1. Introduction
Many of the existing music performance systems rely heavily on new and sophisticated interfaces to function. With the explosive development of digital technology, re-writing of applications with the substitution of new interfaces is unavoidable. While generative techniques can provide creative and sophisticated transformative outcomes, they are underused by existing interactive music applications. In view of this, a balance should be made on one hand to enhance interactive experience and explore creativity on the other hand. There is, however, lack of theoretical framework bridging the gap between designing user interactions and generative creativity within music performance systems.

2. Proposition
This research proposes a theoretical framework which provides a configurable and adaptable solution to supporting interactive music performance through a mechanism of adjusting the interactive and generative intensity of the system. Both generative and interactive techniques are incorporated through the implementation of an interactive music performance system, in order to enhance interactivity and user experiences by extending the engagement of the users with the system at cognitive and computational levels. This framework also provides sharable components so that both musicians/dancers can cooperate and exchange knowledge with the system in the creative process.

In order to support adaptive configuration, there is a slide bar in each of the proposed design model in Figure 1(a)&(b) to adjust the intensity of interaction and generation. The slide bar can go in either direction, going to the right increases the space for interaction, so the system will be interactive oriented. Going to the left gives rise to generative oriented design.
3. Methodology

In order to study the traditional practice and culture of performing dances and music of a group of people in depth, case study is selected as a method to have a closer examination of the music and dance performances of Yi minority group of Yunnan Province in China. Ethnographic field trip was conducted to visit a village called Ke Yi Village where AXi people of Yi Minority live, in the east of Kunming in Yunnan Province. Observation, field notes, video and sound recordings of the performances are major tools to understand the ethnic culture. A number of system prototypes to be used for the experiments were implemented with both interactive and generative techniques and the music resulted from the systems bears some resemblance to the Yi music with ethnic elements.

4. Results and Future Work

The experiments were conducted in Ke Yi Village with two groups: adult villagers aged from 28 to 85 and primary students aged from 10 to 12. They were given the generative piece to listen to and the interactive piece to interact with. Most of the primary students were curious and positive towards the interactive experience with the system while many villagers from the adult group found it difficult to get used to it. In the adult group, there are 30% more people think that the interactive performance is good, while there are 40% more primary students think that the generative performance is very good. In fact, the system is adaptive to the users’ preferences. For future work, a close resemblance to the ethnic tradition is easier to get acceptance. As children and younger generation are more positive towards new kind of interactive experience, there is potential to develop products offering such kind of experience for educational purpose.

References