

## APPENDIX C. LAMS, “doKumaran” Tool, and Active Support System

### **Learning activity management system (LAMS)**

LAMS software is an online system that allows for planning of online digital lessons (“sequences”) using learning activities. LAMS has been an open resource learning design system since February 2005 (LAMS Foundation, 2004). LAMS belongs to the LAMS Foundation, a foundation based in Macquarie University, Australia, as part of the Macquarie E-learning Centre of Excellence

The user-friendliness of LAMS allows professors and course designers to use them without much complexity and hassle. The authoring page for the LAMS comprises several features, for example, “Mindmap”, “doKumaran” tool, and “Q&A”, that can be used to create the desired activity sequences. To create an activity sequence from scratch using LAMS, instructors can “drag and drop” the built-in features within LAMS. Then, they use the connecting arrows to organise the relevant features into a learning sequence (Figure 7 presents a sample screenshot of the authoring platform in LAMS). Students may then participate in learning activities embedded within the platform based on how these activities are sequentially designed as planned by the instructors. Alternatively, instructors can also upload a pre-designed activity sequence from an array of activity templates (sequences) into the workspace. These activity sequences have been pre-designed and saved in a publicly accessible open drive.

LAMS operate as a standalone system and/or can be integrated with other learning management systems or virtual learning environments such as Moodle and Blackboard. LAMS has been adapted as a platform for designing of inquiry-based learning activities (Levy, Aiyegbayo, & Little, 2009), as an environment for collaborative digital storytelling (Kordaki & Agelidou, 2010) or as an environment for blended learning in secondary education (Rossiou, 2012).

Britain (2004) reviewed and reported that LAMS is “the most comprehensive implementation of the concept of learning design available to date”. Early feedback from trials conducted in Australia and the United Kingdom suggested that LAMS enabled many instructors to move their teaching to an online teaching environment due to its highly supportive design for both instructors and students (Philip & Dalziel, 2004).

### **The “doKumaran” tool**

The “doKumaran” tool (dKT) is a new feature and integration tool within the LAMS that allows teachers to create powerful and collaborative learning designs on a “real-time” document (see Figure 7 for a sample screenshot). It allows students to collaborate on single or multiple documents in “real-time”, attaining a learning outcome while influencing each other’s thoughts. Each contributor’s input will be highlighted in different colours to differentiate the authors (see Figure 7a for a sample screenshot).

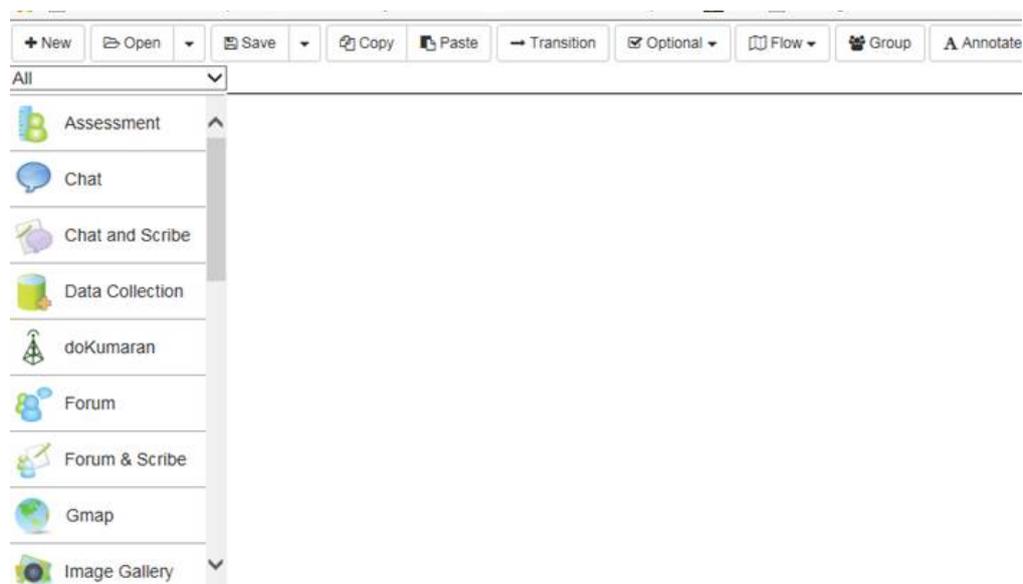


Figure 7. A screenshot of the “doKumaran” tool as part of the functionality feature embedded on the authoring platform of LAMS

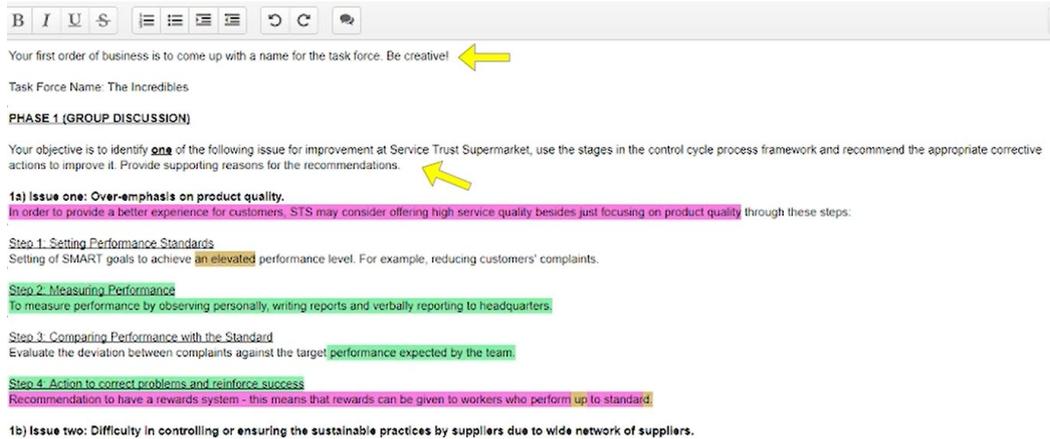


Figure 7a. A screenshot of capturing concurrent contributions highlighted in different colour for each contributor

**Activity support system.** Five types of activity sequences have been created on the dKT:

**1. Group/Instructor-centric activity sequence.** This is the activity sequence where students are able to work within their group for any tasks assigned (see Figure 8A, for a sample screenshot and Figure 8B for the process flow of the group/instructor-centric activity sequence). The activity sequence will be as follows:

- a) Group formation
- b) Selection of group leader and scribe
- c) Group works together to answer question(s) based on a case study
- d) Instructor reviews the work done in the activity with the class

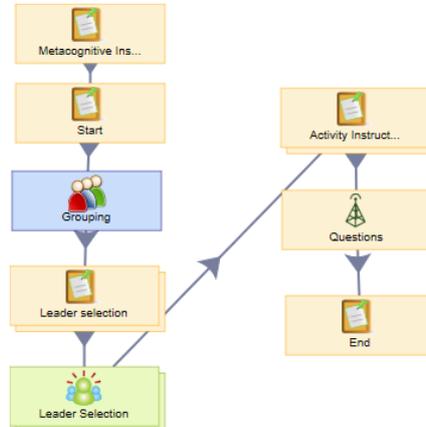


Figure 8A. Screenshot of a group/instructor-centric activity sequence

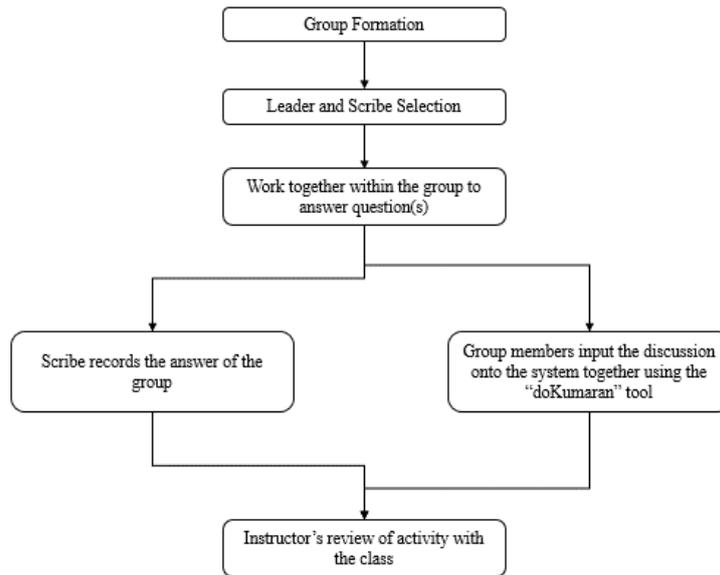


Figure 8B. Process flow of the group/instructor-centric activity sequence

**2. Peer review activity sequence.** With this activity sequence, students can work in their group first and their completed work would be viewed by another group for critical feedback. When the group being reviewed receives the comments and critiques, they may reflect on and edit their work accordingly (see Figure 9A for a sample screenshot and Figure 9B for the process flow of the peer-review activity sequence). The activity sequence will be as follows:

- Group formation
- Selection of group leader and scribe
- Group works together to answer questions based on a case study
- Instructor selects which group's work is to be evaluated by which group
- Group's work sent to the selected reviewing group for evaluation
- Evaluation of the other group's answer, with justifications.
- When all the groups in the class have completed their evaluations, all groups return to review the evaluations given
- As a group, assess the evaluation and incorporate or reject the suggestions, giving justifications for both
- Instructor reviews the work done in the activity with the class.

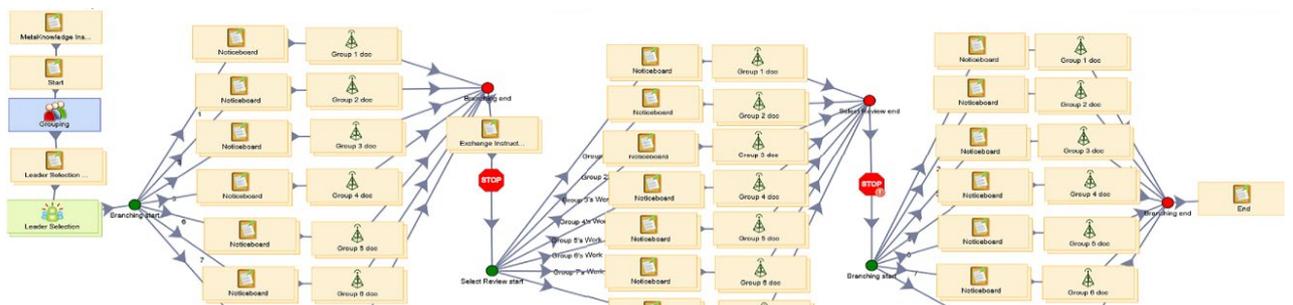


Figure 9A. Screenshot of a peer review

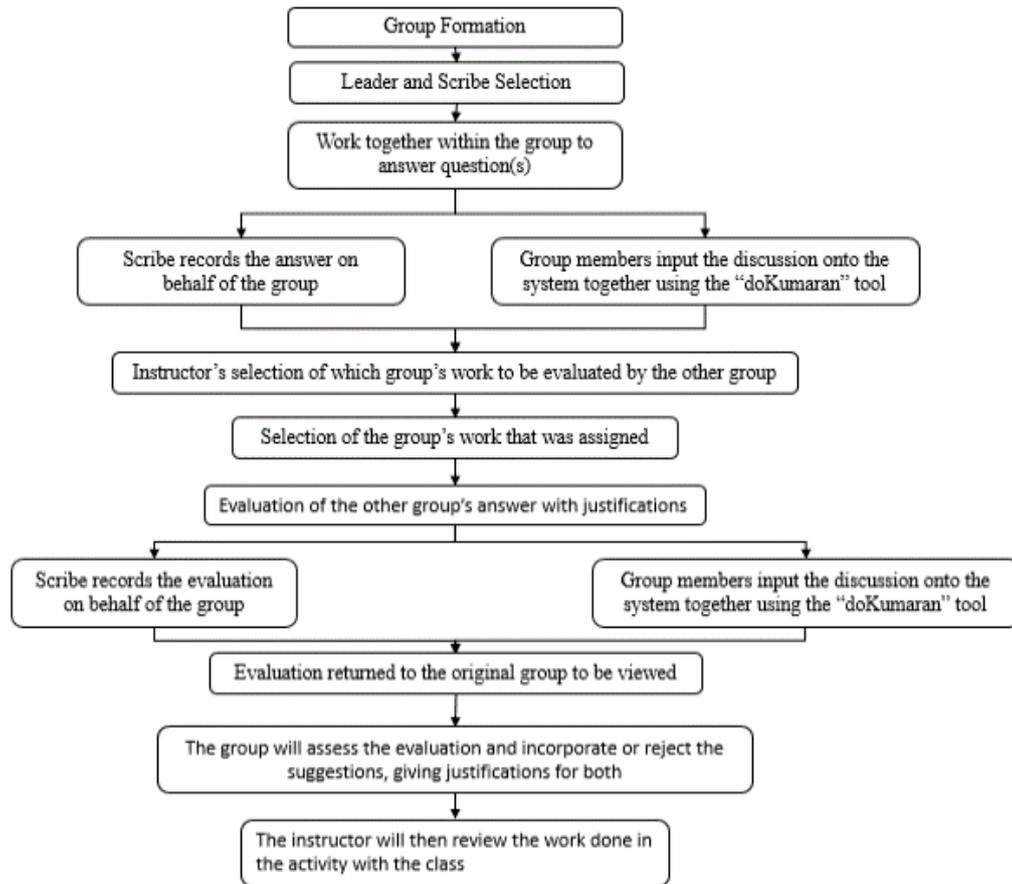


Figure 9B. Process flow of the peer review activity sequence

**3. Collaboration activity sequence.** This activity sequence allows different groups in a class to work together concurrently. For example, two groups can work on one document together at one time. Students will therefore be exposed to teamwork with bigger teams using this activity sequence (See Figure 10A for a sample screenshot and Figure 10B for the process flow of the collaboration activity sequence). The activity sequence is as follows:

- Group formation
- Selection of group leader and scribe
- Selection of topic to cover
- Collaboration with another group to answer question(s) based on a case study
- Instructor reviews the work done in the activity with the class.

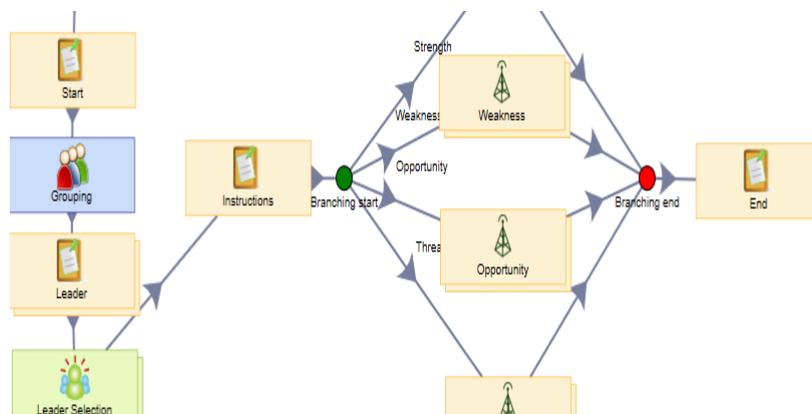


Figure 10A. A screenshot of a collaboration activity sequence

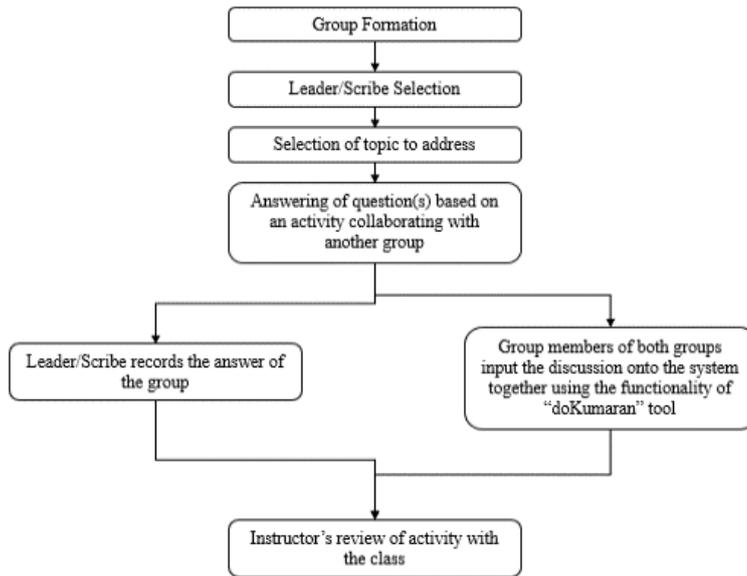


Figure 10B. Process flow of the collaboration activity sequence

**4. Jigsaw activity sequence:** When simulating tasks that can be broken down into stages, such as planning processes or employment cycles, this activity sequence allows different groups in the class to each take on a different stage of the task. After each group has worked on their assigned stage of the task, the class can work together on the whole task together. This would enable students to see the big picture, particularly the links and connectivity between each stage of the task. Thereafter, each group can critically reflect on the overall flow of the stages in order to fine-tune their work (see Figure 11A for a sample screenshot and Figure 11B for the process flow of the Jigsaw activity sequence). The activity sequence is as follows:

- a) Group formation
- b) Selection of group leader(s)
- c) Instructor assigns groups to each of the parts of the question
- d) Each group will answer the assigned parts of the question, based on a case study
- e) Instructor reviews the answers from the class.
- f) Using the instructor's feedback, work with the other groups to create a coherent answer connecting all parts of the question.
- g) Instructor reviews the work done by the class.

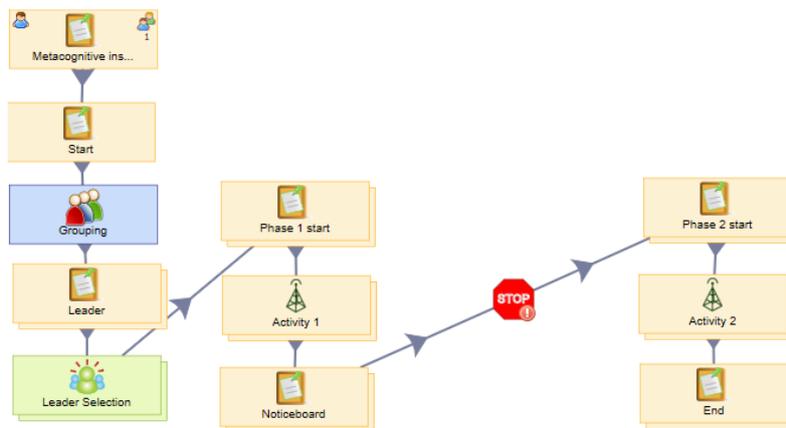


Figure 11A. Screenshot of a jigsaw activity sequence

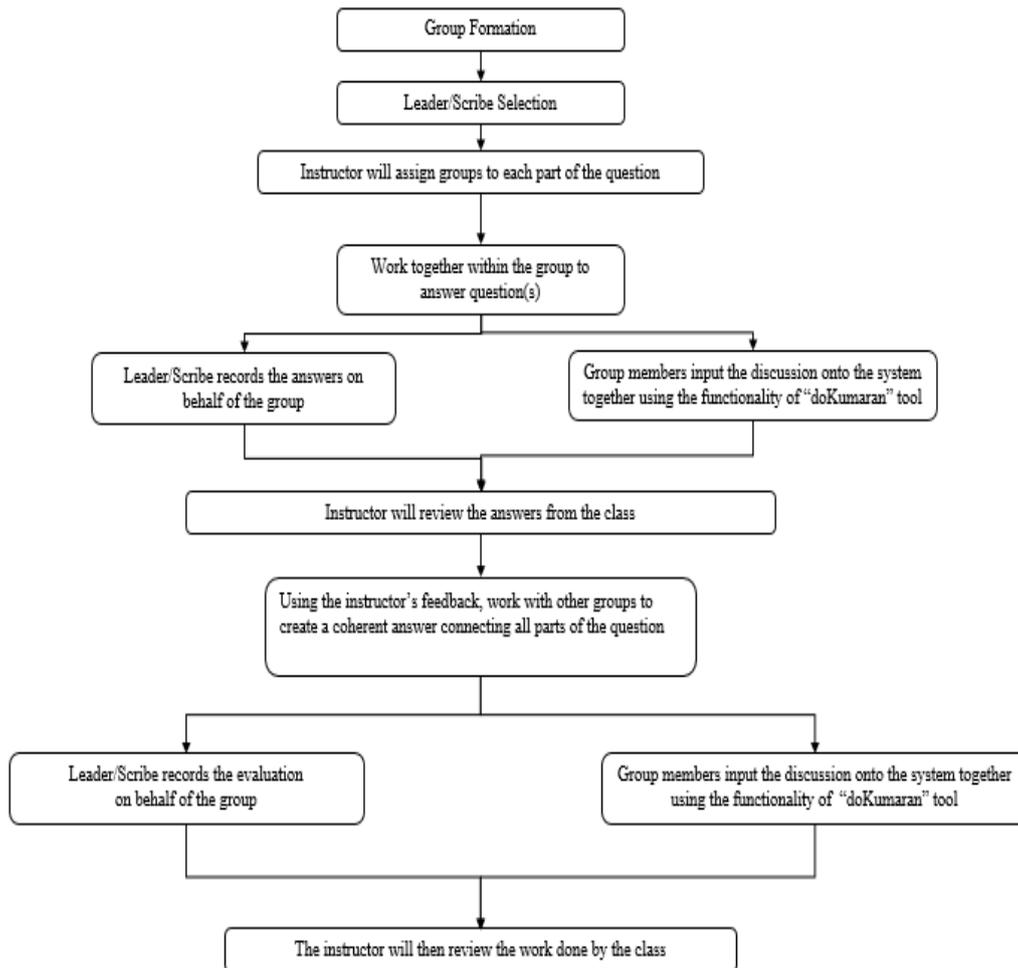


Figure 11B. Process flow of the Jigsaw activity sequence

**5. Unstructured activity sequence.** This activity sequence allows the class to be grouped differently. For example, the entire class may be split up into two teams, with more than one group of students in one team. With more members in one team, the team dynamics would be more diverse (see Figure 12A for a sample screenshot and Figure 12B for the process flow of the unstructured activity sequence). The activity sequence is as follows:

- a) Group formation
- b) Selection of group leader and scribe
- c) The class works together in groups to answer question(s) based on a case study
- d) Instructor reviews the work done in the activity with the class

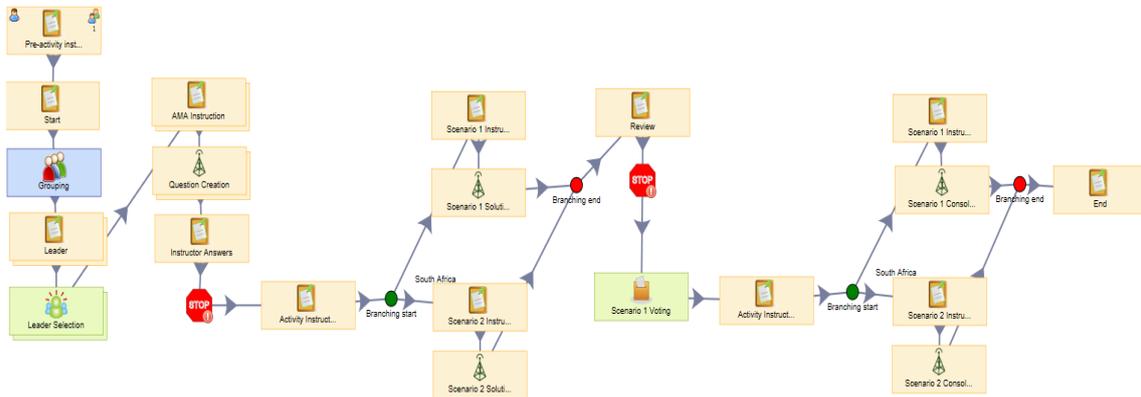


Figure 12A. Sequence in LAMS for unstructured activity sequence

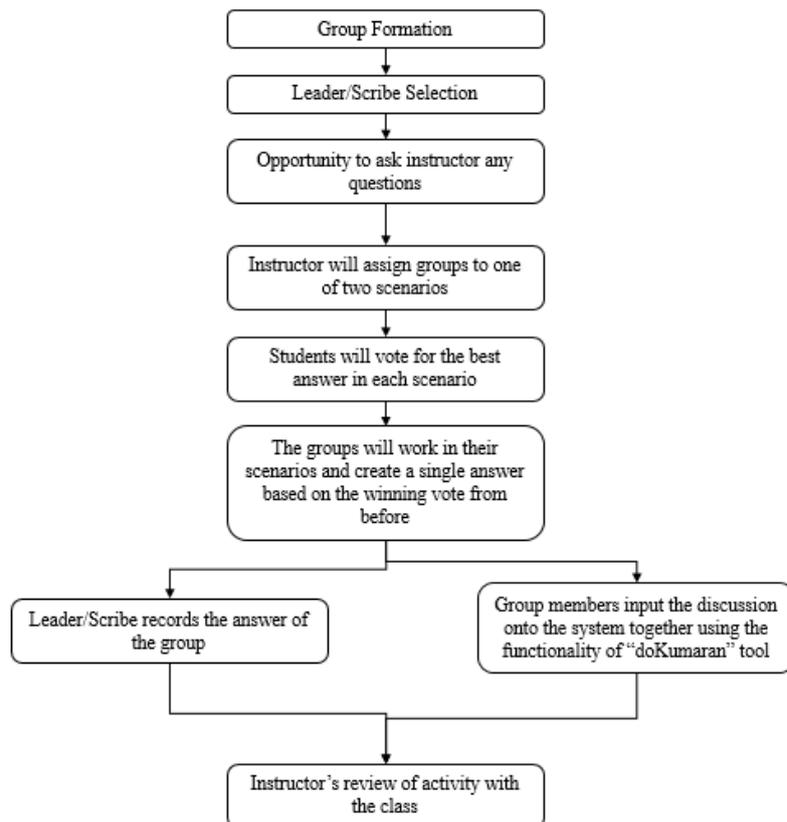


Figure 12B. Process flow of the unstructured activity sequence

Appendix E furnishes a URL link which includes video trailers on the five activity sequences of the scaffolding support system, including a value proposition of the “doKumaran” tool and the technical description on the functionality of “doKumaran” tool.