SocioTechnical Walkthrough – A Collaborative, Human-Centered Design & Development Method for Projects
Workshop website   https://tinyurl.com/ktcyey2

Isa Jahnke*, So Mi Kim*, Joi Moore*, & Alexander Nolte**
*University of Missouri-Columbia
**University of Pittsburgh

Abstract.
The half-day workshop has two goals, understanding and application of the Sociotechnical-Walkthrough (STWT). The STWT is a participatory design and development method that supports collaborative work among educational designers, programmers and users (e.g., learners, teachers) to elicit workflows and communication processes while anticipating technology support. Participants will learn how to apply the STWT in different stages of a project—STWT can be used in the beginning of projects or during IT refinement to gain deeper understanding of specific functionalities.

1. Introduction
The goal of Human-Centered Design is to support technology integration from users' perspectives. To ensure design and development success, researchers and designers can pre-define environments, workflows, and future users (Herrmann, Loser, & Jahnke, 2007). However, real contexts of technology usage may differ from what is anticipated. This disconnection can lead to situations where the full potential of a technology is not realized due to different reasons, a) users cannot adopt the new IT system due to technical problems, b) the technology may not be flexible enough to meet diverse users' needs, c) socio-cultural contexts lead the technology adoption in a different direction from designers' intention (Orlikowski, 1992). The extent and quality of social and technical aspects of technology integration are crucial for future success of technology integration (Fischer & Herrmann, 2011). To address these issues, one promising approach is the Sociotechnical Walkthrough (STWT). The STWT is a bottom-up approach that aims at ensuring the best quality for technology integration with the highest user satisfaction.

2. SocioTechnical WalkThrough Method
SocioTechnical WalkThrough has been mostly applied to design IT systems in organizations. As the term suggests, it is a method that takes social and technical elements of IT into account. Whereas the technical elements can be designed and engineered, the social component involving participants and their interactions are often hard to be designed, at least not in the

same capacity as the technical component (Jahnke, 2016). In addition, the design of sociotechnical processes depends on the position of the observer as different people in different roles 'see' the system differently, thus what elements belong to the system or not can vary. We especially highlight the interplay between communicative human interaction (the Social), human-computer-interaction, and interaction between technical elements (the Technical) (Herrmann, 2006). These three components are interdependent and evolving as Herrmann states: "rules can be designed, but conventions evolve". Such a perspective of the system establishes the framework for designing human interactions, which are neither totally random nor predetermined. As such, Grudin (1988) summarizes difficulties in sociotechnical systems design: a) It is difficult to identify all the requirements of a system; b) users have diverse perspectives and aims that may not be clear to designers; c) it is a dynamic system with boundaries that change over time.

To address such difficulties, the STWT has been designed (Herrmann et al., 2004). The STWT is a tool and a method that aims at modeling human behavior and technologies in terms of activities (processes), resources (IT functionalities), and roles (users and groups in different job positions). The STWT follows a participatory design approach in which designers work together. This approach differs from existing methods in that designers and users model the processes together in graphical diagrams using SeeMe notation (Herrmann, 2006). In such a way, the team designs a new coherent whole in which organizational aspects, processes/workflows, and technology are aligned seamlessly.

The STWT intertwines focus groups interviews with modeling sessions at the same time. The STWT can be used at different stages in a project: a) It can be used to detect specific problems and needs in the current work processes. b) It can help designers to understand and model a future to-be process. c) The STWT can be used to evaluate a new system from a users' perspectives so that the STWT can become an important part of cyclic formative design process.

While conducting focus group interviews, a facilitator creates a model of the interviewees' responses. This model is simultaneously visualized in a graphical diagram (Prilla & Jahnke, 2012). During the interview, the participants are asked to reflect on whether or not their contributions are depicted accurately in the model. The main interview question may be: "Please tell us, how you do your every-day work?". Responses will be visualized using three basic elements: Roles (individual agents or social groups), Activities (workflows) and Entities (resources, tools, technologies).

In our proposed workshop, we will introduce the STWT and the SeeMe modeling notation (Herrmann, 2006). SeeMe allows flexibility with semi-structured notation elements. For example, the participant response, "I do it this way or the other way," can be modeled and graphically represented for two activities. After modeling, the visualized models can be used as a starting point to discuss what the technology will look like and how workflows will need to be adjusted if new tools are implemented.

3. Workshop Outline
The target audience for this half-day workshop includes researchers, designers, students, and practitioners in the field of learning and performance systems design. The workshop is

organized as two parts with a break between. Part 1 has three sessions. First, we start with an introduction where all participants introduce themselves and choose a 'symbol postcard' to explain what they think the STWT is.

Their postcards will be used again at the end. Participants will describe their projects or ideas to which they want to apply the STWT method. We expect to have 30 minutes which may vary depending on the numbers of participants. Second, we introduce participants to the STWT, the background, theoretical concepts, empirical studies, and sample projects in which we applied the method (Herrmann et al., 2004; Nolte & Herrmann, 2016). (30 minutes). Third, we start modeling together with participants using SeeMe (30 minutes). We have a break of 10-15 minutes.

Part 2 consists of a two-part group work. 3-5 participants together use SeeMe and model their projects. We assign roles to them such as users, interviewer and modeler. If the participants do not have ideas on what to model, we will simulate one of our previous projects (30 minutes, 3-5 teams). In the second part, the groups will share their experience (30 minutes). In the end, we have a Lessons-Learned session (15-20 minutes) including discussions of take-away messages. We wrap up the workshop with next steps, support, and further collaboration opportunities.

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