PERCEIVED BARRIERS TO TALENT IDENTIFICATION AMONG UNDERGRADUATES IN THE UNIVERSITY OF BENIN

Ekiuwa Praise COLE
EDU1804198

A PROJECT PRESENTED TO THE DEPARTMENT OF HUMAN KINETICS, FACULTY OF EDUCATION, UNIVERSITY OF BENIN, BENIN CITY, EDO STATE IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE [B.SC(ED)] IN HUMAN KINETICS AND SPORT SCIENCE.

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CERTIFICATION

We the undersigned certify that the project work was carried out by COLE Ekiuwa Praise with matriculation number EDU1804198 of the Department of Human Kinetics and Sport Science, Faculty of Education, University of Benin, Benin City.

_____ _____

Prof. Elvis Agbonlahor **Date**
(Project Supervisor)

_____ _____

Dr. U. Oriahki **Date**
(Project Coordinator)

_____ _____

Prof. Kingsley O. Omorogiuwa **Date**
(Dean, Faculty of Education)

DEDICATION

I dedicates this research work to the Almighty God who has seen me through the struggle of my academics, and also to my lovely parents, Mr. and Mrs. Cole for their support and prayers toward my success.

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With profound gratitude, I acknowledge God Almighty who gave me the courage and fortitude to handle all the activities culminating in the writing of this project. Through the many hurdles and challenges, the flawless God raised dependable succor to all those challenges and doubting which did not define my success in the path of my academic pursuit.

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TABLE OF CONTENTS

Title	i
Certification	ii
Dedication	iii
Acknowledgements	iv
Table of Contents	v
Abstract	ix
CHAPTER ONE: INTRODUCTION	
Background to the Study	1
Statement of Problem	4
Research Questions	6
Purpose of the Study	7
Significance of the Study	7
Scope and Delimitation of the study	8
Definition of Terms	

CHAPTER TWO: REVIEW OF RELATED LITERATURE

Theoretical Framework 10

Talent in sport 14

Talent Identification in Sport 15

Elements in Talent Identification and Development 18

Talent Identification Procedure in Sports 21

- Identification of young talents in sport 24
- Children specialization in sport 26
- Models of young athletes development 27

Talent Development in Sport 29

- Coaching Knowledge of Sport Talent Development 30
- Facilities and Equipment for Sport Talent Development 32
- Motivation Environment for Sport Talent Development 33
- Competitions Environment for Sport Talent Development 34
- Time for Practice and Training for Sport Talent Development 35

Barriers to Talent Identification 36

Summary of Reviewed Literature 40

CHAPTER THREE: METHODOLOGY

Research Design 44

Population of the Study 44

Sample and Sampling techniques 45

Research Instrument 45

Validity of the Instrument 45

Reliability of the Instrument 45

Administration of the Instrument 46

Method of Data Analysis 46

CHAPTER FOUR: PRESENTATION OF RESULT AND DISCUSSION OF FINDINGS

Presentation of Result 47

Discussion of Findings 52

CHAPTER FIVE: SUMMARY, CONCLUSION, AND RECOMMENDATION

Summary 57

Conclusion 58

Recommendations 59

Reference 61

Appendix 69

ABSTRACT

This study was conducted to examine the perceived barriers to talent identification among undergraduates in the University of Benin. To guide this study, five research question were raised. The descriptive survey research design was adopted to accomplish the objectives of the study. The target population was 300 and 400 level students of Human Kinetics and Sports Science Department totaling One hundred and Eighty Two (182) students. The sample size for the study comprised of 110 students which is 60% of the total population. The main instrument of this research is a 27 item self-structured questionnaire which was validated by the researcher's supervisors and two other experts, all from the Department of Human Kinetics and Sports Science, University of Benin. The instrument was tested for reliability using the test-retest reliability method. The research instrument was administered twice to a small sample within an interval of two weeks. The results showed a reliability coefficient of 0.88 which was considered high, acceptable and accurate. Data collection was carried out by the researcher, and the collected data were analyzed using Statistical Package for Social Sciences (SPSS), version 21. The descriptive statistics of mean and standard deviation was used for the data analysis.

The findings of this study revealed that human factors, management, infrastructural and environmental factors are major barriers to talent identification among undergraduates in the University of Benin. It also showed that human factors of prejudice and bias affect talent identification; policy making of the government act as barrier to talent identification; while geographical variation pose as barrier to talent identification. It was recommended that the stakeholders who are objective without bias in their selection process, should be placed in the selection and identification phase/process. Also, adequate policies on proper talent identification at the grass-root level should be ensured by the government.

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FACULTY OF EDUCATION, UNIVERSITY OF BENIN
BENIN CITY

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CHAPTER ONE

INTRODUCTION

Background to the Study

The success of a country in the international sports fields, in addition to its social and economic effects symbolizes stability and comprehensive capabilities of that particular country. This may account for the high investment of several countries in championships and professional sports. Notably, countries around the world carry out athletic preparations, infrastructural planning, talent identification and development for achieving gold, silver, and bronze medals from the world and Olympic competitions. Interest in identifying talents is one of the most important concepts in sports sciences, which has grown considerably in recent years. Talent identification is the process by which young people are guided by certain tests toward the sports that they have the greatest chance of success (Krasilshchikov, 2011).

Talent can be defined as a natural ability or success that can be displayed from early childhood to adulthood. Talent is a marked innate ability defined as artistic accomplishment, natural endowment or ability of a superior type (Brown, 2001). Talent is generally considered an exceptional natural ability to attain goals; therefore, logically, athletic talent ought to be exceptional natural ability of an individual to perform a sports-related task or activity. Talent has several properties which are genetically transmitted and partly innate. These properties include players' anthropometric characteristics (stature, mass, body composition, bone diameter, limb girth) are related to performance in important and sometimes complex ways (Abisai, 2014). These

properties serve as basis for predicting those individuals who are more or less likely to succeed at some later stage (William & Reilly, 2000).

Talent identification refers to the process of recognizing current participants with the potential to become elite players. It entails predicting performance over time by measuring physical, physiological, psychological and sociological attributes as well as technical abilities, either in isolation or in combination (Williams & Reilly, 2000). Similarly, other studies support this definition by defining talent identification in sport as a process in which individuals who are more likely to prosper in a given sport are identified according to the test of specific factors (Hadavi, 2000) and define talent identification as a means of harnessing sporting talent to bring about future success in international arena. Several studies have had varying findings on the methods to be used when identifying talented athletes. Some studies support the use of natural methods while others recommend application of scientific methods (Ziemainz & Gulbin 2002).

The application of scientific methods in talent identification involves application of a series of tests that are thought to measure key factors for success in a specific sport. Utilization of scientific methods to identify athletes with potential reduces time required to reach high performance, enhances the coach training effectiveness, increases competitiveness and number of athletes aiming to attain high level and increases confidence (Bompa, 2000). Review of literature indicates that talent identification programs across the globe are not firmly grounded on scientific rationale (Williams & Franks, 2001) and rely heavily on the intuition or “eye” of expert coaches and talent scouts in identifying talented sports performers (Williams & Reilly, 2000). Similarly

coaches and scouts most often rely on subjective assessment based on their experience and their "eye for talent".

Some studies suggest that talent identification should be done by experienced coaches (Abbott & Collins, 2004). This is supported by a study carried out by Hadavi and Zarifi (2009) whose purpose was to design a model for talent identification and development in athletes that found out that coaches apply the coach-made methods which are based on their personal experience as well as the standard criteria. Another study carried out by Harati *et al.* (2011) to determine the important indices in talent identification for swimming was a survey among elite women swimming coaches. Regarding the method for identification and selection of talented individuals, the study found out that coaches advocated the use of experimental method, observation method, and scientific method as their priority. Identification and selection was done based on coaches' views on anthropometric, psychomotor, skill, and psychological characteristics.

In Nigeria, formal procedures and systems for talent identification and development (TID) are yet to be developed, unlike other countries like the United Kingdom, Australia, USA and Canada, which have achieved the position of dominance in international sports through the development and continuous review of their talent identification procedures (Balyi & Hamilton, 2004). Although, among student athletes at the tertiary level in Nigeria, the development of formal talent identification models and procedures may not alone determine success in TID, but at least, it is an indication of the passion, value and commitment to sports in such countries. Several barriers pose a threat to talent identification. Gray and Plucker (2010) opined that

predictability and age factor are the major issues associated with talent identification of an athlete. Abisai (2014) opined that absence of sport talent identification structures and modalities at the university; Financial support by the university; Lack of or little knowledge on talent identification; Absence/inadequate equipment to facilitate identification process; Lack of sport scholarship for potential talented student-athletes. Divergent views was presented in the study by Till and Baker (2020) regarding challenges affecting talent identification, which centered on what are we looking for; what are the most effective ways to identify, select, and develop talent; as well as Health considerations for talent identification, development and selection. Most of these postulations on perceived barriers around talent identification were observed among the general population, with little or no representation among tertiary students. In an attempt to addressing these gaps, the study is instituted to examine the perceived barriers to talent identification among undergraduates in the University of Benin.

Statement of the Problem

At a glance, it is easy to discern fluctuations and high level of volatility in the performances of student athletes in several tertiary institutions in Nigeria, with exception to Delta State University. These fluctuations may affect the national team performance as most of the students athletes are represented in the national team. In many instances, all the successes recorded in a season would be lost by the end of the following season and in some cases, the reverse is the case (Amorose & Horn, 2000). For instance, the Nigerian national football team failed to qualify for the 2012 Africa Nation's Cup jointly hosted by Gabon and Equatorial Guinea but bounced back to win the Africa soccer

fiesta the following year in South Africa. Similarly, Team Nigeria was unable to secure a single medal at the London 2012 Olympics; however, the Nigerian contingent recorded the country's second best performance at the Commonwealth Games in Glasgow 2014 (two years later). However, despite the fluctuations in Nigeria's performance on the international stage, records (e.g. the number of medal won at the Commonwealth Games) indicate an upward trend in international performance. The variations in performance may be attributed to barriers affecting talent identification.

Talent identification is currently one of the main challenges in sports and has attracted a considerable amount of attention in the last decade. Undoubtedly, identification of talents and familiarity with various sports and events is a complex and multidimensional process, that is, a process that involves the interaction between physical, psychological, political and social factors (Bailey & Collins, 2013). Due herculean process, discovering the most effective and most widely used method of talent identification is very complicated and has long been a concern for researchers. Despite the numerous finding on the importance of talent identification, the question as to whether there is a talent identification program and appropriate sport talent development environment that can facilitate development of student-athletes in the University of Benin to the elite level in Nigeria arises. Review of literature indicates that limited studies have investigated constraints affecting talent identification in Nigerian universities, as majority of studies have centered on sports clubs, national teams and athletes at different levels of education except universities.

In most tertiary institutions in Nigeria, and specifically the University of Benin, there is no defined talent identification system for selecting athletic talents. An observed available criterion for talent identification is the results of sport competitions and since the number of competitions is low and there is lack of suitable criteria to select talented people, the talent identification process is less ambitious. So far, necessary planning has not been performed regarding championships and talented individuals have been ignored or are selected traditionally relying on personal experiences of coaches and some families of children and teenagers. Therefore, sport achievements at the university level are rooted in the method that is known as non-systematic method, which may affect their performances.

From the preceding paragraphs, it can be garnered that several barriers hinders talent identification, which leads to fluctuations and unpredictability of performance among student athletes. Hence, it is unsafe for Nigeria to rely on its previous achievements as evidence of sport success and longevity. This study was therefore designed to examine the perceived barriers to talent identification among undergraduates in the University of Benin.

Research Questions

The study provided answers to the following questions as a guide to the study;

1. What are the barriers to talent identification among undergraduates in the University of Benin?

2. Will human factors act as barriers to talent identification among undergraduates in the University of Benin?

3. Will infrastructure act as barriers to talent identification among undergraduates in the University of Benin?

4. Will management act as barriers to talent identification among undergraduates in the University of Benin?

5. Will environmental conditions act as barriers to talent identification among undergraduates in the University of Benin?

Purpose of Study

The study sought to examine the barriers to talent identification among undergraduates in the University of Benin. Specifically, the study examined how human factors, infrastructure, management and environmental factors act as barriers to talent identification among undergraduates in the University of Benin.

Significance of the study

It is hoped that findings from this study will contribute to the body of knowledge on resolving the constraints to talent identification in general and tertiary schools' students in particular. This study will aid the reversal of negative trend of complex and multi-dimensional talent identification among the youth population.

The results obtained from the study would contribute to encouraging the establishment of a viable Talent identification system (TIS) among athletes and will therefore be of tremendous importance to tertiary institutions and the general youth population in Nigeria.

The outcome of this research will be of vital value to the University of Benin as the study's population is domesticated and localized within each selected sports at the University of Benin.

Scope and Delimitation of the Study

This study focused on examining the perceived barriers to talent identification among undergraduates in the University of Benin. It did not seek to provide an evaluation of talent development among undergraduate. It will be delimited to undergraduates of the Human Kinetics and Sports Science (HKS) attending the University of Benin within the 2022/2023 academic session.

Definition of Terms

In this study, certain recurring terminologies will be operationally used and therefore defined thus:

Talent: An exceptional natural ability to competitively play a sport of one's choice especially that which can be developed by training

Talent Identification: The process of recognizing current participants in sports with the potential to become elite players.

Talent Development: The process of providing the most optimal learning environment to help promising youth athletes realize their potential.

Talent Selection: This is an ongoing process of identifying individuals who demonstrate prerequisite levels of performance in a given squad or team.

Sport Talent Development: Providing players with a suitable learning environment so that they have the opportunity to realize their potential. The

environment includes: sufficient accessible facilities and equipment of high quality, sufficient qualified coaches, sufficient opportunities to compete at the right level and frequency, sufficient time for training and motivational environment.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter is discussed under the following sub-headings:

- Theoretical Framework
- Talent in sport
- Talent Identification
- Elements in Talent Identification and Development
- Talent Identification Procedure in Sports
  - Identification of young talents in sport
  - Models of young athletes development
  - Children specialization in sport
- Talent Development
  - Coaching Knowledge of Sport Talent Development
  - Facilities and Equipment for Sport Talent Development
  - Motivation Environment for Sport Talent Development
  - Competitions Environment for Sport Talent Development
  - Time for Practice and Training for Sport Talent Development
- Barriers to Talent Identification
- Summary of Reviewed Literature

Theoretical Framework

The theoretical framework of this study is hinged on three models: Ericsson's Notion of Deliberate Practice, Bloom's Stages of Talent Development and Cote's Stages of Sport Participation (Ericsson, Krampe & TeschRomer, 1993;

Bloom, 1985; Cote, 1999). These theories critically explain sport talent identification and development. Several studies have been conducted in the area of talent identification and development. Although literature review covers wide variety of such studies, this review will focus on seven major themes. These themes are: talent identification in sports, talent development in sports, coaching knowledge of sport talent development, facilities and equipment for sport talent development, motivation environment for sport talent development, competitions environment for sport talent development, time for practice and training for sport talent development.

Ericsson's Notion of Deliberate Practice

High levels of performance are acquired through sustained investment in practice and deliberate efforts to improve (Ericsson et al., 1993). According to Ericsson et al. (1993), development of sport talent occurs when activities are well defined, are pitched at an appropriate level of difficulty, when useful feedback is presented and the opportunity for repetition, error detection and correction are provided. Ericsson et al. (2003) emphasize that constrains that prevent athletes from engaging in maximum amount of deliberate practice include: resources, motivation and effort. Resources include adequate time, energy, access to competent teachers, training material and facilities. Individual level of performance will be severely constrained if sufficient time is not invested in high quality training, coaches are not knowledgeable on the process involved in developing sports talents and if facilities and equipment are inadequate or not available (Durand & Salmela, 2001). Second, they advocate for high degree of effort necessary for participation in these activities to determine the amount to which an individual can sustain engagement and

adapt to increased task demands over time. Finally, the motivation to sustain participation is largely determined by one's intent to improve (Salmela & Durand, 2001). Without the goal of improving performance, the motivation to engage in such practice is likely to diminish (Ericsson et al., 1993). Ericsson has argued that a high quantity and quality of deliberate practice is sufficient to account for sporting excellence.

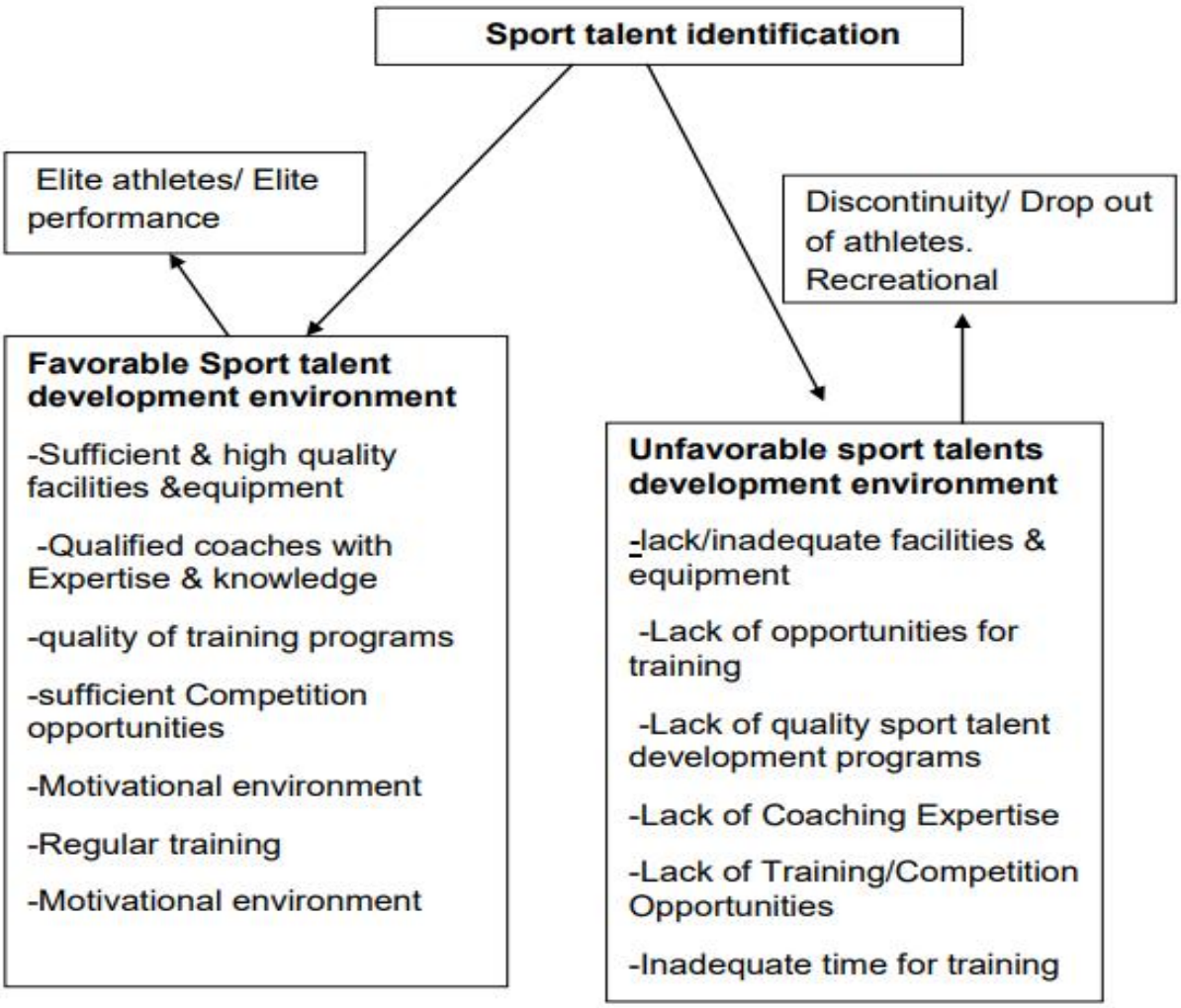
Bloom's Stages of Talent Development

Bloom, (as cited in Russell, 2005) indicates that to attain extreme levels of capability in their respective fields, individuals should undergo intensive process of encouragement, nurturance, education and training. Bloom observes that talent development requires years of commitment to learning and that the amount and quality of support and instruction received from parents, teachers or coaches in this process is vital. Bloom innovatively identifies three stages of talent development as follows; stage of initiation, middle stage of development and late stage of perfection. According to Bloom as (cited in Russell, 2005), these stages provide guidelines for talented individuals who go through the process of talent development as well as instructor and tacticians who take them through that process. He emphasizes that teachers or coaches should be more technically skilled than those at previous level and they should emphasize on development of proper technique, provide opportunities for performance evaluation and expect results through discipline and hard work ethics. In other words participants become achievement-oriented and competition becomes the yardstick for measuring progress.

Cote's Stages of Sport Participation

Cote (1999) suggests three distinct stages of participation in sports: sampling, specialization and investment years. At each level, the athletes have potential to move to another level, drop out or enter recreational years. This study focused on barriers to talent identification. According to Cote (1999), participant dedicates more time and effort in training during investments years. They focus on development of skills and strategies for competitions. Provision of both emotional and financial support is also necessary to facilitate participation. Cote also recommends the need to help participants cope with setbacks such as injuries, failures and lack of motivation. In summary, these theories emphasize on the need to create a sport talent development environment by provision of sufficient qualified coaches, sufficient time for deliberate training and practice, sufficient and accessible sport facilities and equipment, quality training programs, sufficient opportunities for competitions, motivation and individual effort. In absence of sport talent development environment, there will be dropouts making it difficult for talented student-athletes to realize their potential. These theoretical bases are illustrated in the Figure 1

Figure 1: Ericsson's Notion of Deliberate Practice, Bloom's Stages of Talent Development, Cote's Stages of Sport Participation (Russell, 2005)



Talent in sport

Talent in sport is defined by genetically innate morphological features, psycho-motor and functional abilities, cognitive and social characteristics, as well as motivation. The development and realization of these abilities to a great extent depend on parents, school, sports club, a coach, immediate and wider social

environment (Renzulli, 2000). Authors J. Baker, S. Cobley, and J.Schorer (2012) in their book Talent Identification and Development in Sport define talent in soccer according to 4 groups of predictors: anthropometric predictor, physiological-motor predictors, psychological and social predictors. According to Malina (2010) talent in sport is a combination of above average bio-motor skills, creativity and inner motivation. Talented children have several traits in common. These are the following: they exhibit similar behavior, environment is the key to realization of their potential, if they are not properly motivated they lose interest in developing their gift, they experience the world around them differently, their needs are different, it is a great challenge to work with them, and a great strain for their parents, teachers and coaches as well. Finally, talented children deserve talented, capable and coaches and teachers who demonstrate empathy.

Talent Identification in Sports

Talent identification refers to the process of recognizing current participants with the potential to become elite players. It entails predicting performance over time by measuring physical, physiological, psychological and sociological attributes as well as technical abilities, either in isolation or in combination (Williams & Reilly, 2000). Similarly, other studies support this definition by defining talent identification in sport as a process in which individuals who are more likely to prosper in a given sport are identified according to the test of specific factors (Hadavi, 2000) define talent identification as a means of harnessing sporting talent to bring about future success in international arena. Several studies have had varying findings on the methods to be used when identifying talented athletes. Some studies support the use of natural methods

while others recommend application of scientific methods (Ziemainz & Gulbin 2002). According to Balyi and Hamilton (as cited in Nigam, 2010), application of scientific methods in talent identification involves application of a series of tests that are thought to measure key factors for success in a specific sport Talent has several properties which are genetically transmitted and partly innate (Howe, Davidson & Sloboda, 1998). These properties include players' anthropometric characteristics (e.g., stature, mass, body composition, bone diameter, limb girth) are related to performance in important and sometimes complex ways (Borms, 1996). These properties serve as basis for predicting those individuals who are more or less likely to succeed at some later stage (William & Reilly, 2000). A study conducted by Jankovic et al. (1997) to compare successful and less successful 15- to 17-year olds using measures of maximal oxygen uptake, anaerobic power, grip and trunk strength measures, and heart volume (absolute and relative), found out that successful players had superior physiological fitness compared to the others. Another study by Janssens et al. (1997) showed that performance in short (30 m) and prolonged shuttle running discriminated between successful and less successful 11- to 12-year old soccer players. Similarly, in a study by Panfil et al. (1997) found out that elite 16-year olds recorded better performance in running and jumping than their less elite counterparts. It is on the basis of these findings that made Jankovic, Matkovic and Matkovic (1997) to conclude that physiological measures could be useful in predicting later successful performance. These conclusions are supported by Abbott and Collins (2004) who note that tests examining physical, motor and psychological factors are vital when identifying current performance ability or future performance. Utilization of scientific methods to identify athletes with potential reduces time required to reach high

performance, enhances the coach training effectiveness, increases competitiveness and number of athletes aiming to attain high level and increases confidence (Bompa, 1999). Review of literature indicates that talent identification programs across the globe are not firmly grounded on scientific rationale (Williams & Franks, 1998) and rely heavily on the intuition or "eye" of expert coaches and talent scouts in identifying talented sports performers (Williams & Reilly, 2000). Similarly coaches and scouts most often rely on subjective assessment based on their experience (Williams & Reilly, 2000) and their "eye for talent" (Christensen, 2009). Some studies suggest that talent identification should be done by experienced coaches (Abbott & Collins, 2004; Helen et al., 2000). This is supported by a study carried out by Hadavi et al.(2009) whose purpose was to design a model for talent identification and development in Iranian athletes that found out that coaches apply the coach-made methods which are based on their personal experience as well as the standard criteria. Another study carried out by Harati et al. (2011) to determine the important indices in talent identification for swimming was a survey among elite women swimming coaches. Regarding the method for identification and selection of talented individuals, the study found out that coaches advocated the use of experimental method, observation method, and scientific method as their priority. Identification and selection was done based on coaches' views on anthropometric, psychomotor, skill, and psychological characteristics. Although there is lack of empirical studies that have been undertaken to explore the most advantageous method to be used in identifying talented athlete in any sport (Falk et al., 2004), some studies recommend that effective identification of athletes requires a combination of the coaches' experience and the use of sport science testing (Moreno as cited by Rivas, 2009). A study by

Fernandez-Rio and Mendez-Gimenez (2012) found out that despite the enormous amount of youngsters that are enrolled in physical activity classes from an early age, many talented athletes are being ignored due to a deficient structure for talent identification. The process of talent identification requires coaches' sufficient knowledge that will not only enable them define more relevant talent indicators (Vaeyens et al., 2008), but also enable them to apply both objective and subjective assessment in identification of athletes with potential to become elite. Omitting any of these components might lead to wrong assessments and interpretations of athletes' potential. Talent identification in sports plays a very important role in eliminating the frustrations of participating in a sport that one is not suited to (Ghita, 1994). Through exposure of different individuals, particular sports talent identification system acts as a filter to remove people who have relatively few perceived important characteristics, leaving people who should have a relatively strong chance of success in that sport (Nigam, 2010).

Elements in Talent Identification and Development

The most common and obvious way to identify athletic talent is to examine physical ability, but current research cautions against a uni-dimensional approach. Simonton (2001) supported the idea that talent is a complex topic, stating that multiple components contribute to the development of talent in any domain. Abbott and Collins' (2004) study denoted the importance of psychological skills in talent identification and development. They stated that athletes should not be excluded or identified based solely upon one attribute, such as height. Abbott and Collins maintained that other factors like speed and agility may compensate for a weakness. Further, these researchers found that

key psychological behaviors such as motivation and learning strategies are essential to the talent development process both in sport and other performance areas. Meta-cognitive strategies have been shown to enhance achievement among numerous disciplines including education and sport (Gray & Plucker, 2010). Cognitive ability plays a significant role in athletic success. An essential key in identifying the talented athlete is recognizing athletes who can actively think and modify their actions while participating, utilizing strategy and cognitive abilities during play. Physical skill alone does not signify athletic talent. Nieuwenhuis et al. (2002) sought to identify the specific kinanthropometric, physical-motor, and psychological variables as well as specific skills that influence field hockey performance. The study examines two top and two bottom field hockey teams in a 14–15-yearold league to determine any differences. The only meaningful difference they found in kinanthropometric characteristics was frontal thigh skinfold. However, the top group had significantly better endurance and demonstrated more advanced ball-handling skills. Nieuwenhuis et al. created a prediction function using discriminant analysis that successfully distinguished between successful and less successful hockey players 90% of the time. The specific variables distinguishing players include agility, speed, approach success in competition, ability to hit, humerus measurement, general approach success, flexibility, and femur measurement. This complex predictive function falls short of the linear relationship most coaches would like to imagine. Nevertheless, Nieuwenhuisetal.'s 90% success rate indicates that talent may be distinguishable in the teen years. An area that has received limited research is the role of adults during the development of athletic talent. Wolfenden and Holt (2005) examined the perceptions of elite junior tennis players, their

coaches, and their parents regarding talent development. The authors found that intense commitment to tennis occurred earlier for participants than the time frame suggested by previous research. Wolfenden and Holt's findings support the concern of defining "stages" of athletic talent development given that maturity occurs at different times and cannot necessarily be predicted by chronological age. Additionally, this research illustrates the difficulty in identifying elite youth, because there are no guarantees these youth will become elite adult athletes. As a case in point, Venus and Serena Williams are often mentioned as examples of successful adult athletes whose talents were identified and developed beginning at an early age, but for every shining example probably dozens, if not hundreds, of children are identified as talented and achieve little, if any, success. For example, the NCAA (2009a) estimates that only 1% of women make it from collegiate to professional basketball and less than .003% make it from high school to professional basketball. The NCAA-projected similar estimated results were found for most major sports. Wolfenden and Holt also suggested six categories of factors that may influence the development of athletic talent. The categories included emotional support, tangible support, informational support, sacrifices, pressure, and relationship with coaches. A closer examination of these categories is needed to ascertain the impact on the development of athletic talent. Concomitantly, purely cognitive assessments also fail to differentiate levels of athletic talent. Chess is considered a sport consisting solely of intellectual challenge. Doll and Mayr (cited in Gray & Plucker, 2010) found that a measure of intelligence could not distinguish the best among chess players and asserted that additional factors are important in determining who will be the best chess players. Similarly, research demonstrates that athletic talent is a culmination of psychological,

physiological, and support factors, and these elements should be examined to truly grasp the complexity of identifying athletic talent.

Talent Identification Procedure in Sports

Natural Selection

Whilst NGBs recognise the importance of talent detection and identification, very few have employed systematic approaches. Currently, the principle approach employed by NGBs is a natural TI process based on subjective assessment and performance. For instance, tennis selects young people almost exclusively on the basis of a performance-based 'handicap', with success achievable only by participation in geographically dispersed and ‘pay-as-you-enter' tournaments. Minimal testing or development occurs outside this performance focus. In similar fashion, swimming, as represented by the Elite 2000 programme, is exclusively performance-oriented, with progression dependent on times achieved. Thus, for most NGBs, talent detection and identification can often equate to selection of the young players who are able to perform the best at the time of testing as opposed to the selection of those with potential. Unfortunately, for the veracity and efficacy of this procedure, as highlighted in Section 2, adolescents that excel at strength sports (e.g., rugby) tend to be early maturers and those that excel within co-ordination sports (e.g., rowing) late maturers. Analysis of the birth dates of individuals within British youth development squads provides evidence that physical maturity is indeed a determining factor in the selection of athletes. Wolstencroft (2002) reported that over 50% of footballers, swimmers and tennis players selected into English youth squads were born within the first 3 months of the selection year. Richardson and Stratton’s study cited by Wolstencroft (2002) analyzed the

birth-dates of the England World Cup squads for the 1982 to 1998 campaigns. They reported that over 50% of players selected were born early in the competition year (September and December). These findings suggest an inevitable bias because of selection policies at youth level that favour individuals that are more physically mature.

Anthropometrical and Physiological Talent Detection and Identification Models

This model was introduced by England, Ireland, and Scotland based on the Australian Sport Search/ Talent Search programme. It measures adolescents on certain anthropometrical, physiological and performance tasks. Within Scotland, the model, 'Sport Interactive', was employed as both a tool to increase participation levels across a range of sports, and as a talent detection tool. As the main focus of this research, the efficacy of Talent Search and Sport Interactive will be reviewed later in this Section.

Generic Models

Successful participation in sport requires an array of different movements. Whilst many of these movements are specific to different sports, others are common to a range of activities, (e.g., catching). These common movements are called fundamental motor abilities. A TID model has been developed and piloted within England that emphasizes the importance of individuals developing mature levels of fundamental motor abilities if they are to become involved and maintain involvement within sport (Wolstencroft, 2002). Innovatively, this model has ensured that children are provided with appropriate learning experiences prior to the selection of any potential talent. The model provides all children in year 3 and 4 in primary school (age 7-9)

with the opportunity to attend a generic activities club. Within this club, fundamental movement abilities (e.g., kick, catch, leap), as opposed to sport specific skills (e.g., football), are developed. Following a 10-week block, selection of potential talent occurs. Selection is based on the ability of the children across the range of fundamental movements. Those children selected are invited to attend a class where application of these fundamental abilities within the context of activities and games is pursued. The programme is still in its early stages but following the first year of delivery appears to be very promising with children of all levels of ability opting for involvement. Further research is required to establish whether children who would previously have been overlooked, due to poor fundamental movement skills, are being identified into the advanced class. Interestingly, this model is running parallel to a traditional early sport-specialization model in tennis. The impact of the different models on children's involvement and performance in sport is currently been assessed through longitudinal research, which will be completed by January 2003.

Performance Models

Although there evidently has been an increased recognition worldwide of the value of employing effective talent detection processes, it is apparent that athletes around the world are commonly selected into a range of sports by 'natural selection' methods. For example, the screening criterion applied most frequently in Germany, Canada, the USSR, Sweden and Brazil, for selection into development squads and sport schools, is competition results (Wolstencroft, 2002). Once here, athletes continue only if they can 'produce the goods'. Unfortunately however, the success of a country in sport is often inappropriately attributed to their talent detection and identification methods.

For example, due to Malaysia's success in badminton, the 'atheoretical' performance based TI models they employ are perceived to be effective.

Anthropometric Model

The use of scientific talent detection and identification programmes was initiated within East and Central European countries. These models were based almost exclusively on identifying the physical and anthropometrical characteristics of elites in younger athletes. Indeed, the Olympic success of Bulgaria, Romania, and East Germany in the 1960s and 1970s has been attributed largely to scientific talent detection processes. As a result of successful sporting countries employing anthropometric based TI models, similar systems have emerged, and continue to emerge, worldwide

Identification of young talents in sport

The problem of talent identification of children for sport is very complex. Talented children as a rule display above average abilities in different domains. Sport is just one possible choice for them. Is it useful to encourage talented children to take up general and individual sports? Is early specialization useful? Sport practice does not offer clear answers. The problem of 'young champions' is that they 'burn out' soon, they lack motivation, get injured or get tired of excessive training. The results in the early stage of their development are not a guarantee of success in their sports career later in life. Many talented individuals finish their career due to the inadequate, monotonous and excessive training, which as a consequence leads to injury and lack of inner motivation. On the other hand, some athletes start doing sport later in their lives and they achieved top results. There are different methods of identification and selection of talented children in sport. The most simple and most basic is a method of

natural selection. According to this method selection of children is based on current results in competitions. These results can be the consequence of different training quantity and intensity. Sport results can also be the consequence of faster biological maturity and not talent itself. There may be a gap of two or more years between the calendar and biological age. This method has proven to be unreliable. Biological age can be a great advantage or disadvantage for a young athlete. Biological age generates motor skills potential which is manifested through results on competitions. Another group of identification and selection methods belong to scientific methods. There are several international methods. The most famous are the following (Skof, 2016):

- Talent Identification and Development Programs in Sport (TIDPS)
- Talent Intelligence, Personality, Skills – TIPS
- Speed, Understanding, Personality – SUPS
- Differentiated Model of Giftedness and Talent – DMGT
- Talent – SLO We should point out the fact that even these methods are not highly reliable.

There is no such method which could predict results in mature age of an athlete for certain. This only proves the fact that identification, selection and prediction in sport is a complex problem. Success in sport depends on various internal and external factors. The combination of motor skills, psychological factors cognitive abilities, biological and psycho-social development has a great influence on the pace and dynamic of progress of an individual. This only indicates to which extent man is a complicated biological machine, influenced by unpredictable principles.

Children specialization in sport

The question of whether it is useful and necessary to encourage children to do sport at an early age is often asked. There is a wide range of examples of negative practice. Early specialization does not necessarily lead to expected positive results. Many talented children who achieved great results in certain sport at an early age, could not repeat those results later in life. There are certain exceptions to the rule. Tiger Woods started playing golf at the age of three, Novak Djokovic started playing tennis at the age of 4, and Andre Agassi started beating his peers at the age of 6. Early involvement in sport is a world trend. Competitiveness between various sports for young talented athletes is great. Early sport specialization is linked to specific training process and pressure. The consequences of such a training are injures in young athletes. Early specialization means pressure of the environment, coach and parents to achieve great results. This puts a lot of pressure, responsibility and stress on a young athlete. The coach and parents often have unrealistic expectations from their children concerning success. When it is imperative to succeed and win, then the training has to be intensive, specialized and monotonous which as a consequence sooner or later leads to injuries and satiety with training and sport itself. This is a technical mistake, hence, young athletes should experience the training and competition both rationally and emotionally. Monotonous training does not bring to the development of thorough preparation of motor skills, which is the basis for specific training. It is not an issue if children start practicing sport at an early age, but the fact that such an activity prevents them from engaging in spontaneous activities with their peers. If a child is overwhelmed during the period of greatest growth and development, he or she

will not be able to reach the optimal height, at the same time other systems will not be able to function properly (Baker et al., 2012). Negative factors of early specialization are the following:

- Social isolation – segregation of young athletes
- Excessive dependence on sport results
- Psychological stress
- Burn out syndrome and over-exhaustion
- The lack of possibility for education
- Manipulation of a coach and parents regarding the goals to be achieved
- The lack of inner motivation for training and competitions
- Being bored of sport syndrome
- Endangering development and health of a young athlete
- Micro injuries and specific injuries

Models of young athletes development

The path to top sport results is a long, difficult and uncertain one. On average, the process lasts 8 – 10 years, which means about 10.000 hours of training. The author of this theory is a Swedish physiologist, Anders Ericsson. The theory has a lot of supporters and opponents. Models of athlete development vary regarding the aspect of specific sports. Besides the classical model of athlete development with an early specialization, the so called divergent model with later specialization is more and more applied. According to this model at the beginning a broad multidimensional training is applied which includes (Bompa, 2000), various types of exercises, different sports, development of basic motor and functional skills. The stress is on a human, holistic approach to a training

process of a child. Training has to be a game based on motivation and positive emotions. (Bompa, 2000; Malina, 2010; Skof, 2016). Divergent method is based on modern principles of neurophysiology of child nervous system development. Intellectual and motor development of a child is the most intensive in the period between 4 and 12 years of age. One of the most famous models of a long-term functional development of athletes is the Canadian model, by the author I. Balya (Figure 1). The model consists of five phases of the athlete development:

- Game phase – basic exercises (Fundamentals)
- Learning phase (Learning to Train)
- Basic sport preparation for a certain sport phase (Learn to Train)
- Competition preparation phase (Training to Compete)
- Training for the achievement of top results phase (Training to Win)

Figure 2: Model of a long-term sport development (Balyi, 2002)

Talent Development in Sports

Talent development in sports is the most important stage in the process of achieving sporting success (Ebrahim & Halaji, 2007). It is aimed at providing the most optimal learning environment to help promising youth athletes realize their potential. Optimum environment involves provision of adequate number of competent coaches, experts and managers, adequate and availability of

quality facilities and equipment for training and testing as well as time for training, actual training and practice that are directed towards enhancing athletes' development (Williams & Reilly, 2000). Availability of these essential resources can significantly influence the ability to engage in the required amount of high quality training (David & Baker, 2007). It is recommended that these resources be allocated to help identify and develop talent to enable athletes to reach the top in their sport (Abbott & Collins, 2004).

Coaching Knowledge of Sport Talent Development

A coach is someone who orchestrates learning activities and mediates social climate while diagnosing and remediating performance. The basic task is to develop and improve the performance of teams and individuals. In order to do this effectively, the coach must utilize many different types of knowledge to solve problems and ultimately make decisions (Gilbert & Jackson, 2004). This suggestion is supported by Gilbert and Trudel (2005) who emphasize that coaches, like teachers, require knowledge from a number of different domains. Additionally, a study by Trninic et al. (2009) found out that coaches' expert knowledge and experience, as well as scientific acquisitions enables them to stimulate the development of athlete's personality and his/her understanding of a particular sport, skill development, upgrading the level and the number of motor programmes, as well as encouraging the development of selective decision making and decreasing the reaction period. The ability of the coach to devise an environment that fosters optimal learning is the most significant key to athlete's development (Baker, Horton, Robertson & Michael, 2003). Congruently, Kirk (2005) notes that quality of coaches and teachers are key factors in the success of any program oriented to improve physical activity.

Additionally, Trninić et al. (2009) state that top-level coaches encourage continuity in learning and in perfection of technical-tactical knowledge and skills, development of competitive experience and psychosocial development of athlete's personality. A study carried out by Pavlovic (2007) found out that the most important characteristic of a successful coach is the ability to ensure provision of high quality practice. Additionally, the likelihood of talented athletes to become elite is based on provision of best coaches and training (Williams & Reilly, 2000). Furthermore, studies indicate that having experienced coach with knowledge about latest training techniques is valuable to the development of a talented player (Roetert & Harmon, 2006). Access to essential resources such as knowledgeable coaches during the learning process also influences skill development (Baker & Horton, 2004). Baker and Horton (2004) emphasize that the ability of the coach to devise an environment that fosters optimal learning becomes a significant key to athletes' development. Additionally, Baker and Horton (2004) point out that access to high quality coaching would appear to be an important component in maximizing athlete's development. Furthermore, Cobley (2001) observes that the expert volleyball coach plays a critical role in structuring an optimal practice environment that exemplifies the tenets of practice. Bloom et al. (as cited in Russell (2005) point out that coaches at the elite level spend most of their time on the cognitive or tactical elements while coaches of beginners and intermediates focus more on the fundamentals of the sport. They also suggest that non-expert coaches might not be able to impart a large amount of tactical knowledge because of their own limitations in this regard. Ned (2004) observes that a head coach has a critical role in assisting freshmen student-athletes in their program with the transition from high school to college. Ned (2004) further recommends that a

head coach should know the components of the transition programs offered by both the university and athletic department, and develop his or her own transition model to increase the chances of a well-adjusted freshman student-athlete. Coaches and teachers play a crucial role in teaching skills, providing opportunities and nurturing talent. Additionally, effective coaches have been found to frequently provide feedback and incorporate numerous prompts and hustles, provide high levels of correction and reinstruction, use high levels of questioning and clarifying, predominantly engage in instruction and manage the training environment to achieve considerable order. According to Samela (as cited in Durand et al. 2001), expert coaches' goal is to create conducive environment that will improve performance by investing considerable amount of time into planning and structuring practices so that the highest quality of training could occur. A coach's lack of experience and understanding of the sport, as well as an inability to handle pressure and distractions all undermine the athlete trust in him or her. Coaches can be seen as performers and their performance directly affects their athletes. Elite athletes desire a coach who will implement a clear performance plan, develop an atmosphere that will cultivate optimal learning, and is committed to helping them succeed (Baker et al., 2003). Athletes seek a coach who can adjust to their specific individual needs. Over-coaching and unrealistic expectations by a coach can negatively affect an athlete (Gould et al., 2002).

Facilities and Equipment for Sport Talent Development

Creating an appropriate environment in which to nurture talent may play a more significant role in the development of expertise than does heredity (Salmela as cited in Williams and Reilly, 2000). According to Abbott et al.

(2002), the university should support and develop sports by providing the funding to purchase sports equipment, supporting student-athletes to participate in national university sports and supporting organization of university games. For instance, Sotiriadou (2005) report that Tennis Australia supports the importance of having different types of facilities in order to meet player development needs. Helsen et al. (2000), note that talent plays a limited role in the development of elite athletes. They emphasize that factors such as facilities are necessary for athlete with potential to become an expert in sport. These views are supported by Gore (2004) who carried out a study which sought to reach a better understanding of how outside commitments, access to particular services/facilities and teammate roles affect athletic talent development. The findings of the study indicated that access to facilities and services was important to all the athletes, regardless of elite level.

Motivation Environment for Sport Talent Development

According to McCullough (as cited in Wilson, 2006), motivation can be defined as the intensity and direction of effort. There are two forms of motivation: Intrinsic motivation that is the need to feel competency and pride in something (McCullough as cited in Wilson, 2006) and extrinsic motivation that is performance of an activity in order to attain some separate outcome. Ryan (1997) emphasizes that intrinsic motives are most common for continuation in a particular sport and athletes must have intrinsic motivation to continue participating in sports. Fauzee, Daud, Kamarudin, Yusof, Soh, Nazaruddin, Aman and Salikon (2009) noted that coaches play an important role in sport motivation during training and competition. Fauzee et al. (2009) emphasize that motivational words enhance player's confidence, allay stress and also keep player's spirit high. In their study, Fauzee et al. (2009) also

observed that friends give encouragement to continue being in sports, rewards motivate players to keep participating, role model of famous players and environmental influences such as facilities and equipment facilitate participation in sports. Additionally, a study by Holt and Dunn's (2004) also noted that elite youth football players were motivated to play football by the love of the game and the desire to succeed. Furthermore, opportunity to play professionally is also a motive to play sports at college level (Gaston-Gayles, 2004).

In a study by Riewald and Peterson, (2004), US Olympic Committee contacted past Olympians and asked them to complete a survey about numerous aspects of their development. The Olympians were asked to list up to five factors that contributed most to their success and five obstacles that had to be overcome in their quest for success. Identified factors influencing their success included; dedication and persistence, family and friends, coaches, love of sport, training programs and facilities, natural talent, competitiveness, focus, work ethic and financial support. The Olympians listed the following as obstacles to their success lack of financial support, conflict with roles in life, lack of coaching expertise or support, lack of support, mental, lack of training/competition opportunities, medical problems, lack of social support, physical limitations and failure.

Competitions Environment for Sport Talent Development

Gaining experience with high level competitions is seen as an important part of the talent development process (Henriksen, Stambulova & Roessler, 2010). Competition provides ultimate test where all the factors such as skill, physical conditioning, knowledge, motivation and strategy are tested together (Rodgers,

2005). For instance, Sotiriadou (2005) observes that Croquet Australia events provide its athletes top-level competition that helps improve the general standard of play. In order to produce elite sport "stars", competitions should be held on a regular basis (Houlihan & Green, 2008).

Time for Practice and Training for Sport Talent Development

It has been confirmed that training is essential to developing an athlete, but it should be provided in the correct doses for the particular stage of the athlete (Stotlar & Wonders, 2006) and conversely, they must provide adequate recovery for the athlete (Ericsson, 1996). Training for world competitions requires at least 25- 35 hours per week for several years; therefore, time and commitment are both absolutely essential (Rodgers, 2005). However, Ericsson et al. (1993) argued that it was not simply the accumulation of training hours that lead to superior levels of performance but also the training quality was also important (Ericsson (1996). Given the need to invest considerable time and effort into one's activity to achieve excellence, and Rodgers (2005) emphasizes that athletes require adequate time away from school to train; the athletes may spend three hours a day in a serious training in seven days. Expert athletes accumulated more hours of training than non-experts (Hodge & Deakin, 1998). These findings were supported by Baker et al. (2003) who found that expert athletes from basketball, netball, and field hockey accumulated significantly more hours in video training, competition, organized team practices, and one-on-one coach instruction than non-expert athletes. Additionally, lack of time and coordination of time is a typical reason for dropout within competitive sport (Enoksen, 2002).

Barriers to Talent Identification

One problem with talent identification and development is the predictive validity of talent identification strategies. Predictability of talent is in high demand. Although a few coaches and parents believe they possess the ability to predict talent, some researchers disagree (Abbott & Collins, 2002; Helsen et al., 2000). For example, Abbott and Collins (2002) discussed the lack of predictive ability of a traditional talent identification model, the Sport Interactive Model. The model utilizes a computer program that matches children to sports based on desirable sport-related characteristics. Abbott and Collins' study revealed that the model had poor test and retest correlation scores. As such, the model is unlikely to accurately identify potential athletic physical composition and performance ability in young children. The professional sports arena also has difficulty predicting talent. Professional football, as well as other sports, utilizes several skills tests to "predict" future football stars, with millions of dollars at stake in each draft day decision, yet many of the identification strategies have questionable validity. For example, the 40-yard dash is a ubiquitous assessment used to predict success at the professional level, yet it does not predict athletic success reliably due to the arbitrary distance. Moreover, a combination of physical and cognitive abilities is needed to be successful in professional athletics. Stories abound about successful professional athletes who were predicted to be mediocre due to specific physical measurements (e.g., height, weight). These athletes achieve success despite expected predictors of talent. For instance, Muggsy Bogues is 5 feet, 3 inches tall, the smallest National Basketball Association (NBA) player in history. His height is considered overwhelmingly small for even a high school team. Despite his height challenge, Muggsy is an elite athlete. Conversely, the

annals of professional sport overflow with stories of highly touted prospects who achieved little success during their careers. Tim Couch, an AllAmerican and the number one National Football League (NFL) draft pick in 1999, soured quickly as his professional play fell short of his previous talent predictions. Couch, a quarterback for the Cleveland Browns, received $48 million as the first round draft pick. Despite several attempts to be successful, his short 9-yearfootballcareeris less than impressive for a highly touted NFL draft pick. Those who study intelligence are also enthralled with their own form of talent identification. Intellectual aptitude tests are certainly not excluded from their share of poor instrumentation with little merit. An example of accepted but poorly representative testing is the Wonderlic Intelligence Quotient test created in 1937 (Wonderlic, 2008). The Wonderlic IQ test is used to assess learning and problem solving across a variety of domains. The test takes 12 minutes or less and is normed so that a score of 21 represents average performance. This exam is widely used in personnel screenings and by the NFL, yet this assessment may miss a wide variety of important intellectual abilities. Those interested in sport talent identification should be concerned about similar shortcomings regarding the methods used to scout athletic talent of youth. Although many coaches perceive that they are identifying children who will demonstrate athletic talent in the future, in reality they may be limiting their judgment to children who demonstrate current indications of talent, such as physical precocity. If gatekeepers to athletic development programs identify children at an early age based primarily on physical maturity, “late bloomers” or even children of average maturity may be excluded permanently from these programs. The ability to predict talent is moot if we lack adequate knowledge of how to identify and, more importantly, how to nurture athletic potential.

Strong evidence suggests that athletes whose birth dates fall early in the year are more likely to be identified as "talented" (Helsen et al, 2000). Helsen et al. (2000) tested the idea that physical development and an age advantage may be equated by some coaches as talent. The researchers examined studies of international, national, and provincial soccer players. The findings revealed that players born in the first quarter of the selection year were considered "more talented" by their coaches than those born later in the selection year. These effects were maintained over time, as professional players were more likely to have been identified as talented as youngsters and provided with additional coaching. Interestingly, during the study period, Federation of International Football Association (FIFA) changed the selection year guidelines from August through July to January through December. After the guidelines changed, different youngsters were considered talented by their coaches and the changes directly correlated with the date of birth. Children born in the months of January to March were most likely to be considered talented after the FIFA change, whereas the desirable months before the FIFA guideline changes had been August to October. Similar results were not noted in the 16 and older age group, presumably because players born in less desirable times of the year were likely to have dropped out prior to that age. Helsen et al. (2000) concluded their findings by suggesting that coaches' talent identification is explained by physical ability relative to an advantage in age. Other researchers argue that one of the reasons talent goes unidentified is because talent does not emerge until later ages (Green, 2005). When compounded with the earlier observation that physical maturity alone does not predict future talent, the tendency to mistake early physical maturation for physical talent is even more troublesome. While important attributes regarding

athletic talent are being overlooked by coaches and researchers, the narrow range of abilities that are the focus of identification efforts may be contaminated by irrelevant factors. We can conclude that numerous children will be missed or inaccurately ruled out as talented. Helsen, et al. (2000) affirmed an additional psychological component may affect the performance of younger children when competing against more mature children within the same age group. Date of birth may play a significant role in both identifying and developing athletic talent. Research supports the well-known relationship regarding achievement in education and date of birth (Dudink, 1990, 1994). Dudink (1990) found that children in the younger group, regardless of school year, are at a disadvantage compared to older children. However, this study is not the first harbinger of the existence of a problem. Dudink (1994) pointed out that Nature published an article more than 20 years ago that indicated a concern regarding the relationship between season of birth and cognitive development. Nonetheless, researchers continue to note the problem and unfortunately our flawed systems have yet to change. Edwards (1994) criticized Dudink's findings because Dudink does not identify whether the disadvantages of birth date are physiological or psychological in nature. Edwards investigated this notion by collecting the birth dates and heights from cricket players in the United Kingdom during the 1991 season. The researcher found the birth-date effect is true for goalkeepers, defenders, midfielders, and forwards but height was significant for goalkeepers and defenders (Edwards, 1994). Those familiar with soccer are aware that, unlike in other sports such as basketball, height has little impact on ability in soccer, with the exception of the goalkeeper position. The findings indicate that the birth-date effect may cause a psychological disadvantage. Edwards further maintained birth-date

effect is not based solely on physiological or psychological advantages or disadvantages; rather, he noted the combination may vary among sports. However, the author's suggestion to simply guide youth into appropriate sports is somewhat archaic. The author does not provide data nor the method regarding how to discover one's appropriate sport, which is almost certainly easier said than done. Moreover, discovering one's appropriate sport is the major goal of identifying athletic talent. The birth-date effect does reveal a genuine concern for those who are responsible for identifying athletic talent and should be investigated further

Summary of Reviewed Literature

Talent therefore appears to depend on genetics, environment, opportunity, encouragement, and the effect of these variables on physical and psychological traits. The question is no longer whether genetic or environmental factors determine behaviour, but how they interact. It is extremely unlikely that there is such a thing as a 'poetry gene' or a 'music gene', since complex human behaviours typically have a polygenic basis. Furthermore, such abilities are not inherited in a simple fashion. It is true that genetic factors are likely to contribute not only to specific abilities, but also to traits such as persistence, the capacity to concentrate and confidence. Talent generally is considered an exceptional natural ability to attain goals, therefore, logically; athletic talent ought to be exceptional natural ability of an individual to perform a sports-related task or activity. Yet, how does one determine athletic ability and how should this concept be measured? We have yet to determine an exact science in discovering or developing athletic talent. This

may be caused partly by disagreements about the definition of athletic talent, which continues to be a point of discussion among scholars.

It has been established that the aim of talent detection and identification is to provide an accurate prediction of those individuals who have the potential to compete successfully at world-class levels. Such talent detection and identification procedures J tend to be employed with pre-pubescent or pubescent children so that selected children can complete the number of years practice which has been demonstrated as required to achieve excellence. However, the necessity of identifying children during their pubescent years confounds the criteria that are used to predict performance potential. If talent detection and identification models based on the performance determinants of senior elite athletes are going to be successful, the performance determinants employed must be static variables at the time of testing. Unfortunately for this requirement, research has shown clearly that the anthropometrical and physiological factors that are able to discriminate between elite m and sub-elite athletes are unstable during adolescence. Therefore, determinants of talent and the potential to acquire skills and determinants of performance need to be distinguished.

Some researchers have argued that athletic talent identification and development must recognize the multidimensional and dynamic nature of sport talent. Other maintained that examining physical (biometric), performance (motor), and psychological factors related to talent identification is key to performance. Specificity regarding what form talent takes and how it might affect athletes is also essential. In an effort to begin defining talent, Howe et al. provided five properties of talent: genetic or innate factors exist; advance

indicators of talent can exist at an early stage; evidence of talent potential can be used as a predictor of achievement; talent is limited to a small part of the population, and talents are reasonably domain-specific. These properties are helpful, but are not all inclusive of this complex concept. The framework of this study is hinged on the theories of Ericsson's Notion of Deliberate Practice, Bloom's Stages of Talent Development, Cote's Stages of Sport Participation. These theories emphasize on the need to create a sport talent development environment by provision of sufficient qualified coaches, sufficient time for deliberate training and practice, sufficient and accessible sport facilities and equipment, quality training programs, sufficient opportunities for competitions, motivation and individual effort. In absence of sport talent development environment, there will be dropouts making it difficult for talented student-athletes to realize their potential.

The limitations of the majority of current theoretical and conceptual models of talent detection and identification are apparent; specifically, these models are formulated primarily on presumed determinants of performance as opposed to talent. Additionally, those factors emphasized within these models tend to be 'innate' rather than 'develop-able' performance determinants. However, whilst talent is partly innate, an individual's development is largely dependent upon the environment, and the ways in which the individual interacts with it. Unfortunately, whilst many of the models do highlight psychological factors, primary emphasis is placed upon physiological and morphological determinants of performance, even though eventual adult levels of these variables are hard to predict from childhood measurements. Further, conceptual models have not recognized the importance of identifying how an

individual actualizes their talent within the competitive environment and maintains success once it has been achieved. An exception is the model proposed by Simonton (1999), which, uniquely, does distinguish between determinants of performance and skill acquisition.

Most universities in Africa are yet to embrace the sporting practice that would enable them produce world class athletes. Additionally, review of literature indicates that majority of studies have centered on sports clubs, national teams and athletes at different levels of education except universities. In spite of having sports and games departments, the local universities have made minimal impact in presenting athletes in major international competitions. It is on the basis of these gaps in the review of literature that this study is designed to assess the perceived barriers to talent identification among undergraduates in Nigeria, specifically in the in the University of Benin.

CHAPTER THREE

METHODOLOGY

The chapter focuses on the research methods and procedures used in the study and presented under the following headings:

- Research Design
- Population of the Study
- Sample and Sampling Technique
- Research Instrument
- Validity of the Instrument
- Reliability of the Instrument
- Method of Data Collection
- Method of Data Analysis

Research Design

The descriptive survey design was adopted for this study. This design is aimed at collecting data and describing it in a systemic manner. The survey research design provides an accurate assessment of the characteristics of the whole population through the study of a sample considered to be representative of the population.

Population of the Study

The population comprised of 182 (86 three hundred level students and 96 four hundred level students) students of Human Kinetics and Sports Science Department.

Sample and Sampling Technique

The sample size was 110 students, which constituted 60% of the total population. Simple random sampling technique was employed in this research. Male students comprised of 32 (29.1%) while the female students were 78 (70.9%). Furthermore, 52 (47.3%) was three hundred level students, while 58 (52.7%) was 400 level students.

Research Instrument

The main instrument of this research is a 24 item self-structured questionnaire. It was made up of two sections. Section A elicits information on the bio-data of the respondents. Section B is a modified Likert scale designed to elicit information on the perceived barriers to talent identification among undergraduates in the University of Benin, specifically among the Human Kinetics and Sports Science students of University of Benin. The scale is made up of four options namely: Strongly Agree (SA) which is rated four points, Agree (A) three points, Disagree (D) two points and Strongly Disagree (SD) one point respectively.

Validity of the Instrument

The questionnaire was validated by three experts in the Department of Human Kinetics and Sports Science. Their criticisms and suggestions was noted and incorporated into the final survey instrument.

Reliability of the Instrument

The test-retest reliability method was employed. The research instrument will be administered twice to a small sample within an interval of two weeks. An

accurate and acceptable correlation coefficient was obtained with a coefficient value of 0.88.

Administration of the Instrument

The researcher visited classes and hostels to administer the questionnaires to the students. A total of 110 questionnaires was administered and all copies were retrieved, to give a retrieval rate of 100%.

Method of Data Analysis

Fully completed copies of the questionnaire were analyzed using Statistical Package for Social Sciences (SPSS), version 24. The descriptive statistics of mean and standard deviation was used to answer the research questions raised.

CHAPTER FOUR

PRESENTATION OF RESULTS AND DISCUSSION OF FINDINGS

This chapter deals with the presentation of results and discussion of findings.

Presentation of Results

Research Question One: What are the barriers to talent identification among undergraduates in the University of Benin?

Table 1: Mean and Standard Deviation of barriers to talent identification among undergraduates in the University of Benin

S/N	Items Statements	N	Mean	Standard Deviation	Decision
1.	Human factors act as barriers to talent identification among undergraduates	110	3.73	0.139	Agree
2.	Infrastructure act as barriers to talent identification among undergraduates	110	2.92	0.222	Agree
3.	Management act as barriers to talent identification among undergraduates	110	2.59	0.404	Agree
4.	Environmental factors act as barriers to talent identification among undergraduates	110	2.56	0.321	Agree
Total Mean= 2.95 Agree		**110**	**2.95**		**0.271**
Critical mean=2.5					

The data in table 1 showed that the mean values ranged from 2.56 to 3.73, while the standard deviation values ranged from 0.139 to 0.404. With an average mean score of 2.95, the respondents indicated that human factors, management, infrastructural and environmental factors (Mean=2.95, SD=0.271) are key barriers to talent identification among undergraduates.

Research Question Two: Will human factors act as barriers to talent identification among undergraduates in the University of Benin?

Table 2: Mean and Standard Deviation of Human Factors and Talent identification among undergraduates in the University of Benin

S/N	Items Statements	N	Mean	Standard Deviation	Decision
5.	Stakeholders who implement the talent identification may influence it wrongly	110	3.02	0.103	Agree
6.	Key stakeholders may not be patient enough in talent identification phase before success in a sport is achieved	110	2.40	0.324	Disagree
7.	Individuals who can accurately participate in talent identification may not be present	110	2.82	0.312	Agree
8.	Human factors of prejudice and bias affect talent identification	110	2.61	0.981	Agree
9.	Availability of financial resources affect talent identification	110	2.35	0.435	Agree
10.	Lack of close coordination and collaboration with key stakeholders can hinder talent identification	110	3.66	0.321	Agree
Total Mean= 2.81 Agree		**110**	**2.81**		**0.619**

Critical mean=2.5

The data in table 2 showed that the mean values ranged from 2.40 to 3.66, while the standard deviation values ranged from 0.139 to 0.404. With an average mean score of 2.81, the respondents agreed to all the items that human factors act as barriers to talent identification among undergraduates. However, the respondents disagreed to item 6 that key stakeholders may not be patient enough in talent identification phase before success in a sport is achieved (M=2.40, SD = 0.324).

Research Question Three: Will infrastructure act as barriers to talent identification among undergraduates in the University of Benin?

Table 3: Mean and Standard Deviation of Infrastructure and Talent identification among undergraduates in the University of Benin

S/N	Items Statements	N	Mean	Standard Deviation	Decision
11.	Development of equipment and facilities affect talent identification	110	3.11	0.117	Agree
12.	Poor infrastructural development pose as threat to talent identification	110	2.77	0.238	Agree
13.	Take advantage of the existing capabilities in the field of talent identification	110	2.51	0.667	Agree
14.	Administrative bureaucracy needs to be eliminated	110	2.00	0.924	Disagree
15.	Unavailability of research and development in talent identification	110	2.69	0.443	Agree
16.	Use of technology is important	110	2.99	0.118	Agree
Total Mean= 2.67 Agree		**110**	**2.67**		**0.418**

Critical mean=2.5

The data in table 3 showed that the mean values ranged from 2.00 to 3.11, while the standard deviation values ranged from 0.117 to 0.924. With an average mean score of 2.67, the respondents agreed to all the items that infrastructure act as barriers to talent identification among undergraduates. However, the respondents disagreed to item 14 that administrative bureaucracy needs to be eliminated (M=2.00, SD = 0.924).

Research Question Four: Will management act as barriers to talent identification among undergraduates in the University of Benin?

Table 4: Mean and Standard Deviation of Management and Talent identification among undergraduates in the University of Benin

S/N	Items Statements	N	Mean	Standard Deviation	Decision
17.	Management structure is an effective factor in talent identification process	110	2.55	0.347	Agree
18.	Management instability pose as barrier to talent identification	110	2.60	0.538	Agree
19.	Inefficiency of some managers poses as barrier to talent identification	110	2.98	0.134	Agree
20.	Superiority of relationships in the country does not affect talent identification	110	2.44	0.477	Disagree
21.	Lack of a comprehensive system of instructors and athletes may affect talent identification	110	2.72	0.113	Agree
22.	Policy making of the government act as barrier to talent identification	110	2.99	0.118	Agree
Total Mean= 2.71 Agree		**110**	**2.71**		**0.287**

Critical mean=2.5

The data in table 4 showed that the mean values ranged from 2.44 to 2.99, while the standard deviation values ranged from 0.113 to 0.538. With an average mean score of 2.71, the respondents agreed to all the items that management act as barriers to talent identification among undergraduates. However, the respondents disagreed to item 20 that superiority of relationships in the country does not affect talent identification (M=2.44, SD = 0.477).

Research Question Five: Will environmental conditions act as barriers to talent identification among undergraduates in the University of Benin?

Table 5: Mean and Standard Deviation of Environmental Conditions and Talent identification among undergraduates in the University of Benin

S/N	Items Statements	N	Mean	Standard Deviation	Decision
23.	Accessibility to deprived areas of talents act as barriers	110	2.58	0.681	Agree
24.	Spatial planning act as barrier to talent identification	110	2.93	0.233	Agree
25.	Geographical variation pose as barrier to talent identification	110	2.66	0.349	Agree
26.	Economic conditions affect talent identification	110	2.57	0.477	Agree
27.	Lack of sport scholarship for potential talented student-athletes	110	2.82	0.142	Agree
Total Mean= 2.71 Agree		**110**	**2.71**		**0.376**

Critical mean=2.5

The data in table 5 showed that the mean values ranged from 2.57 to 2.93, while the standard deviation values ranged from 0.142 to 0.681. With an average mean score of 2.71, the respondents agreed to all the items that environmental conditions act as barriers to talent identification among undergraduates.

Discussion of Findings

Analysis of data in research question one indicated that human factors, management, infrastructural and environmental factors (Mean=2.95, SD=0.271) are major barriers to talent identification among undergraduates. The findings of this study is in accordance with the reported findings of Kalani, Elahi, Sajjadi and Zareian (2019) who opined that the process of talent identification and providing the hardware and software required to train elite athletes to participate in regional, continental and global competitions is an issue that cannot be ignored. Hence, human factors, management factors, infrastructural and environmental factors need to be considered as key components when identifying talents at the grass-root level.

Analysis of data in research question two indicated that human factors act as barriers to talent identification among undergraduates. However, the

respondents disagreed to item 6 that key stakeholders may not be patient enough in talent identification phase before success in a sport is achieved. The findings of this study is in consonance with the reported findings of Hadavi (2000) who opined that talent identification is an extremely complex attribute that appears in the form of genetics, which regarding behavior, can depend on environmental conditions (Hadavi, 2000). Through talent identification, the progress and success of young athletes takes place in the best and most appropriate way.

Evident from the findings in research question three revealed that showed that the respondents agreed to all the items that infrastructure act as barriers to talent identification among undergraduates. According to previous studies and opinions of the participants, the achieved signs regarding the infrastructure categories can be numbered as: the development of equipment and facilities, infrastructure development, taking advantage of the existing capabilities in the field of talent identification, the elimination of administrative bureaucracy, the barriers to the private sector, education and increasing knowledge, research and development, and the use of technology. However, the respondents disagreed to item 14 that administrative bureaucracy

needs to be eliminated (M=2.00, SD = 0.924). The outcome of this study is in agreement with the study reported by Nigam (2010).

Evident from the findings in research question four revealed that showed that the respondents agreed to all the items that management act as barriers to talent identification among undergraduates. However, the respondents disagreed to item 20 that superiority of relationships in the country does not affect talent identification (M=2.44, SD = 0.477). The results of the present study demonstrated that the management structure is an effective factor in the Nigerian talent identification process, which was derived from categories such as management system, support and human resources. Regarding this, the participants in the study pointed out some factors such as: management instability, inefficiency of some managers, superiority of relationships in the country, lack of integrated management in talent identification, inability of upstream managers, result-oriented managers, lack of a comprehensive system of instructors and athletes, lack of support for a systematic talent identification program, lack of interaction of some relevant organizations, parallel work of stakeholders, mediation in sports championship, corruption in sports, policy making of the government, discrimination in supporting some sports, lack of investment in sports and talent identification, shortage of physical education

teaching hours in schools, and disregarding basic sports. The results of this study are consistent with those by Asadi et al (2017) and Hosseini et al (2013). To this end, the issue of management structure can be managed effectively through strategic planning and work division between key stakeholders, along with human and financial resources in the field of talent identification, monitoring, and evaluation of the Ministry of Sports or the Office for the Development of Basic Sports and talent identification.

Analysis of data in research question five indicated that agreed to all the items that environmental conditions act as barriers to talent identification among undergraduates. The identified environmental conditions are spatial planning act as barrier to talent identification; geographical variation pose as barrier to talent identification; economic conditions affect talent identification; and lack of sport scholarship for potential talented student-athletes. The finding of this study is in consonance with Kalani, Elahi, Sajjadi and Zareian (2019). Investment and talent identification in wrestling or endurance courses in the north and west of the country can move the process of scouting one step forward. However, paying attention to natural resources, individual and cultural characteristics of the society, and spatial planning, will support the process of talent identification and puts it in its right path. The economic

condition of society, government, and all stakeholders are also among the environmental factors that play a role in the field of talent identification.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter covers the summary, conclusion, recommendation and suggestion for further study.

Summary

The focus of this study was to examine the perceived barriers to talent identification among undergraduates in the University of Benin. Five research questions were raised to guide the study.

The study adopted the descriptive survey research design. The target population was 300 and 400 level students of Human Kinetics and Sports Science Department totalling One hundred and Eighty Two (182) students. The sample size for the study comprised of 110 students which is 60% of the total population. In order to guarantee a representative sample, the simple proportionate random sampling technique was used in selecting the sample for the study. A self-structured questionnaire was used to collect data for the study. A total of One Hundred and Ten (110) copies of the questionnaire were retrieved, representing a response rate of 100%. The main instrument of this research is a 27 item self-structured questionnaire which was validated by the

researcher's supervisors and two other experts, all from the Department of Human Kinetics and Sports Science, University of Benin. The instrument was tested for reliability using the test-retest reliability method. The data collected were analysed using frequency and percentage count for the demographic data and mean and standard deviation for the research questions.

The findings of the study are as follows:

- Majority of respondents agreed that human factors, management, infrastructural and environmental factors are major barriers to talent identification among undergraduates in the University of Benin.
- Majority of respondents disagreed that key stakeholders may not be patient enough in talent identification phase before success in a sport is achieved.
- Majority of respondents disagreed that administrative bureaucracy needs to be eliminated.
- Majority of respondents disagreed that superiority of relationships in the country does not affect talent identification.

Conclusion

From the data collected and analysed in chapter four, the following conclusions were drawn:

- Human factors, management, infrastructural and environmental factors are major barriers to talent identification among undergraduates in the University of Benin.
- Human factors of prejudice and bias affect talent identification i.e. superiority of relationships in the country affect talent identification.
- Policy making of the government act as barrier to talent identification
- Geographical variation pose as barrier to talent identification

Recommendations

Based on the findings of the study, the following recommendations were made:

- Stakeholders who are objective without bias in their selection process, should be placed in the selection and identification phase/process.
- Adequate policies on proper talent identification at the grass-root level should be ensured by the government.
- Nigerian government should provide a comprehensive system and adequate infrastructural development to facilitate talent identification.

Suggestions for Further Research

More research work is required in this area, preferably longitudinal research is needed to fully explore the developmental pathway of athletes and how

successful and less successful athletes interact with the environment. Secondly, there are some limitations of the current research work that make the need for further investigations more obvious. For example, from the culture point of view, Nigeria is a multicultural society with up to four hundred and fifty different ethnic nationalities, though there are similarities among the different cultures, there are also areas of clear dissimilarities. Therefore, it will be necessary that the current findings be expounded to more Nigerian communities. Thus, it is recommended that findings of the studies discussed in this thesis be exposed to larger samples within the Nigerian population through quantitative studies in order to test the theories.

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APPENDIX

DEPARTMENT OF HUMAN KINETICS AND SPORT SCIENCE
FACULTY OF EDUCATION
UNIVERSITY OF BENIN
BENIN CITY

QUESTIONNAIRE

Dear Respondent,

I am a final year student of the above named institution and I am carrying out a research on the topic titled "Perceived Barriers to Talent Identification among Undergraduates in the University of Benin".

The research will involve female undergraduates as a case study and you have been selected as one of the study's respondent. It is an academic research and confidentiality is strictly emphasized, hence, be rest assured that the anonymity of the collected information will be maintained.

Thank you in advance.

Yours faithfully,

COLE EKIUWA PRAISE

PART ONE

DEMOGRAPHIC INFORMATION

Please answer by ticking your response

Age: 18-21years ( ) 22-25years ( ) 26-29years ( )

Marital Status: Single ( ) Married ( )

Level: 100 ( ) 200 ( ) 300 ( ) 400 ( )

Religion: Christianity ( ) Islam ( ) Traditionalist ( )

PART TWO

Dear Respondent,

Keys:

SA= Strongly Agree, A= Agree, D= Disagree, SD= Strongly Disagree

S/N	RQ 1: What are the barriers to talent identification among undergraduates in the University of Benin?	Strongly Agree	Agree	Disagree	Strongly Disagree
1	Human factors act as barriers to talent identification among undergraduates				
2	Infrastructure act as barriers to talent identification among undergraduates				
3	Management act as barriers to talent identification among undergraduates				
4	Environmental factors act				

	as barriers to talent identification among undergraduates				
	RQ2: Will human factors act as barriers to talent identification among undergraduates in the University of Benin?	**Strongly Agree**	**Agree**	**Disagree**	**Strongly Disagree**
5	Stakeholders who implement the talent identification may influence it wrongly				
6	Key stakeholders may not be patient enough in talent identification phase before success in a sport is achieved				
7	Individuals who can accurately participate in talent identification may not be present				
8	Human factors of prejudice and bias affect talent identification				
9	Availability of financial resources affect talent identification				
10	Lack of close coordination and collaboration with key stakeholders can hinder talent identification				
	RQ3: Will infrastructure act as barriers to talent identification among undergraduates in the University of Benin?	**Strongly Agree**	**Agree**	**Disagree**	**Strongly Disagree**
11	Development of equipment and facilities affect talent				

	identification				
12	Poor infrastructural development pose as threat to talent identification				
13	Take advantage of the existing capabilities in the field of talent identification				
14	Administrative bureaucracy needs to be eliminated				
15	Unavailability of research and development in talent identification				
16	Use of technology is important				
	RQ4: Will management act as barriers to talent identification among undergraduates in the University of Benin?	**Strongly Agree**	**Agree**	**Disagree**	**Strongly Disagree**
17	Management structure is an effective factor in talent identification process				
18	Management instability pose as barrier to talent identification				
19	Inefficiency of some managers poses as barrier to talent identification				
20	Superiority of relationships in the country does not affect talent identification				
21	Lack of a comprehensive system of instructors and athletes may affect talent identification				
22	Policy making of the government act as barrier				

	to talent identification				
	RQ5: Will environmental conditions as barriers to talent identification among undergraduates in the University of Benin?	**Strongly Agree**	**Agree**	**Disagree**	**Strongly Disagree**
23	Accessibility to deprived areas of talents act as barriers				
24	Spatial planning act as barrier to talent identification				
25	Geographical variation pose as barrier to talent identification				
26	Economic conditions affect talent identification				
27	Lack of sport scholarship for potential talented student-athletes				