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**Suggested techniques for golf instruction in physical education
classes where facilities are limited**

Wilcoxson, Jerry Hale, D.A.

Middle Tennessee State University, 1987

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Suggested Techniques for Golf Instruction
in Physical Education Classes where
Facilities are Limited

Jerry Hale Wilcoxson

A dissertation presented to the
Graduate faculty of Middle Tennessee State University
in partial fulfillment of the requirements
for the degree of Doctor of Arts

August, 1987

SUGGESTED TECHNIQUES FOR GOLF INSTRUCTION
IN PHYSICAL EDUCATION CLASSES WHERE
FACILITIES ARE LIMITED

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Abstract

Suggested Techniques for Golf Instruction in Physical Education Classes where Facilities are Limited

Jerry Hale Wilcoxson

The purpose of this dissertation was to develop a manual for teaching golf that will improve instruction and strengthen learning in college or university golf classes. Techniques are identified that can be used in adapting facilities and equipment in classes that experience limitations. This dissertation is divided into four chapters and also contains a survey questionnaire, a list of survey participants, letters and a definition of terms. In Chapter 1 the current status of golf instruction in colleges and universities is discussed. The problem is stated and the significance of this manual in serving as a source of ideas for overcoming limitations in instruction is emphasized. The author recognizes research limitations of the manual to golf activity classes that are taught at two- and four-year colleges and universities in Tennessee. The review of literature focuses on publications that relate specifically to topical material in Chapter 4. Chapter 2 explains the procedures that were involved in constructing the 12-question, open-ended survey instrument which was sent to 50 schools in October, 1985. Chapter 3 informs the reader that a 90

Jerry H. Wilcoxson

percent return of questionnaires was accomplished. Data concerned with responses to questions as well as statements from 45 non-identified representatives are contained in this chapter. A philosophy of golf instruction is expressed in Chapter 4. Also discussed is the basic purpose for adapting facilities as well as the techniques used in the adaptation of space, surfaces, targets and equipment. The importance of fitting golf equipment to students, using available aids for practice and instruction with various media is also explained. Other topics concerning techniques of instruction are the organization of golf classes, rules of safety and etiquette, stretching exercises designed specifically for golf and the basic types of physical and mental practice.

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Chapter 1

Introduction

The popularity of golf in the United States, including the demand for golf instruction in colleges and universities, creates a need for finding space in which to teach golf activity courses. Many colleges and universities neither own a nine-or 18-hole golf course nor are able to provide space which is adequate for class members to either have an opportunity to become familiar with each type of club or to experience a wide variety of shot making at a higher level.

This manual seeks to provide ideas, procedures, and methods which can aid golf instructors with unsatisfactory facilities to eliminate some barriers to learning. Poor climatic conditions, inadequate time for traveling to a course, lack of indoor and outdoor teaching space and the inability to provide outside instruction in the evening hours because of the lack of lighting can impair instruction. Finally, the lack of access to a golf course can also cause a barrier to the practice of learned golf skills.

Statement of the Problem

The problem is to develop a manual for golf instruction that will strengthen learning in college or university golf classes by identifying techniques that can be used in classes that encounter limitations in terms of facilities.

Significance of the Study

Few studies have been done in the area of golf instruction in which facilities are limited. Learning can be facilitated by providing information that will assist teachers in teaching the skills of golf in either individual or group instructional situations where inadequate facilities exist.

Although a few colleges and universities have their own golf course and some country club and municipal golf courses allow college and university golf teams to play and practice on their facilities, it is unusual for schools in Tennessee to use courses for instruction in golf classes. Often, therefore, golf instructors do not have access to either regulation golf courses, practice ranges, putting greens, practice sand traps or adequate space for students to hit long irons and woods.

The usual procedure in teaching golf classes in college is to either use the school athletic fields or gymnasiums. Also, inclement weather and lack of lighting for night classes compound instructional problems. Unfortunately, in many cases, classes are either not taught because of weather conditions or an overemphasis is given to theory in the classroom.

Ideas and techniques are needed so that instruction in golf in indoor areas or in the outdoor areas with limited space can take place. Information is needed to provide golf instructors with guidelines for adapting facilities,

organizing classes, and selecting equipment to be used in instruction. Also, very little material is available regarding drills and exercises or types of practice where facilities are limited.

The primary significance of this manual is that it can serve as a source of ideas and procedures for instruction in golf which would overcome barriers to teaching and therefore enhance learning despite the limitations of teaching stations. Rather than relying upon make-shift methods without available guidance, this source can serve as a valuable tool for instruction. Various possibilities for better learning opportunities are significant to students and teachers of golf on the two-or four-year college and university level. High school golf instructors can adapt the ideas to fit their specific situations.

Limitations

The study is limited to golf activity classes in two- and four-year colleges and universities in Tennessee and focuses on beginning and intermediate skill levels. The emphasis of the study is on organization and instruction where facilities are limited rather than on methods of instruction, although methodology is recognized as important when it relates specifically to the use of facilities.

Literature Review

In reviewing literature related to golf instruction where facilities are limited a few sources were discovered which dealt specifically with this subject.

A search was undertaken using the Dissertation Abstracts Online Database through the Murray State University Library. None of the dissertations related to golf was found to be pertinent to the dissertation topic.

In the spring of 1982, Jack Nicklaus directed the MacGregor Golf Club Company to develop a ball that would chip and putt much like the conventional ball and tend to reward accuracy more often than it rewards distance. The Cayman ball, named for Grand Cayman Island in the British West Indies where Jack Nicklaus is designing a course to accommodate the short distance ball, has caused some controversy. Bibb (1984) and Jack Nicklaus Enterprises (1984) discuss and explore the values of this ball which allows the game to be played on less land, allows the golfer to select clubs and make shots while Netland (1984) explores the controversy of the new short distance ball. One side feels that this ball will make golf more economical, will allow the game to be played in one-half the time, and will increase the number of participants. The other side contends that the short distance ball is doomed to failure. This group feels that people want to hit the ball long distances and that golf is a traditional game that spurns bold revolution. Some critics feel that the new ball is suitable for par three courses, but is not acceptable for regulation courses.

The National Golf Foundation (1980) wrote a guide which includes material that was contributed by teachers, students,

administrators, and golf professionals. Many college and university instructors participated in compiling this guide. Some categories in this publication which are relevant to the manual are class organization, group formation, exercises and drills, purchase and care of equipment, and adaptation of facilities. This publication also includes instructional media, the use of existing equipment for practice and information on a practice golf facility.

Bowling (1964) included material contributed by university physical education instructors, golf teachers, and golf coaches in a text divided into teaching outdoor lessons, teaching indoor lessons, and supplemental instruction. Other topics include the total program of class instruction, class organization for hitting balls, distribution of clubs and balls and the display and explanation for selecting a set of golf clubs. The material for supplemental instruction covers teaching devices and hints, common errors in techniques and samples of written and practical tests.

Wiren and Coop (1978) explored the importance of having a mental approach to golf which emphasizes less instruction with more self-analysis. The primary theme of this book is that teachers of golf should avoid overinstruction which burdens the pupil and sets up mental blocks to understanding. The authors stress the importance of good mental pictures prior to shot execution and emphasize the right brain-left brain concept.

Johnson and Johnstone (1975) explored the mental side of golf with the inclusion of emotional traits, game analysis, and an area related to general thoughts that need attention during practice and play. This publication also contains material on games for indoor golf and various learning aids. The main theme is that the student of golf needs to know his or her game in order to overcome swing weaknesses. The authors suggest looking at checkpoints, reading the material and then following a self-paced approach to improvement.

Bowen and Clemence (1981) wrote a text pertaining to the basics that are found in golf books which are instructional in nature. The most relevant section concerns the use of television and videotape to improve a student's golf game. The authors stress that a videotape can clarify a problem in the swing which cannot be fully understood through verbal instructions. The importance of viewing videotapes and movies of one's own golf swing in order to analyze strengths and weaknesses is also discussed. The authors feel that a person should study the swing of a golf professional with whom they are physically similar, since each golfer's physique influences the manner in which a golfer swings.

The Editors of Golf Digest (1978) published a book containing a series of 112 articles, individually authored by teaching and touring professionals. Lessons on speciality shots and practice drills which are relative to the dissertation topic are included. These two areas are

pertinent because they can be used in teaching indoors or in limited space areas without need for adaptation.

Revien and Gabor (1981) prepared an eye exercise program for athletes. Some of the contents include hand-eye coordination, peripheral awareness, depth perception, and speed and span of recognition. Other areas are video distraction, video stimulation, and eye concentration and distraction. A series of eye exercises that are important for golf are also included. The authors claim that these exercises can make the eye muscles move the eyes with more precision and speed and can help synchronization of both eyes. Also, a greater part of the retina will become sensitive by using "action situations" rather than static methods of training the eyes.

They feel that in many instances the ocular muscles are not coordinated, causing some incorrect physical decisions. Depth perception, for example, is vital in selecting the correct club for certain distances and in judging how hard to hit a putt from short and long distances. The authors also believe that the participant in any athletic event experiences eye fatigue toward the end of the activity and stress that their eye exercises can increase visual stamina.

Chapter 2

Procedures

A survey questionnaire was constructed in which the primary purpose was to determine the status of golf instruction in physical education activity classes at schools of higher education in the state of Tennessee.

Schools were selected after researching the 1985-1986 Tennessee Student Assistance Award Program Application Instructions under Eligible Institutions and Codes and the 1985-1986, 23rd edition of The College Handbook. The author also researched the 1985-1986 Men's edition and Women's edition of the National Directory of College Athletics. The athletic directories list the chairpersons of physical education and their school addresses.

Schools from Tennessee which list a department of physical education as well as a department of athletics were selected. The intention was to survey as many college, university, and two-year college physical education departments in Tennessee as was possible in order to ensure a broad sample.

A cover letter and one questionnaire were sent to the physical education department chairperson of each of 50 schools. The cover letter identified the author's degree pursuit and university association, the name of the dissertation topic, and the purpose of the survey.

The questionnaire contained a place for the name, position, and school of the respondent. Directions stipulated the placement of a check (✓) in a space on some questions or a written answer in other spaces. A request was made to return the questionnaire even if golf facilities were non-existent at a particular school. A return address to which the survey was to be returned was included as the final item on the survey form.

Twelve questions were included in the survey. Six questions required a yes or no answer, four questions required statistical information, and two questions inquired as to whether the instructional areas and equipment for golf were adequate, excellent, or inadequate.

All materials were mailed on the same day of October 1985. The author numbered the questionnaires in the order of their return. The procedure allowed a tabulation without reference to individual schools.

Chapter 3

Analysis of the Data

Forty-five questionnaires were returned from the 50 that were mailed. Since this constituted a 90 percent return, no further attempts were made to obtain the remaining 10 percent. Survey questionnaires were returned by representatives of 21 colleges, 14 universities and 10 junior or community colleges. Letters of appreciation for participation in the survey were sent by the author to the 45 representatives.

The majority of persons to whom the materials were addressed did complete the questionnaire, although a few persons transferred the survey to another individual in the department. The respondents filled in spaces that identified their name, position and school. The instrument contained 12 questions and was also designed to encourage comments from the persons who participated.

Questions were asked about the offering of golf as a course in the curriculum, the number of golf classes that were offered during the 1985-1986 school year and the average class size of golf classes in each school's physical education program. Thirty-seven schools responded, "yes," while eight schools answered, "no," to the question about offering golf in the program. During the 1985-1986 school year 37 schools offered a total of 140 golf activity classes with eight schools scheduling no golf classes.

Two schools offered the greatest number of golf classes, 12, while nine schools offered only one class in golf. The mean number of classes was 3.78. Thirty-six schools enrolled 702 students in golf classes resulting in a mean number of 19.48 students.

Questions were asked about having access to a regulation golf course, about the availability of an outside area at the school for the purpose of golf instruction and about the approximate size of the outside area. Twenty-three schools had access to a regulation golf course while 14 schools did not have access to a golf course. Thirty-three schools had an outside area that could be used for golf instruction while four schools had no available outside area. The mean size of outside instructional areas was 40,059.39 square yards. Since there were extreme scores, both high and low, 250,000 square yards and 600 square yards, the median score of 28,000 square yards is the most representative.

Questions were asked about having an inside area available for golf instruction as well as the approximate size of an inside area. Twenty-six schools had inside areas and 11 schools had no access to an inside instructional area. Twenty-five respondents listed sizes of inside areas and one school did not answer the question. The largest inside area was 41,800 square feet and the smallest inside area was 800 square feet. The median was 5,000 square feet.

Questions were asked whether or not the areas for golf instruction and the available golf equipment were adequate,

excellent, or inadequate. Twenty-one representatives answered "adequate," four said, "excellent" and 12 said, "inadequate," when describing areas for the instruction of golf. Twenty-seven respondents answered, "adequate," four said, "excellent" and 12 said, "inadequate" to the question about available golf equipment.

The final two questions on the questionnaire inquired as to whether any plans were underway to construct new areas for golf instruction and if plans were in process to improve the current areas for golf instruction. Three schools planned to construct new areas and 34 schools had no plans for constructing areas for golf. Five respondents said their school planned to improve current areas and 32 said their school had no plans to improve current areas for golf instruction.

Fifteen persons commented concerning the golf facilities which are used for golf instruction at their schools. Some persons expressed their need for access to a golf course and others described their occasional use of a golf course for class instruction. One representative commented, "If most schools could have one hole it would improve the teaching of golf."

No respondents said their school owned their own golf course, although one school representative said, "Our campus was built on a nine-hole golf course, therefore we have excellent fairways and tees. We cut out greens from the

fairways and cut holes in the fairway. We should construct three or four regulation greens, but we do not have the maintenance help to maintain the greens."

One individual relates that his school is located next to a golf course which the school uses at half price. Another respondent states, "Our instructor usually takes the class to a local golf course one time and students are required to play one round of golf on their own." Another person comments, "We teach the stance, grip and swing and let them practice using "wiffle" golf balls. Students in these classes play twice each semester (36 holes)."

Other school representatives described their current facilities as well as present attempts to improve the golf facilities at their schools. Some of the available facilities and equipment include a practice putting green, a chipping area and a ball pick-up machine. One person states, "We are making a new tee area for 25 stations." Another respondent states, "We purchased a multi-purpose indoor cage. Our indoor facility is a covered football field. We have areas which would not be considered "limited." Thirty representatives did not have any comments regarding improvement of facilities, plans for new facilities or access to regulation golf courses. These comments and other results of the questionnaire show a need for the instructional techniques presented in Chapter 4.

Chapter 4

Instructional Techniques

A Philosophy of Golf Instruction

An explanation of the basic golf swing in instruction is too often complicated and the negative aspects are emphasized. Bowling (1964) suggests that:

In offering group golf instruction, a positive and simplified explanation of "swinging" golf clubs will produce better and faster results for the majority of students than an analytical, part by part, or negative version. It is wise to present instruction as simply and briefly as possible. (p. 15)

Simek and O'Brien (1981) state that:

Thousands of swing theories have been developed over the years in an attempt to correct the inadequacies of previous theories. Unfortunately, each new theory of swing mechanics is taught in the same overly complex, unlearnable fashion. It is our contention that knowledge of the movements in the basic golf swing is as good as it needs to be. The failure has been in communicating this skill in a manner that can be easily learned. (p. 4)

The fear of failure can be a limitation to learning because intense grip pressure can make the arms, neck, and shoulders less flexible, thus affecting smoothness and power. The student should be encouraged to relax as much as possible.

An instructor can use phrases or words which are "catchy" to allow the student to concentrate on an overall swing rather than many points at once, which can cause a partial paralysis through over-analysis. An example of a phrase is "relax, now swing back slow and low." Also, the instructor should find at least one positive thing to say regarding a student's attempt.

The golf swing takes approximately two seconds. Attempting to analyze and perform a number of intricate details in such a short time can cause problems. "Overemphasizing any detail can become an error that limits or distorts the whole swing" (Nance & Davis, 1980, p. 10).

Learning to play golf and continuing to improve is primarily dependent on the student. The instructor should be a guide who has a sound knowledge of the fundamentals of the game and contributes to positive reinforcement.

Continuing to learn and to improve involves grasping swing fundamentals but is also dependent on judgment, analysis, planning, determination, relaxation, concentration and practice of sound mechanics. An instructor of golf should emphasize these important mental skills as well as physical skills.

The instructor must communicate with a group, yet must reach the individual. Therefore, golf vocabulary needs to be learned, yet should be kept simple. Comparison of golf fundamentals to the fundamentals of other activities should be considered. Also, various drills and instructional media

can contribute positively to learning because the student is actually doing or watching techniques rather than depending heavily on being told by the instructor how to execute skills.

Basic Purpose for Adapting Facilities for Instruction

Students in golf physical education classes need to acquire basic knowledge and physical skills which might allow them to have an appreciation for golf as well as enjoyment in playing the game. In order for students to gain positively from golf instruction, as few limitations as is possible should exist. When space is limited, facilities and equipment can be adapted to provide an instructional environment that is at least adequate for golf activity classes. In some instances, space that is available is not utilized; physical participation is minimal and the emphasis is heavily theoretical.

An adaptation of facilities should be based on making the best use of fields and indoor space in order to compensate for lack of access to facilities that are specifically designed for golf. An important objective of the program of instruction should be to make the maximum use of time while teaching a variety of topics. An instructor needs to understand that a one-term beginning or intermediate class should serve primarily as an introduction to golf. Therefore, one should be aware of teaching basics on which a student can build if the individual's interest in golf continues past the class

experience. Basics can receive more attention and interest should be greater if students have ample opportunity to practice physical skills.

Adapting Space for Instruction

Some areas that can be adapted for golf instruction include gym floors and fringe areas of these floors, infields of tracks, football, softball and baseball fields, large locker rooms, vacant fields owned by the school and classrooms. The equipment to be used in these areas should be mobile in order for the areas to fulfill their original purpose of design.

Careful consideration should be given to activities that occur within close proximity of the adapted areas. If classrooms are used, attention should be given to noise levels and room contents. Chairs and other objects can usually be moved without difficulty to clear space for instruction which involves swinging a golf club. The classroom can also be used to instruct units on safety, etiquette, mental practice and rules.

The selection of outdoor areas for instruction usually involves attention to mowing, the consistent replacement of divots and careful consideration about the direction toward which students hit balls.

Adapting Surfaces for Instruction

Indoor surfaces can be used for instruction by using rubber mats, artificial turf mats, rugs and carpet. Artificial turf mats and driving range mats are commercially

manufactured. These and other types of mats, old rugs and swatches of carpet can be placed on surfaces that are made of wood, concrete or tile. Mats, rugs and carpet swatches should always be large enough to accommodate a misdirection of contact. Some artificial turf mats are designed exclusively for hitting balls with iron clubs. If this is the case, rubber tees can be purchased and used when students are hitting wood clubs.

Electric putting cups can be placed on an adapted surface and plugged into wall outlets in a classroom, locker room or fringe area of a gymnasium floor. These cups return the ball and save time that would be lost if students walked to the cup to retrieve each putt. Different depths of thread on a carpet swatch allow variations in the speed of putts. For example, placing a thin carpet over concrete will result in a faster putting surface, whereas a thick carpet will create a slower surface. Carpet, rugs or foam rubber can also be positioned over unlevel areas to simulate breaks of standard golf greens.

A practice sand bunker can be constructed with a minimal cost of materials or labor. Consideration should be given to locating the bunker away from public view to discourage use by unauthorized persons. Also, selecting level terrain for the site and installing pipes can eliminate problems of drainage. The bunker should be relatively small and shallow to promote ease in maintenance, since occasional addition of sand and raking is necessary. Another

possibility for sand practice is to use a long jump area on the infield of a track. Obviously, cooperation between the golf instructor and track coach is necessary for this arrangement to be implemented and successful.

Adapting Targets and Using Backstops for Instruction

Golf is a target game, thus an instructor should plan for various objects to be available as targets. Flagsticks can be placed in outside areas where spots have been mowed. In the absence of greens and flagsticks, some objects which can be used as targets include chairs, hurdles, old tires, wastebaskets, boxes, hanging mats, wire cages and rope which can be made into a circle and placed on the ground. Students can also hit plastic balls against walls on which targets have been placed or drawn.

One of the most common techniques, both inside and outside, is to hit balls into a net while hitting from turf, rubber or grass. If a budget does not allow the purchase of commercially manufactured nets, old volleyball, badminton and tennis nets can be adapted for use as targets. Chairs, wastebaskets, boxes, old tires and ropes are well suited for chipping and pitching, but full shots usually necessitate the use of a net or cage.

Fitting Equipment to Students for Instruction

Matching equipment properly to the physical characteristics of students in golf classes is a difficult task. In fact, some persons who play golf on a regular basis fail to select equipment which fits their needs.

Factors which cause difficulty in matching equipment to personal needs include lack of knowledge in matching equipment to people, an insufficient amount of equipment necessary to fill the needs of a variety of students, and the high cost of individually matched equipment. Yet, the instructor should attempt to match the available equipment to an individual's swing as closely as possible.

Trevino (1976) states that:

There's no getting around it; the clubs you swing have a lot to do with how you swing, for good or for bad.

It would be silly to spend dozens of hours trying to improve your swing and then go out and mis-hit a shot because your equipment was faulty. (p. 169)

Considerations in selecting golf clubs include body strength, size of hands, the distance of the fingertips from the ground, the amount of clubhead speed that one generates, how much difficulty one encounters in getting a ball in the air with a proper trajectory and whether a person has a tendency to hook or slice the ball.

Nance and Davis (1980) state that:

Because of the differences in height, strength, and hand size between men and women, men's clubs are longer, have stronger and stiffer shafts, have larger grips and are heavier. Average golfers will find the medium shaft best suits their needs. The person with above average power and strength might find a shaft stiffer than medium

better, while a person with average or less strength and power may be helped by a more flexible shaft. (p. 85)

The instructor must keep in mind that a strong person who generates a high amount of clubhead speed will overflex a regular or whippy shaft and will over-compress a low compression golf ball, thus losing accuracy and distance. The less strong person, who may be male or female, is likely to generate less clubhead speed. This person needs a shaft that will flex even when a swing is slow and less strong. A shaft that is too stiff will make compression of the golf ball difficult and will also cause a loss of accuracy and distance.

Generally speaking, the stronger hitter needs a golf club with a higher swingweight as well as greater overall weight while the light hitter needs a golf club with a lower swingweight and lower overall weight. However, it should be noted that golf professionals and low handicap amateurs do not always adhere to these principles. Some players may select equipment because of other individual differences or simply because of the need for a certain feel.

The number of degrees in regard to the loft and lie of golf clubs is also a consideration in selecting golf clubs. For example, a shorter student usually needs a club with a flatter lie whereas a tall person usually needs a more upright lie. But, the distance of the fingertips from the ground is a consideration, since tall persons may have short arms and waists and short persons may have long arms and waists.

Students with smaller hands usually need smaller grips while students with larger hands are more likely to need larger grips. But, an instructor should realize that smaller grips allow more wrist action and larger grips allow less wrist action. Maltby (1986) states, "The most common reason for shots going left is too small a grip. This gives you too much wrist action through impact, closing the face" (p. 30). Grips that are too large can cause an open clubface at impact, thus a fade or slice may result.

Slices and pushes are the most common shots for beginning and high handicap golfers. Maltby (1986) suggests selection of clubs with closed clubfaces, more flexible shafts, more upright lies and smaller grips.

Depth of clubface is also a consideration in equipment selection. Deep-faced woods are generally more difficult to use in getting a ball in the air on a correct trajectory when hit by an inexperienced player or lighter hitter. Shallow-faced woods are easier to use in getting a golf ball airborne even if swung by a light hitter. Low handicap players are more likely to prefer deep-faced woods since their strength allows the ball to get in the air with more distance. Trevino (1976) states that:

Since most golfers need more height on their shots, I don't recommend deep-faced woods to anyone except the very strong male golfer who gets plenty of height and carry on his shots anyway. Women golfers, especially, need shallow-faced clubs to get the height that they

miss out on from not being able to generate a whole lot of clubhead speed. In fact, most women also need more loft on their wood clubs, especially the drivers. I think most women, and many men, would be better off driving with a $1\frac{1}{2}$ wood--a club with, say, a 12 or 13 degree loft--instead of a normal driver. (p. 181)

The overall weight of a golf club is another important consideration in matching a golf club to an individual. Overall weight and swingweight need to relate in the correct combination. The current trend is toward golf clubs with lower overall weight and lower swingweight. Yet, a strong fast swing can become even faster and overpower a light golf club. Trevino (1976) says:

The ideal club for you is one that is light enough to swing at the maximum speed you can control but still has enough weight in the head to apply enough mass to the ball to move it a fair distance. (p. 182)

The long irons, one, two, and three irons are difficult for many high handicap players to use. An upright swing plane and a strong descending blow are needed to achieve proper trajectory and distance with long irons. Hal Sutton (1985) suggests that amateurs ranging from mid-to-high handicappers should not carry long irons. He states that:

Instead, I'd replace those clubs with fairway woods and a third wedge . . . , invest in a good sand wedge, Another questionable club for a lot of golfers is the driver. Why not try a two wood? It's a more forgiving

club, and what you may lose in distance you'll gain in accuracy. Finally, when you're in the market for a new set of irons, look at clubs with lower center of gravity. They are designed to get the ball in the air easier than traditional blades, and that will help most mid-to-high handicappers. (p. 43)

Selection of golf balls for a class is basically dependent upon the instructor. Plastic balls can be used inside and outside, but do not give as true an indication of shot distance, direction or solidity as does a regulation golf ball. Solid plastic balls seem to have a more true flight direction and also seem more durable than perforated plastic balls. When hitting plastic balls outside, the wind can be a negative factor because of their light weight. Cayman balls, though more expensive, are less affected by wind and have a feel which compares favorably with regulation balls. The MacGregor Company is manufacturing and marketing a Cayman range ball.

One of the newest golf balls to be manufactured is the Nite Lite ball made by Pic Point Enterprises in New Hampshire. The regulation size ball has a hole in the center through which a cycalume lightstick is inserted. The lightsticks contain a chemical fluid which gives a green glow to the ball. Pins on greens are marked with a larger lightstick, which can be seen from a distance of one mile. The original concept was to use the ball in the early spring or late fall because of early darkness (Organ, 1986).

General acceptance of this ball by instructors for late afternoon and night classes where lighting is dim or non-existent remains an unlikely possibility.

Standard size regulation golf balls which are United States Golf Association (U. S. G. A.) approved include balls which are solid one-piece surlyn balls, balls with other composition covers which have solid structure and a soft feel, and the soft cover balata ball preferred by touring professionals and low handicap amateurs. The soft cover ball is not recommended for high handicappers who are more likely to cut the cover of the ball. Therefore, this ball does not seem to be practical for use in beginning and intermediate golf classes. Standard size regulation balls can be used in outdoor areas where adequate space is available and for inside instruction where nets and backdrops are used.

A strong hitter may need a 100 compression ball, the above average hitter a 90 compression ball, and the light hitting male and most females an 80 compression ball. The author believes that it is more practical to use all 90 compression balls. Golf balls do not always have the correct compression. Also, cold weather decreases the compression of golf balls whereas hot temperatures allow a ball to be more easily compressed. Compression is also more of a consideration in regard to long distance than on short and middle distance shots.

Ideally, a physical education department should purchase clubs that vary in grip size, overall weight and swingweight, shaft length, and flat and upright lies. Many times though, standard starter sets for men and women, without consideration of club specifications, comprise the clubs used for practice and instruction. The standard starter set has traditionally included one and three woods, three, five, seven and nine irons and a putter.

An instructor should encourage those students in class who own clubs to bring them to class, although it is doubtful that many students will have clubs which are fitted to their swing. The instructor may also feel comfortable in bringing his or her clubs to the class for instructional use. Two methods of adapting school golf equipment include the use of lead tape to increase club headweight and the removal or addition of two-way tape to adjust grip circumference. The instructor's knowledge in changing lies, lofts, shafts and grips can be a positive addition to the improvement of equipment. Yet, it is unlikely that many golf instructors will possess these skills.

The instructor may be able to make students aware of fitting golf club and ball specifications to their swings, even if the department does not have a variety of equipment. In most cases, the instructor should stress the need to consult a Professional Golf Association (P. G. A.) teacher who should possess the knowledge and equipment to properly measure specifications.

Safety

The instructor should explain why safety is an important topic for the group and should be involved in checking for dangers. The following rules of safety should be considered:

1. Formations should allow enough space for each student to swing safely as well as adequate space for the instructor to work with individuals.
2. Stations should be marked with chalk or lime and no person should be allowed to be in front of another person.
3. When golf balls are retrieved, all students should proceed as a group and no one should be allowed to hit until all students return to their stations.
4. Towels should be provided for the purpose of wiping perspiration from the hands and students who possess golf gloves should be encouraged to wear them.
5. The maximal space available for hitting should be checked and the instructor should determine what clubs can be used within this space.
6. A station for instruction involving one individual and the instructor should be marked to separate this space from other stations.
7. Golf equipment should be closely examined to make certain that clubheads are not loose, grips are not slick, and shafts are not damaged.
8. All left-handed players should be placed on one end of a line formation and should not face right-handed players when hitting golf balls.

9. Line formations should be used as often as possible. If semi-circles are used, extreme care should be exercised to avoid anyone swinging in the direction of another person.

10. When hitting balls into nets or other backdrops make certain that there are no holes and check to see that the nets extend fully to the floor.

11. Make certain that hitting mats are of sufficient length and that adequate space is available on the mat and behind the ball to allow for an error at contact.

12. Prevent practice swings anywhere other than an assigned practice station.

13. When playing on the course, always stay behind the person who is hitting.

14. When playing on the course, make sure the persons in other groups are out of range prior to hitting.

15. Leave the golf course when lightning or heavy winds occur. Do not wait under trees or use a steel-shafted umbrella.

16. Call "fore" if a ball is accidentally hit toward someone.

17. When someone yells "fore," get in a low position and cover the head.

18. Drink an adequate amount of liquids on a hot, humid day and use a wet towel to cool the face, neck and extremities. Also wear a hat for protection from the sun.

19. Do not place a golf ball to the mouth in order to clean it because dangerous chemicals may be ingested.

20. If golf cars are used, follow the instructions of the manufacturer which are listed on the vehicle.

A list of rules should be given to each student in the class. Some of the rules on the list can be adapted for closer confines such as an inside gymnasium area. Some new rules that relate specifically to inside facilities may be necessary and should be posted on walls.

Any individual who does not adhere to the rules of safety should be warned. If the person continues to violate rules, necessary action should be taken to ensure the safety of all participants. The instructor should be consistently aware of situations in which the instructor might be negligent.

Students who are novices at golf are not always aware of the potential dangers that exist. Johnson and Johnstone (1975) point out that:

. . . , safety should be one of your prime concerns.

Out-of-doors, on the course, the ball becomes the missile which causes the most injuries. Indoors, the club takes the role of the "one to watch." (p. 123)

Etiquette

The instructor can compile a list of golf courtesies which should be given to group members. This list should be discussed and questions from the group should be encouraged. The class members need to realize that no list will fully

cover each situation, yet, an impression should be made to students that etiquette is a vital concern and a responsibility for each golfer. The classroom can serve as a teaching station for this unit.

Bowen and Clemence (1981) state, "The measure of a true golfer is the respect shown for other golfers displayed in the conduct on the course, care of the course and knowledge and respect for the rules" (p. 43). Bowling (1964) says, "A golf teacher should teach students to respect the rights of others while playing a course" (p. 51).

Golf etiquette is the knowledge and application of common courtesies and manners as applied to other golfers and spectators and also includes care, repair and concern for the golf course. Etiquette affects the safety of participants and others on the golf course as well as the speed of play and course maintenance.

The following list consists of golf courtesies which should be points of discussion for the instructor and students:

1. If possible, receive some instruction and study the U. S. G. A. Rules of golf prior to playing the first time on a golf course.
2. Beginning golfers and other high handicap players should avoid playing at times when the golf course is crowded.
3. If a golfer is playing alone, that player has no status and is required to let other groups play through.

4. Allow faster players to play through your group if your group is holding up play.
5. Allow the group following your group to play through if someone in your group loses a ball.
6. Be aware of the name and number on the ball that you are playing and mark the ball as well.
7. Offer your playing companion the opportunity to play first on the first tee in social play.
8. Remain still and avoid talking when others are hitting.
9. Give assistance to others in your group by tracking and hunting for golf balls that are hit.
10. Replace all divots to their original position.
11. Avoid hitting into players in the group ahead of your group.
12. Repair all ball marks on the green and rake all sand bunkers after hitting a sand shot.
13. Assist in the removal and replacement of the flagstick.
14. Do not step in the putting line of group members.
15. Do not cast a shadow across the line of hitting or putting of a group member.
16. Take a maximum of two practice swings prior to hitting.
17. Avoid placing bags on the green, driving golf cars too close to greens or tees and walking through traps after raking.

18. Mark your ball on the green and replace it correctly.

19. Leave the area of the green prior to marking down scores.

20. Show courtesy to and respect the dignity of each individual on the course regardless of ability.

Class Organization

There are three basic phases in golf activity class instruction: the introductory phase, the skill-building phase and the hitting phase. The introductory phase allows students to view, hear and experience aspects of the skill that is being taught. The skill-building phase allows the students to progress from learning the technique to practice swings. The hitting phase involves students hitting balls toward a target. Formations should be chosen which are safe and which provide students with the greatest opportunity for learning.

Since the introductory phase involves verbal instructions, semi-circles work well for better hearing, teaching the grip and for closer proximity for student questions. Circles work well for skill-building, without hitting balls, since the circle allows a complete view of each student in "part swing practice" and permits the instructor to make corrections that benefit all students but are specific to one particular student. Lines facing the instructor are good for large classes and enable the instructor to view errors easier since the students are

swinging in the same direction. Lines facing in opposite directions keep the entire class closer to the instructor and decrease the instructor's walking distance. During the hitting phase, the use of lines promotes safety because this formation protects participants from slices, hooks, and shanks (National Golf Foundation, 1980). There are exceptions to the line formation related to putting and hitting sand shots. Indoor putting stations, considering the location of electrical outlets, may assume almost any formation while only one student at a time should be positioned in a sand bunker.

When instructing outside, a teacher should avoid placing students to face the sun and should also take wind direction into consideration. Also, instructions for placing students in formation need to be clear.

Stretching Exercises for Golf

There is general acceptance among physical education instructors that warm-up exercises should be prescribed for the majority of activity courses. Yet, exercises are not usually considered as important for golf classes. Whereas, an emphasis on strength and endurance exercises does not seem applicable for beginning and intermediate golf students, stretching exercises can produce improved flexibility, promote a greater range of motion and help prevent injuries. However, improper stretching exercises can cause muscle and joint problems. The instructor should

emphasize daily stretching and stretching only enough to create tension within the muscle while avoiding bouncing.

Leary (1986) emphasizes the importance of nine stretching exercises for golf. These exercises involve stretching deltoids, rotator cuffs of the shoulders, triceps, wrists, buttocks muscles, abdominals and erector spinae muscles of the lower back. The lower back area is a common trouble spot for golfers.

Pelvic tilts, half knee bends and slow swings with weighted clubs should be considered as warm-up exercises. One positive aspect of including exercises in the lesson plans of activity classes is the minimal amount of equipment and time needed for their execution. Exercises can be performed by using doorjams, walls, the floor or ground and golf clubs.

Adapting Teaching Stations and Equipment for Instruction in Skills

Golf classes which have regular access to a golf course with excellent facilities should have few limitations in instruction. The driving range can be used for hitting short, middle and long irons as well as woods. The putting and chipping greens and practice sand bunkers can accommodate the majority of short game instructional categories. Finally, the golf course can be used to give students the opportunity to gain actual course playing experience.

Golf classes which do not have access to a golf course may experience limitations which affect the quality of

instruction unless an instructor adapts teaching stations and equipment for instruction. Listed below are specific categories and skills which can be taught by adapting school facilities into teaching stations and by selecting equipment to fit these stations.

Woods and Long Irons

I. Outdoors

1. Hit Cayman balls into an open area from natural turf to a flagstick.

2. Hit plastic balls into an open area from natural turf to a flagstick.

II. Indoors

1. Hit Cayman balls into a net from an artificial turf mat.

2. Hit plastic balls into a net from an artificial turf mat.

3. Hit plastic balls that are attached to a nylon rope from an artificial turf mat.

4. Hit plastic balls against a hanging mat or wall from an artificial turf mat.

Middle Irons

I. Outdoors

1. Hit plastic balls into an open area from natural turf to a flagstick.

2. Hit plastic balls into an open area from natural turf to a loop of rope. Attach a cloth to a coathanger and place the coathanger in the center of the loop.

II. Indoors

1. Hit Cayman or regulation balls into a net from artificial turf mats.
2. Hit plastic balls into a net from artificial turf mats.
3. Hit plastic balls into large baskets or boxes from artificial turf mats located on the fringe of a gymnasium floor.

Short Irons

I. Outdoors

1. Hit full shots using Cayman balls from natural turf to a mowed area which contains a flagstick or a coathanger and a cloth.
2. Hit chip and pitch shots using regulation balls from natural turf to a mowed area which contains a flagstick or a coathanger and a cloth.
3. Hit full shots using regulation balls with wedges and nine irons from natural turf to a flagstick or a coathanger and a cloth.

II. Indoors

1. Hit full shots using plastic balls from artificial turf mats over hurdles.
2. Hit pitch shots using plastic balls from artificial turf mats to small boxes, baskets or suspended hoops.
3. Hit chip shots using plastic balls from artificial turf mats to carpet swatches on which loops of rope have been placed.

4. Hit full, pitch or chip shots with regulation balls from artificial turf mats into nets, boxes or baskets.

Sand Wedge

I. Outdoors

1. Hit regulation or Cayman balls from a small sand bunker into an open area to a flagstick, coathanger and cloth or into a net.

2. Hit regulation or Cayman balls from a long jump pit to loops of rope or hoops lying on the ground into a net. Hit only the artificial turf behind the ball to simulate bunker shots.

Putting

I. Outdoors

1. Make arrangements for the class to use the putting green at a local golf course on a day when the course is least crowded.

2. Construct a bentgrass green at the school and practice on this facility. Cooperative construction, maintenance and use of the green with the school golf team is suggested.

II. Indoors

1. Place electric putting cups on the end of rugs or carpet swatches or foam rubber mats.

2. Place metal (non-electric) putting cups on the ends of rugs, carpet swatches or foam rubber mats.

3. Draw a line on the floor with chalk and draw a circle on a rug or carpet with spray paint to simulate the

hole. Use the chalk line to help keep the backswing straight and push the club along the target line.

4. Place two yardsticks on the floor using these objects to help bring the putter straight back between them and stroke the putt toward the electric putting cup.

5. Paint stripes on regulation balls and observe whether or not a putt rolls with end-over-end spin. Stroke the balls toward electric or metal putting cups from artificial turf mats, rugs or swatches of carpet.

6. Stroke with the leading arm only without using a golf ball.

7. Look into mirrors while stroking the putt, looking specifically at the putter head to determine the line and length of the stroke.

General Instructions

1. Demonstrate the training grip and use it to teach hand position on the club.

2. Use mirrors to view images of stance and positions at the top of the swing.

3. View video cassettes to analyze the full golf swing, using the stop phase to break down various aspects of the swing.

4. Demonstrate eye exercises for golf and use these exercises to teach eye concentration on the ball at the address position and during the swing.

Practice Aids for Instruction

The golf instructor can choose from commercially manufactured equipment or can construct teaching aids to use when conducting drills and exercises. Some equipment is affordable for most budgets whereas the most sophisticated highly technical equipment is available but is cost prohibitive except for a few physical education departments.

Although nets, mats, and other equipment can be designed by some school maintenance departments, many items which are commercially made are well constructed, guaranteed for durability and more attractive than most handmade equipment. A variety of items are available from Austad's 1986 Golfer's Christmas Catalog, 45 East 10th Street, P. O. Box 1428, Sioux Falls, South Dakota, 57101. Some of these instructional devices are:

1. A golf training grip which can be placed on any golf club for the purpose of teaching correct hand position on the club.

Training Grip, #TG58C, cost \$6.75.

2. A pitching and chipping net which has an aluminum hoop, 24 inches in diameter, can be used indoors as well as outdoors.

Pitch-n-Chip, #CP12C, cost \$18.50.

3. An eleven-foot putting mat with artificial grass has a foam incline near the hole which allows a student to

practice lagging skills. A backstop is included to prevent missed shots from rolling away from the apparatus.

11-foot Putting Green, #PG12C, cost \$37.50.

4. An electric putting cup has an actual size hole and returns the putts to the student. Five slots are numbered to allow scoring for games.

Putting Cup, #1904C, cost \$17.95.

5. An automatic golf tee device places a golf ball in a hitting position by touching an automatic switch. A container, which has a 50-ball capacity, is attached to a mat that enables a student to hit consecutive shots without changing the stance. Objectives are to increase muscle memory and sensitivity of feel.

Tee Wizz, #TX45C, cost \$89.95.

6. Mitsubishi manufactures the Golf Trainer which analyzes the swing. Sensors, which trace club movement to a point of impact, are placed under a mat. The device displays club selection, club head angle, head speed, duffed balls, and shot direction. One limitation regarding this machine is that only right-hand swings can be measured.

Four AA batteries are included.

Swing Trainer, #GC30C, cost \$179.95.

7. A 24-1/2 inch by 13-3/4 inch mat, made of heavy rubber and designed to avoid sliding, has simulated grass. The addition of a rubber tee allows the hitter to use both woods and irons.

Driving Mat, #MN53C, cost \$24.95.

8. A seven-foot by nine-foot practice net with a smaller backup net stops the ball from rolling when it hits the net. The frame is made of steel tubing and is painted to prevent corrosion and rust.

Practice Net, #PN97C, cost \$69.95.

G. O. Distributors, 2502 North Tracy Drive, Erie, Pennsylvania, 16505, markets the Tee-Off device. This apparatus is made in an outdoor model in which natural turf is used as a platform model with a mat, designed for indoor use. An arm has a ball suspended from an unbreakable nylon cord. When a ball is hit in a straight pattern, the ball orbits in a straight line. When the ball is hooked, it orbits inside-out and a slice action results in an outside-in orbit. Once the ball stops, it is in position to be hit again. Replacement balls are available at a reasonable price.

Tee-Off Outdoor Model, #1872, cost \$14.95;

Tee-Off Platform Model, #1873, cost \$19.95;

Tee-Off Replacement Ball Unit, #936, cost \$1.50.

An aid that could be beneficial in determining whether or not a student has a correct release of the wrists and proper timing for maximum power at impact is the Swing-Rite club. This device has the grip, weight and feel of a regulation golf club, even though it has a slender steel head and a sliding ring. Grillo (1986) explains that:

If you swing it with correct power and timing, a hidden spring releases the ring with a gloriously gratifying

click at the imagined moment when club meets ball. A premature click means you uncocked your wrists too soon with loss of power and possible slice. A click after impact means your wrists uncocked too late or you lunged or swayed at the ball.

Swing-Rite Club, no catalog number, cost \$49.95.

One example of an expensive and sophisticated machine is the Sportech Swing Analyzer which has been used by the Vanderbilt golf program since 1982. The computerized machine is made by Sportech Company of Old Saybrook, Connecticut. The machine has light sensors which register the pathway and speed of the golfer's clubface after the hitter stands on the platform and hits a teed golf ball into a net. This machine measures the following parameters:

1. tracking the clubhead during the backswing,
2. tracking the clubhead during the downswing,
3. speed of the clubhead during the backswing,
4. speed of the clubhead during the downswing,
5. position on the clubface where the ball was struck at impact,
6. angle of the center or "sweetspot" of the clubface at impact,
- 7-9. weight distribution between your feet at set up, at the top of the swing, and at impact.

Sportech Swing Analyzer, no catalog number, cost \$13,000.

Larry Shaver (No Date) Vanderbilt University golf coach, considers the Sportech Swing Analyzer to be a good investment.

He plans to recoup the cost by leasing it to individuals and organizations for swing analyses.

Use of Instructional Media

The classroom can be the site of teaching and analyzing golf skills through the use of instructional media. The video cassette recorder and camera, films, instructor demonstrations and mirror image practice can be used effectively as tools of instruction.

The video recorder and camera can be used to record the swings of students and through the use of the cassette player students can view the proper techniques of highly skilled players. The pause and slow motion phase can aid in simplifying analyses of students' swings. Students can view swings of classmates, their own swings and those of skilled professionals.

Students can also participate in mirror image practice which involves viewing oneself while the instructor analyzes the swing. For putting practice, one mirror can be placed in front of the student and another mirror can be placed behind the student. This allows the golfer to see the backswing and forward motion of the stroke.

Demonstrations of the grip, stance, address position and position at the top of the swing can be done by the instructor. Other fundamentals that can be demonstrated by the instructor include the sweepback of the backswing, hand position and the lateral weight transfer from the back

foot to the front foot. The fundamentals that are static such as the grip, stance, address and hand positions are the most simple to view because of the lack of movement. The sweepback and the lateral weight transfer which are partial swing phases should be done in slow motion to simplify understanding of the movements.

Physical and Mental Practice

The instructor should emphasize the importance of proper practice and should teach students how to practice. According to Toski and Flick (1978), there are four basic kinds of practice:

1. the session for warm-up prior to a round of golf,
2. practice for improving the technical aspects of the swing,
3. practice in competition that directs one mentally toward playing the game, and
4. mental practice without using a club in which one ingrains into one's mind a swing feel and images of shots that are successful.

These kinds of practice can be done independently or in various combinations.

Appendices

Appendix A
Definition of Terms

Appendix A

Definition of Terms

1. Adaptation of facilities is change in the structure or the site of a teaching station to make it more suitable for instruction.
2. Address in golf is taking a stance and grounding the club when the rules allow.
3. An Artificial turf mat is a rubber based platform with an attachment of simulated grass.
4. A Bentgrass green is the target area containing the flagstick and is composed of a strain of grass used predominantly in colder regions. This grass, as opposed to Bermuda grass, does not necessitate an over-seeding process nor does it need to be covered in the winter.
5. The Bounce of a sand wedge refers to the wide flange which promotes cutting through the sand when hitting an explosion shot.
6. The Cayman ball is a golf ball that was developed by the MacGregor Golf Club Company which travels approximately one-half the distance of a regulation golf ball and is named for Grand Cayman Island where Jack Nicklaus designed a golf course to accommodate this ball.

7. A Chip is a short shot with a low trajectory that is played to the green.
8. The Clubface is the designated hitting surface of the clubhead.
9. The Clubhead is attached to the shaft and is the metal or wood part of the club that strikes the golf ball.
10. Clubhead speed is the distance that the head of the club travels in a given amount of time.
11. A Deep-faced wood is a club which has greater mass from top to bottom than a standard or shallow-faced club.
12. A Divot is a portion of turf which is displaced by a club during a swing.
13. The Flagstick is the movable pole with a flag attached that marks the location of the hole on the green.
14. Fore is a word of warning which is shouted to anyone in danger of being struck by a golf ball.
15. A Full shot in golf is a ball which is hit with a swing using an extended backswing and a completed follow through position.
16. A Golf car is a gasoline or electrically powered vehicle used to carry one or two persons and their golf equipment.
17. Golf drills are processes of teaching or training in which repetitions of golf skills are applied.
18. Golf equipment is special items needed to participate in golf and includes golf shoes, golf gloves, golf clubs and golf balls.

19. Golf etiquette is conventionally acceptable behavior which is related to the game of golf.
20. Golf exercises are a series of specific movements which are used to help students gain an understanding and awareness of golf skill development.
21. Golf instruction is the act of teaching the knowledge or skills of golf.
22. Golf skills are proficiencies which result from golf instruction and practice.
23. A Golf swing is the backward and forward movement of the golf club with the intent of striking the ball.
24. A High compression golf ball is one that is more compactly pressed or wound, thus necessitating a greater impact force in order to achieve distance.
25. A High handicap golfer is one who receives a great number of shots in order to adjust the player's actual score for the purpose of equalizing ability in competition with other golfers.
26. Honor is the privilege to hit first in golf either by having the lowest score on the previous hole or holes, by winning the toss of a coin or by receiving the right by being a guest or visitor.
27. A Hook is the flight action which causes the golf ball to curve from right to left for a right-handed golfer and from left to right for a left-handed player.

28. Instructional media are printed materials, demonstrations and instruments such as filmstrips, video cassettes and mirror image viewing used in teaching.
29. Instructional techniques are the ways of procedure in teaching knowledge and skills.
30. The Lie of the golf club is the angle which is formed by the clubhead and shaft, usually described as either flat, standard or upright.
31. Limited golf facilities pertain to situations where certain golf instruction and activity is not possible because of a lack of space equivalent to a regulation golf course or full driving range, a lack of sophisticated or expensive equipment or machines, insufficient instructional stations, lack of lighting for instruction at night and also refers specifically to the lack of an area in which it is possible to hit golf shots with long irons and woods.
32. The Loft of the golf club is the vertical slope of the clubface backward from perpendicular.
33. Long irons consist of the one, two and three irons.
34. A Low compression golf ball is one which is less compactly pressed or wound, thus necessitating a lesser impact force to achieve distance.
35. A Low handicap golfer is one who receives either no strokes or a few strokes in order to adjust the

- player's actual score for the purpose of equalizing ability levels in competition with other golfers.
36. A Manual for golf instruction is a reference or handbook related to teaching golf for physical education instructors.
 37. A Medium shaft is the part of a golf club to which the grip and head are attached that connects with the neck of the club and has a standard amount of flex. This shaft is suggested for the average male golfer and the physically strong female player.
 38. Mental golf practice is repeated analysis using the mind for the purpose of gaining proficiency and skill in golf.
 39. Middle irons consist of the four, five and six irons.
 40. The Overall weight of the golf club is the actual amount which the club weighs.
 41. A Par three golf course consists entirely of holes in which par is three strokes.
 42. The P. G. A. is the Men's Professional Golf Association.
 43. Physical education activity classes are courses which are taught as a part of the basic service program in physical education with the greatest emphasis on the physical rather than theory.
 44. Physical golf practice is repetitive physical action for the purpose of gaining proficiency and skill in golf.

45. A Pitch is an approach shot which has a high trajectory and is played to a green.
46. Practice aids for golf are equipment, supplies and media items which assist in physical and mental exercises for proficiency.
47. Putting is the stroke played from near or on the green in which the ball is rolled toward the hole.
48. A Regulation golf ball is one which has specifications that have been tested and approved by the United States Golf Association.
49. A Regulation golf course is one which consists of nine or 18 holes with a variety of par three, par four and par five holes that meets the specifications of the United States Golf Association.
50. A Round of golf is the playing of either nine or 18 holes on a golf course.
51. A Sand bunker is a hazard that is filled with sand and is commonly referred to as a sand trap.
52. A Sand wedge is the highest lofted iron that has a wide flange for playing lofted shots from a fairway as well as a sand bunker.
53. A Shallow-faced wood is a club which has less mass from top to bottom than a standard or deep-faced club.
54. A Shank is a shot which travels at approximately a 90 degree angle to the intended line after being struck on the neck of the golf club.

55. Short irons consist of the seven iron, eight iron, nine iron, pitching wedge and sand wedge.
56. A Slice is the flight action which causes the golf ball to curve from left to right for a right-handed golfer and from right to left for a left-handed player.
57. A Stiff shaft is the part of a golf club to which the grip and head are attached that connects with the neck of the club and has less flex than a medium or whippy shaft. This shaft is suggested for the physically strong, low handicap male golfer.
58. Stretching exercises for golf are the actions of putting muscles through ranges of movement to improve flexibility and to prevent injuries to muscles and joints which are used in the golf swing.
59. A Stroke in golf is any motion of the clubhead that travels forward in the last stage with the intention of striking the ball.
60. The Swingweight of a golf club is a measurement of the clubhead weight in proportion to the shaft and grip weight.
61. Teaching Stations for golf are areas where instruction in golf can occur.
62. The Trajectory of the golf ball is the height and the path of a moving golf ball which is airborne.
63. The U. S. G. A. is the United States Golf Association and is the governing body for golf in the United States.

64. A Whippy shaft is the part of a golf club to which the grip and head are attached that connects with the neck of the club and has more flex than the medium or stiff shaft. This shaft is suggested for the average female golfer.

Appendix B
Letters



McKenzie, Tennessee 38201
901/352-5321

DIVISION OF NATURAL & HEALTH SCIENCES

September, 1985

Dear Colleague:

Currently I am pursuing the Doctor of Arts degree in Health, Physical Education, Recreation and Safety at Middle Tennessee State University. My topic is "A Manual for Golf Instruction in Physical Education Where Facilities are Limited".

Enclosed is a questionnaire designed to ascertain the golf facilities that are available at your school and at other colleges and universities in Tennessee. The results of the questionnaire will provide pertinent data for the study. Please take just a few minutes of your time and complete it. Please return the questionnaire even if you do not have golf facilities. My mailing address is as follows:

Mr. Jerry Hale Wilcoxson
Chairperson, HPER
P. O. Box 78-B
Bethel College
McKenzie, TN 38201

Your participation will be greatly appreciated.

Sincerely,

Jerry H. Wilcoxson

Dr. Ralph Ballou
Advisor

JHW:jkm

Enclosure

COPY



McKenzie, Tennessee 38201
901/352-5321

INTERCOLLEGIATE ATHLETICS

December 16, 1985

Name
Title
Address
City, State, Zip

Dear xxxxx:

In October of this year, I sent a survey questionnaire to you that was designed to ascertain the status of golf instruction in physical education activity classes where facilities are limited.

I wish to express my gratitude to you for your cooperation in returning the survey. Questionnaires were mailed to fifty universities, colleges and two-year (junior and community) colleges. I was very pleased to have 90% (45 of 50) returned.

If you are interested in the results of the survey, please let me know and I will send the information to you upon completion of the dissertation.

Sincerely,

Jerry H. Wilcoxson
Athletic Director

JHW:jkm

Box 78 B
Bethel College
McKenzie, TN 38201

Mr. Jack W. Nicklaus
Muirfield Village Golf Club
Dublin, Ohio 43017

Dear Mr. Nicklaus:

I am currently the golf coach and director of athletics at Bethel College. I am also enrolled in the Doctor of Arts Program in physical education at Middle Tennessee State University. My dissertation topic is Suggested Techniques for Golf Instruction in Physical Education Classes Where Facilities are Limited.

Your new Cayman golf ball has been particularly interesting to me since it relates specifically to my topic. I would greatly appreciate any information you could send me in regard to this new technological advance and the ramifications of this ball for practice and instruction.

May I add my congratulations to you for your recent victory at the Memorial. I have followed your career since I saw you play in the Ohio State Amateur Tournament when I lived in Youngstown, Ohio.

Enclosed is an article about you and the Cayman ball written by John Bibb, sportswriter of the Nashville Banner. Thank you for any consideration which you may give to my request.

Sincerely,

Jerry Wilcoxson



GOLDEN BEAR

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JACK NICKLAUS ENTERPRISES

September 18, 1984

Mr. Jerry Hale Wilcoxson
Athletic Director
Bethel College
McKenzie, TN 38201

Dear Mr. Wilcoxson:

I am writing to respond to your inquiry on Cayman Golf, the new "shorter distance" golf game.

Cayman Golf, otherwise known as Short Golf, is an exciting new concept in golf. While Cayman balls will not be available from the MacGregor Golf Company until the first quarter of 1985, a great deal of speculation has taken place over what impact this new development will have on the game of golf.

Golden Bear International is involved in Cayman Golf through Jack Nicklaus' design of the first Cayman course on Grand Cayman Island in the British West Indies. We are also associated with the MacGregor Golf Company who is developing and manufacturing the ball. The attached piece entitled "The Cayman Golf Story", is our effort to describe the evolution of the game and the ball, and to outline the many uses and benefits we see in the concept.

I hope you find this useful.

Sincerely,


Tom Hislop
Director of Marketing

TJH:jst

Appendix C
Survey Questionnaire

SURVEY QUESTIONNAIRE

NAME: _____

POSITION: _____

SCHOOL: _____

Directions: Please read each question carefully and place a check (✓) in the blank which is appropriate for your response or supply your written answer in the blank. Please return the questionnaire even if you do not have golf facilities.

1. Does your school offer golf in the basic physical education activities program?

Yes _____
No _____

NOTE: If the answer to question #1 is no, you will not need to respond to questions #2 - 12.

2. How many golf activity classes will be offered at your school during the 1985-86 school year?

3. What is the average class size of golf classes at your school?

4. Does your department have access to a regulation golf course for the purpose of golf instruction in physical education activity classes?

Yes _____
No _____

5. Do you have an outside area (field) available at your school for the purpose of golf instruction in physical education activity classes?

Yes _____
No _____

6. If your department has an available outside area, what is the approximate size of the area?

_____ by _____ yards

7. Does your department have an inside area available at your school for the purpose of golf instruction in activity classes?

Yes _____
No _____

8. If your department has an available inside area for the purpose of golf instruction in activity classes, what is the approximate size of the area?

_____ by _____ feet

9. Do you consider the available areas for golf instruction at your school to be

adequate _____
 excellent _____
 inadequate _____

10. Do you consider the available golf equipment for golf instruction at your school to be

adequate _____
 excellent _____
 inadequate _____

11. Are plans underway to construct new areas for instruction of physical education activity classes in golf at your school?

Yes _____
 No _____

12. Are plans underway to improve the current areas of physical education activity classes in golf at your school?

Yes _____
 No _____

COMMENTS: If you have any comments concerning college or university facilities for golf instruction at your school, please feel free to indicate your suggestions or ideas on this page.

PLEASE RETURN TO: Mr. Jerry H. Wilcoxson
 Chairperson, HPER
 P. O. Box 78-B
 Bethel College
 McKenzie, TN 38201

Appendix D
List of Participating Schools

Appendix D

List of Participating Schools

The following colleges and universities participated in the study:

1. Austin Peay State University
2. Aquinas Junior College
3. Belmont College
4. Bryan College
5. Carson-Newman College
6. Christian Brothers College
7. Cleveland State Community College
8. Columbia State Community College
9. Covenant College
10. Cumberland University
11. David Lipscomb College
12. Dyersburg State Community College
13. East Tennessee State University
14. Fisk University
15. Freed-Hardeman College
16. Hiwassee College
17. Jackson State Community College
18. Johnson Bible College
19. King College
20. Knoxville College
21. Lambuth College

22. Lane College
23. Lee College
24. LeMoyne-Owen College
25. Martin College
26. Maryville College
27. Memphis State University
28. Middle Tennessee State University
29. Milligan College
30. Motlow State Community College
31. Rhodes College
32. Shelby State Community College
33. Tennessee State University
34. Tennessee Technological University
35. Tennessee Temple University
36. Tennessee Wesleyan College
37. Trevecca Nazarene College
38. Tusculum College
39. Union University
40. The University of Tennessee at Chattanooga
41. The University of Tennessee at Knoxville
42. The University of Tennessee at Martin
43. The University of the South
44. Vanderbilt University
45. Volunteer State Community College

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