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The Importance of Training Program Planning in Increasing the Effectiveness of Athletes' Physical Preparation

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Abstract

Scientific advancement in all areas of life is not a matter of chance; rather, it is the result of sound planning based on scientific foundations. Planning is not an easy process but a complex one that requires considerable preparation and effort. Every process requires proper planning in order to achieve its objectives. Sports training is an important field in which coaches seek to achieve high levels of performance. This cannot be achieved by chance, but rather through effective sports training planning. The development of training programs is one of the most important tasks undertaken by coaches, particularly well-designed and organized programs that

follow scientific principles and contribute to improving the athlete's physical condition. Coaches face a number of problems and difficulties when developing training programs due to the presence of various factors that influence their design. Many coaches do not attach sufficient importance to the content of training programs despite their significance. Many of them also find it difficult to select and incorporate appropriate training exercises into the program, which often leads them to resort to random training practices that prevent the achievement of the desired results.

Keywords: Planning – Training Programs – Physical Preparation.

1. Training Programs

1.1 Definition of Training Programs

Experts and specialists have made considerable efforts to define training programs. Some of the definitions include the following:

- "They are defined as a set of organized and interconnected activities with specific objectives, established according to a regulation or plan aimed at developing specific skills. They include a series of courses related to a general objective or final outcome. They also consist of practical activities and practices carried out in a training hall or activity room for a specified period of time, according to careful and clearly defined planning and organization, resulting in improvement for the learner." (Mahrous Mahmoud Mahrous & Yahya Thabet Yahya Ismail, 2015, p. 37).
- "They are the implementation steps of the planning process, together with the time allocation, methods of implementation, and resources required to achieve the objective." (Mohamed Sayed Abdel Rahim Khalil, 2016, p. 23).
- "Programs are a combination of policies and procedures based on a specific budget and planned in a manner that leads to the implementation of a particular task…" (Ibrahim Mahmoud Abdel Maqsoud & Hassan Ahmed Al-Shafei, 2003, p. 28).
- "They are an integrated and interactive system in which the different components influence one another. This system consists of integrated elements that are interconnected with each other." (Faisal Abdel Monshid Al-Shuwaili et al., 2016, p. 165).

The researchers adopt the second definition of training programs, which considers them the implementation steps of the planning process, together with the time allocation, implementation methods, and resources required to achieve the objective.

1.2 Importance of Training Programs

The importance of training programs can be summarized as follows:

- Developing the trainee's planning skills.
- Contributing to accurate implementation.
- Helping achieve the intended objectives.
- Saving time and reducing effort.
- Avoiding randomness in implementation.
- Contributing to the successful implementation of training and educational plans.
- Contributing to the success and effectiveness of administrative and training processes. (Mahrous Mahmoud Mahrous & Yahya Thabet Yahya Ismail, 2015, p. 38).

1.3 Components of a Training Program

- The program should be based on clear foundations, whether scientific or philosophical.
- The program should have an achievable and measurable objective that is consistent with the available resources and surrounding environmental conditions. The objectives of the program should not be separated from its content. They should be formulated as operational objectives or simplified purposes that can be measured to the greatest possible extent.
- The content of the program should be derived from the content of the plan being developed and from the objectives intended to be achieved.
- Activities within the program should be organized, and its time schedule should be clearly determined.
- Appropriate methods and techniques should be identified for implementing the program content.
- The program should be evaluated to determine the extent to which its objectives have been achieved, identify shortcomings during implementation, and, at the same time, highlight strengths so that they can be generalized and further developed. (Hassan Ahmed Al-Shafei & Abdullah Al-Ghaddab, 2012, pp. 32–33).

1.4 Characteristics of a Successful Program

"There are a number of qualities and characteristics that should be present in any successful educational or training program, including:

- The program should constitute an integral part of the overall effort of the sports organization.

- The program should provide participants with balanced and complementary experiences that contribute to growth and development.
- The program should be based on the interests, needs, and abilities of the individuals it is designed to serve.
- The program should provide experiences related to the local environment while simultaneously being appropriate to the level of maturity of the individuals.
- The program should be feasible to implement in light of the available facilities, time, equipment, and leadership resources."
  (Mahrous Mahmoud Mahrous & Yahya Thabet Yahya Ismail, 2015, p. 38).

2. Sports Training Programs

2.1 Definition of a Sports Training Program

Sports training programs are considered part of general programs; therefore, there is some overlap between them in terms of their concepts. Many experts have made efforts to provide definitions of sports programs, including the following:

- "It is organized training based on a scientifically designed plan that takes into consideration the components of the training load in accordance with the age group and the objectives intended to be achieved, using all the training means, methods, and techniques that the coach considers appropriate for achieving the components of the training program."
- "It is a set of exercises included in a training hour or a single training unit within the framework of the established curriculum for the training process, with the aim of achieving the objective of the activity performed by the individual."
  (Mohamed Ibrahim Abu Halwa, 2016, p. 145).

The researchers consider the first definition to be the most appropriate for defining a training program, because the second definition limits the concept of a program to a set of exercises performed during a single training unit. A training program is broader than this, as it extends over a period of time appropriate to the objectives to be achieved and is divided into different time periods.

A training program is based on several elements that must be achieved through the training units upon which the program is built. The foundation of this process lies in the interrelationships among all training units, their duration, their number per week, the total number of units included in the program, and the overall duration of the program. In addition, the type and nature of exercises, the training methods used, the equipment and tools required to accomplish the training

tasks, and the frequency of training units constitute important foundations for the success of the training program.

When the coach begins planning, developing, and organizing a training program, they should identify and consider the following:

- The physical and technical levels and abilities of the players through tests and measurements.
- The health condition of the players through physical examinations and various medical analyses.
- Preparing and providing the necessary requirements needed for the training process.
- The different stages of training.
- The purposes and objectives of training.
- The methods and techniques to be followed throughout the training program.
- The importance of the upcoming competition.
- The level of the other teams participating in the competition.
  (Mohamed Ibrahim Abu Halwa, 2016, pp. 145–147).

The researchers believe that all these points must be taken into consideration when designing sports training programs in order to achieve the intended objectives. Lack of knowledge of these aspects means that the planning process is not based on scientific foundations, and consequently, the sports training program will not achieve its objectives. Therefore, a sports training program should be developed on the basis of a set of essential considerations that facilitate the achievement of its objectives.

2.2 Steps for Designing a Sports Training Program

“The development of training programs is one of the most important tasks undertaken by coaches, particularly standardized and organized programs that follow scientific principles and contribute to improving the individual’s condition, making them physically fit and capable of performing the tasks and requirements of the activity they practice. Such programs also promote adaptation of the athlete’s physiological systems. Moreover, training programs that are planned and developed on scientific foundations achieve the highest levels of performance.”
(Mohamed Sayed Abdel Rahim Khalil, 2016, p. 17).

“Training programs differ from one sports activity to another, as well as from one sport to another, according to the requirements of each sports activity…”
(Zaki Mohamed Hassan, 2004, p. 149).

There are several steps that should be taken into consideration when designing a sports training program:

• Principles on Which the Program Is Based

The design of any training program for a particular sports activity should draw upon other scientific disciplines, such as physiology, sports medicine, biomechanics, kinesiology, psychology, and other related sciences.

• General and Specific Objectives of the Program

The objective of the program is derived from the objective of the overall plan itself, which must be achievable. Clearly defining objectives contributes significantly to selecting appropriate exercises and determining the appropriate methods for implementing them.

• Determining the Exercises Within the Training Program

These include:

- **Warm-up:** warm-up exercises.
- **Main section:** exercises designed to develop technical and physical abilities.
- **Closing section:** cool-down exercises.

• Organizing the Exercises Within the Training Program

This primarily depends on several elements, including the components of the training load and how they are distributed across the different stages of the training units, as well as the allocation of training time to each component of the program.

• Implementation Steps for Applying the Training Program

The implementation process includes the following:

- The coach explains the components of the training unit, considers the effects of the previous training load, and addresses any problems.
- The training area is organized before training begins.
- The necessary equipment and tools are prepared.
- A proper warm-up is conducted.
- The components of the training unit are implemented progressively and according to the correct scientific sequence.

- Cool-down and relaxation exercises are performed.

• Evaluation of the Training Program

The coach should establish specific times for evaluating all aspects of the training program, including **physical, technical, and tactical aspects**, through appropriate tests. The purpose is to identify strengths and weaknesses and make the necessary adjustments to the component or components that need to be addressed in the future.

• Development of the Training Program

The coach should continuously work on developing the training program based on their experience and on scientific developments obtained from studies and research, as well as through the use of supporting tools and modern training technologies.
(Mansour Jambil Al-Ankabi, 2013, pp. 191–192).

"In order for the training process to achieve its established objectives and ensure success in all its components, it is necessary to diagnose all the conditions and problems that emerge within the program through accurate scientific evaluation. On this basis, modifications and changes can be made to the contents of the training program. Evaluation is the process **through which a judgment is made regarding the extent to which the program has achieved its objectives and fulfilled its purposes."**
(Mohamed Ibrahim Abu Halwa, 2016, p. 153).

The researchers therefore consider the design of training programs to be an interconnected sequence comprising a set of steps that contribute to the planning process. The planner must be familiar with all these steps during the planning process in order to increase the effectiveness of the program and ensure the achievement of the intended objectives.

2.3 Scientific Principles to Be Considered When Developing Sports Training Programs

The following scientific principles should be taken into consideration:

- Defining the objective of the program and the objectives of each stage of its implementation.
- Taking into account individual differences and individual responses among players, including their individual characteristics and attributes, by determining their respective levels.
- Identifying the most important training tasks, establishing their priorities, and arranging them progressively.
- Ensuring that the training program is appropriate to the players' age group and developmental characteristics.

- Ensuring the organization, variety, and continuity of training.
- Maintaining a balance between general and specific training.
- Ensuring the flexibility of the training program and its suitability for practical implementation.
- Ensuring that the training load is appropriate in terms of **intensity, volume, and density**.
- Progressively increasing the training load, ensuring appropriate advancement, adopting a wave-like pattern, properly directing specific training loads, and maintaining training-load dynamics.
- Increasing motivation.
- Paying attention to the principles of warm-up and cool-down.
- Ensuring adaptation.
  (Emad El-Din Abbas Abu Zaid, 2005, p. 276).

3. Sports Planning

3.1 Definition of Sports Planning

Sports planning is considered a type of general planning that is specifically related to the sports field. Experts have provided several definitions of sports planning, including the following:

"It is the process of organized scientific thinking aimed at determining the implementation procedures for developing and improving the athlete's training condition and advancing it in order to achieve the highest level of performance that has not been achieved before, while ensuring the athlete is in the best possible training condition during a championship or competition."
(Hossam Samer Abda, 2011, p. 86).

"It is the prediction of competitive levels in sports based on expectations and the development of implementation programs to achieve specific or desired results."
(Mufti Ibrahim Hammad, 2008, p. 253).

It is also defined as "the shortest, most reliable, and least costly way of achieving the desired sports levels according to the specified objectives in different types of sports."
(Samia Jamil Assi, 2017, p. 163).

The researchers conclude from the above definitions that the main benefit of sports planning is to achieve objectives and reach the desired levels in the future by developing a program that takes

into consideration the available resources and competitive levels. Therefore, defining objectives is one of the most important elements that must be considered in the sports planning process. The researcher strongly agrees with the last definition of sports planning.

Difference Between Planning, the Plan, and the Training Program or Curriculum

The researchers believe that there is a relationship between planning, the plan, and the training curriculum, and that these concepts are sometimes confused in some references. Therefore, each concept can be explained as follows:

- **"Planning = prediction + plan.** Planning is a broader and more comprehensive process than the concept of a plan. Planning can be understood as the process of developing a plan; therefore, the plan is the outcome of planning.
- The **plan** is defined as the general framework that establishes the basic features of the training program or curriculum. Planning, on the other hand, is the process of anticipating the future and preparing for it through a plan; that is, determining and identifying the methods for achieving these objectives according to the changes that may occur in the future.
- The **training program or curriculum** consists of the implementation steps presented in the form of detailed physical or mental activities and exercises that must be carried out in order to achieve the objectives."
  (Ahmed Yousef Metaab Al-Hasnawi, 2014, p. 147).

3.2 Importance of Planning for Sports Training

The importance and benefits of sports training planning can be summarized as follows:

• Defining Objectives and Working to Achieve Them

Planning establishes objective goals, thereby making sports training clearly directed toward specific objectives.

• Anticipating Obstacles

Planning anticipates the problems and obstacles that may hinder preparation plans and consequently enables appropriate measures to be taken to address them.

• Choosing Between Alternative Plans and Programs

Planning makes it possible to develop several alternative training plans and programs and compare them in order to select the most effective option for achieving the best results.

• Defining Responsibilities

Planning establishes the responsibilities of all members of the technical and administrative teams responsible for implementing sports training plans and programs. As a result, their productivity and effectiveness are enhanced.

• Effective Communication

Planning in sports training facilitates communication among all organizational units, functions, and personnel, beginning with the highest sports management level and extending to the technical and administrative teams responsible for implementing plans and programs.

• Periodic Evaluation

Sports training plans include methods and procedures for periodic evaluation in order to identify the levels achieved during the various stages of plan implementation. The intermediate objectives established in advance serve as evaluation criteria for determining the levels of preparation achieved during the implementation of the plans.

• Economic Efficiency

Sports training planning contributes to saving effort, money, and time by clearly identifying the objectives to be achieved in the future and determining the appropriate resources, training methods, preparation programs, and competitive strategies required to achieve them.
(Nawal Mahdi Al-Obaidi, 2011, pp. 189–190).

• The Macrocycle (Major Training Cycle)

Definition and Nature of the Macrocycle

The macrocycle is a comprehensive training cycle consisting of a relatively large number of mesocycles. Its minimum duration is approximately six months and may extend to more than one year. Its internal structure depends on the characteristics of the athlete, the sport, and the overall objective of the training phase. Thus, it encompasses all types of medium and small training cycles, each positioned according to the planned structure of the training season.

Each training phase has different tasks, and the appropriate structure and sequence of microcycles are established in order to accomplish these tasks. When considering the macrocycle of a training season, the structure of the mesocycles comprising it varies according to the division of the training season into periods, depending on the nature of the competition and the type of sport. Microcycles and mesocycles are organized in such a way as to achieve the desired objective during each period.
(Amr Allah Ahmed Al-Basati, 1998, p. 157).

“The structure and duration of the macrocycle are determined by several factors, including the major competitions for which the athlete is preparing, the individual needs of each athlete to achieve adaptation, as well as the athlete’s level and training condition. The

duration of the cycle generally ranges from several months to four years when the objective is preparation for participation in an Olympic Games."
(Abu Al-Ala Ahmed Abdel Fattah, 2012, p. 287).

The researchers believe that the macrocycle represents a set of mesocycles. A training season may contain several macrocycles, depending on various factors that influence the sports planning process.

Sections of the Macrocycle

"The macrocycle represents an annual plan aimed at bringing the athlete to the highest possible level of sports performance in competition during the year. It includes three training periods: the preparation period, the competition period, and the transition period."
(Ahmed Yousef Metaab Al-Hasnawi, 2014, p. 189).

These periods are as follows:

1. Preparation Period

The preparation period takes place at the beginning of the training season, and its objective is to prepare the athlete to participate in competitions.

"The preparation period may constitute two-thirds to three-quarters of the macrocycle, and it is divided into the general preparation phase and the specific preparation phase."
(Ahmed Yousef Metaab Al-Hasnawi, 2014, p. 190).

A. General Preparation Period

This is the first period of the training season and takes place after the athlete has stopped training for a certain period of time.

**"This period is primarily aimed at general physical, functional, psychological, and technical preparation, which provides the foundation for specific preparation. The duration of the general preparation period depends on the athlete's level of general preparation, the type of sports specialization, the athlete's level, and other factors.

The progression method is characterized by a gradual increase in training load through a progressive increase in both volume and intensity, while taking care to avoid increasing the training load too rapidly. Excessively rapid progression can negatively affect the athlete's level of sports form during the season. A rapid progressive increase may cause the athlete to reach peak form without having sufficient training background to maintain that form until the time of the competition. This is referred to as 'phosphoric training,' meaning an intensive increase in training loads and a substantial increase in training intensity over a short period, resulting in the achievement of sports form in the shortest possible time, but without guaranteeing its continuity

throughout the training season."**
(Rissan Kharibat & Abu Al-Ala Abdel Fattah, 2016, p. 557).

During this period, considerable emphasis is placed on physical preparation, which is highly important among the various aspects of preparation. The objective is to develop physical qualities regardless of whether they are directly related to the specific activity practiced by the athlete. General preparation constitutes the foundation upon which specific preparation is built. Therefore, inadequate general preparation will negatively affect the athlete's performance throughout the training season.

Objectives of the General Preparation Phase

"The general preparation phase seeks to achieve a number of objectives, including:

- Raising the level of physical components and establishing the basic functional readiness of the athletes' body systems through general physical preparation, which gradually shifts toward specific preparation toward the end of this period.
- Learning new skills, reviewing and developing previously learned skills, and partially integrating them with new skills.
- Accomplishing certain aspects of long-term psychological preparation and laying the foundation for short-term psychological preparation.

When planning the general preparation phase, an increase in training volume and a decrease in training intensity should be considered, together with relatively long recovery periods. As the athlete approaches the specific preparation phase, training volume decreases while intensity gradually increases."
(Nawal Mahdi Al-Obaidi, 2011, p. 197).

The researchers therefore consider the general preparation period essential for preparing the athlete to enter the specific preparation period. Consequently, careful planning is particularly important with regard to the components of the training load, because this period follows a break from training and competition. Inadequate planning of training loads may therefore lead to injuries.

B. Specific Preparation Period

Training during this phase aims to prepare the athlete to reach sports form. As a result, the number of specific exercises increases, and these exercises become increasingly similar to the demands of competition. This phase also includes exercises aimed at developing physical qualities such as speed and specific endurance.

The overall training volume increasingly moves toward precise sports specialization. Particular attention is given to technical aspects associated with competition. This is generally achieved in

two directions: the first involves developing physical qualities related to technical performance, while the second focuses on improving performance in terms of economy of effort.

Competition exercises are generally distributed evenly throughout this period, with their volume increasing toward the end of the phase. Although greater emphasis is placed on specific exercises, this does not mean that general exercises should be eliminated, as they remain necessary to maintain the achievements made during the first preparation period.

During this phase, the training load continues to increase progressively, with particular emphasis on increasing the intensity of specific preparation exercises and competition exercises. This may be reflected in increased speed of performance, movement tempo, power, or speed-strength.

It should be noted that as intensity increases, this affects training volume. Initially, the volume may remain stable and then gradually decrease as intensity increases. At first, this reduction occurs through decreasing the volume of general exercises, while simultaneously increasing the emphasis on specific exercises, whose volume progressively increases during this phase.

It should also be noted that the high intensity of the training load during this period shortens the medium wave of the training cycle to approximately **3–4 weeks**. This, in turn, affects the structure of the mesocycle, which generally consists of basic and loading cycles.
(Rissan Kharibat & Abu Al-Ala Abdel Fattah, 2016, pp. 558–559).

Objectives of the Specific Preparation Period

The specific preparation period aims to:

- Raise the level of specific physical preparation and improve the efficiency of the physiological systems so that they are compatible with the performance requirements of the specialized sport.
- Develop technical preparation and bring it to the level of automatic performance, while integrating it with physical fitness and game strategies.
- Learn new tactics and master previously learned ones within the framework of tactical preparation.
- Provide short-term psychological preparation and link it to competitive situations.
- Integrate all types of preparation within a comprehensive and coherent framework.
  (Nawal Mahdi Al-Obaidi, 2011, p. 197).

The researchers therefore consider the specific preparation period essential for preparing the athlete to enter the competition period, and consequently, competition results depend significantly on its effectiveness. Therefore, careful planning is particularly important with regard to the components of the training load, which are characterized by **high intensity and**

relatively low volume, in contrast to the general preparation period. Inadequate planning of training loads during this phase may result in injuries, which can negatively affect the outcomes of the subsequent competition phase.

Competition Period

The competition period comes after the specific preparation period and is considered one of the most important and longest periods of the training season.

"The competition period is the period during which the matches of the competitive season are held. It begins with the first match and ends with the last match. During this period, the high level achieved by the athlete throughout the different stages of the preparation period is maintained, while efforts are made to achieve and sustain sports form."
(Fatima Abdel Malek et al., 2011, p. 79).

Achieving and maintaining sports form is one of the main objectives that the athlete seeks to accomplish during this phase.

"The competition period can be divided into a pre-competition phase and an official competition phase. The pre-competition phase includes a number of competitions that lead the athlete toward the main competition, as well as certain specific tests designed to assess the performance level and efficiency of some sports equipment and facilities. It may also aim to test the effectiveness of new tactics during a match or competition and constitutes an effective means of reducing athletes' anxiety before official competition."
(Ahmed Yousef Metaab Al-Hasnawi, 2011, p. 191).

Physical preparation during the competition period aims to bring the athlete to the highest possible level of specific training readiness and to stabilize the general training condition at the level already achieved. Preparation of movement and tactical performance during this period aims to improve sports performance to the highest possible degree. This requires maintaining the components of physical fitness and the skills previously acquired, while also improving their flexibility, performance level, and ability to be applied according to changing competitive conditions.

Through competitions, improvements occur in the components of physical fitness and sports skills, while the athlete's experience increases and their level of movement and tactical performance develops. In addition, competitions are an important means of developing character and improving volitional qualities. Therefore, competitions are not merely a method used to assess the athlete's level; rather, they are an important factor in advancing sports performance. During this period, competitions become among the most important and effective means and methods of training for further development.
(Qasim Hassan Hussein & Yousef Lazim Kamash, 2012, pp. 229–231).

Transition Period

The recovery and transition period is the final period of the training season and is important from physical, physiological, psychological, and other perspectives.

"It is the period that immediately follows the competition period. It begins after the final match of the competitive season and ends with the first training unit of the preparation period for the following competitive season."
(Saleh Mohamed Saleh Mohamed, 2017, p. 248).

This period aims to restore the athlete's physiological systems following the effects of intense physical and nervous exertion resulting from the training loads during the preparation and competition periods, while maintaining a relatively adequate level of training condition to ensure optimal recovery and preparation for the following season.

The Mesocycle

Definition and Nature of the Mesocycle

The mesocycle is one of the types of training cycles included in the training season and is characterized by a number of features that distinguish it from other cycles.

"The mesocycle is a distinct block used to construct the macrocycle or training season. It usually consists of several microcycles (weekly cycles), ranging from 2 to 6 cycles. This number varies according to the duration of the cycle itself, which is related to the length of the training season. The mesocycle generally approaches one month in duration. This period is considered appropriate because it corresponds to the natural monthly rhythm of the human body, based on the assumption that human vitality and physical activity follow a wave-like pattern of increases and decreases. The monthly wave of the biological rhythm lasts approximately 23 days, and this is particularly evident in the natural menstrual cycle of female athletes. The structure of the mesocycle is based on certain physiological principles that do not differ significantly from those governing the microcycle."
(Abu Al-Ala Abdel Fattah, 2012, p. 280).

Types of Mesocycles

Most experts in this field agree that mesocycles can be classified into the following types:

1. Introductory Mesocycle

This cycle takes place at the beginning of the training season, that is, after the transition period. Its purpose is to progressively raise the athlete's level and abilities, facilitating the gradual transition from general physical preparation to specific physical preparation.

It is therefore generally used during the general preparation phase of the training season. It can also be used when the athlete returns to regular training after periods of interruption caused by injury or other circumstances.

The cycle includes a set of exercises aimed at improving physiological efficiency through the development of different types of endurance, increasing speed-strength and flexibility, and developing technical performance by emphasizing the correct execution of motor skills, which form the foundation for the subsequent stages of training.

When structuring the mesocycle, it should consist of **one to three introductory microcycles**, or two introductory cycles followed by basic cycles and then a recovery cycle. Moderate intensity and a substantial increase in training volume should be used, with the training load gradually increased when the cycle is repeated.
(Rissan Kharibat & Abu Al-Ala Abdel Fattah, 2016, p. 540).

2. Basic Mesocycle

"This is the main type used during the general preparation period. It involves a high training volume and aims to develop the athlete's general physical fitness. The basic cycle is also used to learn new skills and refine previously acquired skills. Different forms of this type of mesocycle are used throughout the various training stages and may be classified as general or specific preparation cycles. The total number of training mesocycles depends on the time available for the general preparation period, while microcycles are used within these cycles in different configurations."
(Jamal Sabri Faraj, 2012, pp. 108–109).

"The structure of the training load during this basic mesocycle is characterized by its direction. It may be directed toward improving and developing the level of the athlete's training condition, or it may be directed toward maintaining the existing level of training condition in order to contribute to completing the adaptation process to the requirements of the activity being practiced."
(Amr Allah Ahmed Al-Basati, 1998, p. 155).

"The training program during this cycle is characterized by variation and diversity in training methods, together with an increase in the volume and intensity of the training load and an increase in the number of training doses involving maximum volume and intensity. The cycle may contain different types of microcycles."
(Rissan Kharibat & Abu Al-Ala Abdel Fattah, 2016, p. 540).

3. Test Mesocycle

**"The test mesocycle, or preparation-monitoring cycle, is a transitional cycle between the basic cycles and the competition cycles. It includes training that corresponds to the requirements of the

competition for which the athlete or athletes have been prepared during the preceding cycles, with the aim of achieving comprehensive preparation.

The training program during this cycle is characterized by increased use of training doses involving specific preparation exercises and competition exercises, together with maximum or near-maximum training intensity associated with competition. The type of microcycles comprising the cycle should continuously be varied between increased loading and recovery, depending on the body's tolerance of physical loads during this cycle. This cycle is the one that achieves specific preparation for the athlete."**
(Emad El-Din Abbas Abu Zaid, 2005, p. 56).

4. Pre-Competition Mesocycle

"These cycles are among the most important forms of mesocycles during the phase of direct preparation for competitions. Their contents are largely structured according to the competition system and its conditions in order to facilitate adaptation to the competition system and circumstances, with the aim of achieving high levels of performance in competition and accelerating the recovery process."
(Amr Allah Ahmed Al-Basati, 1998, p. 155).

5. Competition Mesocycle

The competition mesocycle is a type of mesocycle characterized by specific features that distinguish it from other cycles. It is called the **competition mesocycle** because it takes place during the competition period.

"These cycles constitute the main type used during the competition phase."

6. Recovery Mesocycle

The recovery mesocycle is a type of mesocycle designed to facilitate recovery.

"There are two methods for structuring this cycle. The first aims to prepare the athlete for competition by raising the level of sports form through loading and unloading. The second aims to maintain the level of sports form achieved by the athlete through reducing the training load in order to eliminate the effects of fatigue resulting from previous loads."
(Abu Al-Ala Abdel Fattah, 2012, p. 282).

• Microcycles

Definition and Nature of the Microcycle

The microcycle is one of the types of training cycles included in the training season and is characterized by a set of features that distinguish it from other types of cycles.

“The microcycle refers to the smallest complete component of the training-load cycle. It consists of a set of organized training units performed over several days. Regardless of whether the contents of these units are similar or different in terms of training loads and frequency, they are directed toward achieving a specific purpose or objective during the training process within a particular period of the training season. It is considered the smallest and first composite training segment in the training process.”
(Ahmed Al-Basati, 1998, p. 137).

A microcycle consists of several training doses (units), which differ in their structure and the sequence of training doses according to certain physiological principles, foremost among them the rhythm of fatigue and recovery.

The duration of a microcycle also varies according to several factors, including the objectives of the cycle, its position within the training season, and the relative amount of time allocated to it. However, the most commonly used duration is **one week**, due to its compatibility with the athlete’s natural weekly biological rhythm.

Nevertheless, the duration may sometimes vary, ranging from **4–5 days to 10–14 days**. In rare circumstances, a microcycle lasting only two days may be used when specific conditions require particular training tasks to be consolidated over relatively short periods. However, the **weekly microcycle** remains the most commonly used form.
(Emad El-Din Abbas Abu Zaid, 2005, pp. 52–53).

Types of Microcycles

Abu Al-Ala Abdel Fattah and Rissan Kharibat agree that microcycles can be classified as follows:

1. Introductory Microcycle

The introductory microcycle aims to restore the body and its various systems to a condition capable of handling high physical loads. Therefore, it is generally used at the beginning of the preparation phase and at the beginning of mesocycles.

It is characterized by a relatively moderate training load and greater emphasis on general preparation. It can also be used during the pre-competition period to maintain the levels achieved during previous cycles without imposing excessive loads on the athlete.

2. Basic Microcycle

The basic microcycle aims to stimulate adaptation processes within the body. It is characterized by an increase in training volume and intensity and is generally used during the preparation period.

It can also be used during different stages of training, but in different forms depending on its position within the training season. When used during the preparation phase, it aims to improve either general or specific preparation.

Its structure also varies according to its relationship with the dynamics of training-load development. It may aim to progressively increase the intensity or volume of the training load, or it may aim to maintain a stable level of training intensity and volume.

3. Competition Preparation Microcycle

The competition preparation microcycle aims to provide **indirect preparation for competition**. Its content varies according to the type of competition and the individual characteristics of each athlete.

Among its objectives is the use of active recovery while simultaneously incorporating competition-specific exercises. This cycle is generally structured in a manner that closely resembles the distribution of competition periods and the recovery intervals between them.

4. Recovery Microcycle

The recovery microcycle aims to provide opportunities for recovery between basic cycles. It contains training loads characterized by relatively low volume and is used as a means of active recovery.

This cycle is generally placed at the end of a mesocycle. It may also be scheduled consecutively following basic cycles characterized by high training loads.

5. Competition Microcycle

The competition microcycle aims to prepare the athlete for competition. Its structure is influenced by the type of competition in different sports and by the nature of the competition schedule in which the athlete will participate.

It includes the number of tests and trials, the recovery intervals between them, recovery methods, and the organization of all measures that contribute to achieving the best possible results in competition.

6. Compensatory Microcycle

Following the implementation of a test cycle, the coach may sometimes need to modify the structure of the training loads in order to adjust certain aspects of the training plan.

For example, based on an analysis of the results of the test cycle, the coach may observe that the athlete has been subjected to excessive loading, resulting in **overtraining and fatigue**. The compensatory microcycle is therefore used to modify the training load and restore an appropriate

balance within the training plan.
(Rissan Kharibat & Abu Al-Ala Abdel Fattah, 2016, pp. 530–532).

Conclusion

Based on the foregoing discussion, the researchers conclude that the development of training programs is of great importance in the field of sports training for achieving high levels of athletic performance. Therefore, careful planning is essential to enable coaches to achieve the intended objectives with the least possible amount of time, effort, and cost.

A training program consists of a set of steps through which the coach defines the objectives to be achieved. Accordingly, any training program that is developed on scientific foundations and takes into consideration the conditions and requirements contributing to its success is likely to achieve its objectives and produce positive results.

When developing a training program, the coach should divide it into appropriate training periods, with each period designed to achieve a specific set of objectives. Furthermore, the program should include an effective **evaluation component** to assess the extent to which its objectives have been achieved and to identify any necessary modifications or improvements.

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