

Using a computer in the sports science in the Republic of Iraq (1988-2012)

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Summary

This study discuss (6) important uses of computer in sports science , the dates of these usage differ from year to other and interfere with each other, show who the progress in the Republic of Iraq increase , graduate students use some applications are not specialized like (AutoCAD) and investing it in the analyzing movement in scope of sports, using part of this application solution a big problem in measuring angles and distances, graduate students use several applications such as (Dartfish) as it has been to solve many problems using this application especially those problems related to high speed camera as accumulates a large number of images in programs that do not have the ability to deal with films that use modern applications in application after another demonstrates the weakness of previous applications in solving problems later, the speed of processors and techniques screens minute made some companies are racing to receive its programs to films with extensions.

In this study, a historical account of the uses of computer in the Republic of Iraq began in 1988 using a computer for the first time in Basic language and ending in the year 2012 using the computer as an intermediary for applications, and found that the computer had been used in each of analyzing of athletic movements, take advantage of it in the field of biomechanical feedback, in the education movements by displaying movements and replay it on monitor, use computer software in the field of three-dimensional and discover dimensions of skill, used as an intermediary

for some devices such as measuring the electrical activity of muscles (EMG), force platforms, finely use a computer in the field of building models

Keywords: Computer, Sports Science, Iraq.

1- Introduction

Computer that machine which you find the solution of all the problems because they contain applications last in the areas of life, and we mean computerized those machine which consists of three joints with an important input, processing and finally outputs, use of computers in Republic of Iraq in sport science has begun with computer (Al-Warka) is a compound in the National Company for Electronic Industries (NEC) continued device of origin Japanese and works on (BASIC) language, Computer by using this language offered some orders like (line) connecting the line between two points it was enough to show the shape sticks of players, after processing computer coordinates these points plotted advance on graph paper, as well as drawing paths, and using some terminology mathematics was possible to determine the length of the track has also been using the functions triangles to find angles such as angle knee which exist between the two lines, one line extending from the hip machine knee joint and the other line that extends from the knee to the ankle joint, and then make some additional processors to find the angles in the quarters of the axes data, we have invested all the possibilities of the device in terms of color and sound as well.

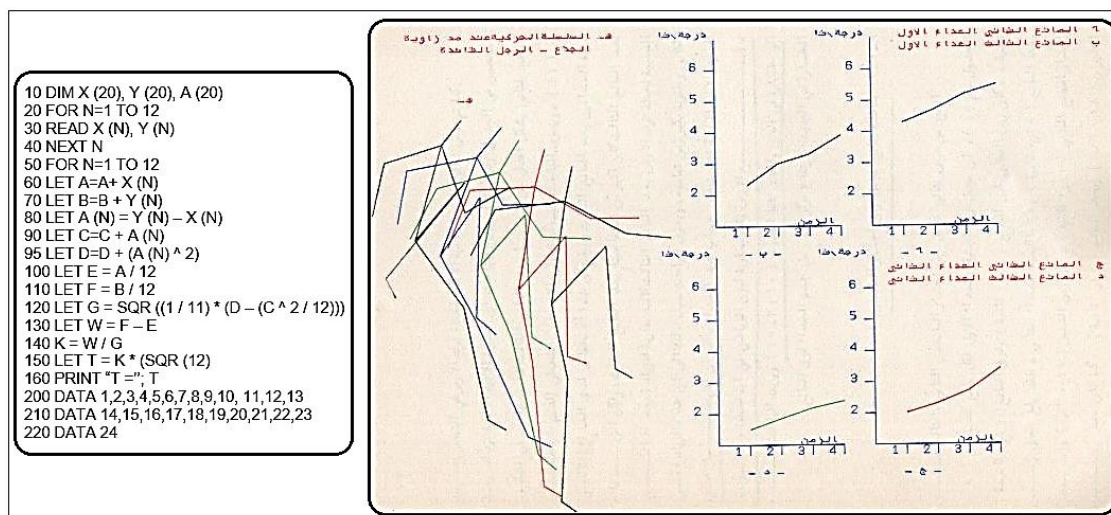


Figure (1) showing BASIC programming and some of the outputs of the plotter attached to the computer (1988).

The device has been slow, but gave a great service in helping researchers to provide information in large quantities for all stages of the movement after it was measurement using a protractor and ruler confined to the stage without the other because of fatigue and we were. Was also used plotters and printers to transfer data that was processed on paper and then included in the research, of course, was to Cameras imaging film a big role in providing images for the purpose of gathering information from them, this has been happening for the first time in the middle of the year 1986 at the University of Baghdad in the College of Physical Education, The camera movements by the Department of Cinema and theater as well as the visual arts section and audio at the Academy of Arts in Baghdad. Was also used other computers, such as (Sinclair) English-made as well as (Sacker) Japanese Origin collect Arabic) and diversity was due to the possibilities of the use of Arabic as well as in processing speed.

The first Master appeared, carrying some equations written in BASIC languish was in 1987 at the University of Baghdad (Hussein Mardan 1988), and the thesis contains

some colorful graphics device Tracer, also equipped with a computer with some equations statistical been finding information descriptive statistics such as mean and inferential like (t) test for the purpose of addressing the differences between cases and whether these differences with significant connotations or not significant.

2- Usage of computer in sport science

2-1 Using Computer to analyze movements

First software used are for cutting films to images, and use at the University of Mosul in the Department of Computer of the presidency of the university in the year 1997 (Saad Nafie 1998) used calculator-type (IBM) system (XT) were installed card read video files and transfer it to the computer and then cut to frames , where he began shooting video after the difficulties in obtaining movies or Acidification and printing, and it was the early workers in the field of cinematography (Jassim Naif Al-Roumi 1984) to provide high speed camera (Bolex) (64 fps) and then (75 fps) provided the Department of Cinema and Theatre (Ali Salloum 1997), and were analyzes done on the device (Mevyola - Film production) as is transferred form the schematic for the player or points anatomical (arthritis) and then complete the later tracks and angles using the ruler and protractor and transfer the results to the special tabulations and then other accounts complex to find a speed collected and angular velocity and other variables related to distance.

Some software's helped to cut the film to images such as (Adobe Primer) and then find distances and angles like (AutoCAD) program then we use other program (Dartfish) which provided form experimental possibilities fruitful for researchers as it has been dispensed cutting the film to photos and also included the program scale, as well as finding distances and angles and even the times became available (after it was calculated images manually and then turned to the times), as is allowed to use other software to find tracks and follow-up joints of the body and even the angles and find all of the speed and acceleration linear and angular.

2-2 Using Computer in Biomechanical feedback

Appeared the first use of the devices platforms measuring force at the University of Baghdad as it has been linked to this device computerized to show numeric values and curves of force (Iman Shaker 1992), and then linking them to start Blokes (Hussein Mardan 1997) as provided this platform measurements of force and time appear on a computer screen after it was analyzes limited to films depicting through video devices and then presented to the players (feedback) but terms biomechanical (laws) that have become available on computers possible players to follow speeds as well as paths and angles their bodies, and after putting some programs in aggregate on computers (Al-Warka) managed some offices specialist (Office Diyala engineering) design platforms to measure force linked to the start blokes noted players amounts of power in each bloke through curves plotted on a computer screen (Fig. 1), and they know over time available between the pick and other (maximum force) this information and other biomechanics' variables that were watching theoretically or by a video camera (Najah Mahdi and others 1999).

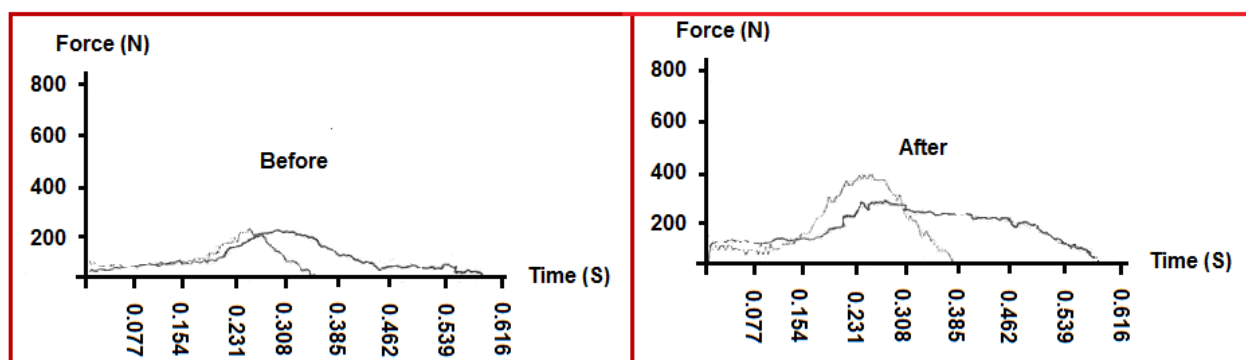


Figure (2) showing Feedback with curves force–time bloke start. (1997)

Also invested nutrition the biomechanical feedback to teach some skills as solving computer In addition to teacher and has been shown that the use of computer assisted in achieving better results in learning about the economy time and effort from the

coach in the delivery of material required to learn, and the use of computers with feedback both types of internal and external , has facilitated the learning process as it helped the learner to understand and absorb the detailed parts of the skill to be learned (Nagham Salih 2004)

2-3 Using computer in motor learning

Some software using an application like (Visual Basic) for the purpose of training on the speed of response and the development of expectation motor and some mental capacity training, for example, has been designed test close to the reality of correction in a game handball and ask goalkeeper sit either a computer screen and when viewing the film shows a player aiming The laboratory stands snapshot here and show some of the options , goalkeeper must find the right choice and, following footage appears cases correction multi at the end of the test player gets the lab on the degree of expectation is then workout in fact, the test is performed on the (12 goalkeeper) Premier League clubs (elite) handball for the 2006-2007 sports season, motor test expectation on computer designer has relationship intelligence reached (0.72), focus attention (0.79) and the arm motor speed (0.89) the level of significance values less than (0.05), and reach a model that can be theoretical test signal to each of the (speed of response, intelligence and arm motor speed) and contribution rate (0.95), (Ali Koman 2008).

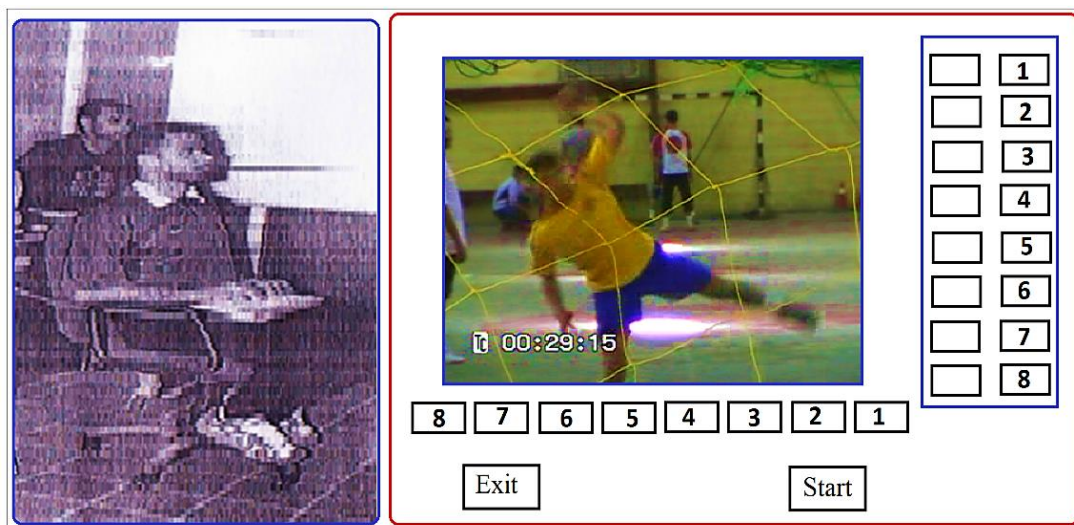


Figure (3) showing the motor prediction test for handball goalkeepers. (2008)

There are other studies in other areas prior to this study, has also been studying the effect of using a computer to teach science in creative thinking and acquire scientific concepts is a serious attempt to use the computer as an educational tool in the teaching of science and investment program by graduate students and researchers in the field of methods Teaching (Faten Salem 2003).

2-4 Using computer in the three-dimension

Used for the first time at the University of Mosul College of Physical Education, depending on (AutoCAD) program and the evidence or the coordinates of the points that were transferred to the anatomical program (Excel). It is then transferred to a program (AutoCAD) Nonetheless, the data that have become necessary as the body's center of gravity in three dimensions has been calculated in the private equations program (Excel) (yahia ayed 2012).

2-5 Using computer as an intermediary for some devices

Through software that is designed under the environment (Windows) managed some international companies that issued apparatus attached with disc (CD), such as

software devices (EMG) if it was dealt with first time at the University of Baghdad, as was measured the electrical activity of the muscles involved in the effectiveness triple jump (Wehbe Alwan 2009) and weight lifters (Safaa Abdel Wahab 2009), either a scanner foot (Foot Scan) has been used for the first time at the University of Babylon.

2-6 Using computer in model building

Through software that works under (Windows), models for the performance skills was produced as well as the presence of statistical models also interfere computer in their construction, and building models of skill designed program contains the values typical of the best players (Fig. 4) The program is filmed player laboratory and matching his image with the image of the form to find the differences, some software such as (Dartfish) Provided synchronization options any situation (player model with local player) and watch specific clips, though, so the digital comparison requires another intervention program.

Table (1) shows the angles in some joints (bloke start), (Hussein Mardan Omer 2021)

No.	Variables	Degree
1	Foot in Front Blok	120
2	Knee in Front Blok	176
3	Foot in Rear Blok	105
4	Knee in Rear Blok	85
5	Hip	86
6	Front Aram	90
7	Rear Aram	97

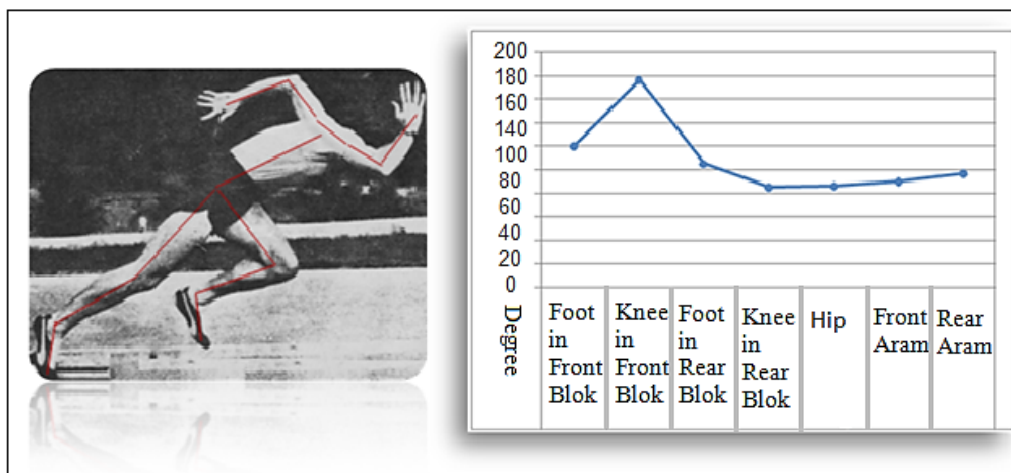


Figure (4) showing model shows the variables when starting from blokes

3- Discussion

This study involved 6 important points of computer usage in the scope of sports since and these areas overlap the areas dates varying indicate the evolution of the use of computers in the Republic of Iraq, located work the largest in the investment computer for graduate students and notes from some studies that there is some science others specialized in sports such as (AutoCAD) Even so, a small part of this application solve a big problem in measures angles and distances, notes that the students had to use other applications, demonstrating the weakness of previous applications to solve subsequent problems, especially those related to problems filming Fast as it accumulates a large number of images in programs that do not have the ability to handle movies, but only pictures, speed processors and precise techniques screens made of some companies are racing to receive programs of films with different extensions and some used transformers.

4- Conclusions

There is a task important points provided by the use of a computer in sport fields is to use the computer in the analysis of athletic movements, take advantage of it in the

field of nutrition biomechanics feedback as well as in the education movements by displaying movements and replay it on monitor, make use of computer software in three-dimension and discover dimensions of skill , computer use as an intermediary for some devices such as measuring the electrical activity of muscles (EMG) and hardware platforms measuring force and using computer in models building.

Some of these studies also included projectiles, such as what happens when track and field players throw tools (Omer H. 2024), and the hurdler is projected before the hurdle.

Many mechanical forces have entered into active sports applications, which requires continuous action according to correct scientific foundations until the successful selection of the appropriate type of player in the specific competition (Hussein Mardan Omer, Sadeq Abdul Ridha Atiayah 2019), This requires the development of new programs that meet the ambitions of coaches and players.

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