Teacher training program of Experiments and Demonstrations in High School physics class

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APEJ (Association for Physics Education of Japan) has been developing a systematic teacher-training program to encourage physics teachers to practice experiments and demonstrations in their classes. Actual sessions of the program have been held in Tokyo every summer since 2008. The sessions are conducted by voluntary teachers. They work as instructors, and offer their experiences in teaching and the results of their research activities. Almost all the participants said that these sessions were very useful and the discussions with the instructors were very fruitful.

In this session instructors prepare six (in half-a-day session) or ten (in all-day session) workshops on experimental topics, such as grating, standing wave, conservation of mechanical energy, and so on. These experimental workshops last 40 minutes and are performed six or ten times. Consequently all the participants can join in all workshops and the instructors can talk to all of them. The participants can gain useful knowledge and skills from practical instructions, while the instructors can also improve their knowledge and skills by talking to the participants in the session. The participants realize that fundamental experiments and demonstrations are very important for high school physics teaching and that they are not as difficult to perform as they would imagine.

Some regional research groups of physics teachers have become interested in the activity of APEJ and we have started working together to organize the program. In 2012, these sessions were held in 6 cities (Tokyo, Fukuoka, Niigata, Sapporo, Osaka, and Nagasaki). APEJ hopes that these sessions will be held everywhere in Japan.

One of the participants gave us such a comment; "Let sleeping instruments in the cabinet wake up and work."