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# Transmitter Assisted Learning: New Application in Teaching and Coaching Sports Skill

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## **Preamble**

*The evidence from research on teachers and students in physical education showed that student teachers can improve their teaching skills if they get adequate practice and supervision. Furthermore, student-teachers in physical education can learn to provide specific skill feedback which has been shown to be important in sports skill teaching and learning. In pedagogical research in the mid and late 1990s, we came across the use of Transmitter Assisted Learning (TAL) in teacher training. TAL is a system using small FM transmitters and receivers to link lecturing staff, supervisors or coaches to their students. We believed this technique can be useful in helping student-teachers to enhance their instructional skills such as the delivery of feedback by enabling a supervisor or a fellow peer to discreetly communicate with a student-teacher. From our experience in teacher education training and supervision, we saw potential of this technique for situated learning of both classroom management and instructional techniques.*

## **Abstract**

*TAL is a system using small FM transmitters and receivers to link novices (student-teachers) and experts in authentic learning contexts. This technique has been found to be useful in supervising student-teachers on practicum (Giebelhaus, 1994), teaching school counselors in interview situations (Gordon, Lane & Hall, 1998) and early childhood teachers in mock employment interviews (White & Gordon, 2000). In the sports education context, Kahan (2002) used this device, which is termed as bug-in-the-ear device, for communication between a student-teacher and the cooperating teacher during physical education classes. He concluded that the device was a valuable tool for use in supervision. However, apart from his work, there is little evidence that such wireless communication has been applied in the physical education and sports skill pedagogy area. From our experience in teacher education training and supervision, we saw the*

*potential of this technique for situated learning of both classroom management and instructional techniques in pre-service teacher training programmes. Specifically, the enhancement of teaching or coaching for student-teachers can be achieved through micro-teaching and authentic teaching practice in schools. The teacher educator or sports skill instructor can directly communicate with the student-teacher through a linkage by transmitter and receiver while the student-teacher can simultaneously teach and receive help. The teacher educator or sports skill instructor can help the student-teacher to deliver quality teaching by providing immediate and focused feedback about their teaching classroom management skills and sports skill.*

## **Keywords**

Transmitter Assisted Learning, teaching practice, Physical Education student-teachers

## **Introduction**

TAL is a system using small FM transmitters and receivers to link lecturing staff, supervisors or coaches to their students. This technique has been found to be useful in the student teaching supervision (Giebelhaus, 1994), teaching of school counselors (Gordon, Lane & Hall, 1998) and early childhood teachers in interview skills (White & Gordon, 2000). However, there is little evidence that it has been applied in the physical education pedagogy area in pre-service teacher training classes. From our experience in teacher education training and supervision, we saw potential of this technique for situated learning of both classroom management and instructional techniques. Specifically, enhancement of teaching or coaching for performance among student-teachers can be achieved during on-campus micro-teaching situations as well as authentic teaching practice in schools. The university supervisor can directly communicate with the student-teacher through a linkage by transmitter and receiver. At the same time, the student can receive help from the

supervisor whilst engaged in the process of managing classes or teaching. Alternately, the communication could be between peers; for example, one student-teacher could be observing or giving feedback to another in small-group teaching situations. The supervisor or fellow classmate can help the student-teacher to deliver quality teaching by providing immediate specific feedback during the lesson or coaching situations about sports skill learning and classroom management skills. Thus, the feedback is more meaningful to the student-teacher. Another possible advantage for this technique is that a safe sports skill teaching environment can be ensured. If the supervising lecturer or observing peer realises a possible hazardous situation, this message can be discreetly communicated to the student-teacher to take immediate action.

## Aims and Objectives

The project was to:

1. explore a new approach in teaching, coaching and learning by using the TAL for teaching sports skill; and
2. apply the technique as a form of action learning project so that reflections and feedback about the technique could be gathered for adjustment in the second phase of application.

Long-term significance of the study is:

1. if found to be effective in enhancing teaching and learning, to promote TAL for physical education and sports pedagogy area; and
2. to apply this technique in other areas for learning such as preparing students in interview skills for employment in teaching, fitness or recreational settings.

## Methodology

### *Technological Device*

We bought six sets of FM transmitters and receivers of Yaesu Portable Radio Model (VX-400V) and applied for a mobile radio system license (Note: at the time of doing this project, The Telecommunications Authority of the Hong Kong Government required all licensing for walkie-talkie devices).

### *Courses and Classes*

Four practical sports skill classes for the Physical Education and Recreation

Management Programme were involved. These sports skill classes included two sessions of Gymnastics I and two sessions of Basketball. As sports skill classes contain coaching elements, instructors had the opportunity to adopt this technique during micro-teaching situations when the students took turns to act as student-teacher for practice teaching of that particular sports skill.

Apart for practical sports skill classes, this technique was also applied in two cohorts in the Teaching Physical Education in Schools course. Help was directed from an instructor or a fellow classmate to the student-teacher. Most sports skill situations involved complex interactions and as such were not fully predictable and do not always follow to plan. Therefore, this technique has the advantage of creating situated learning for student-teacher as they are faced with decision-making in the live context. The supervising lecturer or peer can give direct support to the student-teacher in teaching classes. Another possible advantage for this technique is that a safe sports skill teaching environment can be ensured.

### *Familiarisation Training*

Prior to the use of equipment, instructors and student-teachers had a familiarisation briefing with the system in the use of the earphone, microphone, transmitter and receiver. Procedures from the instructional training video *Transmitter Assisted Learning: Supported Practice in Authentic Settings* developed by Gordon, Lane and Hall (1998)

were followed. Instructors and student-teachers were told to speak softly, positively when giving prompts for encouragement, reinforcing feedback or corrective feedback so that a supportive tone was delivered. The observers learned to adjust their voice quality, timing and language.

TAL technique was first applied involving one-way communication from the instructor to the student-teacher. Then, a new format was derived involving students' triad during micro-teaching situations: one receiver, one talker and one observer. The receiver was the student-teacher. The talker gave verbal feedback to the receiver. The observer sat next to the talker and wrote comments about the quality of feedback given by the talker. In the next cycle, a rotation of roles was done. The observer became the talker and the receiver became the observer while the talker took on the receiver role. In the following cycles, the same pattern of rotation of roles was repeated. Throughout the whole process, the one-way communication mode was kept.

### **Evaluation**

Evaluation of applying TAL in micro-teaching sports skill was conducted in the form of survey and interview. In the survey, the observer of the students' triad recorded the information about time line, task descriptions and teaching cues given by the talker during micro-teaching situation. At the end of a class session involving micro-teaching, each student-teacher was interviewed about the usefulness of the

technique, satisfaction rating and skills developed by the technique. Discussion sessions among student-teachers and sports skill instructor were held.

### **Results/Findings**

Twelve student-teachers of the *Teaching Physical Education in Schools* course were interviewed and they all commented that the technique was helpful in micro-teaching situations. TAL technique was particularly useful in enhancing teaching effectiveness when the talker was more experienced than the receiver in sports skill. In this case, the talker could often give specific feedback to the peer. On the other hand, student-teachers realised the timing of feedback delivery was crucial. If a talker gave feedback at a wrong time, the feedback itself might have become a hindrance to teaching. Another technical problem was that switching on the microphone for communication made a disturbing sound that was heard by the receiver. Furthermore, the quality of feedback depended on how experienced the talker was in the specific sports skill that the student-teacher was conducting. The more experienced the talker was in the skill, the more confident and specific the talker was in giving feedback. However, early in the project, student-teachers reported that they were distracted by the talker. Therefore, they were advised not to have abrupt stop in action when they heard the talker's voice. Also, some students were reluctant to give feedback which might have perceived by them as criticising the fellow classmate. After further practice

in micro-teaching situations, student-teachers seemed to be more willing to try the TAL technology. Furthermore, in the earlier phase of applying TAL, student-teachers felt more comfortable if the sports skill instructor gave feedback instead of their peers. In the later phase of using TAL, student-teachers felt comfortable in having peers giving feedback. They further commented that the formation of the students' triad could have affected the group harmony because the three student-teachers had to be comfortable in working together.

### Discussion

The TAL technique was perceived to be useful in sports skill micro-teaching situations. In particular, a student-teacher could be discreetly advised or alerted about potential danger in the teaching environment so that he/she could rectify the problem immediately. For example, in a gymnastics class, the student-teacher could respond if necessary and could rectify an unsafe situation.

The implications for future pedagogic practice are:

1. to incorporate the technique into coaching situations;
2. to use in supervision of actual teaching practice in schools; and
3. to apply it in an action learning project aiming at assessing the effectiveness of skill learning of students.

### Enhancement on Teaching and Learning

Students understood how to be more effective in teaching sports skill and were able to put this technique into action through

1. getting external help in the form of feedback on skill techniques and skill correction; and
2. managing the learning environment, particularly a greater awareness of unsafe situations and advice about how to react.

### Limitations/Difficulties

Students or instructors had to be familiar with the techniques of being a talker (when to talk, how much to talk, how soft or how often to talk). If the talker gave feedback at the wrong timing (at the time the receiver was addressing the class), the receiver might be interrupted and focus on message relayed in his/her ear. At an inappropriate time, he/she might interrupt the thought of the tester or divert his/her attention.

### Conclusion

In the implementation of the equipment during micro-teaching situations of sports skill, this project confirmed the usefulness of transmitter assisted learning technique to be applied in sports skill learning and teaching.

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