The Effective Use of Guidance Techniques in Teaching Racquet Sports

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A number of variables must be controlled in order to optimize the teaching of motor skills. Several examples of these variables are (1) the type of information to provide the learner, (2) how often to provide the information, (3) the appropriate level of precision of the feedback, (4) how to organize practices effectively, and (5) how to set up an effective practice/rest distribution. Also of interest in optimizing skill learning is the effective use of guidance techniques. Guidance is the process whereby a student is restricted to the appropriate movement pattern either through the use of physical barriers or hands-on manipulation by the teacher or coach.

Guided learning has been called error-free learning and response prompting (Singer & Pease, 1976), or a presentation trial (Newell, Morris, & Scully, 1985), and has often been subdivided into two categories. The first has been called forced-response (Macrae & Holding, 1965) or active or physical guidance. With this type of guidance, the learner's limbs or body is passively transported through the appropriate movement pattern by the guiding mechanism or by the teacher. The other category has been called response restriction or passive guidance. This type of guidance allows the learner to perform a movement, but only within the limits set by the training device or a preset physical barrier.

Multiple studies (Holding & Macrae, 1964; Macrae & Holding, 1965; Singer & Pease, 1976; Singer & Gaines, 1975) have shown noticeable positive effects of guidance on the performance of various tasks. Schmidt (1988) reviewed a group of studies examining guidance and, based on the findings of these studies, suggested several tentative generalizations about the effects of guidance on learning. The first generalization was that guidance may be the most effective in early practice. He stated that "much of the apparent contribution of guidance procedures is involved in getting the response 'into the ballpark' so that later refinements can be made" (p. 420). He also suggested that guidance techniques may reduce the complexity of the information provided by the stimulus by giving a preview of what is to happen in the task. Finally, the majority of these studies have shown that guidance is a performance variable and not a learning variable. Tests that are historically used in motor learning research to determine whether learning had occurred indicated that guidance techniques depressed learning when compared to trial-and-error practice. In early research, Annett (1959) suggested that practicing only the correct response deprives the learner of the opportunity to sample the range of possible responses. It is also the consensus of a number of researchers (Salmoni, Schmidt, & Walter 1984; Winstein & Schmidt 1990) that receiving feedback on every trial or using a high, relative frequency of trials results in a dependency upon the feedback, thus learners fail to solve problems on their own and develop their own internal learning strategies. They found that a technique called fading, whereby the feedback or guidance was presented on a regular basis at first and then gradually withdrawn, could greatly alleviate this problem. Based on Schmidt's (1991) guidance hypothesis, which stated that heavily guided practice would result in poorer learning when compared to trial-and-error learning, Winstein, Pohl, and Lewthwaite (1994) designed a study to examine the effects of heavily guided practice versus the use of the fade technique described in the feedback literature. These researchers found that the apparently detrimental effects of heavily guided practice can indeed be offset if guidance is provided less frequently, specifically using the fade technique.

Another possible use for guidance may be in the attempt to correct preexisting inappropriate motor programs. The research in this area is minimal at best and suggests that the testing for results is difficult to accomplish.

The purpose of this article is to provide examples of equipment, both manufactured and homemade, that can be used to restrict the learner to the appropriate movement pattern. Examining potential problems typically experienced when using guidance equipment and what can be done to counter these problems effectively will also be discussed. Examples of applicable equipment and barriers will be presented for the sports of tennis, badminton, and racquetball.

Guidance in Tennis

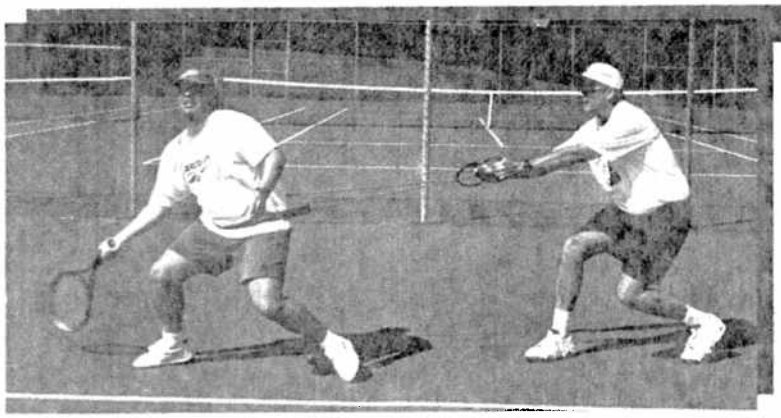
Various companies manufacture equipment and barriers used to restrict movements in the sport of tennis. However, many can be constructed by teachers and coaches based on the particular needs of their students. Some of the more common guidance practices and pieces of equipment for tennis follow.

Walls and Fences

Ask students to stand with their heels against the back fence and use the fence as a barrier to prevent an overly large backswing on the volley. The teacher or coach can also build an easily transportable wall that can be placed anywhere on the court to act as a physical barrier.

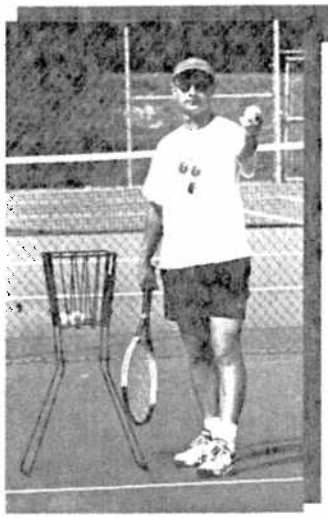
Targets, Cones, and the Rope Zone

As students progress, one of the goals of the instructor is to advance them to the point where they are hitting for specific areas on the tennis court. This can be enhanced by using targets and cones that can be constructed from various materials or purchased from a number of companies. Place the targets and cones on various parts of the court and use them as aiming points. The instructor can also section off areas of the court using ropes that connect to the net, making target areas on any or all parts of the court. This is known as the rope zone.



Power Bands

In an attempt to encourage players to recover more rapidly after making contact with the ball and completing a stroke, an instructor can attach rubber tubing around the stomach of the player. While holding both ends of the tubing from a safe distance, the instructor allows the player to extend to a point of tension when hitting and then pulls back rapidly to guide the player back to the initial position more rapidly than would be done without the rubber tubing.



The Net

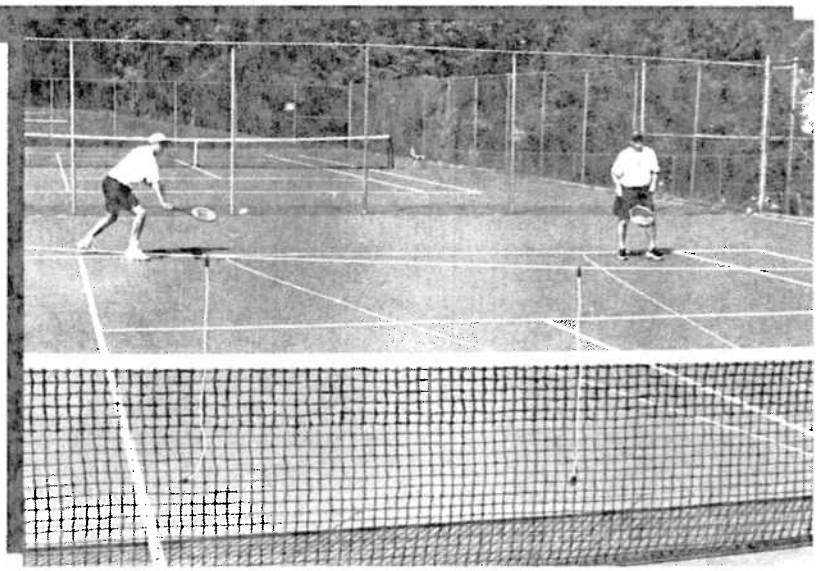
The net can act as a barrier when teaching the serve. If the teacher is trying to teach the classic pendulum backswing, students prepare to serve towards the doubles sideline by standing in the normal, ready position with the front of their shoes touching the net. The net will prevent the backswing from moving too far out from the body. The teacher can also use ballhoppers (at left in photo) placed in advantageous positions to accomplish the same mechanics when serving from the baseline.

Teach Feet

When working with young children or others who are having problems stepping to the correct place, the instructor can place pieces of colored rubber or cardboard, constructed to look like feet, in the appropriate starting and finishing positions. Alternatively, the court can be marked with tape or chalk. Teach feet also seem to have a motivational property, especially for children.

The Air Zone

One of the goals of every tennis player is to have a safe margin of error when hitting the ball over the net. An easy way to provide guidance for this skill is to string a rope across the net at varying heights and have the player attempt to hit over the rope. The Air Zone is a product manufactured for this purpose. It consists of two telescoping fiber-glass poles that can be attached to two netposts on the tennis courts. By raising or lowering these poles, the instructor can establish different heights to clear when stroking the tennis ball. This product also provides smaller elastic ropes that can be attached between the net and the upper rope to establish air zones that creates target spaces in order to practice cross-court or down-the-line passing shots.



Power Groove

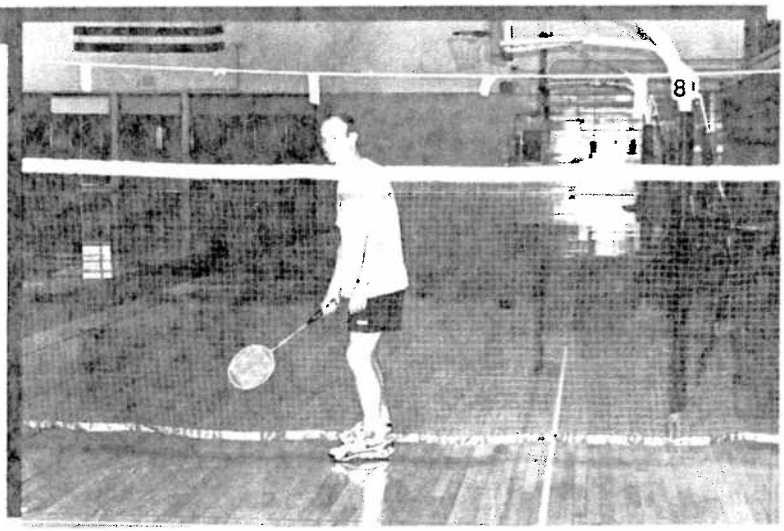
The Power Groove is a combination of elastic belts and Velcro pads constructed to allow the teacher or coach to restrict arm movements in order to prevent an overly large backswing on the volleys. The central belt wraps around the body just below the chest and attaches using Velcro. Two elastic straps are then placed around the arms midway between the elbow and shoulder and are attached to the central belt.

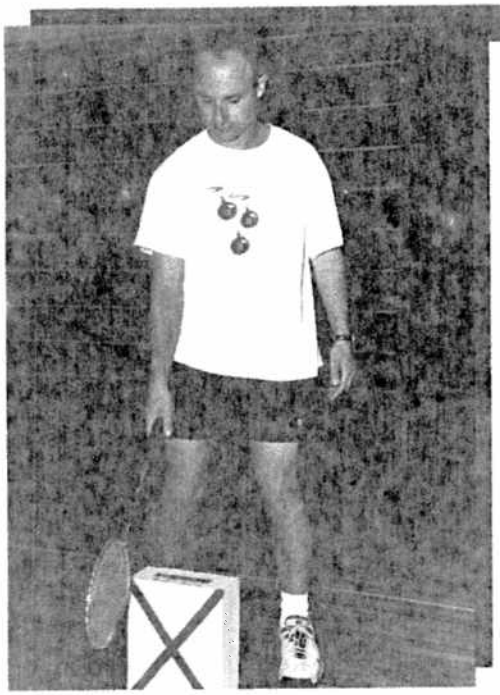
Guidance in Badminton

Because badminton is similar to tennis, many of the guidance techniques used in tennis can be adapted to badminton. Some specific guidance techniques for badminton follow.

Rope and String

Use a rope or a string, stretched across the net from netpost to netpost at different heights, in order to keep the shuttlecock below the string for low, short serves, hairpins, and drives. When placed at a height of approximately 15 feet, the string can be used for successful clears if the shuttlecock is hit above the string. Wood, fiberglass, or plastic net pole extensions will be needed for all string attachments.





Box

A small box can be placed on the court to prevent the use of a total underhand swing on underhand serves and high clears. The box is placed on the floor next to the student, who stands sideways to the net. The box forces the student to hit around the barrier, thus creating a sidearm underhand shot as opposed to a totally underhand shot. This technique also increases lever arm length and gives more power to the hitter.

Sheet

String a sheet between four standards, each approximately seven feet high. The sheet should be stretched taut and parallel to the floor. This creates an overhead barrier to keep drive shots parallel to the floor and close to the top of the net. If the drive shot goes up rather than parallel, the shuttlecock will hit the sheet.

Duck-Bill Blinders

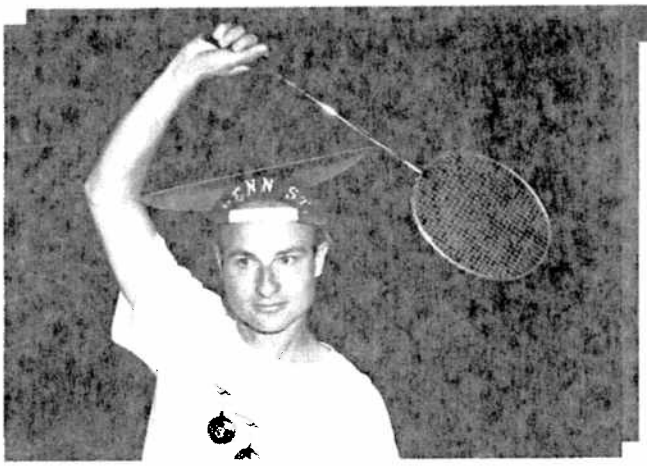
The teacher can construct duck-bill blinders with the use of head bands and cardboard. The blinders are placed under the eyes to prevent the student from seeing the court. Duck-bill blinders can accentuate court sense and court awareness by preventing the student from seeing the actual court lines and his or her own location with regard to these lines. The student gains court awareness by learning distances from the net and from the ends of the court. This resembles game play. The blinders also help focus concentration on the shuttlecock itself, since there are fewer court distractions. The instructor can also purchase basketball posies, which are worn around the head and have a plastic projection below the eyes to force the student to dribble the basketball without looking at it. The posies can be used in place of the duck-bill blinders.

Four-Sided Blinders

Use four-sided cardboard blinders attached to a headband in order to surround the eyes. The blinders should extend out about four inches. This visual barrier is used as a sighting device or aiming technique, similar to sighting with a rifle, to help the student follow the shuttlecock with the eyes at all times. This technique allows the student to concentrate on watching the shuttlecock because it cuts down on peripheral views that may cause distractions. This technique works well for the student who has trouble watching the shuttlecock and therefore has trouble making racquet-shuttlecock contact.

Rubber Surgical Tubing

This can be used, like the Power Groove, to restrict the student to the appropriate ready position. Tie the tubing to the body and then tie the elbows and arms close to the body with the tubing. As the student moves the arms farther from the body, the tension on the tubing will increase. This restricts the student to a shorter preparatory backswing (nonstretched rubber) as opposed to a longer preparatory backswing (stretched rubber) and allows more rapid movement of the racquet.



Halos

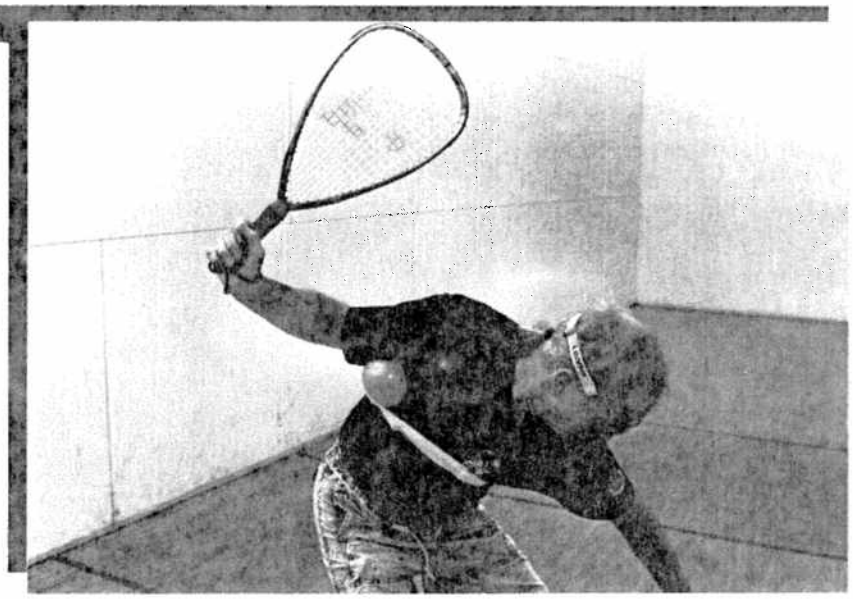
Make a 15-inch diameter cardboard halo and attach it to a hat so that it extends above the head. In hitting around-the-head shots, the arm action must move the racquet around the perimeter of the halo causing the correct motion of the around-the-head shot. The halo may be tilted in various directions in order to act as a barrier for different around-the-head shots, such as high clears, drives, and smashes.

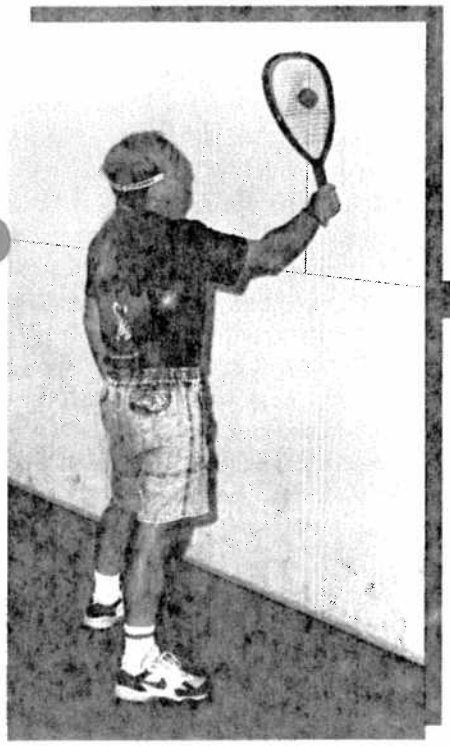
Guidance in Racquetball

The following guidance techniques are specific to racquetball. Some tennis and badminton guidance techniques can be adapted for racquetball as well.

Balloons

Take the tennis swing out of racquetball by taping a balloon under the armpit to create a touch pad for the arm. The student must keep the arm in contact with the balloon to achieve the appropriate arm mechanics for racquetball. The balloon will help keep the arm bent if someone is hitting with a tennis stroke, or too much of an extended stroke.



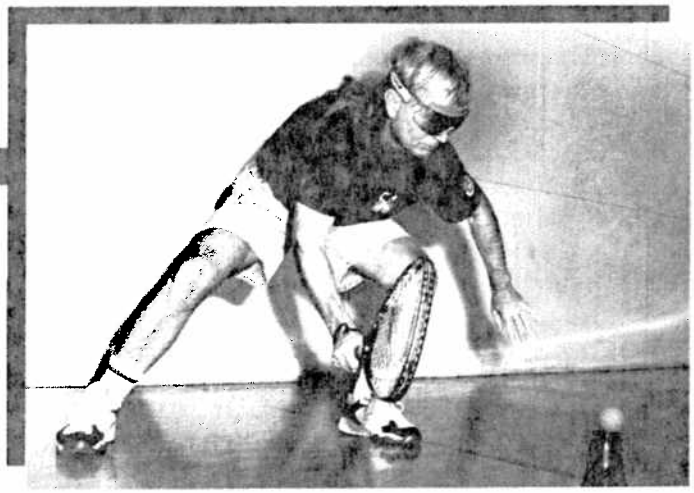


Walls

Use the walls of the court to practice wallpaper shots. Stand about 18 inches from a side wall, extend the nonhitting arm up as high as possible and then drop the ball straight down the wall. Step back slightly and try to barely scrape the wall in a scooping action with the racquet in order to make successful contact with the ball.

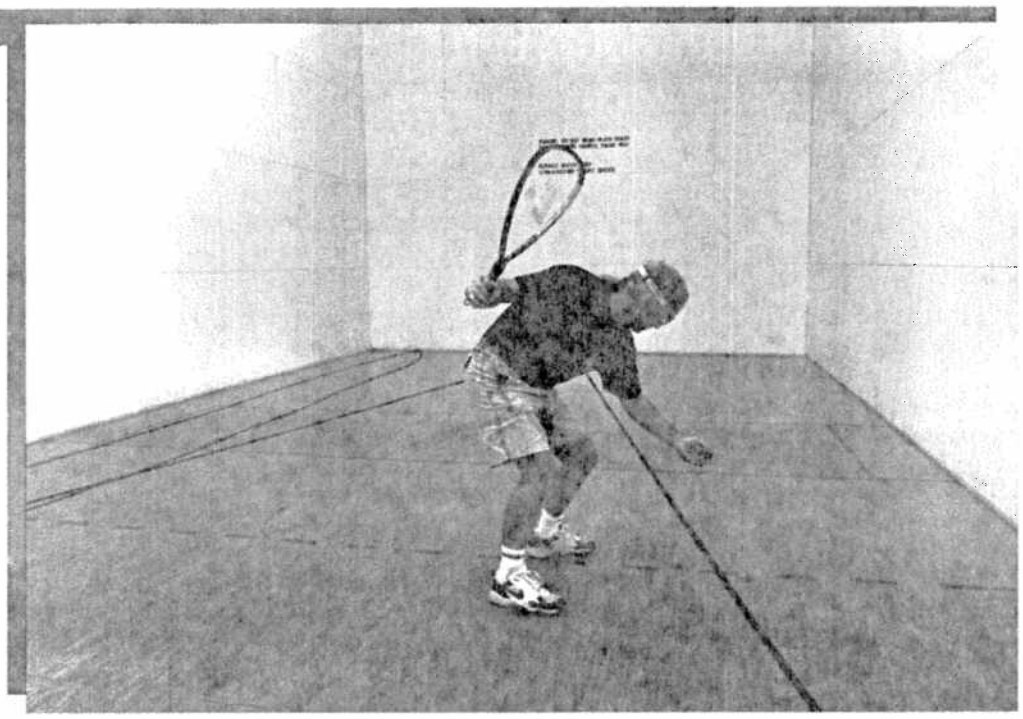
Cups

Use 12- to 16-ounce plastic or paper cups as tees to practice kill shots. Place the cup upside down and put the ball on top of the bottom of the cup. This gives the hitter a low stationary ball to hit. The hitter must bend at the knees to lower his or her center of gravity. The racquet should hit the cup as well as the ball. If the hitter hits through the cup and the ball correctly, the ball will stay low and parallel to the floor.



NYLON WEBBING

Use nylon webbing to create ball flight path patterns to help guide cross-court and down-the-line passing shots. To be even more effective, use different color webbing for different shots. The student should stand at the back of the court and hit the ball so that it follows the path of the webbing, resulting in a correct ball flight path.



The aforementioned concepts are only some examples of guidance techniques that use equipment and physical barriers. As previously stated, numerous pieces of guidance equipment are commercially available, and much of this equipment can be used for guidance purposes in a number of different motor skill activities. If teachers and coaches take the time to visualize the task being practiced and the needs of the individual practicing, they will be able to create their own guidance equipment. However, to obtain optimal results, teachers and coaches should use guidance early in the learning process and employ the fading technique. This will place the student in an environment conducive to ensuring that learning, not immediate performance, is of paramount importance.

Finally, it should be mentioned that with the exception of the study done by Goode and Magill (1986), most of the research dealing with guidance has been done using laboratory tasks. More research using relatively complex, real-life skills must be done to strengthen the generalization of the findings to complex sports skills.

Acknowledgment

All photos are by Ted Jones.

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Out of the Gate: Turn Your PETE Majors into Interview Front-Runners

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After completing four to five years of undergraduate schooling, physical education teacher education (PETE) majors are ready for their first professional teaching job. Even though PETE majors are often well-educated, breaking into the job market may be a stressful, and at times, negative experience. However, with proper training on how to approach and conduct the interview process, the experience can often be positive and meaningful to the job applicant. Such training should include the compilation of a personal portfolio; attendance and involvement in appropriate conferences and seminars; mock interviews conducted by peers, faculty, and local business executives; and participation in real-world settings.

According to Arter and Spandel (1992, p. 36) a portfolio is "a purposeful collection of student work that tells a story of the student's efforts, progress, or achievement in a given area." Hannam (1995) suggests that portfolios can assist with job searching. In a student's senior year the complete portfolio might be useful to potential employees as evidence of the student's abilities. A pilot project conducted at Illinois State University by Waishwell, Morrow, Micke, and Keyser (1996) asked a number of questions relating to the utilization of portfolios. One question asked students to discuss the benefits of developing a portfolio. By far the largest category of responses pointed towards the benefits of a portfolio in job searching and interviewing. The students felt that prospective employers could gain an understanding of their potential and what they are like as a person. These same students also felt that they would be in a more positive position to acquire a job than those who did not have examples of their qualifications.

The importance of attending and participating in state, regional, and national conferences should be self-evident. Attending these conferences enables PETE majors to keep abreast of recent trends in the profession and to network with other professionals. It is important for PETE majors to establish visibility with those who are responsible for the hiring of teachers in their school systems. In addition, taking the initiative to make a presentation either on their own, or as a co-presenter with another student or faculty member, will make an even more favorable impression on those who make hiring decisions. This participation will also make a nice addition to any resumé. At Appalachian State University, the student majors club places a strong emphasis on this aspect of the job interview process, and the physical education faculty makes it a point to involve as many students as possible in presenting, presiding, and greeting at appropriate conventions. This has had a very positive effect on the marketability of Appalachian State physical education graduates.

Most of the literature concerning interviews deals with the research method of using the interview as a means of collecting data (Lomax, 1996; Patton, 1990; Zidon, 1996). There is little literature available on how to best train and educate PETE majors to be more successful during the professional interview process.

Pairs of students ask one another potential interview questions.

One excellent source is Medley's book *Sweaty Palms* (1993). This text includes interview basics, preparation techniques, and help with making the decision as to whether or not to accept a position if it is offered. Medley also discusses types of interviews, questions and answers, dress, discrimination, confidence, enthusiasm, and honesty. *Sweaty Palms* is the most comprehensive guide to the interview process and is highly recommended for any prospective interviewee.

This article will give PETE faculty members and students, as well as any physical education, recreation or dance teacher in-depth, innovative, and practical interview methods to help them gain employment. Interviewing is a skill, and, like any other skill, the more you practice, the better you become. The following interview practice situations progress from simple to complex in order to prepare the prospective interviewee for the real-world interview process.

Peer Practicum

One of the first and simplest steps to prepare candidates is to have a PETE faculty member list 15 to 20 questions typically asked during job interviews. The questions are typed on small individual pieces of paper and placed in an envelope. After discussing interviewing processes and tips with the students, have them pair-up with one envelope per pair. One student randomly draws a question out of the envelope and reads it to the partner. Then the partner must respond to the question within a few seconds. After the response, the questioner provides feedback to the respondent on how he or she handled the question, and then they discuss the question. The envelope is rotated to the other partner, and the process is repeated. As questions are answered, remove them from the stack. Ask questions such as: "What will I see when I see the best of you and your performance?" and "Under what circumstances did you last lose your composure?" Also useable are more typical questions, such as: "How will you handle discipline?" or "What is your philosophy of physical education teaching?" See table 1 for additional questions. Prepare enough envelopes to handle half of your largest class size.

Peer Interview

The next interviewing step is to give students a hypothetical job description and the resumés of the final two candidates for the hypothetical job. Inform the students that these two candidates will be in class for the next meeting and that each student must decide which candidate looks best on paper and come to class with three questions to ask each candidate. Both resumés should offer very qualified candidates, but each candidate's resumé should reveal different professional interests. Determining the "best" candidate on paper should present a difficult choice. The PETE faculty member then secretly selects two students from the class to become the two finalists. These students must learn the resumé material of "their" character and create other material in their backgrounds to fill in the holes in their mock resumés. The PETE faculty member primes these two individuals by giving them hints as to the types of questions and areas of questioning to expect.

At the beginning of the next class, both candidates are introduced and sit on opposite sides in the front of the classroom, facing the class. Their resumé names are written on the board behind them. Before the interview begins, the class votes for its choice for the job, and the results are recorded by the candidates' names. After 20 to 30 minutes of questioning the candidates, the class rethinks its original vote, which was based solely on the paper resumés, and casts a new vote. The new tallies are placed on the board and compared with the first tallies. Discussion ensues on why members did or did not change votes. Discussion items may include, but are not limited to, responses, questions, mannerisms, appearance, fidgeting, eye contact, posture, and grammar. Discussion usually lasts between 15 and 30 minutes. At the end, the two candidates describe how it felt to be interviewed and what difficulties they had in responding to questions.

Table 1. Additional Interview Questions

- What do you do to get away from your job?
- What, in your opinion, is the difference between the average coach and a great coach?
- What motivates you?
- Why are you applying for this position?
- What will you add to our program?
- In your last job, what is the one thing you are most proud of having done?
- Why should we hire you?
- What makes you special?
- Why are you changing jobs?
- Where do you see yourself in ten years?
- Who paid for your education?
- How do you keep fit?

PETE Faculty Interviews

The next phase in interview preparation is to have PETE faculty members interview PETE students. This process can be completed as an assignment or as an ongoing part of the PETE majors club. The student (candidate) must present his or her own real resumé to the faculty member a week in advance and set up an appointment for the interview. The student will be evaluated on the important interviewing skills that have been pre-

viously discussed in class or in club meetings. Items such as, but not limited to, punctuality, appearance, honesty, verbal communication skills, knowledge about the new school, questions asked by the interviewee, attitudes, and manners would be included in the evaluation process. The interview takes place in a secluded place such as a faculty office or conference room, and lasts for about 20 or 30 minutes. At the completion of the interview, the faculty member and student discuss the interview and how they each felt about the student's performance. At the end of the discussion, the resumé is returned with written comments and a brief exchange concerning its positive and negative points ensues between the candidate and the faculty member. Interviews by phone and with multiple interviewers can also be conducted under the foregoing guidelines.

The Use of Meals

The interview process between faculty member and student may take place at a meal function. If a meal function cannot be arranged, interviewing over a snack is also a possibility. There are times when job candidates are invited for breakfast, lunch, or dinner as part of the interview process. Unfortunately, many people have had no formal training in the etiquette of eating. Spending a part of a class or club meeting on basic eating etiquette may just be what is needed for a candidate to positively impress a prospective employer. Conversely, poor eating manners could certainly make a viable candidate lose a job. Points of etiquette might include where the knife should be placed while not in use, where one should place the knife and fork when finished eating, and how to correctly remove that piece of hard stuff in the food that is now chewed up in your mouth.

Videotaping

Videotaping the faculty-student interview can provide excellent feedback on the student's performance. The faculty member and student may view the tape immediately after the interview discussion, or at a later time that is convenient for both parties. Sometimes it is best for the students to view the video tape several times by themselves before they sit down and review it with the PETE faculty member. This previewing process evokes a better discussion during the review of the video tape with the PETE faculty member. It is a good idea to use a four-head VCR so that slow motion and stop action may be used during the review process. The stop action captures the essence of the moment for specific instances during the interview. After completing the review of the video tape, the faculty member should give the student at least five positive points about his or her interview performance, and then give some points that need improvement. This should be done on a special written form completed jointly by the faculty member and the student. The form should include those items mentioned in the PETE faculty interview section and should be designed by the PETE faculty member before the videotaping. See table 2 for additional items that may be included in the evaluation form. The joint completion of the form, as opposed to only a faculty report, exerts a stronger influence for improving the PETE student's interview skills.

Local School Officials and Business Leaders

Another phase of pre-job preparation is to invite local school administrators to conduct mock interviews with the PETE students. This can be completed at the local schools, during classes, or during professional major club meetings. Sometimes arrangements can be made to have five or six administrators on hand during the same time period. For example, all administrators come to an hour-long, evening meeting of the majors club. They receive copies of the students' resumés before the meeting and hold ten-minute interviews, followed by five-minute discussion periods with the students at the meeting. Therefore, each administrator can interview, with discussion, four candidates during the meeting. Multiply this by six administrators, and you have provided interview experiences for 24 students. This process can also work for classes, par-

Table 2. Twelve Tips for a Good Interview

1. Dress in a suit for males, and a dress or suit for females.
2. Arrive on time.
3. Be yourself—don't put on an act.
4. Spend time before the interview to learn about the school, the PE and athletic program, and the school system so that you show you have taken an interest in the job and can ask more specific school-related questions.
5. Do not fidget or use mannerisms like uh's and ok's.
6. On tough questions, think briefly and put your thoughts together in a logical fashion. You do not always have to respond instantaneously.
7. Have a firm, but not a crunching, handshake both at the start and at the end of the interview.
8. If you don't understand a question, paraphrase it or ask to have it repeated in a different form.
9. Use positive body language and good eye contact.
10. Listen carefully.
11. Thank the interviewer and express again how interested you are in the job.
12. Write a thank-you letter as soon as possible.

ticularly those scheduled late in the afternoon and evening.

If there are not enough local public and private school administrators, the PETE faculty member can ask peer PETE faculty, PETE administrators and/or other college faculty and athletic administrators to help with the interview process. Local business leaders may also be used to help with this process. A side benefit of using community members is that it creates good public relations between the PETE department and local professionals. It also allows for local school personnel and business leaders to meet your PETE students and receive an "inside look" at their preparation.

Real-World Setting

The next logical step is to practice in a real-world setting. Many colleges hold job fairs and/or career days in which they invite school officials to campus in order to interview prospective employees from the senior class. Strongly suggest to the students, especially the seniors, that this would be a particularly good time to refine their skills. Also suggest that they should participate in as many job interviews as possible, even if the job is not of interest. During this phase of their interview training, they learn how different each interview experience can be. They will learn that some interviewers do all of the talking and others do little, and that some interviewers are aggressive and others are passive. They will also learn that even though many interviewers will be professional, some will not be. During this "real" interview, PETE students will begin to realize what it takes to be prepared to make a positive impression during the interview process.

Sometime during the training sessions, expose your PETE majors to *Job Choices* (1998), a yearly publication by the National Association of Colleges and Employers. This publication is an excellent source for the job-related knowledge and skills needed for obtaining a professional position. *Job Choices* contains specific information on how to prepare for interviews, what to expect during an interview, how to react to difficult questions, and the importance of first impressions. Also included is information on letter writing, resumé writing, table manners, and what is available in the job market both nationally and internationally. Most college career development centers receive this publication and can provide multiple copies to the PETE faculty member for use with their students. The new copies usually arrive on campus in late August or early September.

Students interview two classmates playing the role of job-seeker.

The final step in the process is for PETE majors to use their interview knowledge to gain that first job. It is hoped that the tips contained in this article give the PETE reader some guidance for obtaining the knowledge and skills required to perform at an optimal level in the interview process. Remember, interviewing is a skill that improves with practice. Practicing from simple to complex, as indicated in this article, will create a more positive interview experience for all those involved in the process. Our personal experiences with the processes included in this article have been positive, and they have made both the interviewees and interviewers better participants in the interview process.

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