There is growing emphasis on preparing students for future learning by equipping them with 21st century competencies. One such critical competency is about idea generation and collaboration. Individuals in a group do not automatically contribute ideas, collaborate and act as a group. Acknowledging that technological and pedagogical support for idea generation and collaboration learning is far behind the expanding need, in the past 7 years NIE researchers have developed networked technologies and explored their potentials and effective pedagogies in enhancing Mathematics, Science, Chinese and English learning in Singapore schools. In this talk I am going to share my design-based research on developing and implementing ICT tools such as GroupScribbles (GS) and AppleTree which enable collaborative generation, collection, and aggregation of ideas of students for knowledge improvement and deeper learning in real classrooms. GroupScribbles provides a shared space based upon individual effort and social sharing of notes in graphical and textual form. AppleTree supports both the enactment and assessment of collaborative learning by providing real time multi-facet assessment to scaffold students' individual and group work. Both projects seek to design interactive technologies and pedagogies to support student centered learning by harnessing students’ collective intelligence.