We Like Each Other – Is This The Systemic Solution For The Survival Of Peer Mentoring Groups?

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Abstract

A recurring discussion at the annual international system dynamics conference (ISDC) is about the situation when young researchers, typically master students or PhD. students, decide to use system dynamics (SD) for their studies, while lacking fundamental SD support at their institutions. One option to get support is to attend and present at the ISDC, a valuable but short opportunity. An alternative for continued support is Peer Mentoring Groups (PMGs). The participation in a PMG can be valuable for presenting work to other system dynamicists and evaluating their work, building up a scientific network and expand horizons. But why is it that, even when people find PMG useful and want to participate, many groups die out? In this paper, we describe the dynamics of PMGs and investigate the system structures that create a situation where effort and commitment decrease with each meeting, resulting in a PMG to eventually fade away. We discuss potential possibilities on how to change these "undesirable" dynamics. That is, what needs to be done so that groups do not die out. Thereby, our intention is to provide support for other PMGs as a basis for discussion for future research needed in this area.

Keywords: Group Learning, Peer Mentoring Groups, SD Support

1. Introduction

A recurring discussion at the annual international system dynamics conference is about the situation when young researchers, in most cases master students or PhD. students, decide to use system dynamics for their studies, while simultaneously lacking fundamentals in system dynamics support at their institutions. Of course, there are a lot of sources available for the self-studying of what system dynamics is about, such as literature, various web-pages, online courses and tutorials. However, each of these sources lacks direct feedback. There are two ways to get direct feedback on your work, to get questions answered and get to know system dynamics professionals. One way is to attend the annual system dynamics conference and present your work there. In our opinion, this is a great opportunity, but a very costly (i.e., time and money). Moreover, getting feedback only once a year is usually not sufficient as student work is typically ongoing, required iterative feedback. Quality of feedback varies depending on the platform you are able to present your work (presentation, PhD. Colloquium, poster, etc.). A valuable alternative is seen in peer mentoring groups (PMGs) The participation in a PMG can be a highly valuable platform to present your work to other system dynamicists, evaluate work from other system dynamicists, build up a scientific network or to broaden your horizons. The benefits of peer mentoring are well known and widely advocated. PMGs composed of less experienced system dynamicists can also be a valuable construct, as even less experienced system dynamics practitioners can provide feedback, give advice, help solve problems or discuss relevant topics (Kemmis et al., 2014). A PMG is more than a learning resource suitable for less experienced system dynamicists. More experienced system dynamicists can also benefit from participating in a PMG by getting introduced to recent work, fresh ideas and new ways of solving problems.

As described above there are many benefits of peer mentoring that are well known and widely advocated. But why is it that, even when people find PMGs useful and want to take part in them, many groups die out? After an initial push, PMGs often find themselves in a spiral towards low commitment and sudden death. In this paper, we describe the dynamics of the death of PMGs and investigate the system structures that create a situation where effort and commitment decrease with each meeting, resulting a PMG to eventually fade away. Additionally, we discuss potential possibilities on how to change these “undesirable” dynamics. That is, what needs to be done so that groups do not die out. Therefore, our intention is to provide support for other PMGs as a basis for discussion and to foster future research needed this area.

2. We Like Each Other PMG

2.1. Founding of the “We Like Each Other” PMG

In this context, we would like to introduce our PMG called “We Like Each Other”. During the 2016 System Dynamics Society Conference in Delft two professional system dynamicists, Laura Black and David Andersen, generated an initial impetus for students to form PMGs. Reasons behind initiating PMGs were to help individuals complete system dynamics (SD) related projects, i.e., dissertation work and to decrease barriers for learning and obtaining resources. Collectively, our group had been or had become friends during the conference,

either that year or the year before (Delft 2016 and Cambridge 2015). Dialogue developed about PMGs and our group of friends decided a PMG had a perceived value. Our group consists of five members (Hector, Tomas, Joona, Sarah and Thomas) from different scientific backgrounds and different parts of the world.

Thomas is a PhD. student from Germany that will finish his studies in this year (2017). He studied Geology and is now working on the integration of bioenergy into the overall energy system of Germany using a system dynamics approach. He got to know SD during his master studies and decided to further investigate the use of SD for energy system analysis. Thomas joined the PMG because he knew two other members of the group from a former conference meeting and has no SD support at his research institute. Thomas expected promising discussions on SD work, mutual benefits while helping each other with SD related problems and to just have a vibrant place to talk and discuss.

Tomas is a PhD. student from the Czech Republic and plans to finish his PhD in late 2017 or early 2018. He has background in theoretical computer science and mathematics. He touched SD for the first time during his master studies and decided to study it more in depth in his PhD. Unfortunately, there is no study program devoted to SD at his university. He started as self-taught and then spent the autumn semester of 2016 at the University of Bergen, which was his first official SD training. He is currently working on a SD model of a professional service company. The goal is to build a model that can replicate a subset of usual problems and issues caused by miss management of a company - some kind of a "flight simulator". The main motivation for Tomas to participate in a PMG is that it is practically the only way to get feedback on his work from people working in the same field on daily basis. He is the only one in his department, who is studying and applying SD and his supervisor is not academically active in the field anymore.

Sarah has a background in economics (MSc from the University of Constance) and in SD (MSc from the University of Bergen). Her PhD. work is to build a SD model to simulate the "green" transition of the UK energy sector and its broader macroeconomic and socio-economic implications. In addition, her PhD. addresses a methodological question by comparing the policy recommendations drawn from a SD thesis model with a second modified model that integrates typical assumptions of economic theory (e.g. equilibrium assumption, perfectly informed and rational agents). Sarah joined the PMG to exchange knowledge about SD, learn more about research in various research areas and to extend her network in the SD community.

Hector has a background in Animal Science and Agriculture Science (MS from Sam Houston State University) and is completing a PhD. in Biological Sciences from South Dakota State University. His work addresses grassland conversion to cropland and the associated environmental consequences (erosion, hydrology and water quality) using SD. Hector values learning from the members of the PMG and desires to foster strong peer relationships in the SD society.

Joona has a background in Automation and Systems Technology (MSc from Aalto University). He was initially introduced to the SD field through an introductory course but his learning has mainly been self-taught ever since - due to limited offerings of SD courses in his

country. He is not the only one in his organization utilizing SD, yet his experiences are that knowledge sharing opportunities are quite few and far between. Hence, his main motivation for joining the PMG has been to learn from others, share resources, and satisfy his curiosity.

Upon attending the SD student chapter meeting additional group forming help and techniques to start a PMG were given, i.e., group names and a group leader to initiate meeting times. Our multidisciplinary group of PhD. students initiated meetings on August 15, 2016 and have since met at least twice a month. Topics have included peer review of dissertation models and published articles, sharing resources and teaching strategies. Once started our group gained synergy and individual ownership developed. Our PMG decided a unique and exciting challenge would be to explore the dynamics that exist in PMGs which end in death spirals and why ours has avoided fading away.

2.2. Reflection on past year

The PMG has met on a regular basis for approximately eight months using Google Hangouts. Work that we complemented since the 2016 ISDC includes the discussion of system dynamics papers and learning materials, peer review of our work and the development of a paper evaluating peer mentoring groups. We reviewed papers that were interesting to us and relevant to our research. Topics included methodology (e.g. how to properly document an SD model, model testing and calibration) or for teaching purposes of SD (e.g., SD introductory papers and useful models for teaching). Peer review of individual SD work was done by request (i.e., need of individuals). Group model building skills were utilized during the dynamic hypothesis formulation stage of this paper. This process stretched us as individuals to dialogue and articulate our mental model about the problem (i.e., PMG death). The interdisciplinary nature of our group meant that individuals were not experts in each other's research areas, which challenged us to explain our research in a simple and clear way.

Since the founding of the PMG "We Like Each Other" we have met approximately 20 times. Usually a meeting lasts between 60 to 90 minutes. The time spent on preparation for our meetings differs. It depends on who is going to present an issue or if we are working together on a model, etc. With this paper and our presentation at the ISDC we hope to provide a benefit to students in a similar position to ours.

2.3. Future plans

In order to keep momentum of the group, we have set one long term goal - submitting an article to a high impact journal about PMGs. We presented a poster during the ISDC 2017 to get some feedback. Besides this long term collective goal, we plan to continue working towards individual goals of each member - towards finishing PhD. studies and helping each other to resolve work related issues. To achieve this goal, we will continue to meet bi-weekly and devote a part of each meeting to presentations and discuss the work-in-progress of each member. We believe that having these partial short-term deadlines consisting of preparation for the meetings will help us to keep focused on our work and deliver it on time.

The main research question of our planned article is why some peer mentoring groups survive whilst others fade away. We will analyze this issue using SD and quantitative methods like surveys. Until now we developed a CLD and presented our work at the 2017 ISDC.

3. Conclusion

Our aim is to propose effective policies and recommend actions that would help PMGs survive by avoiding death spirals. PMGs as a form of a shared way of learning the SD methodology can greatly improve the learning environment, build up networks and make SD more accessible. PMGs are an important pillar of the System Dynamics Society and its multifaceted application in our world. Efforts toward increasing survival of PMGs will enrich the SD methodology and its impact as an approach to address complex challenges.

References

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