

Open Science Gallery, A Self-Organising Team Building Approach For Transdisciplinary Group Interactions

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ABSTRACT

Open Science Gallery (OSG) is an interaction method and context for enabling knowledge creation which has emerged from our experience in supporting team building processes among transdisciplinary and geographically distributed researchers at our higher education institution.

The OSG works as a self-organising team building approach for designing and conducting group interactions across disciplines, providing participants with an open space for initiating shared, interest-based initiatives. It helps to bring people together, which possibly would not work together because of its different disciplines. These group interactions across transdisciplinary boundaries provide an open knowledge sharing where also learning from each other takes place.

The OSG is intended to be applied in face-2-face meetings, aiming to overcome discipline-related and physical boundaries and to initiate collaboration. The amount of participants is not limited, the method works for any size of people as long as they have the chance to meet each other in a room or hall at the same time.

To this end, the OSG presents an introductory question (OPEN) which serves for the participants as a starting point for sharing their personal expertise (SCIENCE) within a safe environment (GALLERY). The OSG is self-organising and spontaneous which means that no advance preparation for participants and little facilitation is required.

In this paper, we describe the need for such an approach which focuses on the specific challenge of multidisciplinary collaboration in research or education. We cover the terminology of the OSG and its methodological framework, as well as the potential for future developments and applications.

In the first part of this paper, we will describe the procedures of the OSG, its core elements, implementation steps and experiences made in the face-2-face pilot application. The second part covers the current development of the method, which also allows the integration of virtual participants. Furthermore, we describe the next development of the method, which will specifically be designed for virtual participants only.

INTRODUCTION

The complexity and diversity of today's challenges requires solutions that are beyond the scope of a single discipline or area of research. As a consequence, it is key to promote the collaboration of researchers from different disciplines and to enable them to perform an inter- and transdisciplinary creation of shared knowledge. Imagine a scenario in which you have a geographically distributed organisation with various autonomous research groups who never worked together and barely know each other. Where do you begin for promoting collaboration? In their model of organisational knowledge creation Von Krogh et al. (2000) emphasize five knowledge-creation steps, which are (1) sharing tacit knowledge, (2) creating concepts, (3) justifying concepts, (4) building a prototype, and (5) cross-leveling knowledge. Following this model, the first step in our mentioned scenario would be to "share tacit knowledge": and this is not easy. In fact, even after 20 years of knowledge management practice, tacit knowledge still seems too mysterious and is often ignored by managers because it cannot be controlled. But this is exactly what you should not do: rather than being controlled, knowledge creation needs to be enabled, and is in this similar to the growth of a plant, which also cannot be controlled but only "enabled" by appropriate cultivation. How to enable the sharing of tacit knowledge (step 1) and the creation of concepts (step 2) in the mentioned scenario? This is the question that we in our geographically distributed organisation had to address and that we answered by means of our approach of an Open Science Gallery, an interaction method and context for enabling knowledge creation (Von Krogh et al. 2000, 176 ff) by means of a face-2-face meeting with the purpose of building interdisciplinary teams around new ideas.

OSG TERMINOLOGY AND METHODOLOGY

The term OSG has a specific terminology, conveying the essence of our method in three words:

Open: the method focuses on conducting collaboration between multidisciplinary participants. Open means that there is no predefined team building process. Instead, the participants find each other based on shared *passion* and *interest*. An open question at the start of the OSG aims to facilitate the initial conversation among participants. From there, they decide themselves *on what* they want to work, *with whom* and *how long*.

Science: each participant is treated as an expert in his or her research field and invited to share his or her expertise with colleagues from other disciplines. The individual business cards with the personal competences of its owner help to find colleagues with same or similar interests. Thus, a topic can be examined from various perspectives. In this professional multiperspectivity lays a great strength of the OSG method.

Gallery: to support this driven by passion approach described above, the OSG should take place in a bright room with pin-boards, poster walls etc. as catalysers for social interaction and cross-disciplinary conversation. Participants should feel safe and protected while working out new ideas.

The OSG has its methodological roots in the “Design Thinking” process and the “Red Monkey Innovation Management” approach.

Design Thinking is a human-centred, creative, iterative and practical approach to innovation (see Brown 2008, p.8). based on inspiration, ideation and implementation as three interwoven stages (see Brown, 2009. p. 3). In our method we refer to this approach as follows: the participants develop collaboratively new ideas for projects, initiatives etc. Thereby, this process is creative and iterative since the participants continuously align these ideas with their individual interests. Thus, in the OSG format there is no particular outcome predefined for the group works. Ideas are allowed to be dynamic and can be adapted through the whole OSG process.

The second approach, to which the OSG is related, is Jef Staes (2014) “Red Monkey Innovation Management”. Here, Staes promotes the distinction between 2D and 3D organisations. While in 2D organisations the focus lays on diplomas and certificates for education and hiring, 3D organizations recognize the importance of passion and talents as keys to learning and working. While in 2D organizations we behave like sheep, just blindly following our job descriptions, the red monkeys in 3D organizations use their passion and talents to create innovation. Following Staes’ invitation, the OSG aims to support this 3D thinking approach by drawing on individual expertise rather than the given belonging to an organizational research group.

PROCEDURES OF THE OSG

The purpose of OSG is to build teams around new ideas; the themes of these ideas are free and the introductory question merely serves to initiate discussions. Therewith, the OSG is aligned with Nonaka’s et al. (2000) model of dynamic knowledge creation: the OSG aims to create new knowledge by bringing its participants in a socialising space together. Here they are invited to share their skills and passions and to go into a deeper dialogue to transcend tacit and explicit knowledge.

The following steps describe how to run an OSG:

1. Introducing an open question: an OSG starts with some explanations about the format and a predefined introductory question. This question should simply help participants to start conversations. A starting question which covers the meeting goal will help, for example: If you think about your skills and interests, to what project idea would you apply them?
2. Creating personal interest cards: Afterwards, each participant receives 5 business cards (including his/her picture, name and work-unit) to complete with keywords expressing his/her personal interests and competencies.

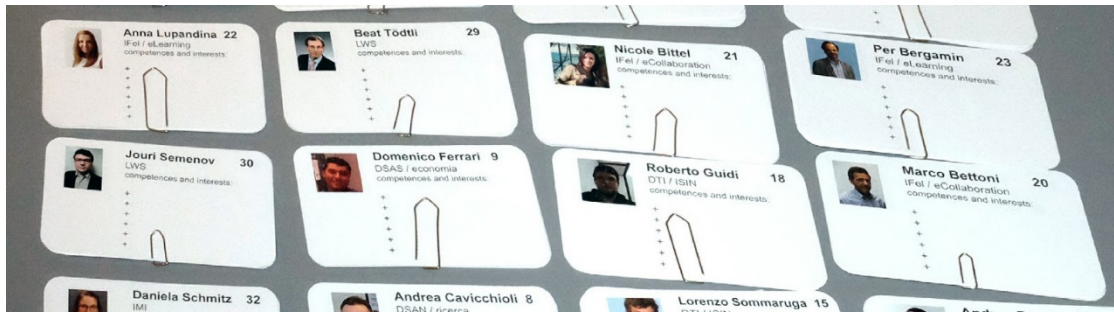


Figure 1: Business card preparation

3. Creating posters: Once the cards have been completed, participants are invited to manually create a poster using their input about the introductory question based on their own ideas. This is not a mandatory step, as there is no pressure to create something. Poster ideas can be input for projects, discussions or anything else. To do this, they choose a free pinboard and start writing or drawing.

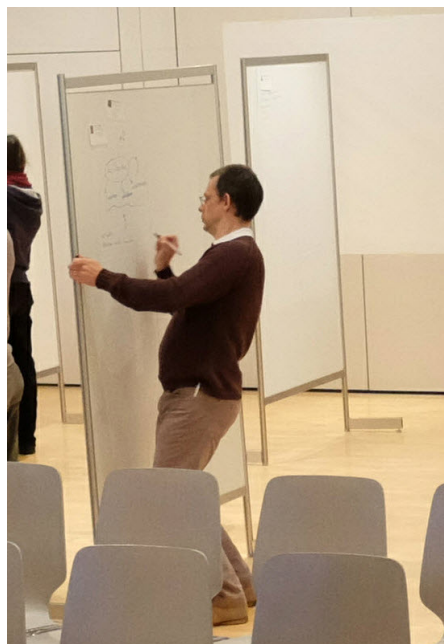


Figure 2: Individual creation of a poster

4. Visiting posters: The format doesn't distinguish between poster-owner and poster-visitor: All participants visit the posters and they pin one of their business cards to each poster they are interested in.



Figure 3: Poster visits

5. Building groups: The group building process is self-organised. Participants join the poster they would like to work on.
6. Working in groups: Once the interest groups have been established, they start working on their idea. It is up to the participants to change groups after 20 minutes or to create new groups for previously unused posters.
7. Visualising outcomes: Participants are invited to use a huge paper wall (1.50x3 metres) to write down their conclusions during their group work.
8. Presenting outcomes: At the end of the workshop, all groups briefly present their results to all participants and the next steps in-front of the paper wall.



Figure 4: Presentation in front of the idea wall

9. Creating final project teams: At this point, every participant is invited to join one or more groups for which he/she will continue to develop the idea as a member of the project team. For this, a business card must be tagged for every idea of interest. It is also possible to leave former working groups or even not to join a project-team..



Figure 5: Final Idea wall including businesscards of project members

Furthermore, the OSG creates a safe environment. This is particularly important for introverted people.

EXPERIENCES

The Swiss Distance University of Applied Sciences and its parent institution SUPSI (Scuola universitaria professionale della Svizzera italiana) are a geographically distributed organisation with various autonomous research groups. One of the instruments for fostering collaboration consists of an annual full-day face-2-face workshop between researchers of the two institutions. The workshop focuses on promoting cooperation and advancing social ties among geographically distributed researchers with professional and cultural differences and who, in many cases, never worked together and barely know each other. During the 5th edition of this research workshop which took place on October 24, 2014 in Brig (Switzerland) the OSG was applied and constituted the context of the main part of the meeting which opened with a keynote speech. This OSG was attended by 32 participants from 11 units; they created 22 posters, established 10 interdisciplinary groups and developed 4 project ideas (2 of which were later submitted for grant applications while the other two are still in progress).

Generally, participants liked the OSG due to its practical orientation and inspiring, energizing atmosphere. First of all, we found that participants loved to interact and to create ideas in the OSG context. They appreciate the method's openness by working on ideas which do not usually form part of their daily activities. Sometimes people seemed to feel abandoned; in this case the facilitators had to help them, being careful to find the right balance between free space and guidance, a key requirement for enabling social encounter. Furthermore, the idea wall turned out to be an appreciated context for sharing the outcomes of the group works. People liked this approach of having a shared interaction and knowledge space probably because it encouraged and nurtured conversation at a plenary level in a safe way.

We also learned from our pilot that the OSG process needs some improvements. Participants felt partially confused about what should be done as next. Here a solution could be an introduction to the OSG method and a detailed agenda of the steps displayed on a projector. The group building process must be simplified and user should be in some way better prepared for this step, for instance by giving a short introduction on the concept of self-organisation.

Finally, we will aim to better integrate introvert as well as low-creative participants in future. It turned out that giving participants a space for their ideas wasn't enough. Participants who have difficulty being outgoing and creative need a more sensitive approach.

CURRENT DEVELOPMENT

After the first application of the OSG method in fall 2014, we are about planning its further development. Given the fact that virtual communication and collaboration gains continuously in importance in terms of overcoming time- and space limitations, we aim to blend the face to face events with online parts throughout the following stages:

Preparation

We are all more or less involved in our daily business activities. Thus, we all know how challenging it is to catch participants before an event and to engage them in pre-workshop activities. Hence, we are confident to increase participants' engagement by bringing them virtually together. To this end, we invite them to join our workshop group on LinkedIn (<http://www.linkedin.com>) where they are asked to introduce themselves and to share insights into their daily activities with other colleagues. Thanks to the advantages of the asynchronous forum, the participants can decide themselves, *when* and *from where* to respond and to contribute to the discussion. Furthermore, the forum gives participants the opportunity to start discussions on new and other topics driven by their personal interests.

Implementation

Beside this option of preparing the event with the help of virtual communication, we plan 2015 for the first time a virtual keynote at the face to face event. Eddie Obeng will talk about new challenges for learning. He is going to use his own 3D platform-environment Qube (<http://qube.cc/>). While our workshop coordinator is logged in on Qube, the participants are able to follow Obeng's keynote speech via beamer and sound system. Participants can write their upcoming questions directly during the talk into etherpad (<http://www.titanpad.com>), a collaborative writing tool). Thus, Obeng can immediately respond to them. The titanpad is also used for capturing the outcomes of small group activities during the keynote which are initiated by Obeng himself. This way, we can make sure that the audience can interact with the keynote speaker even if he is not sitting in the same room.

Thereby, there are several technical aspects, you need to make sure, before running a keynote talk online:

- The internet connection: you have to make sure the internet connection is stable and reliable.
- The audio settings: there is nothing more annoying for participants than a bad audio while listening to a virtual presentation. That's why the audio needs to be of high quality.

Both, internet connection and audio, should be tested (ideally more than once) before the event for sound quality and audio-feedback.

Follow-up

Again, as soon as the face to face event is over, participants are already back again in their daily business and there is not much time left to devote to the past workshop. Also here, virtual forms of interaction may help to extend the event's effects. That's why we plan for our next research workshop in October 2015 to organize follow-up activities on the online platform Qube. Participants will be invited to join a virtual session on Qube one or two weeks after the face to face workshop. During this session, participants can reflect and discuss about the content and format of the event, the outcomes of the group works, planned activities, next steps etc.

This kind of virtual follow-up gives participants the chance to meet each other again without being too much interrupted in their daily activities (particularly by a long travel). Furthermore, this virtual meeting can be the starting point for ongoing interactions and collaboration among participants.

Outlook

This is, how we plan to realize this year's workshop. Nevertheless, the question remains, how to organize the virtual communication, especially *before* and *after* the event in order to reach the best and highest possible participants' engagement. We assume that we need to try various approaches and tools in future to find out which ones are working best. We also think about the option to organize some of our events completely virtual in future as described below.

FUTURE DEVELOPMENT

The OSG method is not limited to face-2-face meetings. It is conceivable that the same could also be completely carried out virtually. In a virtual world like second life or Qube all necessary options are already available today. Participants are free to move in such virtual worlds and when they are close enough they can even talk to each other. You can form groups and immediate content can be provided and presented in tables or flip charts.

What we need to change, is the time frame. No one wants to stay an entire day in a virtual world, but up to two hours at a time are quite possible. The complete sequence of OSG can also take place in small stages over several days or at selected times. What may appear to such scenarios has yet to be researched and developed. New technologies for virtual and augmented reality will appear soon on the market, such as the holo-lens from Microsoft or the oculus rift from Facebook. This will bring also new opportunities into play.

CONCLUSION

We designed the OSG as an interaction method and context for enabling a shared knowledge creation in inter- and transdisciplinary teams. We applied the OSG method in the framework of an annual one-day workshop where researchers from different institutions and various disciplines meet face to face to build interdisciplinary teams around new ideas. It was important to us to give participants the freedom to decide themselves with whom they want to work and on what. Hence, we applied Staes' *driven by passion* approach for our new interaction format. In the OSG, teams are built spontaneously based on shared interests. The first implementation of the OSG has confirmed the importance of this format's openness as participants started to build groups *across their own discipline* themselves. Furthermore, the outcomes of these group works in terms of project ideas and submissions highlighted the lasting effects of such an approach.

From the first implementation round we also learned how critical it is to guide participants through the OSG process. Even if the format focuses on self-organisation, most of the participants need some support and step-by-step instructions on how to collaborate and develop common ideas in a new way. Thus, we recommend to set up a clear agenda and to guide the audience through each of its points. Although the facilitation is reduced to a minimum in the OSG, the facilitator has to be present in the background.

This need of a reliable guidance by the facilitator might be even more critical for accompanying online interactions. As we plan to carry out this year's workshop by blending online and face to face communication, we need to devote time to get to know our audience: not each participant is familiar with online tools and how to use them. Also listening to a virtual keynote while sitting in the same room with other colleagues may feel strange to one or the other participant. Thus, it will be crucial to run the keynote without technical problems for avoiding frustration and inhibitions. To this end, a clear and stable connection and audio need to be guaranteed.

With this in mind, we aim to realize also completely online workshops in future. We are convinced that the OSG can be applied in a 100% virtual setting.

However, considering these 3 OSG applications presented in this paper, there are some limitations for each of them to keep in mind:

face to face

Face to face meetings require a lot of time and cause interruptions from the daily activities. For our annual face to face workshops researchers have to travel for each way more than half a day. Thus, face to face meetings can be rather ineffective. However, this kind of meetings make sense by all means especially if your audience is going to meet for the first time.

blended

If you decide to mix virtual and face to face formats you might need to be aware that your greatest challenge might be to motivate participants to take part in pre- and after event activities. We consider that giving participants as much flexibility as possible to contribute to these activities is one of the keys to their engagement.

online

For running a virtual workshop participants need to be familiar with concepts of e-collaboration. They need to feel capable to use the tools and technology. In addition, a fully virtual implementation might be not the first choice for participants who don't know each other yet. For this case a face to face meeting can be more effective, especially for establishing a first and personal contact.

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