*Appendix*

**ScrumAdemia**

How can researchers use the project management method Scrum in science?A guide

Scrum was created in the context of software development and should not only enable agile work, but also ensure efficient exchange between developers and customers. Whether it is a dissertation, scientific article, or any other contribution in the scientific community, researchers produce other types of products and are usually their own “customers.” For this reason, a group of doctoral candidates from the German Institute for Global and Area Studies (GIGA) – Leibniz Institute for Global and Regional Studies created ScrumAdemia and drafted this overview of suggested adjustments. These guidelines should be understood as suggestions and recommendations. Any further adaptations are certainly possible.

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| ***Original Scrum Rules*** | ***ScrumAdemia Rules*** | |
| **Definition** | | |
| With the help of Scrum, software developers can efficiently process complex tasks. The method enables them to manufacture high-quality products. | With the help of ScrumAdemia, researchers can efficiently work on complex tasks. The method enables them to come up with high-quality research results in a creative and productive way. | |
| **Scrum Roles and Accountabilities** | | |
| **Developers**  Those members of the team who do the work on the product and choose on how much they will work on in a Sprint. | All team members are developers of their own dissertations. | |
| **Product Owner (PO)**  The team member who defines the contents of the Product and prioritizes these contents. | All team members are POs of their own dissertation. Supervisors are not included as POs. The Scrum Team may introduce “Tandems” that provide space to take up the different roles. | |
| **Scrum Master**  Teaches the Scrum framework to the team, moderates events, supports the team with techniques, and guards it from external distractions | The team members take turns to take up the role of the Scrum Master | |
| **Organization** | | |
| A Scrum team is made up of a PO (controls the work of the developers), a Scrum Master (monitors compliance with the Scrum rules, mediates between the customer, the PO, and the team), and a group of developers. | | A ScrumAdemia Team roughly consists of ten researchers with similar levels of experience. Each team member drives their own project (e.g., dissertation project, research article) hence is PO and Developer at the same time. The team members take turns taking on the role of Scrum Master. |
| At the heart of Scrum are Sprints—a time frame of maximum one month, during which partial goals are achieved and potentially deliverable products such as homepage functions or visualizations are produced. All Sprints within a development project should be of the same length. | | A duration of three weeks has proven to be beneficial for Sprints in the context of a PhD. They are used to achieving subgoals that are defined in detail. Products can be, for example, a draft for a paper or a book chapter, a precisely defined set of statistical analyses, or an envisaged number of qualitative interviews. |
| Recurring events in Scrum have the function of creating regularity and reducing meetings that go beyond the set rules to a minimum. | | Recurring events are adapted to the needs of ScrumAdemia research. |
| **Events** | | |
| **Sprint**  Sprints are fixed-length events of one month or less. A new Sprint starts immediately after the conclusion of the previous Sprint.  Sprints encompass all the work necessary to achieve the Product Goal, including Sprint Planning, Daily Scrums, Sprint Review, and Sprint Retrospective. | | **Academic Sprint**  Sprint is a time-boxed period of three weeks that includes Sprint Planning, Daily Scrums, Sprint Review, and Sprint Retrospective. Team members work to complete key parts of their respective research projects. |
| **Sprint planning**  The Scrum Team plans the tasks to accomplish and goals to achieve in the coming Sprint | | **Academic Sprint Planning**  The first day of each Sprint begins with a 45-minute planning meeting. Here team members name the products that they want to develop in the Sprint. Subtasks should take a maximum of one working day. The other team members provide feedback on feasibility. |
| **Daily Scrum**  Team members report on the previous day, define their daily goals, and name any challenges | | **Daily Scrum**  Each team member has two and a half minutes to report on the previous day, define daily goals, and identify any challenges. Absent team members take part by telephone, join in via video call, or report in writing. |
| **Sprint Review**  The team reflects on what was and what was not achieved within a Sprint. | | **Sprint Review & Retrospective**  Review and retrospective are merged in ScrumAdemia (2x 30 minutes on the last day of the Sprint). Each doctoral researcher has four minutes to report and get feedback on the Sprint.  The retrospective can be used to review and refine ScrumAdemia or to address common challenges via external support (e.g., senior researchers) or enhance peer exchange. For the latter, additional pedagogical methods such as intervision support feedback. |
| **Sprint Retrospective**  Exchange and reflection on the quality of teamwork. | |
| **Documentation**/**Collaboration** | | |
| The PO creates and maintains a list of all tasks (backlog). Intermediate goals that have to be achieved by the time the project is completed are documented here. | | With the help of online project-management tools/software (e.g., Asana, Phabricator, Tiger, Trello), Sprint goals and interim results are clearly documented for the entire team. Each team member creates their own backlog in which all products are listed up to the end of the project. |
| The PO creates a list of products and prioritizes them. At the beginning of each Sprint, the team selects those that it currently considers feasible. The team then defines the necessary work steps and records them in a backlog. | | With the help of a shared digital board (e.g., Asana, Phabricator, Tiger, Trello), the team records in lists what is currently being worked on and what still needs to be done. These lists are fed from the individual backlogs of all team members.  Review and Retrospectives are documented via visual collaboration platforms such as Miro. |
|  | | ScrumAdemia can make use of Tandems to enhance transparency and commitment to each other’s projects. Team members team up by two in rotation every one or two Sprints. Tandems meet regularly on demand to support each other in Sprint planning, product-backlog refinement, to take up the role of Scrum Master, or similar. |

**About the ScrumAdemia Team**

The Team was founded in November 2019 by nine doctoral researchers. While there was some fluctuation over the past two years—some team members left for personal and professional reasons, and new ones joined—the team currently consists of eight members, seven of which are authors of this paper. The team is quite diverse in many respects: members are enrolled at different universities but are all associated with the same institute via its Doctoral Programme, the main research infrastructure we are embedded in. Members differ regarding employment status too: some are scholarship-holders while others work in third party-funded projects or rely on short-term work opportunities. Regarding disciplines, all of us are social scientists pursuing dissertation projects in fields such as Anthropology, Economics, International Relations, Political Science, and Sociology. Most team members write their dissertations as monographs; two are working on cumulative dissertations. From the outset, team members have been at different stages of their doctoral projects. Some have been in the early phases of crafting the research design and planning fieldwork, others have already collected and analyzed data. Some had even been writing up the research results when they started to participate in ScrumAdemia.