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**A COMPARISON OF A SELF-DIRECTED LEARNING APPROACH
TO A TRADITIONAL INSTRUCTIONAL APPROACH
IN BEGINNING TENNIS**

Richard E. LaLance

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

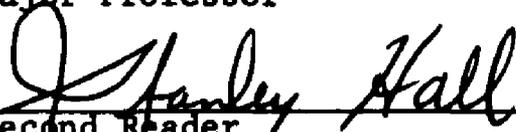
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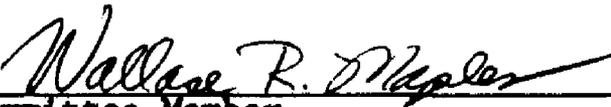
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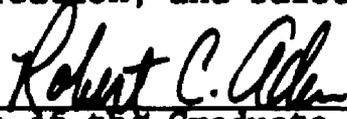

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ABSTRACT

A COMPARISON OF A SELF-DIRECTED LEARNING APPROACH TO A TRADITIONAL INSTRUCTIONAL APPROACH IN BEGINNING TENNIS

by Richard E. LaLance

The purposes of this study were: (1) to compare a self-directed learning approach to teaching tennis to a traditional instructional approach and (2) to analyze and interpret the results of this comparison.

Fifty-two male and female undergraduate students at Middle Tennessee State University served as the subjects for the investigation. They were assigned to either the experimental group or the control group according to their total scores on Form A of Hewitt's Comprehensive Tennis Knowledge Test and Hewitt's Tennis Achievement Test.

The experimental group utilized a Self-Directed Learning Approach to Tennis which included the following aspects of individualization: diagnosis, self-selection of activities, self-selection of learning materials, self-pacing and leveling. The control group followed a traditional teaching approach focused on group-oriented procedures (mass demonstration, explanation, discussion and drills).

The experimental period lasted five weeks (the first term of the Middle Tennessee State University 1975 summer session). At the end of the period, subjects were retested with Form B of Hewitt's Comprehensive Knowledge Test and Hewitt's Tennis Achievement Test.

An analysis of variance with one within-subject dimension and one between-subject dimension was used to determine if there were any significant differences within or between groups.

Findings of the study were:

(1) Both the experimental and the traditional procedures proved to be effective instructional techniques in that significant gains at the .05 level were made in each of the four tennis variables studied--forehand ground stroke, backhand ground stroke, service accuracy and speed, and knowledge of the game.

(2) No significant difference existed between the groups on any of the four variables measured as a result of the experimental treatment.

ACKNOWLEDGEMENTS

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Finally, the one person who provided the writer with the support, assistance, and understanding necessary to make this study a reality is his loving wife, Linda Lou.

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Chapter 1

INTRODUCTION

A commonly accepted goal of educational institutions is that of meeting individual needs. Yet, as one observes basic instruction programs in physical education, it becomes apparent that many of the methods of college level instruction are traditionally group oriented in approach. Although it is probably the most expedient, group-oriented instruction might be questioned in terms of its effectiveness compared to other methods.

Gagné points out that learning any set of materials depends upon the individual contributions from the learner himself. Learning is an individual matter and is determined largely by what the learner does and not by what the material or the teacher does. Therefore, the focus of emphasis must be on getting student involvement.¹ Based on this premise, student learning should be more effective in an individualized learning environment.

¹Robert M. Gagné, "Learning Theory, Educational Media and Individualized Instruction," Educational Broadcasting Review, IV (June, 1970), 57.

In recent years, programs of Individualized Instruction (II) have been implemented in educational systems throughout the United States. Literally thousands of such programs are currently in existence ranging from the elementary to the postgraduate levels. Literature based on studies of these programs reveals the vast success of II in terms of student learning. In view of this, it appears that II should be given serious consideration as a means of improving learning in physical education programs.

This investigation was concerned with determining the comparative value of a specific individualized instruction approach--self-directed learning--to a traditional group-oriented approach in the teaching of tennis.

STATEMENT OF THE PROBLEM

Using a self-directed and a traditional group-oriented method, this study was designed to investigate the effects of these two instructional approaches on the acquisition of: (1) three fundamental tennis skills (fore-hand ground stroke, backhand ground stroke, and service) and (2) basic knowledge of the game.

PURPOSE OF THE STUDY

Ideally, a college level basic instruction program in physical education should provide opportunities for each student to pursue activities of his own selection. It would be hoped that the student would accrue skill competencies needed to encourage his participation in those activities upon completion of the program. For such a goal to be accomplished, two considerations must be acknowledged: first, the emphasis on the individual student and, second, the need to discover the most effective means of achieving that end.

The purposes of this study were: (1) to compare a self-directed learning approach to teaching tennis to a traditional instructional approach and (2) to analyze and interpret the results of this comparison.

DELIMITATIONS OF THE STUDY

This investigation was limited to students enrolled in the Physical Education Basic Instruction Program at Middle Tennessee State University. Two Beginning Tennis classes held during the first term of the 1975 summer session provided the population from which comparable samples of students were drawn. Since the classes were taught by two different instructors, a two-teacher variable

existed. It was realized by the researcher that this condition might have been capable of influencing the results.

The experimental period was yet another variable that presented a limitation. Summer session terms at Middle Tennessee State University are arranged in a substantially different manner from those of fall and spring. Specifically, summer terms last approximately five weeks while regular terms last approximately seventeen weeks. Summer term classes in Beginning Tennis meet four days per week; fall and spring term classes meet two days per week. The length of class periods in the summer term is sixty-five minutes, contrasted to fifty minutes in the regular session classes. The researcher was also aware that the difference in frequency and length of meeting times would make it difficult to generalize from the results if the study had been conducted during a regular semester.

DEFINITIONS OF TERMS

Individualized Instruction (II)--The tailoring of the educational process which takes into account the unique qualities and needs of each individual.²

²Robert A. Weisgerber, Trends, Issues and Activities in Individualized Learning (Washington, D.C.: Office of Education, February, 1972), p. 6.

Self-Directed Learning--A type of individualized instruction characterized by: diagnosis, self-selection of activities, self-selection of materials, self-pacing and leveling.

Self-Directed Learning Approach to Tennis (SDLAT)--The formulation and implementation of a plan to apply the principles of self-directed learning to the teaching of tennis. SDLAT served as the treatment for the experimental group.

Traditional Instructional Approach--The approach that was used for the control group. It was based on group-oriented procedures such as mass demonstration, explanation and drills, with restricted individual attention given to each student.

Forehand Ground Stroke--The stroke used by a right-handed player to hit the ball on the right side of his body after a ball bounces (a left-handed player uses the forehand ground stroke to hit a ball that comes to him on the left side of the body).³

³Joint Committee of the United States Lawn Tennis Association and the American Association for Health, Physical Education and Recreation, Tennis--Group Instruction (Washington, D.C.: The American Association for Health, Physical Education and Recreation, 1964), p. 10.

Backhand Ground Stroke--The stroke used by a right-handed player to hit a ball that approaches him on the left side of his body as he is facing the net. The opposite is true for the left-handed player.⁴

Service--The stroke used to put the ball in play at the start of each point.⁵

STATEMENT OF HYPOTHESES

For the purposes of this study, the following Null Hypotheses were tested:

1. There will be no significant differences in the mean skill performances of the experimental and traditional groups on the forehand ground stroke, backhand ground stroke, and service accuracy and speed as a result of the experimental treatment.

2. There will be no significant difference between the experimental and traditional group in the mean test scores of the tennis knowledge test.

⁴Ibid., p. 11.

⁵Maryhelen Vannier and Hollis T. Fait, Tennis (Philadelphia: W. B. Saunders Company, 1969), p. 104.

Chapter 2

REVIEW OF THE LITERATURE

Many people confuse individualized instruction with individual activity. The latter implies that the learner is working by himself and consequently such activity requires special materials as well as help always available when it is needed. Individual activity may or may not be individualized instruction depending on whether or not the task, the learner's behavior and the teacher's behavior have been determined on the basis of the learner's needs at a particular moment in time. When these factors have been tailored to his needs, his instruction is individualized regardless of whether he is working alone, in a small group or in a large group.¹

As one looks at the tremendous amount of literature related to II, especially in the past decade, a shift in philosophy from teacher-dominated instruction to student-centered learning becomes apparent. An appreciation of students as unique individuals who pursue learning in their own unique way has made the need for individualization a real one.

GENERAL REVIEW OF INDIVIDUALIZED INSTRUCTION

Numerous II programs have appeared throughout the country. Large scale systems have come about through the

¹Madeline Hunter, "Implementing Individualized Instruction," Thrust for Educational Leadership, II (April, 1973), 7.

efforts of organizations primarily concerned with research and development, while more local versions have been developed by respective systems and schools. A number of the large scale plans that have drawn special attention from educators in the United States are reviewed by Edling² as follows:

1. The Continuous Progress Plan--This plan provides for the uninterrupted development of each child without restrictions as to specific materials and modes of instruction.

2. UNIPAC's, Learning Activity Packages, Performance Criteria Units, Teaching Learning Units--Each of these represent a packaged instructional module that usually contains one or more specific instructional objectives most often stated in behavioral terms, sample tests that suggest how the behavior will be measured, and a complete list of references to aid the learner.

3. Program for Learning in Accordance with Needs--This system develops and tests Teaching Learning Units for individual subject areas utilizing both general and special sets of commercially available materials.

4. Individually Prescribed Instruction--Based on carefully detailed and sequenced behavioral objectives, this

²Jack V. Edling, "Individualized Instruction: The Way It is--1970," Audiovisual Instruction, XV (February, 1970), 13-16.

program includes empirically developed materials which permit students to plan and proceed independently, provisions for diagnosing and monitoring student progress, written prescriptions for each learner, and continuing teacher diagnosis and feedback.

Dunn suggests five possible ways to individualize learning and stresses that any II program is either related to or is an outgrowth of one of these types: (1) Programmed learning, (2) Instructional packages, (3) Contracts, (4) Work-study experiences, and (5) Community contributions. She further states that, regardless of the name given to the program, it is only individualized to the degree which it utilizes teacher- and/or student-determined goals, materials, activities, interests, and assessment devices.³

Esbensen, too, points out that an instructional system is individualized only when student characteristics play a major part in the selection of objectives, materials, procedures, and time. He also relates that individualization is not a black or white matter in that one does not simply say that a system is or is not individualized;

³Rita S. Dunn, "A Proposition Paper to Further Individualization of Instruction in the Schools," Audiovisual Instruction, XVII (November, 1972), 49-53.

rather, one needs to identify the nature and degree of individualization.⁴

CLASSIFICATION OF INDIVIDUALIZED INSTRUCTION

In an attempt to identify and classify different types of individualization, Edling⁵ devised a model (Figure 1) based on school versus student selection of learning goals and school versus student selection of learning activities and materials. Four distinct types of II are identified in this model, each representing a different approach to individualization. Hull has clearly depicted these four types of II in the following paragraph:

When the school selected both the learning objectives and the media for attainment, the category is termed Individually Diagnosed and Prescribed Learning. When the school determines what is to be learned but allows the learner freedom to determine how he will attain the objectives, the category is termed Self-Directed Learning. In situations where the learner selects the objective but the media are determined by the school, the category is termed Personalized Learning. If the student selects both

⁴Thorwall Esbensen, Working at Individualized Instruction (Palo Alto: Fearon, 1968), in James Black and William Georgiades, "Individualized Instruction--A Rating Profile," Thrust for Educational Leadership, II (April, 1973), 34.

⁵Jack V. Edling, Individualizing Instruction: A Manual for Administrators, Corvallis Teaching Research Division, Oregon State System of Higher Education, 1971, in Ronald E. Hull, "Selecting an Approach to Individualized Education," Phi Delta Kappan, LV (November, 1973), 170.

Media	Objectives	
	School-Determined	Learner-Selected
System-Determined	"Individually Diagnosed and Prescribed"	"Personalized"
Learner-Selected	"Self-Directed"	"Independent Study"

Figure 1

Classification of Individualized
Instruction: Edling's Model

what is to be learned and how to learn it, the category is termed Independent Study.⁶

To more clearly define each of the types of II classified by Edling, Dunn has described those aspects of individualization included within each type (Figure 2).⁷ Using these "aspects" as the criteria, it appears that a totally individualized program might not be feasible for many educational systems. Therefore, the decision becomes one of selection and utilization of the type of II that best suits the needs of the students in the respective environment. For this investigation, self-directed learning, as classified by Edling and expanded upon by Dunn, was chosen to serve as the means of individualization.

INDIVIDUALIZED INSTRUCTION IN PHYSICAL EDUCATION

The writer's search of the literature failed to reveal information concerning self-directed learning in a physical education activity program based on this study's established criteria. Therefore, the remainder of this chapter will be focused on literature related to individualizing instruction in physical education, regardless of the criteria involved.

⁶Hull, "Selecting an Approach to Individualized Education," 169.

⁷Dunn, "A Proposition Paper to Further Individualization of Instruction in the Schools," 53-54.

Semi-Individualized	Totally Individualized
Individually Diagnosed and Prescribed <u>Aspects of Individualization</u> Diagnosis Self-Pacing Leveling	Teacher and Student Diagnosis Teacher and Student Prescription Student Selection of Goals, Learning Materials, Activities, Instructional Techniques Self-Pacing Self-Leveling Self-Assessment Filled by Cooperative Assessment
Personalized <u>Aspects of Individualization</u> Diagnosis Self-Selection of Goals Self-Pacing Leveling	
Self-Directed Instruction <u>Aspects of Individualization</u> Diagnosis Self-Selection of Materials Self-Selection of Learning Activities Self-Pacing Leveling	
Independent Study <u>Aspects of Individualization</u> Diagnosis Self-Selection of Goals Self-Selection of Learning Materials Self-Selection of Activities Self-Pacing Leveling	

Figure 2

Semi-Individualized Compared to Totally Individualized Aspects of Each Type of Individualized Instruction

A recent approach to teaching physical education basic instruction program courses (lifetime sports and gymnastics) at Purdue University was developed by Annarino.⁸ It is based on individualization utilizing Individualized Instruction Packets (IIP's). The packets are complete activity units made up of a progressive series of skill tasks requiring written, verbal and motor responses by the students. These IIP's are designed to replace the traditional, regimented group drills with independent learning, thinking, creativity, and self-responsibility. Each student progresses at his own rate in learning the skills and knowledge. The packets are designed for use by an individual student to supplement teacher instruction. It is felt by Annarino that this "new approach" shows promise of being the most effective way of increasing learning in physical education basic instruction programs.⁹

In an investigation by Aquilar comparing programmed instruction for teaching tennis to a conventional method, no

⁸Anthony A. Annarino, "University Basic Instructional Program--A New Approach" (mimeographed paper handed out at The Southern Conference on the General Physical Education Program in Higher Education, January, 1974, Atlanta, Georgia), pp. 1-4.

⁹Anthony A. Annarino, "IIP," Journal of Health, Physical Education and Recreation, XLIV (October, 1973), 20-21.

significant difference was found in the levels of the two groups in the specific skills that were tested.¹⁰

Spears and Swire report that independent physical education programs at Antioch College and Wellesley College increase the opportunity to provide a meaningful experience in the basic instructional program. Antioch utilizes autonomous physical education; Wellesley utilizes independent physical education. Both institutions provide the student with an outline of procedures to be followed concerning attendance, grading and credit. Students submit a written proposal outlining the objectives and a specific program showing how the objectives are to be met. Upon approval, the student works on his program and submits a report of the outcomes at the end of the course.¹¹

A self-instructional course was developed by Turley to incorporate individualized learning into the area of physical conditioning. A self-instructional learning package offering various learning tracks was developed to serve as the instructional medium for the course in body and figure control for women at East Texas State University.

¹⁰M. Kay Aquilar, "The Influence of Programmed Instruction on the Achievement of Specific Skills in Tennis," Dissertation Abstracts International, XXXIV (January, 1974), 3951-A.

¹¹Betty Spears and Dale Swire, "From Philosophy to Practice Through Self-Directed Activities," Journal of Health, Physical Education and Recreation, XXXIX (October, 1968), 39-41.

Turley concluded that: (1) individualized learning opportunities can be planned and organized into self-instructional packages and (2) self-instructional packages can be adapted for use in body and figure control courses.¹²

At Texas A & M University, individual prescription in physical education, during freshman orientation, precedes enrollment in the physical education program. The philosophy of the required program is that every individual is different and, therefore, the prescription of activity for each individual must be somewhat different. The central theme of the program is to help each student attain his potential related to physical education. Information gathered during pre-program testing is used for individual prescription. Activities such as weight training, jogging, agility running, relays, beginning swimming, self-testing activities and circuit training are assigned weekly, with each individual responsible for his own participation.¹³

The life skills (physical education) program at Hostos Community College in New York City is unique in its total commitment to the systems approach. Courses, based on

¹²Dorcas E. Turley, "A Self-Instructional Course in Body and Figure Control for College Women" (unpublished Doctoral dissertation, East Texas State University, 1973), pp. 68-70.

¹³John M. Chevrette and Homer Tolson, "Individual Prescription," Journal of Health, Physical Education and Recreation, XLI (May, 1970), 38-39.

clearly written performance objectives, are determined and elected by the students. Individualized features of this program include: pass only grading system, adjustable time limits for learning, competency testing for credit, and multi-teaching strategies.¹⁴

Attempts to utilize II have not been exclusive to institutions of higher education. Many high school programs have tried various methods of II as shown below. A successful learning approach to gymnastics at Eagle Grove High School in Iowa places full responsibility for the determination of a gymnastics unit structure on the girls enrolled in physical education. Goals as well as learning techniques are left up to the students with multi-media resources made available.¹⁵

Stanhope reports success with an independent study option for upperclassmen at Timberlane High School, New Hampshire. It is based on a theory that secondary school students are on their way to becoming self-reliant, responsible adults, capable of choosing activities which

¹⁴Wallace M. Pina, "Physical Education," Journal of Health, Physical Education and Recreation, XLII (November-December, 1971), 57-58.

¹⁵Patricia L. Geadelman, "Self-Directed Learning," Journal of Health, Physical Education and Recreation, XLII (September, 1971), 25-26.

they are interested in pursuing individually. Students may select almost any activity as long as three criteria are met: (1) the student must have a genuine interest in the activity, (2) the activity must have carry-over value, and (3) participation in the activity must provide an opportunity for a goal-centered learning experience. Faculty advisors are assigned and conferred with weekly to evaluate progress.¹⁶

Goal-centered individualized learning was implemented at Framingham North High School in Massachusetts. It was developed in order to give the students a more active role in deciding what they were going to learn and how they would like to learn gymnastics. With the instructor's guidance, students were required to put their goals in writing for the entire unit and to supplement the instructor's evaluation of their performances with their own. The goal-centered learning was considered an effective approach in eliminating the problems of not enough time, not enough space, and too many students.¹⁷

At Silverton High School (Colorado), a student-designed physical education program has been developed in

¹⁶Carolyn L. Stanhope, "Independent Study Option," Journal of Health, Physical Education and Recreation, XLII (September, 1971), 24.

¹⁷Sandra Driscoll and Doris A. Mathieson, "Goal Centered Individualized Learning," Journal of Health, Physical Education and Recreation, XLII (September, 1971), 26-27.

which participating students are given a voice in curriculum construction. Activities include new and challenging units in Alpine and Nordic skiing, backpacking, orienteering and mountaineering as well as standard activities such as badminton, first aid, soccer, circuit training, softball, and volleyball.¹⁸

An emphasis on individualized instruction prompted the girls' physical education staff at Ft. Pierce Central High School in Florida to develop and implement contingency contracting. Eleventh- and twelfth-grade girls enrolled in physical education are permitted to pursue study units of their own choice. Contracts are available for the various units containing contract information, work sheets and materials which aid the students in fulfilling the agreement.¹⁹

Omaha public schools (Nebraska) have implemented a new approach to physical education involving student-centered learning. The traditional program was abandoned and radical changes were made to implement II. Specific changes involved arranging learning tasks, developing a new model, changing the role of the teacher, changing the gym

¹⁸George Pastor, "Student-Designed," Journal of Health, Physical Education and Recreation, XLII (September, 1971), 30-31.

¹⁹Barbara L. Fast, "Contracting," Journal of Health, Physical Education and Recreation, XLII (September, 1971), 31-32.

into a learning laboratory, placing the student in a self-directed learning situation, and introducing relevant, cognitive learning tasks at the appropriate level.

Individualized learning units were developed in seventeen typical basic instruction activities according to a five-step progression of: diagnosis; prescription; student pursuit of learning task with performance objective reached; teacher evaluation; assignment of new task.²⁰

As previously stated, all of the programs reported above have fallen somewhere in the broad area of "individualized instruction." None of these, however, represented an example of "self-directed learning" based on the criteria earlier reviewed; that is, none clearly demonstrated all of the aspects presented in the definition of "self-directed learning" in this study.

²⁰Robert D. Shrader, "Individualized Approach to Learning," Journal of Health, Physical Education and Recreation, XLII (September, 1971), 33-35.

Chapter 3

METHODS AND PROCEDURES

The methods and procedures discussed in this chapter were developed to ascertain information pertinent to the statement of the problem of this study. The following paragraphs include descriptive information regarding the selection of subjects, instruments that were used, the experimental period, implementation of the experimental group, implementation of the control group, and statistical procedures.

SUBJECTS

The subjects in this study were 52 undergraduate male and female students at Middle Tennessee State University enrolled in two separate Beginning Tennis classes. Each subject was assigned to either the experimental group or the control group accordingly: Pretest results on Hewitt's Tennis Achievement Test served as the criterion to match subjects from one Beginning Tennis class with subjects from the other class. Rank according to test score determined the pairing. One member from each matched pair was randomly assigned to either the

experimental or control group, with the remaining member being assigned to the other group. This procedure divided the subjects into experimental and control groups in each class. Pooling of the like groups served to provide the necessary comparable samples for this investigation. Two instructors were involved--one (the investigator) teaching the experimental group and the other (the varsity tennis coach) teaching the control group.

INSTRUMENTS

The literature reveals that numerous instruments have been designed to measure various facets of tennis. This study was concerned with three specific tennis skills--forehand ground stroke, backhand ground stroke, serve--and knowledge of the game. Therefore, the investigator chose two instruments specifically designed to measure these variables: (1) Hewitt's Tennis Achievement Test and (2) Hewitt's Comprehensive Tennis Knowledge Test.

Both tests have been subjected to statistical analysis in terms of reliability and validity. Hewitt's Tennis Achievement Test¹ evaluates the three skills--service, forehand ground strokes and backhand ground strokes--at the university level. The test-retest method

¹Jack E. Hewitt, "Hewitt's Tennis Achievement Test," The Research Quarterly, XXXVII (May, 1966), 231.

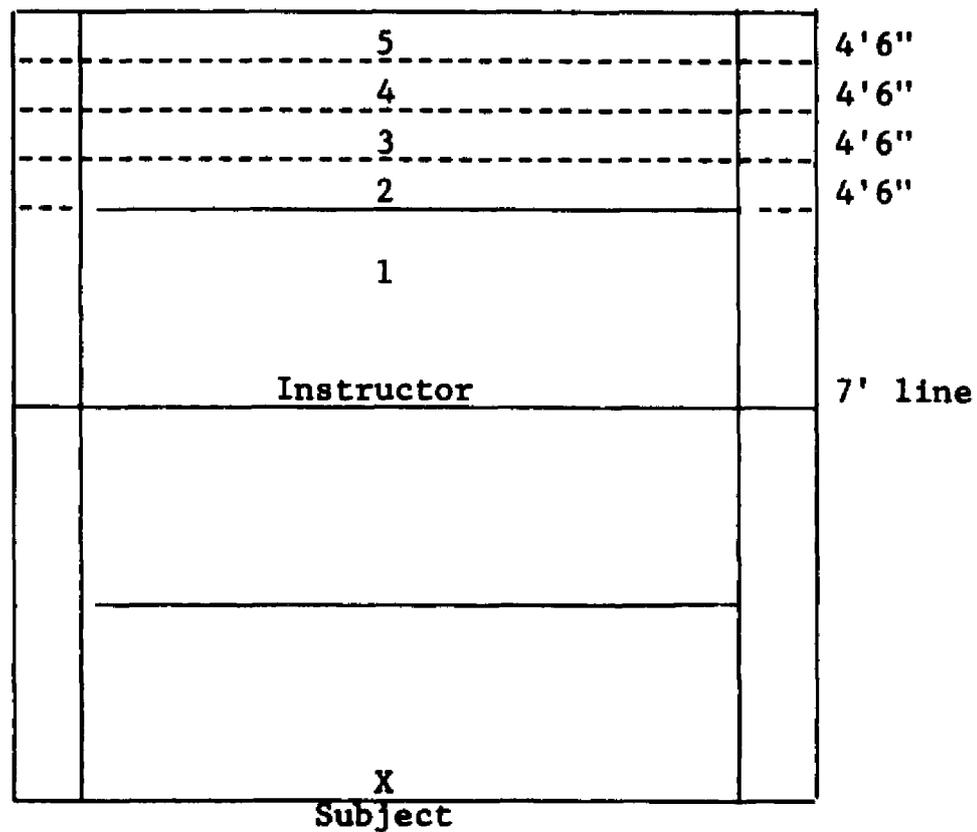
reliabilities range from .75 to .94. Validity coefficients for each of the skills when compared with individuals' rank order of play ability ranged from .52 to .93. Hewitt's Comprehensive Tennis Knowledge Test² includes 100 items divided into two parts, Form A (revised) and Form B (revised). Alternate halves of the two forms, when using the Spearman-Brown Prophecy formula, give a reliability of .95. When correlated with the Minnesota Tennis Knowledge Test, $r = .81$.

Descriptions of the two Hewitt tests and how they were employed in this study follow.

Hewitt's Tennis Achievement Test

The tennis court is divided into five zones for the forehand and backhand drives. The zones are weighted from one to five points as shown in Figure 3. Ten balls for the forehand and ten for the backhand are pitched on one bounce to the subject positioned on or behind the baseline. Each ball must be stroked and returned across the net to a point within the doubles court boundaries. A seven foot restraining line at the net allows for a good low drive. All balls returned to the proper court under the restraining line are scored according to the zone value (zone in which the ball touches down). Balls passing over the restraining line and landing in the proper court receive one-half the zone value.

²Jack E. Hewitt, "Hewitt's Comprehensive Tennis Knowledge Test," The Research Quarterly, XXXV (May, 1964), 147.



10 Forehand Strokes

10 Backhand Strokes

Figure 3

Hewitt's Tennis Test
Forehand and
Backhand
Drive

The right service court (Figure 4) is divided into six zones. Standing in proper service position, ten balls are served by the subject into this court. Balls passing under the restraining line and landing in the right service court are scored according to the zone value. One-half value is scored for balls passing over the restraining line and landing in the proper court.

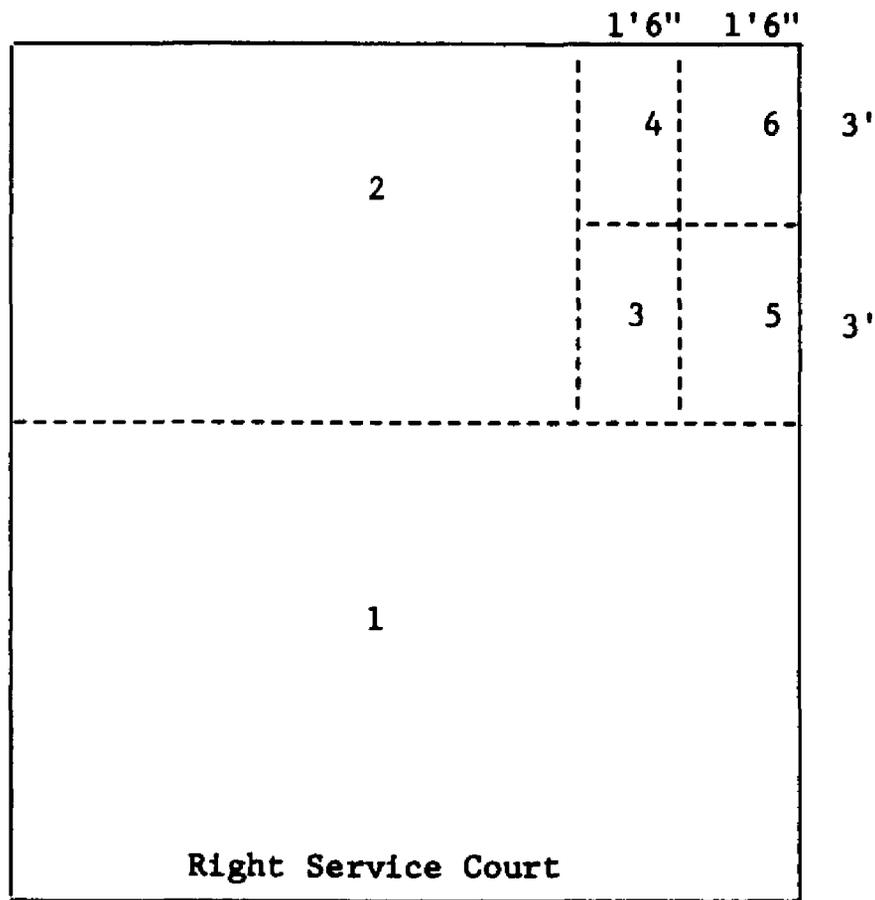
In addition to service placement, service speed is also measured, but only in "good" serves. Speed is determined by the distance the served ball will travel on one bounce. As shown in Figure 5, the area is divided into four zones, each weighted in value from one to four points.

All of the four measures on Hewitt's Tennis Achievement Test were used to arrive at a composite score for each subject. Two scorers and one recorder were used to reduce possible scoring and recording errors.

Hewitt's Comprehensive Tennis Knowledge Test

Questions on this knowledge test were based on the five most important phases of the game as stressed by professional authorities in the field. The elements were weighted as follow:

<u>Test Elements</u>	<u>Percent</u>
1. Fundamentals of the game	40
a. Serving	10
b. Forehand Drive	10
c. Backhand Drive	10



10 Balls Served

Figure 4
Hewitt's Tennis Test
Service Placement

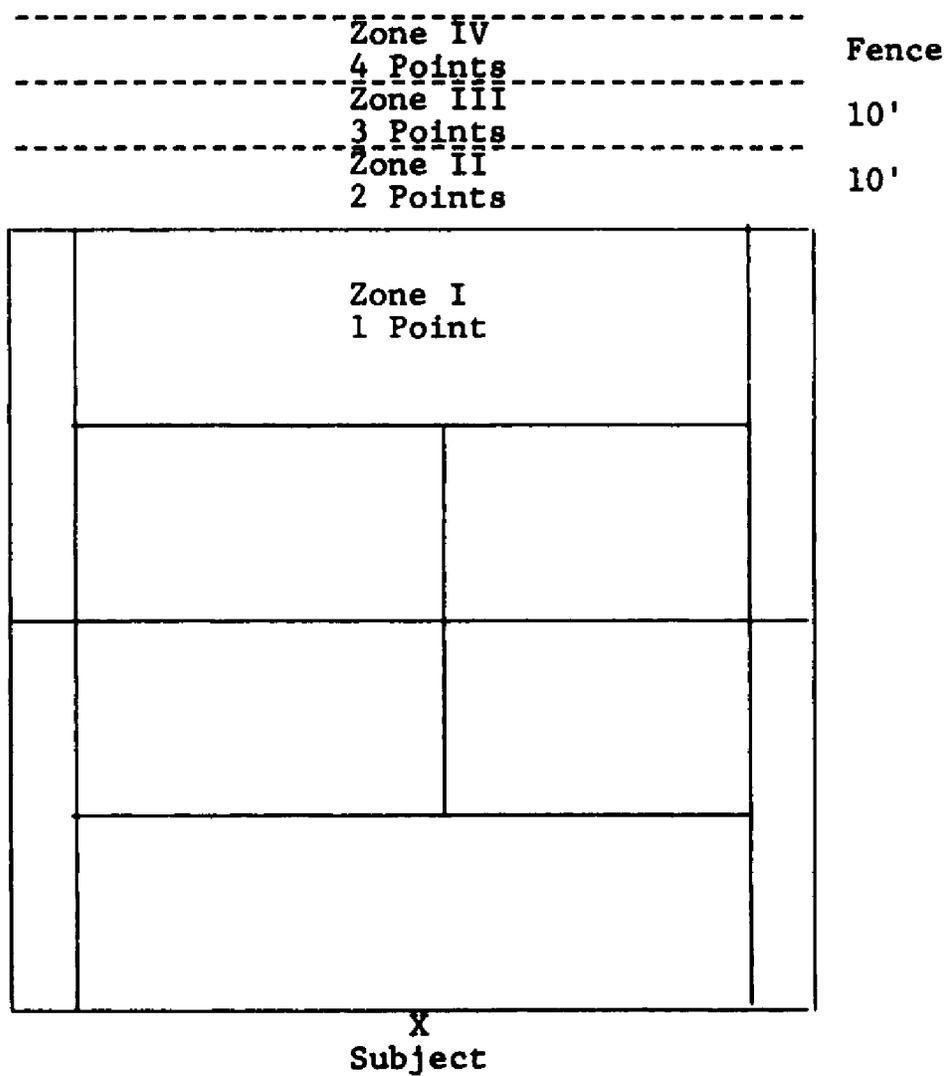


Figure 5
Hewitt's Tennis Test
Service Speed

<u>Test Elements</u>		<u>Percent</u>
d.	Volley	3
e.	Half-volley	3
f.	Chop and Slice	2
g.	Smash	2
2.	Rules of tennis	25
3.	Playing situations	25
a.	Styles	12½
b.	Strategies	12½
4.	History	5
5.	Equipment	<u>5</u>
Total		100

Copies of both forms of the test may be seen in Appendix A.

TESTING PROCEDURES

The two instruments described above were administered at both the onset and the end of the experimental period. Special care was taken by the investigator to insure that each administration was consistent.

The pretest, consisting of Hewitt's Tennis Achievement Test and Form A of Hewitt's Comprehensive Tennis Knowledge Test, was scheduled for the first and second days of the experimental period. The posttest was given during the final three days of the experimental period and included Hewitt's Tennis Achievement Test and Form B of Hewitt's Comprehensive Tennis Knowledge Test.

EXPERIMENTAL PERIOD

This investigation was conducted during the first term of the Middle Tennessee State University 1975 summer session. The actual dates of this period were June 10 through July 10 and included 19 meeting days. Physical Education Basic Instruction Program courses met for 65 minutes per day for four consecutive days per week, Monday through Thursday.

EXPERIMENTAL GROUP

The experimental group was comprised of 25 Middle Tennessee State University male and female undergraduate students enrolled in two separate Beginning Tennis classes in the Physical Education Basic Instruction Program.

A Self-Directed Learning Approach to Tennis (SDLAT) method was employed as the experimental treatment of this group. It was based on the following "aspects of individualization":

1. Diagnosis
2. Self-selection of activities
3. Self-selection of materials
4. Self-pacing
5. Leveling.

The SDLAT was broken down into two main parts, each containing learning modules arranged in a lower-order skill to a higher-order skill sequence, as shown below.

Part I: Skill Development

Module 1: Movement on the Tennis Court

Module 2: Forehand Ground Strokes

Module 3: Backhand Ground Strokes

Module 4: Service

Part II: Information Development

**Module 5: General Knowledge and Appreciation
of the Game**

Module 6: Simple Strategy

Each module was implemented according to the model presented in Figure 6. The model was developed by the researcher in an attempt to organize a pattern for progression through each module. Specific objectives stated in behavioral terms served as the learning goals. An instructor-student conference at the onset of each learning module provided the student with an insight into his existing abilities and the necessary changes that must be made to meet the objectives. The student was then responsible for selecting the activities and materials that appeared to him to be best suited to his individual needs. Self-selection choices

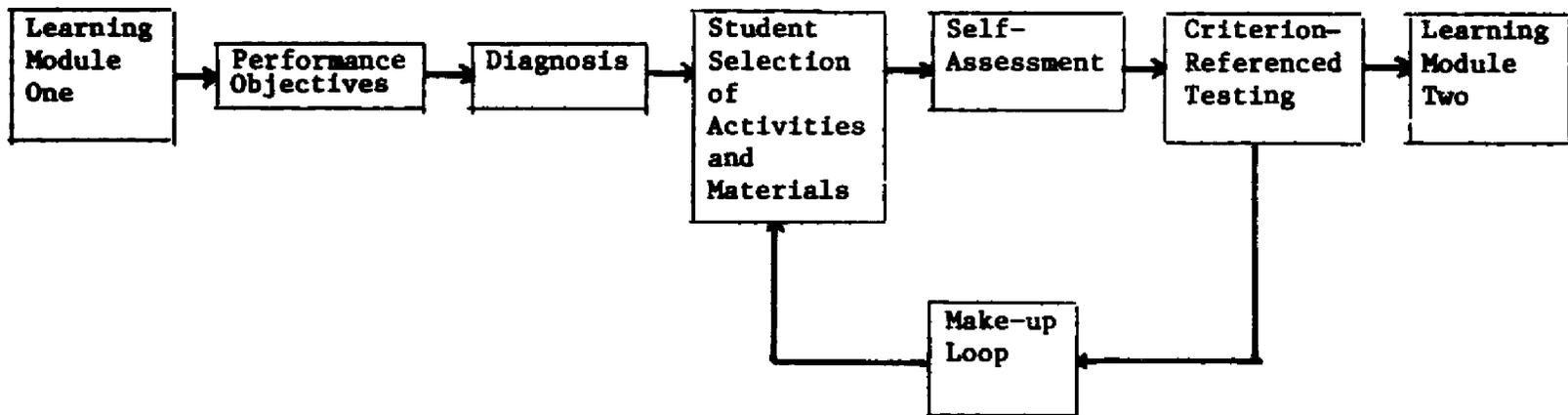


Figure 6
SDLAT Model

included individual action activities, cooperative action activities, and related materials available for each module.

When the learner felt that the tasks involved in a module were completed, he made a self-assessment check to determine his readiness for the criterion-referenced test administered by the instructor. Once he successfully demonstrated his abilities and/or knowledge on the test, he was ready to move to the next module. If he failed, a make-up loop was available to allow him more time on the tasks to be learned.

An SDLAT handbook was distributed to each subject in the experimental group to serve as a guide for self-directed learning. Developed by the researcher for purposes of this study, the handbook included the following information:

1. an introduction to beginning tennis,
2. the essence of self-directed learning,
3. organization of SDLAT, and
4. six learning modules.

It also contained a breakdown of each learning module according to the model explained above. Modules were color-coded for easy identification.

Subjects in the experimental group were required to meet two class periods per week with the instructor. These meetings were scheduled by the instructor by dividing the group in half and assigning each half specific days of the

week for regular class attendance. It was felt by the instructor that these scheduled meetings led to a smoother and a more effective implementation of self-directed learning than would be expected with no pre-arranged sessions. More specifically, each meeting was concerned with diagnosis, criterion-referenced testing, and any other matters necessitating student-instructor interaction. Other than those two meetings per week, the program was strictly self-directed. Each member of the group, however, was expected to complete as much of the total program as possible during the experimental period.

CONTROL GROUP

The control group was made up of 25 male and female students enrolled in the above mentioned Beginning Tennis classes at Middle Tennessee State University.

A traditional teaching approach, based on group-oriented procedure, was the basis of the instructional method used for the control group. Mass demonstration, explanation, discussion, and drills highlighted the traditional teaching techniques. Students functioned as members of large and/or small groups and received limited individual attention from the instructor. Students in the control group were required to attend class and to

participate in the various activities set forth by the instructor for the duration of the course.

STATISTICAL ANALYSIS

Teaching procedure was the essence of this study. In particular, the purpose of this investigation was to determine if one method appeared to be superior to the other in terms of the skills demonstrated and knowledge obtained of tennis. And, if so, what differences existed in the variables studied as related to the instructional approach?

In an attempt to answer these questions, a simple analysis of variance utilizing the F Ratio³ was utilized.

³Janet T. Spence and others, Elementary Statistics (New York: Appleton-Century-Crofts, 1968), pp. 161-163.

Chapter 4

ANALYSIS OF DATA AND DISCUSSION

The data collected in this investigation consisted of initial and final scores for the forehand ground stroke, backhand ground stroke, service accuracy and speed, and knowledge of the game of tennis. An analysis of variance was utilized to determine if there was a significant difference at the .05 level of confidence between the control group and the experimental group as a result of the experimental treatment.

ANALYSIS OF DATA

Comparison of Group Means

The comparison of group means by the pre-post test for each of the four tennis variables is shown in Table 1. The repeated measures reflected an overall significant increase in each of the four variables for both the experimental group and the control group. It should be noted that the mean gains in the backhand and service measures varied slightly in favor of the experimental group, while the mean gain in the knowledge performance varied

Table 1

Comparison of the Group Means for the Forehand Drive, Backhand Drive, Service Accuracy and Speed, and Knowledge of the Game

Group	N	Mean Pre-test	Mean Post-test	Mean Gain
Experimental Group	25			
Forehand		9.06	11.20	2.14
Backhand		6.92	9.62	2.70
Service		7.36	15.28	7.92
Knowledge		42.08	66.08	24.00
Control Group	27			
Forehand		9.07	11.31	2.24
Backhand		7.11	8.59	1.48
Service		11.20	15.07	3.87
Knowledge		41.40	68.88	27.48

slightly in favor of the control group. Very little difference was found in the forehand performance.

Analysis of Variance

Forehand Ground Stroke. Analysis of the forehand ground stroke showed that the results were independent of the method employed in that there was no significant difference between the experimental and control groups. This information is shown in Table 2.

The pre-post test main effect reflected a significant increase throughout the experimental period. Both groups showed a favorable gain for the forehand drive ($F = 8.29$, $df = 1/50$, $p < .05$).

Backhand Ground Stroke. Analysis of the backhand stroke, depicted in Table 3, revealed no significant main effects or interactions between the two groups. However, the effects of both the experimental and the control treatments did show an overall significant improvement of the backhand drive ($F = 13.72$, $df = 1/50$, $p < .05$).

Service Accuracy and Speed. No significant difference was found between the groups in the development of the service accuracy and speed skills. This information can be seen in Table 4. The pre-post test main effect reflected a positive gain in that both groups significantly improved on these measures ($F = 30.48$, $df = 1/50$, $p < .05$).

Table 2
Analysis of Variance for the Forehand Drive

<u>Source</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>F.95</u>
<u>Between-Ss</u>	1630.72	51			
Groups	0.10	1	0.10		
Error (b)	1630.61	50	32.61		
<u>Within-Ss</u>	878.50	52			
Pre/Post	124.96	1	124.96	8.29*	4.03
Groups X Pre/Post	0.06	1	0.06		
Error (w)	753.47	50	15.06		
<u>Total</u>	2509.22	103	24.36		

*Significant at .05 level

Table 3
Analysis of Variance for the Backhand Drive

<u>Source</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>F.95</u>
<u>Between-Ss</u>	1284.83	51			
Groups	4.53	1	4.53	0.17	4.03
Error (b)	1280.29	50	25.60		
<u>Within-Ss</u>	525.62	52			
Pre/Post	111.11	1	111.11	13.72*	4.03
Groups X Pre/Post	9.63	1	9.63	1.19	4.03
Error (w)	404.87	50	8.09		
Total	1810.45	103	17.57		

*Significant at .05 level

Table 4
Analysis of Variance for Service
Accuracy and Speed

<u>Source</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>F.95</u>
<u>Between-Ss</u>	3178.60	51			
Groups	85.89	1	85.89	1.38	4.03
Error (b)	3092.71	50	61.85		
<u>Within-Ss</u>	2429.37	52			
Pre/Post	879.86	1	879.86	30.48*	4.03
Groups X Pre/Post	106.43	1	106.43	3.68	4.03
Error (w)	1443.06	50	28.86		
Total	5607.97	103	54.44		

*Significant at .05 level

Knowledge of the Game. Analysis of the knowledge of the game is presented in Table 5. No significant difference was found as a result of the experimental treatment. The pre-post main effect revealed a significant increase throughout the experimental period. Both groups showed a favorable increase in the knowledge of the game ($F = 259.67$, $df = 1/51$, $p < .05$).

DISCUSSION

In the review of the literature, several authors were shown to be using some type of individualized instruction techniques in the teaching of physical education activities.¹ While most of these authors reported favorable results, documentation of effectiveness was not submitted, leaving only speculation as to why they expressed a preference for the Individualized Instruction (II) techniques over the traditional method.

Results of this study also reflect an inability to show that the particular II technique used--a self-directed approach--was more effective than a traditional approach.

¹Anthony Annarino, "IIP," Journal of Health, Physical Education and Recreation, XLIV (October, 1973), 20-23; Dorcas E. Turley, "A Self-Instructional Course in Body and Figure Control for College Women" (unpublished Doctoral dissertation, East Texas State University, 1973); John M. Chevrette and Homer Tolson, "Individual Prescription," Journal of Health, Physical Education and Recreation, XLI (May, 1970), 38-39.

Table 5
Analysis of Variance for the Knowledge
of the Game

Source	SS	df	MS	F	F.95
<u>Between-Ss</u>	8608.11	51			
Groups	29.62	1	29.62	.17	4.03
Error (b)	8578.49	50	171.56		
<u>Within-Ss</u>	20730.00	52			
Pre/Post	17316.96	1	17316.96	259.67*	4.03
Groups X Pre/Post	78.66	1	78.66	1.17	4.03
Error (w)	3334.36	50	66.68		
Total	29338.11	103	284.83		

*Significant at the .05 level

Why, then, have II techniques come into widespread use? Perhaps the answer lies not in data collected in a formal investigation but in the very nature of II itself--that is, in the emphasis on the individual student and a specific plan to meet his individual needs.

Support for this suggestion can be seen in the results of a subjective evaluation of SDLAT shown in Appendix C. Students in the experimental group were asked whether they strongly agreed, agreed, were uncertain, disagreed, or strongly disagreed with ten statements concerning the desirability of SDLAT. Twelve of the twenty-five subjects "strongly agreed" and an additional nine "agreed" that SDLAT seemed to be more effective than a regular (traditional) class situation for learning beginning tennis. They expressed a preference for SDLAT even though they had never been enrolled in a traditional class. A partial explanation for their position might be revealed in their very positive responses to two other statements (numbers 1 and 3), both of which emphasize the "personal" aspect of SDLAT. In a time of "students' rights," surely a teaching approach focused on the individual student should be considered desirable--especially if it has been shown to be equally as effective as an approach less personal in nature.

In conjecturing why the SDLAT did not show a statistically significant advantage over the traditional approach, the writer suggests one outstanding possibility. Throughout the term, students in the experimental group expressed their concern at being unable to discipline themselves in order to become self-directed. They felt a previous conditioning to attend classes on a regular basis, led by an instructor. This feeling is further revealed in their response to question 4 of the subjective evaluation in which approximately half of the students "strongly agreed" or "agreed" that meeting only half of the regular time (as scheduled in SDLAT) seemed to deter progress.

A discussion of this study should not be concluded without mentioning a few advantages of the SDLAT which have not previously been noted:

1. It offers an advantage in terms of space. Many college and university physical education activity courses are large, thereby creating a pronounced teaching problem for the instructor. Self-directed learning affords an economical advantage in that small groups can be scheduled while other students are engaged in self-directed activities.

2. It involves an exposure to a variety of media. Appropriate equipment and materials provide the student with

a concentration of aids from which to choose, according to his own needs and interests.

3. The model of the SDLAT might serve as a guide in the development of similar approaches in other activity courses, especially for individual and dual sports.

Chapter 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purposes of this study were (1) to compare a traditional instructional approach (control group) to the teaching of tennis with that of a self-directed learning approach (experimental group) and (2) to analyze and interpret the results of this comparison.

SUMMARY

Procedure

Fifty-two male and female undergraduate students at Middle Tennessee State University served as the subjects for the investigation. They were assigned to either the experimental group or the control group according to their total scores on Form A of Hewitt's Comprehensive Tennis Knowledge Test and Hewitt's Tennis Achievement Test.

The experimental group utilized a Self-Directed Learning Approach to Tennis which included the following aspects of individualized instruction: diagnosis, self-selection of activities, self-selection of materials, self-pacing and leveling. The control group followed a

traditional teaching approach focused on group-oriented procedures (mass demonstration, explanation, discussion, and drills).

The experimental period lasted five weeks (the first term of the 1975 summer session). At the end of the period, subjects were retested with Form B of Hewitt's Comprehensive Knowledge Test and Hewitt's Tennis Achievement Test.

An analysis of variance was used to determine if there were any significant differences within or between the groups.

Findings

Statistical treatment of the data indicated the following results:

1. Both the experimental and the traditional procedures proved to be effective in that significant gains at the .05 level of probability were made in each of the four tennis variables--forehand ground stroke, backhand ground stroke, service accuracy and speed, and knowledge of the game.

2. No significant difference existed between the groups on any of the four variables measured as a result of the experimental treatment.

As a result of the analysis of data, all of the null hypotheses tested in this investigation were accepted.

These hypotheses were as follow:

1. There will be no significant differences in the mean skill performances of the experimental and traditional groups on the forehand ground stroke, backhand ground stroke, and service accuracy and speed as a result of the experimental treatment.

2. There will be no significant difference between the experimental and traditional groups in the mean test scores of the tennis knowledge test as a result of the experimental treatment.

CONCLUSIONS

Within the limits of this study, the following conclusions are submitted:

1. The SDLAT was shown to be an effective method of teaching beginning tennis to students at the college level.

2. The traditional, group-oriented approach was an equally effective method of teaching beginning tennis.

3. The SDLAT received a favorable reaction from the participating students.

RECOMMENDATIONS

Based on the findings of this study, it is recommended that:

1. A similar investigation be conducted using a full school term as the experimental period in order to ascertain if time would influence the results,

2. More research be undertaken assessing the effects of self-directed learning on skill development in other individual and dual sports,

3. More research be initiated determining the values, uses and outcomes of multi-media in physical education basic instruction programs, and

4. Another investigation be conducted utilizing three groups--a traditional, a self-directed, and a combination of the two--to determine if there is a marked difference in favor of the combined group.

APPENDIXES

APPENDIX A*

HEWITT'S COMPREHENSIVE TENNIS KNOWLEDGE TEST
FORM A, REVISED

*Written permission obtained from Jack E. Hewitt,
Professor Emeritus, University of California, Riverside,
November 18, 1975.

HEWITT'S COMPREHENSIVE TENNIS KNOWLEDGE TEST
FORM A, REVISED

Directions: About one-half of the following statements are true and about one-half are false. If the statement is more true than false put a (+) sign in the space provided on your answer sheet and an (O) if the statement is more false than true. ANSWER EACH QUESTION AS IF IT RELATES TO A RIGHT-HANDED PLAYER.

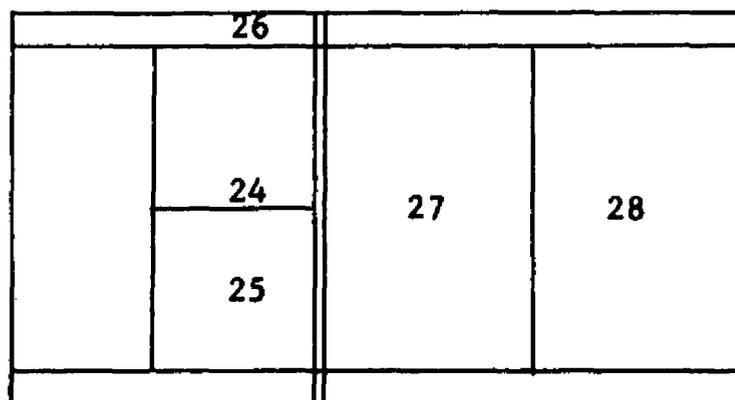
1. A chop stroke produces backward spin on the ball.
2. On the forehand drive a person should attempt to hit a bouncing ball at the level of shoulders or eyes.
3. Hitting the ball in the air before it touches the ground is called a half-volley.
4. If time permits, a pause at the end of the backward swing on all drives is advisable.
5. When the racket puts top spin on the ball, the ball stays in the air longer.
6. The end line of the tennis court is called the back line.
7. It is good tennis strategy to play the opponent's weakness.
8. Stepping on the line while in the act of serving is called a line fault.
9. A "smash" is an attempt to "kill" the ball on a forehand or backhand drive.
10. To lob the ball in the sun is to take an unfair advantage of the opponent.
11. In the backhand drive the left shoulder points towards and is at right angles to the net.
12. Racket stringing can be too tight for best play.
13. A racket strung with nylon lasts longer than expensive gut.
14. The rules state that sides must change at the end of every even game played.
15. "Wightman Cup" play is competition for women only in England and the United States.

Directions: Place in the appropriate space on your answer sheet the number of the phrase that best completes the sentence.

16. It is good strategy in tennis to: (1) force opponent out of position, (2) drive all balls to opponent's backhand side, (3) try to rattle opponent during play, (4) play ball to opponent's baseline, (5) chop all balls.

17. In the chop stroke where the ball is hit hip high, the racket completes the follow through: (1) above the head, (2) above the eyes, (3) below the eyes, (4) below the shoulders, (5) below the hips.
18. To be at the net position first is: (1) spectacular, (2) best offensive position, (3) worst offensive position, (4) best lobbing position, (5) best forehand drive position.
19. For the forehand drive generally one should attempt to contact the ball: (1) a foot in front of the fore foot, (2) opposite the fore foot, (3) even with the rear foot, (4) a foot behind rear foot, (5) two feet behind rear foot.
20. Action in the overhead volley is similar to that of the smash except in the overhead volley the movement shows: (1) more speed of action, (2) less speed of action, (3) more cut, (4) less cut, (5) more wrist action.
21. If the opponent hits to your weakness you should: (1) run around the ball and hit it on your strong side, (2) play off to one side so that the ball comes to your strong side, (3) lob, (4) make an attempt to play the ball on the side it hits, (5) volley the ball.
22. The best position to cover most lobs on the court is: (1) two feet from the net, (2) midway between the baseline and net, (3) 12 feet back of baseline, (4) alleys, (5) midway between baseline and fence.
23. Smashing is liable to be more successful: (1) at the spot one foot from net, (2) on the service line, (3) on the baseline, (4) five to ten feet back of baseline, (5) at the spot between the net and the service line.

Directions: Give the names of a tennis court.



Directions: Answer the questions below by placing either "Yes" or "No" on your answer sheet.

29. Player A served underhand. Umpire said nothing. Was this correct?
30. Player B played the ball with both hands on the racket. Player A did not play the return and claimed the point because B used two hands. Was this correct?
31. Player B tosses the second ball poorly on the serve and catches the ball instead of hitting it. A claims the point because B caught the ball. Was A correct in claiming the point?
32. Is the score called "game" when one side wins the additional point after deuce?
33. Player F cuts the ball over the net and it has so much backspin on it that the ball bounces back into F's own court. D reaches over the net and touches the ball with the racket before the ball bounces a second time. At no time did D touch the net. Was the umpire correct in giving F the point?
34. In tournament play for women does winning three out of five sets determine the match?
35. Player C runs close to the net and in returning the ball finds that he must jump the net. Player B, because of this, becomes confused and knocks the ball out of the court. Umpire gave the point to C. Was this correct?
36. Is it permissible for your partner in a doubles game to stand in the center of the court obstructing the view of the receiver?
37. The first served ball by B rolls back onto A's court and the second served ball hits it. A failed to remove the first ball. Does B win the point?
38. In official play, players change courts at the end of every even game.
39. A makes a good return at the net. In so doing his racket slips from his hand and goes into B's court. B because of this becomes confused and misses the ball. Does B get the point?
40. Is the best position for net play midway between the service line and the baseline?
41. Player C reaches over the net and touches the ball before it passes over the net. Was the umpire correct in giving C the point because he did not touch the net and D knocked the ball out of bounds?
42. Is the score of 6-5 considered an official set?
43. While serving, player A steps on the line simultaneously as the racket touches the ball. Is this a violation of the rules?

Directions: Match the following numbers in column A with the statements in column B to which they are related. Have no more than one number before any item in column B.

Column A	Column B
1. Out	44. Hitting the ball over the head of the opponent.
2. Kill	45. Ball hits the net on the serve and falls into the proper service court.
3. Fifteen-all	46. While serving winning the point after deuce.
4. Game	47. Both sides winning one point each.
5. Advantage receiver	48. Serving the ball underhanded is considered . . .
6. Smash	49. A ball spinning backward in its flight.
7. Advantage server	50. Any served ball hitting outside legal service boundary.
8. Thirty-fifteen	
9. Thirty-all	
10. Let	
11. Net ball	
12. Continue play	
13. Reverse ball	
14. Illegal	
15. Fault	
16. Foot fault	
17. Service line	
18. Lob	
19. Legal	
20. Service	
21. Deuce	
22. Chop	

APPENDIX B*

HEWITT'S COMPREHENSIVE TENNIS KNOWLEDGE TEST
FORM B, REVISED

*Written permission obtained from Jack E. Hewitt,
Professor Emeritus, University of California, Riverside,
November 18, 1975.

**HEWITT'S COMPREHENSIVE TENNIS KNOWLEDGE TEST
FORM B, REVISED**

Directions: About one-half of the following statements are true and about one-half are false. If the statement is more true than false put a (+) sign in the space provided on your answer sheet and an (O) if the statement is more false than true. ANSWER EACH QUESTION AS IF IT RELATES TO A RIGHT-HANDED PLAYER.

1. Wimbledon, the scene of many European tennis championships, is located in Paris, France.
2. "Lobs" are short returns made at the net.
3. On a backhand drive, the right shoulder should be at right angles to the net.
4. The "shake hands" or Eastern grip for the forehand drive allows the racket face to be at right angles to the flight of the ball.
5. Bringing the racket down on the ball and twisting the wrist backward produces the chop stroke.
6. In the majority of instances in singles play, one should return behind the center of the baseline after each play made behind or around the baseline.
7. In the forehand drive both feet should be pointed at right angles to the net.
8. When executing a forehand drive, the body should be facing the net.
9. In singles, the serve might be effectively placed to the opponent's backhand especially if the server expects to advance to the net.
10. The score could be 40-15 when serving to the opponent's right court.
11. A "stop-volley" is a volley played from the baseline.
12. A service that touches the net and falls into the proper service court is called a "net" ball.
13. After making a good backhand drive the body weight should end up on the right foot.
14. If standing out of bounds, it is permissible to catch the ball before the ball hits the ground and win the point.
15. "Davis Cup" matches are for men only.

Directions: Place in the appropriate space on your answer sheet the number of the phrase that best completes the sentence.

16. To be most effective in doubles play requires:
 - (1) ability to play net
 - (2) ability to cover back court

- (3) team work
 - (4) ability to lob
 - (5) ability to smash from the baseline.
17. A person wins the set when the score stands as follows:
 - (1) 6-5 (4) 5-0
 - (2) 9-8 (5) 7-5
 - (3) 7-6
 18. A tennis ball with a forward spin on it will:
 - (1) continue longer in the air (4) bounce to the right
 - (2) shoot upwards (5) bounce to the left
 - (3) shoot downwards
 19. In the straight overhead American serve, the racket head completes the follow-through by the:
 - (1) right shoulder (4) right leg
 - (2) left shoulder (5) left leg
 - (3) right hip
 20. The best average position to return a chop stroke is to get:
 - (1) about two feet in front of the bounce
 - (2) about four feet in front of the bounce
 - (3) close to the spot of the bounce
 - (4) about three feet behind the bounce
 - (5) about five feet behind the bounce
 21. In making a smash, the best position to hit the ball is:
 - (1) directly ahead of the front foot
 - (2) about three feet in front of the body
 - (3) directly over the front part of the head
 - (4) about one foot behind the head
 - (5) about two feet behind the head
 22. Most professional players in the forehand drive contact the ball:
 - (1) as it leaves the ground on the rise
 - (2) as it reaches height of bounce
 - (3) as it starts to fall from height of bounce
 - (4) midway between height of bounce and second bounce
 - (5) just before the ball hits for second bounce

Directions: Answer the questions below by placing either "Yes" or "No" on your answer sheet.

23. Is the score 30-all when each side wins three points?
24. A is standing close to the net. Ball hits A's arm and returns itself over the net. Is the return good?
25. Player B moves one foot off the ground while in the act of serving. Is this a violation?
26. Player A serving in a singles game stands in the alleys behind the baseline. The serve was in the proper court. Player B claimed the point because A stood in the alley area. Was this correct?

27. In a ranking tournament play for men does winning three out of five sets determine the match?
28. A cuts the ball. B has a difficult time returning the ball over the net because of the spin. Is the spin put on the ball by A the same spin produced by B in making a forehand drive?
29. Is the score 15-love when the server wins the first point?
30. If you are standing out-of-bounds and swing at the ball and miss it, does the point count for you?
31. A makes a weak return, B runs to the net and hits the ball back over the net. However, in doing so B's racket follows through and hits the net. A could not return the ball and claimed the point because B hit the net. Was A correct?
32. If team A and partner standing in the court strike and miss a high ball that goes out-of-bounds, does team B score the point?

Directions: For each statement fill in the space on your answer sheet with the correct word.

33. Hitting a ball directly overhead with an attempt to "kill" the ball is called a _____.
34. Hitting the ball on the fly before it touches the ground is called a _____.
35. All balls hitting boundary lines are _____.
36. While serving, stepping on the line before contacting the ball with the racket is called a _____.
37. Hitting the ball over the head of the opponent is called a _____.
38. Hitting a chop or cut on the ball makes the ball spin _____.
39. When a ball hits the net on the serve and goes into the proper court it is called a _____.
40. Hitting a ball as it bounces off the ground is called a _____.
41. Breaking a tennis ball in half while playing, the umpire will call a _____.
42. Each side winning three points each the score is called _____.

Directions: Match the following numbers in column A with the statements in column B to which they are related. Have no more than one number before any item in column B. Record your answer on the answer sheet.

Column A

- | | |
|------------------|------------------------|
| 1. Basefault | 13. Kill |
| 2. Volley | 14. Net ball |
| 3. Love-all | 15. Fifteen-love |
| 4. Let | 16. Permissible |
| 5. Deuce | 17. Lob |
| 6. Overhead play | 18. Continue play |
| 7. Thirty-all | 19. Pick up |
| 8. End line | 20. Half-volley |
| 9. Fifteen-all | 21. Game |
| 10. Footfault | 22. Advantage receiver |
| 11. Baseline | 23. Smash |
| 12. Stop-volley | 24. Love-fifteen |

Column B

43. When each side has won two points each.
44. End line of a tennis court.
45. Hitting the ball overhead with an attempt to "kill."
46. When the receiver wins the first point.
47. When serving jumping off the ground with both feet before contacting the ball.
48. Striking the ball just as it leaves the ground.
49. Splitting the ball while serving.
50. Winning two points in succession after deuce.

APPENDIX C

**RESULTS OF THE SELF-DIRECTED LEARNING
APPROACH TO TENNIS SUBJECTIVE
EVALUATION**

**RESULTS OF THE SELF-DIRECTED LEARNING
APPROACH TO TENNIS SUBJECTIVE
EVALUATION**

Item	Response*				
	<u>SA</u>	<u>A</u>	<u>U</u>	<u>D</u>	<u>SD</u>
1. SDLAT provided more opportunity for you to get personally involved in the learning of beginning tennis than a regular class would provide.	15	8	1	1	
2. The opportunity to "self pace" your learning seemed to help accomplish the overall objectives of the course.	7	10	6	2	
3. Individualized and small group activities appeared to be more effective in learning beginning tennis skills than would large group activities.	21	4			
4. Classes meeting only one-half of the regular time as scheduled in SDLAT seem to deter progress.	2	10	4	8	1
5. Out of class learning activities (Self Learning Center, individual action drills, and cooperative action drills) seemed to help your overall progress.	7	16	1	1	
6. The opportunity to select the learning activities and materials that suited you appears to be an advantage over the regular class where the activities and materials are largely assigned by the teacher.	11	12	2		
7. SDLAT provided a better opportunity for you to develop beginning tennis skills than a regular class.	10	11	3	1	
8. If other physical education classes (that you needed to enroll in) were offered utilizing self learning, your willingness to take one would be strong.	7	11	5	2	

Item	Response*				
	<u>SA</u>	<u>A</u>	<u>U</u>	<u>D</u>	<u>SD</u>
9. The instructor, serving as a facilitator of learning rather than a traditional teacher, hampered your opportunity to learn tennis skills.		1	1	13	10
10. Considering all factors listed above, SDLAT was more effective than a regular class situation in terms of learning beginning tennis.	12	9	2	2	

***Possible Responses**

SA--Strongly Agree

A--Agree

U--Uncertain

D--Disagree

SD--Strongly Disagree

APPENDIX D

**A SELF-DIRECTED LEARNING APPROACH
TO TENNIS--A GUIDE**

**A SELF-DIRECTED LEARNING
APPROACH TO TENNIS**

(SDLAT)

**A Guide
for students taking HPERS 104
Beginning Tennis**

**Developed by
Dick LaLance**

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Introduction

HPERS 104--Beginning Tennis

Tennis has rapidly grown into one of the most popular sports in the United States. No longer is it an activity for a small isolated group as it once was--its impact, both as a participation sport and spectator sport, has benefited millions.

In order to develop the skills necessary to play tennis, a great deal of practice and dedication is a must. Many hours of practice time are required to learn the fundamentals of the game. Years are actually spent by many tennis enthusiasts working on the skills necessary for intermediate and advanced play.

HPERS 104, Beginning Tennis, however, is not concerned with intermediate and advanced competition, but rather with the basic skill foundation and general knowledge of the game. It is hoped that HPERS 104 will equip you with those tennis skills which are critical in the overall learning process of the game.

A Self-Directed Learning Approach to Tennis

Nature of SDLAT

In order for you to attain a level of tennis sufficient to permit further development after completing HPERS 104, you will have to "invest" time and effort in this course. To ensure that you reach the above level and obtain the best possible results, it will be necessary for you to become personally involved in the learning process.

It is on this premise that "A Self-Directed Learning Approach to Tennis" has been developed.

Self-directed learning is a form of individualized instruction in which you, the student, take on the responsibility for the work involved in learning. You need guidance, which the instructor provides, but you must do the work.

Organization of SDLAT

This course has been divided into two main parts:

Part I: Skill Development

Part II: Information Development

Part I includes the psychomotor skills necessary for a sound physical foundation of tennis, while Part II includes the cognitive skills essential to an understanding of the game, how it is played, and to an overall appreciation of tennis.

Each part is divided into modules (learning units) arranged in an order which should allow for a logical learning progression in beginning tennis.

Part I: Skill Development is divided into the following modules:

Module 1: Movement on the Tennis Court

Module 2: Forehand Ground Strokes

Module 3: Backhand Ground Strokes

Module 4: The Service

Part II: Information Development is divided into the following modules:

Module 5: General Knowledge and Appreciation
of the Game

Module 6: Simple Strategy

Each module is further broken down into the following parts:

- (a) The Learning Task--What it is that you are going to learn.
- (b) Performance Objectives--Specific expectations expressed in behavioral terms.
- (c) Learning Materials Available--Materials available to you to supplement learning of a particular skill (periodicals, books and audiovisual aids).
- (d) Learning Activities Available--Activities available to you which should provide assistance in learning a particular tennis skill (Individual Action Drills which you can perform by yourself and Cooperative Action Drills which you perform with one or more persons).
- (e) Progress Check--A self-test that should indicate to you whether or not you have learned the skill set forth in the module.
- (f) Criterion-Referenced Test--A test administered to you by the instructor, based on the performance criteria (performance objectives) which completes the module and allows you to progress to

the next one. Readiness for this test is determined by you with the help of the "Progress Check" above.

Your task is to begin with Module 1 and Module 5 and progress through the remainder of the SDLAT program.

Your instructor will provide you with an overall itinerary setting the pace for the complete term. However, you will be expected to negotiate each module at your own pace, using the activities and materials that best suit your individual needs.

Two meetings per week will be scheduled (during regular class period) with your instructor. During that time you will share instructional information, correct problems, diagnose your current level in specific skills, take the criterion-referenced tests, and discuss any problems which may arise during the term. Besides these two meetings per week, the program will be entirely self-directed. Your own initiative will determine how involved you will become in the learning process.

The remainder of this guide presents the six learning modules through which you will progress.

PART I
SKILL DEVELOPMENT

MODULE I

MOVEMENT ON THE TENNIS COURT

The Learning Task

The student should be able to move effectively around the tennis court in order to get into position to properly stroke the ball. Specifically, he should:

- (a) be able to move with speed and agility,
- (b) be able to move quickly and under control,
- (c) be able to move into position to hit forehand ground strokes on short balls, deep balls and wide balls,
- (d) be able to move into position to hit backhand ground strokes on short balls, deep balls, and wide balls.

Performance Objectives

1. The student will stand on the baseline close to the center mark. The instructor, who is in the middle of the opponent's forecourt, will throw ten balls to the student's forehand side. Using quick but controlled movements, the student should be able to move into a position to execute a forehand ground stroke (not stroking the ball) on seven of the ten balls.
2. The student will stand at a point on the baseline close to the center mark. The instructor, who is in the middle of the opponent's forecourt, will throw ten balls to the student's backhand side. Using quick but controlled movements, the student should be able to move into a position to execute a backhand ground stroke (not stroking the ball) on seven of the ten balls.

Learning Materials Available

Periodicals

Addie, Pauline B. "How to Improve Your Footwork," Tennis, X, No. 5 (September, 1974), 28-31.

Heldman, Gladys M. "Footwork," World Tennis, XXII, No. 9 (February, 1975), 51-53.

Books

Heldman, Gladys, and Cornel Lumiere. The Book of Tennis. New York: World Tennis Magazine, 1965. Chapters 4, 5, 6, 7, 8.

Mason, R. Elaine. Tennis. Boston: Allyn and Bacon, Inc., 1974. Chapter 5.

Audiovisual Aids

Ealing Film-Loop, "Footwork," 91-0802.

Learning Activities Available

Individual Action Drills

1. Rope skipping.
2. Jogging.
3. Lateral skipping from center of baseline to right singles boundary line and back to starting point.*
4. Lateral skipping from center of baseline to left singles boundary line and back to starting point.*
5. Forward skipping from center of baseline to the net and return to starting point.*

Cooperative Action Drills

1. Partner toss drill--Partner stands in opponent's forecourt and tosses the ball on one bounce to student's forehand side. Student moves quickly and efficiently to a position in order to execute a proper ground stroke and then returns to starting point.
2. Repeat #1, only tossing ball to student's backhand.
3. Repeat #1, only tossing the ball short (ball should bounce inside service court).
4. Repeat #1, only tossing the ball deep (ball should bounce on or close to base line).

*See Ealing Film-Loops--"Footwork" (Learning Materials Available)

Progress Check

Using Ealing Film-Loops "Footwork" as a reference, the student should be able to move effectively to the stroking position (both forehand and backhand) on balls tossed on one bounce from opponent's court (by a partner).

Criterion-Referenced Test

1. The student will stand at the center of the baseline. The instructor, who is in the middle of the opponent's forecourt, will throw ten balls to the student's forehand side. Using quick but controlled movements, the student must move into a position to execute a forehand ground stroke on seven of the ten balls.
2. Repeat #1, only tossing balls to student's backhand.

MODULE 2

THE FOREHAND GROUND STROKE

The Learning Task

The student should be able to effectively execute a forehand ground stroke (the stroke used by a right-handed player to hit the ball on the right side of his body after the ball bounces) for a return.

He should:

- (a) be able to grip the racket properly,
- (b) be able to prepare the racket properly,
- (c) be able to anticipate where the ball is coming,
- (d) be able to execute a level stroke contacting the ball off the front foot,
- (e) be able to follow through after contacting the ball.

Performance Objectives

The student will stand on the baseline close to the center mark. The instructor, who is in the middle of the opponent's forecourt, will throw twenty balls to the student's forehand side--each ball bouncing one time. Using the forehand ground stroke, the student will be able to stroke fourteen out of twenty across the net and into the singles playing area.

Learning Materials Available

Periodicals

King, Billie Jean. "Keys to Better Ground Strokes," Tennis, X, No. 7 (November, 1974), 28-31.

Kramer, Jack. "How to Hit a Winning Forehand," Tennis, IX, No. 4 (August, 1973), 24-27.

Price, Bill. "The Secret of the Forehand Follow-Through," Tennis, IX, No. 4 (August, 1973), 28.

Tennis Instruction Advisory Board. "The Forehand," Tennis, X, No. 12 (April, 1975), 29-35.

_____. "The Forehand," Tennis, XI, No. 1 (May, 1975), 28.

Van der Meer, Dennis. "The Evert Forehand," World Tennis, XXII, No. 9 (February, 1975), 28.

_____. "Learning a Topspin Forehand," World Tennis, XXII, No. 1 (June, 1974), 25.

_____. "Rx for a Forehand," World Tennis, XXI, No. II (April, 1974), 62.

Van der Meer, Linda. "Fixing a Funny Bone Forehand," World Tennis, XXII, No. 12 (May, 1975), 20.

Books

Driver, H. I. Tennis Self-Instructor. Madison: Monona-Driver Book Co., 1971. Chapter 8.

Gensemer, Robert. Tennis. Philadelphia: W. B. Saunders Co., 1975. Chapter 3.

Gould, Dick. Tennis, Anyone? Palo Alto: National Press Books, 1971. Pp. 1-15.

Heldman, Gladys, and Cornel Lumiere. The Book of Tennis. New York: World Tennis Magazine, 1965. Chapter 4.

Mason, R. Elaine. Tennis. Boston: Allyn and Bacon, Inc., 1974. Chapter 5.

Metzler, Paul. Tennis--Weaknesses and Remedies. New York: Sterling Publishing Co., Inc., 1974. Chapters 1-2.

Pelton, Barry C. Tennis. Pacific Palisades: Goodyear Publishing Co., Inc., 1973. Chapter 5.

Sebolt, Don R. Tennis. Dubuque: Kendall Hunt Publishing Co., 1970. Chapter 4.

Audiovisual Aids

Ealing Film-Loop, Forehand Ground Strokes, 91-0786.

FBO Tennis Cassette Tape, Percentage Tennis, Part I.

Slide Tape Presentation, Forehand, Backhand and Serve.

Sports/Media Cassette Tape, Steps to Winning Tennis, Side A.

Learning Activities Available

Individual Action Drills

1. Forehand Bounce Drill--Stand on baseline with a container of balls within reach. Prepare racket and drop ball in front of you toward the net. With a level, full swing, stroke the ball across the net, deep into opponent's court. Repeat until all balls are used and then start the same drill from the other end of the court.
2. Wall Drill #1--Stand approximately twenty feet from a large wall with a container of balls in reach. Prepare racket and drop a ball in front of you toward the wall. With a level, full forehand swing, stroke ball against the wall and stop (block with your racket) the rebound.
3. Wall Drill #2--Repeat Wall Drill #1, only aim for a mark approximately four feet above the floor.
4. Wall Drill #3--Repeat #1, only back away to thirty feet and stroke the ball to a target drawn on wall (four feet in diameter) with the center of the target approximately five feet above the floor.
5. Wall Drill #4--Repeat #1, only back away to thirty feet and stroke the rebound using your forehand, rather than stop it. Try to execute as many consecutive forehands as possible.

Cooperative Action Drills

1. Partner Forehand Bounce Drill--Stand on baseline with a container of balls in reach and with a partner on the opposite baseline. Prepare racket and drop a ball in front of you toward the net. With a level, full swing, stroke the ball across the net to your partner. Partner should stop or block ball rather than return it.
2. Partner Forehand Toss Drill--Stand on baseline in the "ready position" with your partner standing at the net in the opposite court with a container of balls in reach. Partner should pitch balls on one bounce to your forehand side so a smooth level forehand stroke can be executed. Hit the balls across the net and within the singles boundaries in opponent's court.
3. Partner Forehand Rally Drill--Stand on baseline with partner on opposite baseline. Using a forehand stroke, initiate a forehand rally with your partner concentrating on keeping the ball in play as long as possible. (It is important for right-handers to hit cross-court forehands in this drill so as to allow each person an opportunity to practice forehand ground strokes.)

Progress Check

Progress Check #1

Using the Forehand Bounce Drill (see #1 under Individual Action Drills), the student should be able to effectively place eight out of ten balls in opponent's backcourt.

Progress Check #2

Using the Partner Forehand Toss Drill (see #2 under Cooperative Action Drills), the student should be able to effectively return six to eight out of ten balls across the net and within the doubles boundaries of opponent's court.

Criterion-Referenced Test

The student will stand on the baseline close to the center mark. The instructor, who is in the middle of the opponent's forecourt, will throw twenty balls to the student's forehand side--each ball bouncing one time. Using the forehand ground stroke, the student must stroke fourteen out of twenty across the net and into the singles playing area.

MODULE 3

THE BACKHAND GROUND STROKE

The Learning Task

The student should be able to effectively execute a backhand ground stroke (the stroke used by a right-handed player to hit a ball that approaches him on the left side of his body) for a return.

Specifically, he should:

- (a) be able to grip the racket properly,
- (b) be able to prepare the racket properly,
- (c) be able to anticipate where the ball is coming,
- (d) be able to execute a level stroke contacting the ball off the front foot,
- (e) be able to follow through after contacting the ball.

Performance Objectives

The student will stand on the baseline close to the center mark. The instructor, who is in the middle of the opponent's forecourt, will throw twenty balls to the student's backhand side--each ball bouncing one time. Using the backhand ground stroke, the student will be able to stroke ten out of twenty balls across the net and into the singles playing area.

Learning Materials Available

Periodicals

- Engleberg, Dave. "Hit Your Backhand with a Frisbee Toss," Tennis, X, No. 11 (March, 1975), 21.
- Heldman, Gladys M. "Hot to Hit with Power," World Tennis, XXII, No. 5 (October, 1974), 50-53.
- King, Billie Jean. "Keys to Better Ground Strokes," Tennis, X, No. 7 (November, 1974), 28-31.
- McMurdy, Doug. "Is Your Backhand for the Birds?," Tennis, IX, No. 7 (November, 1973), 50.
- Rosewall, Ken. "Ken Rosewall Demonstrates the Way to Improve Your Backhand," Tennis, IX, No. 11 (March, 1974), 51-53.
- Van der Meer, Dennis. "Lean in on Your Backhand," World Tennis, XXXI, No. 8 (January, 1975), 30.

Books

- Driver, H. I. Tennis Self-Instructor. Madison: Monona-Driver Book Co., 1971. Chapter 9.
- Gensemer, Robert. Tennis. Philadelphia: W. B. Saunders Company, 1975. Chapter 3.
- Gould, Dick. Tennis, Anyone? Palo Alto: National Press Books, 1971. Pp. 1-15.
- Heldman, Gladys, and Cornel Lumiere. The Book of Tennis. New York: World Tennis Magazine, 1965. Chapter 8.
- Mason, R. Elaine. Tennis. Boston: Allyn and Bacon, Inc., 1974. Chapter 5.
- Metzler, Paul. Tennis--Weaknesses and Remedies. New York: Sterling Publishing Co., Inc., 1974. Chapter 3.
- Pelton, Barry C. Tennis. Pacific Palisades: Goodyear Publishing Co., Inc., 1973. Chapter 5.

Sebolt, Don R. Tennis. Dubuque: Kendall Hunt Publishing Co., 1970. Chapter 5.

Audiovisual Aids

Ealing Film-Loop, Backhand Ground Strokes, 91-0794.

FBO Tennis Cassette Tape, Percentage Tennis, Part I.

Slide Tape Presentation, Forehand, Backhand and Serve.

Sports/Media Cassette Tape, Steps to Winning Tennis, Side A.

Learning Activities Available

Individual Action Drills

1. Backhand Bounce Drill--Stand on baseline with a container of balls in reach. Prepare racket and with left hand drop a ball well in front of you, toward the net. With a level, full backhand swing, stroke the ball across the net, deep into opponent's court. Repeat until all balls are used and then start the same drill from the other end of the court.
2. Wall Drill #1--Stand approximately twenty feet from a large wall with a container of balls in reach. Prepare racket and drop a ball in front of you toward the wall. With a full, level backhand swing, stroke the ball against the wall and stop (block with your racket) the rebound.
3. Wall Drill #2--Repeat Wall Drill #1, only aim for a mark approximately four feet above the floor.
4. Wall Drill #3--Repeat Wall Drill #1, only back away from wall thirty feet and stroke ball to a target drawn on the wall (four feet in diameter) with the center of the target approximately five feet above the floor.
5. Wall Drill #4--Repeat Wall Drill #1, only back away from wall thirty feet and stroke the rebound using your backhand rather than stopping it. Try to execute as many consecutive backhands as possible.

Cooperative Action Drills

1. Partner Backhand Bounce Drill--Stand on baseline with a container of balls in reach and with a partner on the opposite baseline. Prepare racket and with the left hand drop a ball in front of you toward the net. With a level, full backhand swing, stroke the ball across the net to your partner. Partner should stop or block ball rather than return it.
2. Partner Backhand Toss Drill--Stand on baseline in the "ready position" with your partner standing at the net in the opposite court with a container of balls. Partner should pitch balls on one bounce to your backhand side so a smooth, level backhand stroke can be executed. Hit the balls across the net and within the singles boundaries in the opponent's court.
3. Partner Backhand Rally Drill--Stand on baseline with partner on opposite baseline. Using a backhand stroke, initiate a backhand rally with your partner concentrating on keeping the ball in play as long as possible. (It is important for right-handers to hit cross-court backhands in this drill so as to allow each person an opportunity to practice backhand ground strokes.)

Progress Check

Progress Check #1

Using the Backhand Bounce Drill (see #1 under Individual Action Drills), the student should be able to effectively place six out of ten balls in opponent's back-court.

Progress Check #2

Using the Partner Backhand Toss Drill (see #2 under Cooperative Action Drills), the student should be able to effectively return five to seven out of ten balls across the net and within the doubles boundaries of the opponent's court.

Criterion-Referenced Test

The student will stand on the baseline close to the center mark. The instructor, who is in the middle of the opponent's forecourt, will throw twenty balls to the student's backhand side--each ball bouncing one time. Using the backhand ground stroke, the student must stroke ten out of twenty balls across the net and into the singles playing area.

MODULE 4

THE SERVICE

The Learning Task

The student should be able to adequately serve (the stroke used to put the ball in play at the start of each point) the tennis ball into the proper court.

Included are the following skills:

- (a) be able to position the feet properly behind the baseline,
- (b) be able to grip the racket properly,
- (c) be able to hold the ball(s) properly,
- (d) be able to toss the ball properly,
- (e) be able to time the swing in order to contact the ball at the peak of the swing,
- (f) be able to follow through after contacting the ball and assume a "ready position" on the court.

Performance Objectives

The student will stand in the proper position for serving to the deuce side (right side) on a regulation tennis court. He will serve ten balls to that service court. He will be able to serve, with reasonably correct form, five of the ten balls into the proper service court.

Learning Materials Available

Periodicals

- Ashe, Arthur. "Lesson on the Cannonball Serve," Tennis, X, No. 1 (May, 1974), 27-30.
- Brandi, Joe. "The Ball Toss: How to Do It Right," Tennis, X, No. 11 (March, 1975), 53-55.
- Foster, Ben. "Follow Through for a Forceful Serve," Tennis, X, No. 2 (June, 1974), 71.
- Gonzalez, Pancho. "Lesson on the Serve for the Week-end Player," Tennis, XI, No. 1 (May, 1975), 32-35.
- Heldman, Gladys. "The Toss," World Tennis, XXII, No. 6 (November, 1974), 55-56.
- Kozlowski, Dave. "Finish Your Serve on the Other Side," Tennis, X, No. 12 (April, 1975), 22.
- Kraft, Steven A. "Six Cures for the Service Choke," Tennis U.S.A., XXXVII, No. 12 (December, 1974), 15-19.
- Van der Meer, Dennis. "Take the Hitch Out of Your Serve," World Tennis, XXII, No. 11 (April, 1975), 18.

Books

- Driver, H. I. Tennis Self-Instructor. Madison: Monona-Driver Book Co., 1971. Chapter 10.
- Gensemer, Robert. Tennis. Philadelphia: W. B. Saunders Co., 1975. Chapter 3.
- Gould, Dick. Tennis, Anyone? Palo Alto: National Press Books, 1971. Pp. 15-20.
- Heldman, Gladys, and Cornel Lumiere. The Book of Tennis. New York: World Tennis Magazine, 1965. Chapter 9.
- Mason, R. Elaine. Tennis. Boston: Allyn and Bacon, Inc., 1974. Chapter 5.
- Metzler, Paul. Tennis--Weaknesses and Remedies. New York: Sterling Publishing Co., Inc., 1974. Chapter 4.

Pelton, Barry C. Tennis. Pacific Palisades: Goodyear Publishing Co., Inc., 1973. Chapter 5.

Sebolt, Don R. Tennis. Dubuque: Kendall Hunt Publishing Co., 1970. Chapter 8.

Audiovisual Aids

Ealing Film-Loop, The Serve, 91-0810.

FBO Tennis Cassette Tape, Percentage Tennis, Part I.

Slide Tape Presentation, Forehand, Backhand and Serve.

Learning Activities Available

Individual Action Drills

1. Service Toss Drill--Assume proper foot position for service behind baseline on the tennis court with a container of balls within reach. Use a real or imaginary target (approximately 15" in diameter) located slightly in front of the left foot inside the baseline of the court. Start from the ready position for the serve and toss the ball concentrating on proper height and placement. Let the ball bounce in order to see how close it comes to the target.
2. Whiff Drill--Repeat #1, only initiate a swing at the ball whiffing (or missing) it at the peak of your swing. Concentrate on good form and timing.
3. Shadow Drill--Standing on the tennis court in proper service position, execute the full service motion (without ball) concentrating on good form and timing.

Cooperative Action Drills

1. Criss-cross Service Drill--Assume a proper service position on the tennis court with a partner in the opposite court in a good receiving position. Serve several balls to your partner concentrating on form and accuracy. Partner should block the balls and return with a service. Repeat several times and then change sides of court (deuce court to ad court and vice versa).

Progress Check

Using the Criss-cross Service Drill (see #1 under Cooperative Action Drills), the student should be able to serve six out of ten balls into the proper service court.

Criterion-Referenced Test

The student will stand in the proper position for serving to the deuce side (right side) on a regulation tennis court. He will serve ten balls to that service court. He must be able to serve with reasonably correct form five of the ten balls into the proper service court.

PART II
INFORMATION DEVELOPMENT

MODULE 5

GENERAL KNOWLEDGE AND APPRECIATION
OF THE GAME OF TENNISThe Learning Task

1. The student should be able to demonstrate an overall knowledge of the game for purposes of playing at least one complete set of tennis.

This includes the following:

- (a) be able to recall and apply the rules of tennis,
- (b) be able to keep score accurately for each game,
- (c) be able to keep the set score accurately,
- (d) be able to demonstrate a familiarity with the terminology,
- (e) be able to demonstrate proper player conduct,
- (f) be able to demonstrate proper etiquette on the tennis court.

2. The student should be able to demonstrate an appreciation of tennis.

This includes the following:

- (a) be able to demonstrate positive attitudes toward the game and toward participation,
- (b) be able to watch good tennis and appreciate it,
- (c) play outside of class for personal pleasure.

Performance Objectives

1. The student will be able to participate in a regulation tennis singles or doubles set and demonstrate the ability to recall and apply the basic rules of the game.
2. The student will be able to demonstrate the ability to keep the score accurately for one complete set of tennis.
3. The student will be able to participate in a tennis singles or doubles set and demonstrate the ability to apply good court etiquette and good player conduct as judged by the instructor.
4. The student will show an interest in tennis by playing more tennis during his leisure time than he did before taking HPERS 104.

Learning Materials Developed

Periodicals

All Periodicals Applicable.

Books

- American Alliance for Health, Physical Education and Recreation. Tennis--Badminton--Squash Guide. Washington, D.C.: AAHPER, 1974. Pp. 10-92.
- Driver, H. I. Tennis Self-Instructor. Madison: Monona-Driver Book Co., 1971.
- Gensemer, Robert E. Tennis. Philadelphia: W. B. Saunders Co., 1969.
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Audiovisual Aids

- FBO Tennis Cassette Tape, Percentage Tennis, Parts I, II, III, IV.
- Sports/Media Cassette Tape, Steps to Winning Tennis, Sides A and B.

Mimeographed Material

Heldman, Gladys M. "A Tennis Glossary," World Tennis.

Powell, Nick. "The Code," World Tennis.

Learning Activities Available

Individual Action Drills

Not applicable.

Cooperative Action Drills

1. Practice Games--With a partner of near equal tennis ability, play regulation tennis games concentrating on the rules, scoring and proper etiquette.
2. Execution Tennis--Simulate the game of tennis using a board game that may be checked out from SDLAT. (See Instructor.)

Progress Check

Using the test questions* below, the student should be able to answer correctly 11-12 of the 15 questions concerning general knowledge of the game of tennis.

- ___ 1. Before the start of a tennis match a "toss" is made to determine the server and the choice of sides. The winner of this toss:

 - A. automatically becomes the server.
 - B. may elect to become either the server or the receiver, whereupon the other player is given the choice of sides.
 - C. may elect to become either the server or the receiver or may choose a side, while the other player is presented with no options at all.
 - D. may decline his option to elect to serve or to receive and instead may choose a side, whereupon the other player automatically becomes the server.

- ___ 2. The server must:

 - A. deliver the ball overhand.
 - B. deliver the ball, or at least make an attempt at a delivery, each time he makes his toss.
 - C. have one foot in contact with the ground during the delivery of the ball.
 - D. not be in contact with an imaginary extension of the center mark or the singles side line (in singles play) or the doubles side line (in doubles play) during the delivery of the ball.

- ___ 3. Which of the following would be a service fault?

 - A. During the delivery the server has one foot in contact with but not inside the base line.
 - B. During the delivery the server has one foot over but not in contact with the court.
 - C. The server delivers a legal service into the proper court, but in its flight the ball strikes the top of the net.
 - D. In a doubles match, the server delivers the ball while standing behind an imaginary extension of the alley.

- ___ 4. If a server is interrupted (such as by a ball bouncing from a neighboring court) while he is making a second service attempt:
- A. that service attempt only is replayed.
 - B. the entire service is replayed, again giving the server two attempts to make good on his service.
 - C. play must continue as if the interruption did not occur since outside sources can not have a bearing on play that has already begun.
 - D. play must continue if the service attempt is made good--but if the server misses on his attempt that service only is replayed.
- ___ 5. Where may the receiver of the serve stand?
- A. Anywhere.
 - B. Anywhere except within the service court.
 - C. He must stand within the boundaries of the court.
 - D. He must stand within the boundaries of the back court.
- ___ 6. Which of the following is a let?
- A. A legally delivered service which strikes and does not cross over the net.
 - B. A legally delivered service which touches and crosses over the net, but does not land within the proper service court.
 - C. A legally delivered service which touches and crosses over the net, then lands within the proper service court.
 - D. A service which lands within the proper service court without touching the net while in flight, but which was illegally delivered.
- ___ 7. Which of the following would not be a good return?
- A. A ball which lands on the base line.
 - B. A ball which passes on the outside of the net post, below the level of the net, then lands within the opponent's court.
 - C. When a player strikes the ball on his own side of the net, but then his follow-through brings his racket over top of but not in contact with the net.
 - D. When a player strikes the ball on his own side of the net, but then his follow-through touches his racket to the net without passing over the top of the net.

- ___ 8. A score of ad in means that:
- A. the receiver will win that game if he wins the next point.
 - B. if the server wins the next point the score will become deuce.
 - C. the server is ahead on the score.
 - D. both A and B are correct.
- ___ 9. When the score advances to match point it means that:
- A. the next point could complete the match.
 - B. both players have won five games in a particular set, and thus one player must win at least seven games to win the set.
 - C. the score at that particular point in the match is tied in number of games won in the deciding set of the match.
 - D. the receiver can make a service break if he wins the next point.
- ___ 10. If the score of a particular game is 40-15, and on the next point the server holds service, it means that:
- A. the point was a set point.
 - B. the server has won that game.
 - C. the score becomes ad in.
 - D. a service break is still possible in that particular game.
- ___ 11. One of the following scores is possible but never announced as such.
- A. 40-love
 - B. 15-15
 - C. 30-15
 - D. 40-40
- ___ 12. Players change sides of the court after the:
- A. second, fourth, and every subsequent even game of the first set.
 - B. fourth game of each set.
 - C. first game of the second set when the first set ended at 6-3.
 - D. first game of the third set when the first two sets ended at 6-2 and 5-7.

- ___ 13. In the doubles game:
- A. the player who serves the first game will also serve the fifth game, while his partner will serve the third game.
 - B. the order of the service is established prior to the first set, and must remain the same for all subsequent sets.
 - C. if a player should serve out-of-turn and a game is completed before the mistake is discovered that game is counted and a correction in the serving order must be made for that team's next service.
 - D. if a team receives out-of-turn the order of receiving as altered must remain the same for the remainder of the set.
- ___ 14. Which of the following is true regarding the doubles game?
- A. Whoever serves for the first game of any set is required to be the first receiver in the second game of that set.
 - B. The order of serving and of receiving must remain the same throughout any one set, but may be changed for any subsequent sets.
 - C. If a served ball strikes a receiver's partner before it hits the ground, regardless of where he was standing, the ball is called a let and the point is replayed.
 - D. Partners must play the ball alternately, i.e., one partner must make a return, then the other partner must make the next return, and so on.
- ___ 15. Which of the following are courtesies which should be common to all tennis matches?
- A. If a player did not have a good view of a ball which landed near a line he may ask that his opponent make the call, in which case his opponent is obliged to call the ball in or out.
 - B. The receiver should call out "fault" on service attempts which do not land within the proper service court and should not make an attempt to return the ball but instead let it bounce off the court.
 - C. During the hit-up prior to the match opponents should generally try to hit the ball within each other's reach.
 - D. All of the above are common courtesies.

*Gensemer, Robert. Test Questions for Tennis, Second Edition.
Philadelphia: W. B. Saunders Co., 1975.

Criterion-Referenced Test

1. The student must be able to participate in a regulation singles or doubles set and demonstrate the ability to recall and apply the basic rules of the game as judged by the instructor.
2. The student must be able to demonstrate the ability to keep score accurately for one complete set of tennis as judged by the instructor.
3. The student must be able to participate in a tennis singles or doubles set and demonstrate the ability to apply good court etiquette and good player conduct as judged by the instructor.
4. The student must show an interest in tennis by playing more tennis during his leisure time than he did before taking HPERS 104 as judged by the student.

MODULE 6

SIMPLE STRATEGY

The Learning Task

The student should be able to apply simple strategy to both a singles tennis set and a doubles tennis set.

This includes the following:

- (a) be able to maintain good court position for ground strokes,
- (b) be able to play to your opponent's weaknesses,
- (c) be able to keep the ball in play.

Performance Objectives

The student will be able to participate in a tennis singles set or doubles set and demonstrate the ability to apply simple strategy, both offensive and defensive.

Learning Materials Available

Periodicals

Barnaby, Jack and Others. "A Guide to Doubles," Tennis U.S.A., XXXVIII, No. 2 (February, 1975), 51-52.

Gonzalez, Pancho. "Winning Tactics for Week-end Singles," Tennis, X, No. 11 (March, 1975), 24-28.

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Heldman, Gladys, and Cornel Lumiere. The Book of Tennis. New York: World Tennis Magazine, 1965. Chapters 16 and 17.

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Audiovisual Aids

FBO Tennis Cassette Tape, Percentage Tennis. Parts I, II, III, IV.

Sports/Media Cassette Tape, Steps to Winning Tennis. Sides A and B.

Learning Activities Available

Individual Action Drills

Not applicable.

Cooperative Action Drills

1. Practice Games--With a partner of near equal tennis ability, play regulation tennis games concentrating on applying simple strategy--both offensive and defensive.
2. Execution Tennis--Simulate the game of tennis using a board game that may be checked out from SDLAT. (See Instructor.)

Progress Check

Using the test questions* below, the student should be able to answer correctly 7-8 out of the ten questions concerning simple tennis strategy.

- ___ 1. When should a player organize his playing strategy for any tennis match?
 - A. During the hit-up.
 - B. After the first few games of the first set have been played.
 - C. Throughout the first set.
 - D. Only after the first set has been completed.

- ___ 2. Which one of the following could be considered as a rational statement about general tennis strategy?
 - A. Always change a losing game.
 - B. When the balls being used have had their nap worn off, it is more effective to impart spin to the ball whenever possible, especially on the serve.
 - C. A player who has the wind at his back should try for placements rather than outright point winners and should charge the net often.
 - D. The better the opponent, the more conservative type of game a player should employ.

- ___ 3. Which one of the following would not be regarded as reasonable strategy for the first service in singles play?
 - A. It must be made successful about three-fourths of the time, mainly to keep the receiver hitting from a deeper position where he is less likely to be able to make a strong passing shot.
 - B. If a slice serve is hit, it is especially effective when placed in the near corner of the deuce court.
 - C. Generally the ball should be placed deep to the far corner in both service courts for the advantage it gives of pulling the receiver off the court.
 - D. Down-the-middle placements of the serve have the advantage of reducing the receiver's opportunities for hitting a cross-court return.

- ___ 4. The majority of the time, the second serve in singles should be:
- A. a flat serve.
 - B. aimed at the far corner in both service courts.
 - C. placed shallow and up-the-middle in both service courts.
 - D. placed shallow and right at the receiver.
- ___ 5. If in a particular match a server finds that his second serves are consistently being returned for point winners by his opponent, what should he do?
- A. Hit his first serve harder, trying for an ace to win the point without the need for a second serve.
 - B. Hit the second serve harder.
 - C. Slow down a bit on the first serve to get it in more often.
 - D. Change his serving position on the base line.
- ___ 6. When receiving the serve a player should:
- A. maintain an especially tight grip on the racket as the server prepares to make his stroke.
 - B. hold the head of the racket high to eliminate any wasted motion of raising it to that position in the backswing.
 - C. take up a position inside the base line when the server can hit an especially hard flat serve.
 - D. always stand at least several feet away from the singles side line so that the basic center court position can be quickly recovered after the return of the serve has been made.
- ___ 7. When a server delivers an especially hard flat serve, the receiver should change his normal swing in what fashion?
- A. Loosen his grip on the racket.
 - B. Take a shorter backswing.
 - C. Delay the backswing until the ball has bounced.
 - D. Take a more forceful foreswing into the ball.

- ___ 8. With regard to the placement of the service return in singles play, it is good strategy to:
- A. always return the ball to the feet of the server.
 - B. always hit the ball shallow up-the-middle.
 - C. hit cross-court more often on second serves than on first serves.
 - D. not be concerned with the placement of the return, but instead hit the return as forcefully as possible.
- ___ 9. The primary objective in returning the serve is to:
- A. get the ball in-bounds.
 - B. place the ball in the server's backhand corner.
 - C. hit an aggressive shot.
 - D. avoid hitting a shallow shot.
- ___ 10. What general guideline governs a player's advancing to the net during a rally?
- A. The advance to the net must be preceded by a forcing shot that has the potential of eliciting a weak return from the opponent.
 - B. The advance should usually come following a shot hit from behind the base line.
 - C. The advance itself must continue uninterrupted until the net position is reached.
 - D. The advance should always bring the player to a final position several feet from the net and in the exact center of the court (relative to the side lines).

*Gensemer, Robert. Test Questions for Tennis, Second Edition. Philadelphia: W. B. Saunders Co., 1975.

Criterion-Referenced Test

The student must be able to participate in a tennis singles set or doubles set and demonstrate the ability to apply simple strategy, both offensive and defensive.

**SDLAT Student Progress Account
HPERS 104--Beginning Tennis
Mr. LaLance**

Name _____ Class _____

Approval Date	Check if OK	Error
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|--|--|--|
| <p>_____ Module 1: Movement on the Tennis Court</p> <p style="margin-left: 40px;">A. Speed and agility
B. Hitting position for forehand
C. Hitting position for backhand</p> | | |
| <p>_____ Module 2: The Forehand Ground Stroke</p> <p style="margin-left: 40px;">A. Ready position
B. Grip
C. Racket preparation
D. Stroke
E. Follow through</p> | | |
| <p>_____ Module 3: The Backhand Ground Stroke</p> <p style="margin-left: 40px;">A. Ready position
B. Grip
C. Racket preparation
D. Stroke
E. Follow through</p> | | |
| <p>_____ Module 4: The Service</p> <p style="margin-left: 40px;">A. Ready position
B. Grip
C. Toss
D. Contact
E. Follow through</p> | | |
| <p>_____ Module 5: General Knowledge and Appreciation of the Game of Tennis</p> <p style="margin-left: 40px;">A. Rules
B. Scoring
C. Player conduct
D. Etiquette</p> | | |
| <p>_____ Module 6: Simple Strategy</p> <p style="margin-left: 40px;">A. Court position
B. Exploiting opponent's weakness
C. Ability to keep the ball in play</p> | | |

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