the participants on their wicked problems by – among others – constellations were very fruitful.

2) We used *several lenses/paradigms for data collection*, as suggested by Wilber. In particular we collected data from logbooks, phenomenological accounts, stories, summaries of collective research workshops, emails, questionnaires. For instance, during the research conferences we asked three researchers to take notes, each with a different lens. Researcher (A) listened factually 'what happened, what do they tell? Which results do they share? Researcher (B) listened at a discourse level: what stories do they share? If it was a 'play' who are the main players? Who not? What is problematized? What is surprising? Which metaphors do they use? Researcher (C), a trained systemic facilitator was asked to focus on the systemic principles: who/what is included, what not?

[6] Partly summarized from a previous article (Thölke et al. 2013)

What happened at the balance of give and take? What can we experience with regard to the 'order?' Nevertheless, gathering data during these workshops from different lenses was complex and lead to a data overflow. Here we have to find a more economic way of working.

3) We strived to *include our own position as researchers*. We increased our own 'awareness' about our assumptions, role and impact by working with concepts such as parallel processes, transference and counter-transference, and by regularly applying constellations for different situations (e.g. investigating the entanglement of a facilitator with a Sparks group). To us, these actions were seen as potential additional sources of information for phenomena in the field.

4) We enriched conventional methods of data analysis (e.g. content analysis, discourse analysis and working with portraits on which participants were invited to comment) with *phenomenological data analysis*. For instance, we created physical spaces in the room for 'elements of the method Sparks' and placed positions of the different stakeholders around those elements. Researchers were then asked to step into these 'positions' and to reflect on the method from these perspectives. With respect to research we know that many researchers are sceptical about using phenomenological methods to gain access to knowing beyond the cognitive. However, we would like to emphasize that we used these methods in addition to more conventional ways of data analysis. We found that collectively using, for instance, a constellation to analyse the results of a content analysis speeded up the interpretation and deepened the understanding. More research is certainly needed here.

Including systemic and/or phenomenological methods in our data gathering, meaning making and analysis really deepened our understanding of hidden dynamics. Researchers and facilitators began to relate to the data in a way that allowed them to viscerally sense the patterns of behaviour that reveal the stuck-ness in a group or organization. This process of co-research and co-design helped to sharpen our articulation of the Sparks methodology and engage in purposeful problem solving. Exploring the Sparks process was valuable for participants and researchers alike. There was a reciprocity in learning.

In particular consistently including the 'interior point of departure' of the researchers and hence increase 'self' awareness is a new and promising element. Parallel processes and the inner journey are powerful tools for the researcher and facilitators to really understand what is going on in a system and to act 'in service of the system'. Again, constellations proved to be very supportive.

Regarding the external validity of the research the results are restricted to a few groups in one particular context. Within this context there is high ecological validity. However, more research is needed to test Sparks and/or to apply awareness-based action research in different contexts and with different facilitators and researchers. We believe that our approach has great potential to contribute to a new, more inclusive research paradigm.

6. REFLECTIONS AND DISCUSSION

6.1 The role of Leadership for Sparks communities

Sparks works with communities of professionals. In those communities, we combine learning and creation/innovation. Moreover, since we work from a systemic point of view, these communities are continuously asked to take responsibility for the part (their own process) without neglecting the whole (the organization, the larger community). They are invited to take leadership/autonomy within the given boundaries. In this sense, Sparks models an 'ideal' professional learning community and explores the personal and organizational conditions and skills necessary for such a group to be successful.

Stepping into a sparks process is somewhat akin to stepping onto a creative rollercoaster. It is not comfortable! Of its very nature it asks participants to venture into the unknown: finding answers requires us first to examine the very lens by which we look at the world and to do this in ways that go beyond the cognitive, to include emotion, felt sense and intuition. One of the school leaders summarized this as follows: *'people felt an obligation to include feelings; that made them feel inadequate and clumsy, it felt strange.'* Above all, these uncomfortable moments were shared with group of peers, which may be even more uncommon among professionals in education. We asked the groups to engage in the wickedness 'beyond keeping up appearances,' to include the imperfect. We did this, not to increase stuck-ness in problem analysis but to delve for the gold hidden in the shadow.

From a leadership point of view, certain conditions must be met, before teachers can venture into such a process. In the following we elaborate on these conditions without the pretention to be comprehensive. In particular, we reflect on how leaders question their own assumptions, how to provide holding for solving wicked problems, what it means to engage in tough conversations and the importance of appreciating results for organizational transfer.

<u>Question your assumptions and be prepared to really 'see people' in your organisation</u>

We've already touched on the need for a burning question. The questions and demands of leadership are naturally full of assumptions that are valuable from the point of view of management but often less so from the perspective of a teacher/employee. Thinking that teachers MUST understand the importance of a certain issue because it is strategically relevant (or that there is no choice with regard to a certain problem) increases the wickedness. For instance, one principal told us about the importance of learning in his organization BUT *'we have to consider the demands of the government.'* However true at a factual level, such remarks carry a hidden message (such as: *'actually there is little room for own learning, we must follow the rules of the external forces'*). The very stuck-ness or rigidity in the leaders problem definition minimizes the possibility to find solutions 'outside' a dilemma (out of the box).

In addition to hidden messages in problem definitions, questions have different forms and weights depending on the perspective in an organization. For leaders it is vital to sense how a question/demand resonates in his or her organization.

The way a question is formulated and how the teachers react to the question reveals much about commitment. Each person participating in a sparks process needs to feel passionate about the question being asked. When the question is simply dropped in by leadership or if there is insufficient space and time allowed for participants to make the question their own, the process comes to a halt. Questions that live in the hearts of the participants lead to commitment, even if things become difficult. One example of this we described in the portrait of the Citadel case, when the principal literally reformulated the initial question during a Sparks meeting (Teachers: '*We found it awkward to have a question/challenge imposed on us from above. During the conference it became clear that we too have a part in these questions/problems. The project is about us, if you want to change something from the inside out, then we have to stop blaming others and begin to look at ourselves*.') A second example occurred at OGVO: From the perspective of the principal, a continuous curriculum is vital for the quality of education and therefore the students. And of course, the teachers agreed. However, the underlying question for the teachers was slightly different. Besides the fact that there was little consultation with the second school about the issue, the question itself carried the emotional charge (blame and anger) of years of frustration among some team members. Of course this was felt by the team members of the other school, resulting in them simply dropping out of the process. As a consequence, the real question for the Sparks participants had to be translated into '*how can we really get in contact with the other school about a continuous curriculum, even though they have to cut costs?.*' A third example occurred at Ralph Allen where the principal brought in a seemingly neutral question: *how to create sustainable space for innovation in a demanding school environment?* The difficulty here was that the question implicitly carried the vision of the leader – there was little or no consultation to find out the question carried by the teachers. With leadership placed on a pedestal it became impossible to challenge the question – as it meant challenging the vision of the leader.

On the other hand, it is also not supportive of the Sparks process if the question is held by the participants only, but not by leadership, as we have seen in the case of ILS. The implicit question of getting more attention for 'the relationship factor' in the teacher trainings institute was not made explicit and therefore was not part of the horizontal dialogue.

Hence, Sparks requires us to collectively find the right question engaging in a vertical and horizontal dialogue. It works when people really feel seen in their wicked problem, when their hearts and minds are touched *('it's about us').* This is true for leaders and participants alike. However, for leaders providing the conditions of a Sparks process, it asks them to look at a question from different perspectives and to give room for a process in which a 'wicked problem' can be explored. And to keep on doing so, even if – metaphorically speaking - a group seems to be looking in the wrong corner of the building. Sparks asks leaders to let go of their own assumptions and support the team with curiosity, trust, empathy AND overview.

<u>Provide sufficient 'holding' by being there</u>

Another condition that we have found to be important for the success of Sparks is the web of support that is comprised of layers of leadership: leadership at the individual level of one's own learning process; team leadership; school leadership and leadership at board level. We have come to call this web of support the '*holding*'. According to Ronald Heifetz (Director Harvard University's Kennedy School of Government, Leadership Education Project) the first resource that a leader has is

the, *'capacity to manage the holding environment – that organizational space in which the conflicts and stresses of adaptive work take place'.* This holding of course consists of providing resources such as time, space and facilitation but first of all it has a relational dimension. This quality of the holding has a very direct influence on the success of a team. It requires a subtle movement of the leader between being present as a 'whole' person AND letting go of his/her own 'musts' because of political or strategic reasons.

One example is provided in the case of Citadel by the principal who was able to stay present to the emotions of his teachers expressed during the research conference (even in the presence of participants from other schools). Another example occurred half way through the sparks process at Dominicus College. Both the question held by the teachers and the way of working had become increasingly uncomfortable, bringing them into contact with matters of the heart. The facilitators sensed that the group needed to feel the bedding and support of the principal who until then had stayed distant from the process, *'I want to give room to the project group and therefore I am not a member of the group,'* she argued. One facilitator told the principal that the group needed her to realize that this is about a new way of working together; that there are already small openings and that right now what they need most is her support. The principal noticed that she finds the invitation, *'surprising and scary'* and the facilitators made her aware that this is exactly how her teachers are feeling. The Sparks facilitator encouraged her not to 'let go' but to be 'present without trying to control'. Providing adequate holding therefore includes being vulnerable and replacing the urge to control by really being present. The latter does not mean that a leader must literally be there all the time, as the following example shows: 'J.', one of the governors at Ralph Allan wrote: *'For once I was the one unable to meet a commitment. I think both the leadership and the other two governors were a bit thrown by my not being there – they are reliant on my leadership. But there is an upside, it meant that [the Spark facilitator] could take over with full authority – I was not there to rescue or interpret or take over – all strong tendencies for me.' Later she wrote: 'it felt as if they had initially missed me, but had grown up without me.'* The Sparks facilitator on the other hand wrote about the same incident: *'Especially with the Parent Circle Project I saw two governors becoming freer to move, no longer waiting for approval from [J.]; involving her more as a coach than as a leader. J. noticed this and it was beautiful to see how she so enjoyed "staying out", leaving the responsibility where it belonged.'* In her reflections of the day J. wrote, *'Later, it was brilliant to attend the opening year 7 assembly and for M and N to stand up and speak to all the parents about the Parent Circle. It genuinely felt as though I was able to step back, leave it to them and that innovation was starting to happen from the inside out.'* By no means did this governor step back emotionally [or in Sparks terminology 'energetically'] from the project. She was present in her 'holding' as a committed person and not with her 'ego'.

We found similar patterns between facilitators and Sparks teams, facilitators and researchers and within the steering group.

The facilitators of the Sparks teams too provided a holding for the participating teachers, as the following account of a facilitator shows: *'only when we (the facilitators) were fully present and authentic and able to hold the creative tension was the group willing to step into the unknown, willing to open to ways of knowing other than the cognitive.'*

Regularly, the research team was asked to provide holding for the facilitators of the Sparks groups. After all, we spent a lot more hours in supervision and coaching of the facilitators than expected in

advance. The following account of a facilitator may illustrate this: 'during the supervision I realized that I had gotten completely sucked into the dynamics of the *vmbo school.' […] 'I analyzed the situation and got myself stuck in my own conclusions. This kind of set ideas about how the world is, is the essence of the problem in Venlo and the cause of their own stuck-ness. [As a Sparks facilitator] you need then to have the courage to recognize this and conclude that it requires a different way of thinking if there is to be a possibility to heal. Not more of the same. This feedback [from the lector] was appropriate, but I needed to breathe deeply before I could acknowledge it'.* Another facilitator wrote about the research team: '*They were there whenever I or J. reached out to them, also at critical moments when we were really stepping into the unknown. They were present, without providing the solution but with full trust. It was a very fine feeling which eased the work that needed to be done; a bedding such as a bedding should be, without entanglements, free and yet "held".*

The research team itself was supported by the RAAK steering group which met quarterly throughout the project. The quality of the conversations in the steering group meetings changed over time. At the beginning it was quite formal, the agenda setting the tone with a formalized conversation about roles and responsibilities. Over time, the relations changed. We can only talk about how we (the researchers) experienced this. In our preparation we were willing to be more vulnerable, we wanted to stimulate an exploration of the results that were emerging, including the difficulties and we observed that the quality of support that we received over time also grew. Towards the end we more and more engaged in a dialogue on how to support change from the inside out. In those conversations, the governors became willing to explore their own role in relationship to supporting creative processes within their schools. The steering group evolved from an instrumental and detached committee to a supportive and committed 'think tank.' For instance OGVO looked at, *'how can we make lasting contracts on a relational level between schools governors?'*; Alliantie looked at, *'how can we best support principals to hold the tension as their teachers go through creative processes'*; and in the case of Ralph Allen , *'how to involve teachers better in the vision of the leadership'*?

We believe that Sparks processes gain strength by increasing the quality of these holdings. Throughout the project we tried to walk our talk. There were very few RAAK Meetings that did not have a reflective component, reflecting on the quality of our own relationship. This was a challenge – also simply from the point of view of time – but it was fruitful. Although we tended to invest much in these layers and the interconnectedness, in a future project we would pay even more attention to the quality of the different holdings. It might be necessary that leaders themselves participate in a Sparks group or join supervision regarding how to support innovation from inside out. With regard to leadership support, and the role of Sparks in this matter, there is a lot to gain.

<u>Don't avoid 'tough conversations,' horizontally and vertically</u>

In order to break through patterns of wicked problems people need to be able to engage in – what we called – 'tough but caring conversations.' Conversations that are from heart to heart, without holding back or hidden agenda's. Textbox 7 shows a process at Dominicus that resulted in such a 'tough' but healthy conversation.

In august 2012 a research workshop with the Dominicus sparks team was organized which, included the principal. From the beginning the Sparks team was tense and slightly frustrated. Although they looked back on a tough but fruitful Sparks process, the actual solutions they worked on were – in their eyes – not honored by the principal ('P'). The principal had to leave the workshop early and then the tension broke. One of the participants spoke 'Anger*! Where is ['P'].? Where is the bedding? She wants us to take responsibility– fantastic, super! But two months later and everything that has been agreed on is reversed'.*

The researchers listened carefully and heard the story of projects agreed in June, cancelled without communication in September. One in particular causes the Sparks team pain, the cancelling of the '*mentorship for two years instead of one year*' project. As they listened they heard the frustration at the teacher's inability to express their anger directly. The researchers took the decision to move from the role of researcher to the role of facilitator and to work directly with the (most angry) teacher (L.) through a constellation. The real insight however came through the wise words of a colleague teacher,: *'I believe that the principal will understand your feelings when you express them as you do now, not only the anger, but the why behind it, the pain.*' And the response (L.): '*Insight! I will go and talk with 'P'. She does not see all the elements and so misses the impact. I need to take my responsibility to show her this. And if she does not hear that I/we miss her then all the positive ideas and energy will get lost. And that matters to me, that touches me'*.

During the final conference he message that could not be expressed during the August workshop was spoken with honesty and compassion directly to the principal, with all participants from the Sparks projects present: '*We had some wishes for mentorship that could not be realized, I was angry, because it touched me. I would like to feel that you support me on the ideas I have. That is how we can make some steps forward*.' The other teachers supported him; they asked the principal to be more a part of the process. An observer from another Sparks group reflected on what he had heard: '[I understand now] *how important it is that leadership endorses the journey. The teachers are saying – we want you, 'P'., within our team'*. The principal 'P' responded, '*I know what you are saying. That it is not only a question of organization, but also communication. Share these things*.' The closing words from one of the teachers were, '*maybe within the RAAK project it is not only about knowing and thinking. Now I realize why I am happy about my school – that is because I am happy'*. Written in the reflections of one of the researcher/observers was his experience of '*the love in this group*' and by another observer, '*there is something going on in this group, something inspirational. How much they have formed as a conscience group – such a strong connection a warmth amongst them, love even*.'

Textbox 7: The ability to engage in 'tough conversations'

The textbox shows how difficult it is really to engage in 'what needs to be said.' In everyday life we tend to avoid these conversations and therefore we tend to increase the wickedness of certain issues even more. That is what we mean by the notion that wicked problems recreate and reinforce themselves. The account also shows the personal journey which was necessary for the teacher to get the courage and clarity for opening up. The vulnerability and openness of the teacher invited the principal to do the same.

People tend to neglect or deny wicked problems. Moreover, when addressed, wicked problems come with a lot of resistance and this resistance may have different forms. Textbox 8 gives an example how one of the facilitators worked with this resistance. The organization of the Sparks sessions was quite difficult. Time and agenda restrictions made it almost impossible to get everybody together. During the meetings, participants walked in and out. There were a several innovative projects going on and the facilitator managed to reflect on each of them separately, depending on who was actually in the room. During this meeting, the facilitator tried to switch the focus from the ongoing projects to the very essence of the Sparks journey: creating an innovative culture at RAS. The facilitator wrote about this intervention in her logbook: *'we talked about the meaning of "inclusion" which is one of the pillars of the school. It was a difficult dialogue where I used different systemic language than RAS, where the differences and the mis-understandings became very clear. I went home content, but exhausted and it took some time before I was able to take a different*

tack. The cause was the [repeating difficult] of agenda planning', with which the valuable but exhausting meeting ended. After that, the facilitator decided to 'bring in' her struggles in an intervison meeting with the research group. We tried to disentangle the very wickedness of the problem and discovered the geniality of 'how the system avoids the real issue of collective learning' and therefore holds fragmentation in place. This intervision session was followed by several 'tough conversations' between the lector and RAS, but also between facilitators and between researchers. In a parallel process, we tried to find answers to questions as: 'how are we increasing fragmentation in this project? What do we have to learn collectively? These investigations lead to a stronger relationship and support between the research group and the facilitation in Bath (the facilitator wrote: '*The support that I experienced during the telephone conversation with the research team was necessary and allowed me to hold the creative tension'.* With this support, the facilitator was able to address this wickedness much more explicitly in het communication with RAS (see textbox 8).

Email of the facilitator at RAS to the Sparks group after a session: *'What I wonder is happening right here and right now? Is it a common choice to give up a place in order to set a date? That's for me the same with the people who are willing, but not able to be there. We can say, we have to deal with that, we have to include that. But what are we not facing then? What are we excluding? Why are we doing Sparks? So Sparks is not a moment we plan and do some stuff, it is a moment to be with a group holding a question. It needs (deep) contact and awareness. And we (I) can't create that if we are not there with the group. So inclusion in this, on another level, means to be honest to ask ourselves, what does it take to be part of a sparks group? To what do I/we say yes? If we as RAS want to include a Sparks group to what do we say no/yes? I can imagine these questions are there with the project groups as well? So what happened to me ([in the] last [Sparks session] were two things: 1. the recognition we had a good meeting in the situations that was there 2. that I was so tired afterwards. And of course the travelling, talking English, my own small personal journey etc. was all part of it, but also holding the task of the sparks group and the "absence and being there" of the members, the "walking in and out", the not in balance feelings. To give welcome to the ones who came in and to really say goodbye to the ones who left again. The clock was in my dream last night! Please don't get me wrong! These questions have nothing to do with blame (but an enquiry into [the wickedness itself]) where we can make the learning in RAS more sustainable. What do we have to learn in the Sparks group? and what is this part of the learning? So what is common now, what is the [wicked] pattern? Is J. [one of the Sparks participants feeling most responsible] trying very hard to get all the members in the room next time? Then the tiredness is probably travelling from me to her. Do we want that? Let's hold this question together! ….ask J. to send this email to the whole group so we can use it as a learning piece. Maybe it's good to be with this question for a while and reflect on it!*

In response the principal wrote an email to all of the Sparks participants: *'I look forward to a sparkly meeting next Tuesday in the Leadership Conference room. If you are UNABLE to attend please apologize to ME. If you are sending in material, please send to J..'*
In her reflections on this next session one of the participants wrote: *'everybody was there – the first time that had happened and the RAS people were there for the whole time. The full-house effect did seem to connect with the strong email sent out by [the principal] in advance and her strong presence and engagement at the previous meeting. There was such an amazing willingness of the group to be collective, to be vulnerable, open and honest. We highlighted on the flip chart the key aspects of the sparks process: the inner point of departure, the small (personal) journey, the collective journey, and the learning about learning with a focus on what is not being said and vulnerability. The group created a time-line on the floor with diagrams and images which became a bonding focus – there was palpable pride and shared ownership of the story that was told'.*

Textbox 8: Communication with RAS

In her reflections the facilitator wrote, '*maybe it sounds strange, but this [the email from the school leader] was for me a YES moment'.* The group had finally stepped into the Sparks process with the commitment to explore the real wickedness. As indicated in the textbox, during the following Sparks session, the facilitator worked with a time line exercise in order to evaluate the process. In this exercise, the participants were asked to mark significant moments of their history as a group on a line drawn on the floor. Then they were invited to literally 'step in' these moments and reflect on them collectively. Eventually, the group came up with the following. They divided the Sparks process in three phases, 1.**ecl**, the external partner leading the innovation in the school; 2.the confusing transition period and 3.RAS taking the ownership of the real question, the culture of

innovation. The facilitator wrote: It felt like a '*shift from being a ball in a pin-ball machine to taking ownership and leadership; if sparks is about sustainable learning, then here there have been lessons learnt! They have learned about: ownership and leadership, learning to share and ask for help and support and how to create bedding for each other.*'

During the RAAK projects, we had tough conversations all the way. Often we thought: 'we wish we had been so open, clear and to the point earlier.' However, the very wickedness in a system avoids those conversations and the time of tension (in the words of RAS 'the period of confusion') is a vital fertile ground for learning and creation. Leadership from this perspective sometimes means 'hanging on in there' as long as it is necessary and being prepared to say what really needs to be said at the right moment.

Transfer to the wider context: the impact on personal, team and organization

Sparks and 'transfer' is a real challenge. On the one hand, Sparks is about transfer. The method works with and integrates the context in the learning group. The very notion of 'Sparks' means that we aim at many different small incentives on t a personal, team or organizational level that may or may not light a broader fire in a collective. However, we argue that leaders play an important role in harvesting and using the results at an organizational level.

On a personal level we see that Sparks has a significant impact! Participants see not only the patterns of behavior in their own school but through working with constellations they experienced the patterns in other schools. Also, we can report much learning on a team level, as many of the examples in this report show. The collectives really went through amazing transformations, as one of the principals described: *'What I see is that the team around the head of VWO department is more a team now. They work with other people, take the initiative and the responsibility. They feel they can take decisions themselves, they feel they can do it. This can be the start of a cultural change within the school. Some of the teachers experienced a new motivation for their job. The teachers especially appreciated the constellations in Bath, seeing the different perspectives and the time they had for this topic and each other.*" The principal sees teachers working together as a team, taking initiatives together, doing research, being pro-active. The results of the group work were – from a rational point of view - honored by the principal and this has increased the motivation.

However, recognition of this achievement needed some guidance. First, the principal had difficulties to express exactly what the contribution of RAAK is and in her opinion it took too long: *'It is difficult for me to say what the results are*,' she told us. And when the teachers told what they had discovered, in her way of expression she seemed to respond: 'how can something as trivial as "more contact" be a result for you?' As researchers we realized that in order to involve the leader in seeing and appreciating what is emerging, leaders must be much more involved in the Sparks process. People who did not participate in Sparks naturally are perceiving the process from a position which is determined by the very wickedness. For instance, if engaging in more personal relationships is a major issue at a school *(*'the students signalize a lack of *'warmth in contact,'* and the school is perceived as being too cognitive'), advances in being more in contact can hardly been seen and certainly not 'felt' (from a cognitive stance) by outsiders (since the whole systems is trained to evaluate contact as being inferior to cognition). Nevertheless, in such a context, the actual creation

of warmth in a learning group is a best practice and thus a large step forward! Textbox 9 gives an example how we worked carefully to include 'the other' in Sparks.

In a conversation between a teacher at Dominicus and the facilitator it became clear that RAAK has created a *''fertile ground,' it has given us a boost and it has given us the possibility to look at our school in a different way. There is enthusiasm to implement a whole child, whole system approach. We are looking at what is already happening at Dominicus and at what's possible in our system. The literature search seems to back us up: there is a link for example between physical health and exam results. I feel supported. […] We have become a team, whereby commitment has emerged '.* In the same conversation, the teacher said: *'But, we are now confronted with handing over something to Citadel – what can we hand over?! I am confronted with questions from the Rector about this (and from the Alliantie board). With hindsight, it would have been better to have had the Rector as a full participant. She does not have the same mindset as we (sparks group) do and we are lacking a language to talk about what is happening'.*

The teacher asked the facilitator to support him in a conversation with the Rector. He experienced '*desperation*' trying to convey the group's experiences within RAAK to his management team (MT). A date was set and the participant, Rector, and facilitator sat around the table. As the Sparks participant struggled to articulate, the response of the Rector was: *'just come, the management team would love to hear about the keys that you have found – it doesn't have to be perfect. Take us with you in your deliberations in the choices you are making.'* The Rector experienced the groups as, *'too modest, they don't dare to come over the doorstep. Yet I have the feeling that you are bubbling over with ideas. This is an invitation, I am curious, simply come.'* However, if for the teacher it were that simple to join the MT meeting and to talk about the Sparks results, he would have done it already. Thus, there was a wickedness to be explored. The facilitator decides to address first this wickedness from the participant's perspective: What is in the way of simply stepping over the '*doorstep*', what is needed? This question lead to a very open and vulnerable exploration of the teacher's experiences in the organization). This exploration was, on the one hand founded in the relationship of trust built between the participant and the facilitator. On the other hand, the teacher had gained confidence during the Sparks process that, in order to work with patterns, one should not avoid tough and honest conversations. The Rector experienced this as an '*eye opener'*. From a place of reflection she started to see the real added value of Sparks and observes gently: *'you are placing the bar very high, you are taking a lot of responsibility.'* At this moment, the teacher felt really seen, not only cognitively but also from the heart. The facilitator now addressed the Rector. She uses a concept of foreground and background in organizations. That which is openly seen and presented by members of an organization and that which one consciously or unconsciously tries to hide. At Dominicus, the foreground might be decisiveness, cognitive, speed, such that: *'Emotion (which has no place) has gone underground [we discovered during the Sparks meetings]. Processes go slowly and that feels strange. Naming 'emotion and contact' as the keys of Sparks is not experienced as helpful. But to actually try to live them, helps. To show warmth, contact in the relations. There is already much achieved and the keys are already in motion. It is now the task of leadership to hold the spine straight and to endure'.* In other words, facilitator and teachers asked for 'trust' that measurable results would follow. At the end of the conversation the teacher asks the rector to support him and the group to share the responsibility for the task to include 'the background' of the organization. In this sense, he did not want to bring 'the solutions and results of Sparks to the Rector/MT but to share with them their challenge: '*How do we enroll other teachers in our vision?*'

Textbox 9: Involving leadership in the Sparks process.

School leaders have to be willing and have to learn to recognize the small but important steps forward. But leaders may learn too! It is a stretch for a leader, a stretch for any '*outsider'* of a Sparks group to see the emerging results and to recognize their significance. In our research project we have seen all leaders struggle with this issue. We also were witnesses of the negative effect if a leader does not recognize 'what has achieved.' However, as shown in the textbox the initiative for involvement does not necessarily have to come from the top.

During RAAK, we tried different ways of involving 'others,' as for instance, leadership dialogues where we brought the leaders of the different schools together to share their experiences. At ILS we asked the facilitators to share their stories in an MT meeting with the inviting question: '*This is what we experience. We also feel that it could be of great value to this organization but need your help to discover where and how'.* It was in this meeting that we got the commitment to work with the senior student mentors (SLB) in the institute.

Finally, we hoped to introduce Sparks as a method to increase organizational learning. Although we can report many small results for the different organizations, showing evidence for 'organizational

learning' seemed to be beyond the scope of this research. It would require us to go back to the schools after a while and look for lasting changes. On the other hand, using the results of the Sparks processes is now in the hands of the teams and the school leaders.

It might be that – in order to see organizational change – working with one or two sparks groups in an organization, is not sufficient. However, we strongly believe – in accordance with the literature – that teams are the bridge between individual and collective learning. And there was a lot of learning in the teams.

6.3 Educational systems; a new typology

The RAAK project has led us to a new perspective on educational systems[7]. A perspective which may explain some of the 'wicked' organizational issues we see in schools. This new perspective may not lead to revolutionary interventions to solve some of the challenges in the education crisis but it provides us with more understanding and less 'judgment.' The latter is a helpful (ref. Hellinger orders of helping) position if we want to support coherence and a release of creativity in organisations.

The systemic perspective today discerns two types of social systems: work-related or organizational systems on the one hand and systems in the personal domain such as friends or family on the other.

In personal systems, the bonds of loyalty are usually closer and the emotions connected to the patterns of behavior more intense than in work-related systems. Generally speaking the bond between a child and its parents is stronger than the bond between employee and employer and the underlying emotions correspondingly more passionate. There are other differences as shown in the table below (see also Stam, 2009).

	Family systems	**Education**	**'Conventional' perspective on organizational systems**
Binding force	love/identity	<=>	task responsibility/income/personal development
Boundaries	clear	<=>	open
Emotional 'charge' of relationships	firstly emotional then task oriented	<=>	firstly task oriented then emotional
Positions	fixed/not flexible	<=>	flexible
Vertical relationships	parents-children	<=>	manager-employee
Complexity of system	low	<=>	high

Table 3: Differences between family and organizational systems

Work-related systems are often seen as responsibility systems (responsibility and task are the binding factor) whilst friends and family-systems are seen as love systems (with love and identity as the binding factors). The boundaries of a family system are clear. In general people know who belongs and who does not belong to the family. In organizations this is more diffuse. Do the

[7] And probably for systems in the healthcare sector.

customers belong to an organization's system? Are the external teachers of a university part of the organization? Moreover, in work-related systems, positions are changeable and temporary, whereas in family-systems the "actors" are not interchangeable (a father or mother remains father or mother; a first born child remains always the first born child). In particular, the vertical relationships between parents and children are, in theory, different to the relationships between managers and employees. Children are highly dependent on their parents, managers and employees have – in principle and in an ideal sense - a contractual relationship. Generally speaking, in theory we see organizational systems as being much more complex than family systems.

In practice, such a strict division between personal and organizational systems doesn't occur. This forms the very basis of the Sparks method. However, during this research we nudged up against an interesting hypothesis. Education systems can possibly be seen as a third type of system or possibly, a mixed system. In a mixed system, the entanglement between personal and organizational system qualities, forms part of the wickedness of the system. This entanglement carries also the creative potential of educational systems and deserves attention.

From a systems perspective, we believe that learning takes place dependent upon the position of a person in a system. For instance, the first born child in a family faces a different constellation and therefore learns different behavioral patterns than the second or third born. After the family-system as learning context, the education system often is the second major social system that the young child meets, the first social system "outside" of the warm nest. In the order of things the education system takes a place between family and work. For the young child this "outside" system is just as restrictive as the family system. There is after all not much space for choice about what he or she does. Moreover the teacher – however nice – holds the new authority which from the perspective of the child is an all-embracing position of power. In ordinary language, the child must learn to adapt. How this adaption process goes (how the child experiences its school career) leaves indelible tracks on its personality. Its future trust of authority and its ability to become a member of a group are all given shape again here. Education systems are therefore in our culture more emotionally charged than many other work systems. We believe that people in general carry this imprint with them for the rest of their life. The imprint is reactivated a soon as they are in contact with school systems, independent of whether they are, teachers, school leaders, parents, officers of a ministry or university students. In other words, educational systems have their own underlying 'scripts.' Shapiro and Carr (1998) found, that work systems reactivate unresolved behavioral patterns from the past. For instance, employees who were confronted in their family system with authority conflicts and/or problems of adaptation (for instance being part of a group) repeat these unresolved patterns in the work context. If it is true that educational systems are more emotionally charged than other work systems, it is most likely that these unresolved patterns play a more dominant role in the everyday work practice. Working in an education system therefore requires a high level of reflection and personal leadership of the participants. Not investing in consciousness leads to psychological games, as we have seen in several of the RAAK cases.

Another characteristic that makes the education system special is the nature of its "inhabitants". Just as in family systems, the education system is inhabited by several generations (one can see this for example in the relationship between mentor and mentee). The rolls and the differences between the generations are often larger than those between colleagues of different ages in a normal work system. The gap between teacher and child is closer to that of a parent-child relationship than to an

employee-boss relationship. Rolls, familiar from a family system exist alongside the rolls of a work system.

Several particular qualities of the education system correspond more closely to a family-system than to a work system – despite the fact that they are a work system. There is strong emotional involvement, loyalty and to a certain extent, dependence. The hierarchical relationships appear to correspond more to parental relationships (also in a positive sense!) than the working relationships of employer-employee. This leads to engagement and a warm atmosphere on the one hand but to inefficiency and excessive conservatism on the other. Moreover, in educational systems borders play an ambiguous role. They are seldom a subject of open discussion or contract. Often they are implicit ('everybody knows'), over emphasized (e.g. 'this is my territory') or neglected (e.g. people in education often work 5 days while being paid for 4 days).

And finally in education it's all about the student becoming his/her own person, the identity. School is an extension of the upbringing at home and with that it is co-responsible for the development of identity (Verhaeghe, 2012). Where, in work relationships the primary product is a service, in school it's about self-development in the eyes of the teacher in comparison to the other. We experienced 'judging' (e.g. the other, the situation, the self, the method) as an important and omnipresent factor in educational culture.

Being judged is an important aspect of the development of identity (*am I good enough*?). Children are to a certain extent 'dependent' on the judgment of the teacher, making the relationship between teacher and child extremely vulnerable. Rethinking the way we judge each others in school systems seems to us to be crucial for further development. More than in any other work system, organizational changes have the potential to touch on the very identity of employees and so touch on an existential fear. Sensing this fear, acknowledging it (instead of judging) and dealing with fear is a condition for committed co-creation among the parties involved.

All of this leads to an increased need for clarity around responsibilities, roles, boundaries and positions in educational systems. However what we find in many educational settings is that this "contracting" is clear only on paper, in real life there is often a huge gap for instance between the world of allocated hours and everyday work. Moreover the importance of relational and psychological contracts are – in our opinion – substantially underestimated. Clarity needs to be created such that parties can engage in adult relationships, which is in our opinion not a common good in education. Here one can see that the strength of the system can also be its weakness. We are not asserting that the education system should become more like an ordinary work-system (e.g. that everything should become more business-like), on the contrary.

These characteristics of the education system as a mixed system create confusion and a lack of clarity and are the source of many of the symptoms in the education system that we recognize. They are ultimately responsible for the "wicked problems". They also carry the creative potential of these extraordinary systems. For instance, as many teachers would agree, schools leaves a lot more room for acting with love and affection between parties. Operating from this perspective, we have a great challenge to transform our system of testing and judging by numbers into a system in which we have tough conversations from heart to heart. Between teachers and students, between teachers and leaders and teachers and parents and between teachers themselves.

We have tried in this reflection (in a somewhat controversial manner) to shine some light on the context in which wicked problems in schools arise. We are humbly aware that much that is true as a

generality is a lie at the level of the individual. Nevertheless, we think that a little more systemic sensitivity toward the special nature of the school system would help school leaders and teachers to step out of the vicious circles; help them to engage with "wicked problems" in a more creative way, together with their teams. In our experience, Sparks has been a valuable method to support this process.

LITERATURE

Beer, S. (1985). *Diagnosing the system.* Chicester:John Wiley

Berne, E. (1964). *Games People Play; The basic handbook of Transactioal Analysis*, Ballantine books

Boszormenyi-Nagy, I. (1994). *Tussen geven en nemen. Over contextuele therapie*. Haarlem: De Toorts

Buber, M. (1970). *I and Thou.* A new translation, with prologue by Walter Kaufmann. New York: Scribner

Camillus, J.C., (2008). *Strategy as a Wicked Problem.* Harvard Business Review

Denyer, D., Tranfield, D., & Van Aken, J. E. (2008). Developing Design Propositions through Research Synthesis. *Organization Studies*, *29*, 393–413.

European Foundation for the Improvement of Living and Working Conditions (2010). *Young people and NEETs in Europe: First findings.* Résumé. Page 5.

E.U. (2009). *Communication from the Commission to the European Parliament, The Council, The European Economic and Social Committee and the Committee of the Regions Tackling early school leaving: A key contribution to the Europe 2020 Agenda*

Fischer, Michael D (2012). *Organizational Turbulence, Trouble and Trauma: Theorizing the Collapse of a Mental Health Setting*. Organization Studies **33** (9): 1153–1173

Hellinger, B. (1998). *Love's Hidden Symmetry.* Phoenix, Arizona: Zeig, Tuckeer & Co.

Hjort, M. (2010). De ontmoeting als werkterrein; van binding naar verbinding in organisaties; ed. J. Thölke: in Leren in organisaties, juli 2010:25 – 27.

Horn, K. P., & Brick, R. (2009). *Invisible dynamics* (p. 204). Heidelberg: Carl Auer.

Ingham, T. (2011). *How can we innovate in our school from the inside out? A proposal for an international project exploring the development of a culture of innovation in Ralph Allan School*.

Issacs, B. (1999). *Dialogue and the Art of Thinking Together.* Doubleday: Random House

Jurg, W. (2010). *The perceived usefullness of Branding constellations; Unravelling Branding systems.* Het Noorderlicht, Groningen.

Jurg, W & Thölke, J. M. (2006). *Integrating the inner and outer world in market research: An application of the systems constellation technique*; The 5th International Workshop: Phenomenology, Organization, and Technology; Amsterdam, 2006;

Maturana. H. & Varela, F.J. (1987). *The Tree of Knowledge: The Biological Roots of Human Understanding*. Boston: Shambhala.

Miller, J.G. (1978). *Living systems.* New York: McGraw-Hill.

OECD (2005) Attracting, Developing and Retaining Effective Teachers - Final Report: Teachers Matter http://www.oecd.org/edu/school/attractingdevelopingandretainingeffectiveteachers-finalreportteachersmatter.htm

Robinson, K. (2009). *The Element – how finding your passion changes everything.* Penguin Books Ltd.

Ropes, D. & Thölke, J.M. (2010). Communities of practice : Finally a link between individual and organizational learning in management development programs (2010). In: *Proceedings of the European Conference on Intellectual Capital,* 504 - 512

Scharmer, O. (2009). *Theory U; Leading from the future as it emerges* (p. 530). San Francisco: Berrett-Koehler Publishers.

Senge, P.M. (1992). *De vijfde discipline*. Schiedam: Scriptum Books.

Shapiro, E. R., & Carr, A. W. (1991). *Lost in familiar places: Creating new connections between the individual and society*. New Haven: Tale University Press.

Stam, J. J. (2006). *Fields of connection* (p. 146). Groningen: Uitgeverij Het Noorderlicht.

The Design-Based Research Collective (2003). Design-Based Research: An Emerging Paradigm for Educational Inquiry. In: *Educational Researcher,* Vol. 32, No. 1, pp. 5–8

Thölke, J. M., Nabben, I., Kauffman, R., Wetzels, R., & Sigaloff, C. (2009). Interventures: Kleinschalige, onderzoekende teams van professionals als basis voor duurzaam leren in organisaties. In: G. Smid & E. Rouwette (Reds.), *Onderzoekende professionaliteit*. Van Gorcum.

Thölke, J.M., Herder-Wynne, F. & G. Sipman (2013). Pabo A curriculum for Sustainability (in Dutch). Research report

Thölke, J.M., Sipman, G., Andriessen, D., Herder-Wynne, F. (2013). *Making the invisible visible at a teacher education college using awareness based action research*; Conference proceedings: *RWL8 8th International Conference on Researching Work and Learning University of Stirling* UK 19-22 June 2013;

Thölke, J.M., Kingma, M., Herder-Wynne, F. (2012). Researching together: learning about and with communities of knowledge and practice in primary education (in Dutch). In A. Plaat. G. van Os, M. Noordegraaf (redactie): *Rijk met Wetenschap; bestuur is informatie 2012*,. 101-124. Boom Lemma. Met.

Thölke, J. M., Van Vlokhoven, H., Kingma, R. M., Peters, M., & Herder-Wynne, F. (2012). *Generating and sharing knowledge in primary education – research about communities of knowledge* (in Dutch). Nijmegen: Hogeschool van Arnhem en Nijmegen. Research report comissioned by the P.O Raad

Van Aken, J.E. (1994). De bedrijfskunde als ontwerpwetenschap. *Bedrijfskunde,* 66(1), 16-26 (in Dutch).

Van der Meer, 2011; Over de grenzen van de leerkracht; Passend onderwijs in de praktijk Uitgave van de ECPO, Den Haag

Veenbaas, W., Goudswaart, J. (2002). *Vonken van verlangen; systemisch werk perspectief en praktijk.* Utrecht: Phoenix Opleidingen.

Verbiest, E. (2011). Leren innoveren. Een inleiding in onderwijsinnovatie. Garant. Antwerpen, Apeldoorn.

Verbiest, E. (2012). Professinele leeergemeenschappen; een inleiding. Garant. Antwerpen, Apeldoorn.

Verhaeghe, P (2012). *Identiteit*. Uitgeverij: De Bezige Bij.

Vermaak, H. (2013); Paper for the Academy of Management Annual Conference 2013, Awarded as the Best Action Research Paper by the Organization Development & Change Division Planning Deep Change Through a Series of Small Wins

Weber, G. (2002). *Praxis der Organisationsaufstellungen; Grundlagen, Prinzipen, Anwendungsbereichte.* Carl-Auer-Systeme Verlag, Heidelberg

Weissfelt, P. (2006). *The purpose of a system; health and disease of the system and the consequences for the individual, group and organization*. Nelissen, Soest. (in Dutch)

Wenger, E. (1998). *Communities of practice. Learning, meaning and identity*. Cambridge: University Press.

Wierdsma, A.F.M. (1999). *Co-creatie van verandering*, Eburon, Delft

Wilber, K. (2001). *A theory of everything* (p. 208). Boston, MA: Shambhala Publications

APPENDIX

Overview data sources*

	Dominicus	**Citadel**	**OGVO**	**RAS**
Constellations: transcriptions & reflections	1		2	3
Interviews with participants & management	12	13	5	17
Logbooks & reflections of participants	9	2	3	28
Logbooks & reflections of facilitators/researchers	10	44	13	8
Transcriptions and notes of research workshops/conferences	1	4	4	10
Reflective Emails / memos	6	34	13	21
Notes of meetings with management	1		2	10
Other (official documents, proposals, reflection of supervision, designs, reflections and notes of steering group meetings, etc.)	2	1	1	5

*ILS sources/accounts were woven in the texts of the other four cases