# Interactive Sequential Flowcharts: An Online Innovation for Learning through Mind maps

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**Introduction**: Both teachers and students use computers and mobile phones to communicate, learn, access and dissipate information and knowledge. The integration of new techniques proved successful even when using non-digital, but interactive means including flipped teaching. In addition, different teaching techniques that have emerged from the integration of technology in education such as gamification stimulate both sides of the brain and enhance active learning. Nowadays, learners and facilitator are almost always connected to some social media network, hence it would be worthy if this is exploited for the sake of learning. In order to establish a more interactive learning environment and enable students to learn easier and faster and grasp the general concept of a subject, we have designed and prepared mind map flowcharts for students' preparation of class. Therefore, the desired class outcome is achieved by having students study the topic in pre-prepared mind map sequential flowcharts and reserve the actual class time for flipped-class technique, and thus the class is used for active learning such as discussions and speculations, assumptions, analyzing and hence synthesizing ideas. This novel technique is intended for the initiation of a local campaign to encourage lecturers to utilizing innovative methods making students' learning process a free-flowing process and the methodology they adopt is conducive to the high level of modern learning targets.

**Methods**: Convenience sampling questionnaire was answered by teacher and students to measure their satisfaction with the currently used classical method of teaching/learning and their urgency of need for the introduction of new digitally based methods. The VB.NET language was used to prepare flowcharts that are friendly to fill and give us the ability to prepare a topic in a sequential manner. The Black box testing method was used to test the system for faults and errors.

**Results**: At the current stage all the obtained results are related to the software preparation. Learning experience trials would be our next stage of the project. The results of the first stage can be recapitulated in the testing of the following: successful online feedback for sign up of new users (teacher and student levels), successful online feedback for sign in for teachers and students, successful online feedback on addition or deletion of educational material for teachers, both in flow charts and other complimentary material and successful online feedback on students queries and teachers answers

**Conclusions**: If newly introduced learning/learning facilitation methods help deliver course objectives they are educational innovations. Even better, if these methods offer teachers a topic delivering design in networks of linked ideas, and if they give students the tools and experiences that spur an innovative mindset to add rationale thinking knowledgeably and self-sufficiently, creativity promotion can be one goal of learning. Experience from around the world proved that the use of modern teaching techniques results in making learning interesting and transforming teaching into a more pleasant experience of facilitation. The introduced new system in this abstract is believed to deliver the above described needs, and our upcoming mission is to start learning trials using the described system. Furthermore, the software will be enhanced to include students' chat rooms for scientific discussions, and its integration into a more comprehensive educational system is being considered.

**Key Words**: Mind maps, Sequential flowcharts, gamification