TECHNOLOGICAL TOOLS USABLE FOR OBSERVATION OF HIGH LEVEL SPORT IN THE TRAINING STRUCTURES

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Introduction:
Technological tools allowing an accurate observation of sports gesture are still very often out of reach financially, materially or difficult to operate for the non specialist person in these technologies.

Hypotheses:
Computers, their peripherals, notably the video acquisition cards, the means of storage, and the current software packages (spreadsheets and tools of presentation assisted by computer) would allow to make tools of observation simple to operate because they have become common.

Materials and methods:
The spreadsheet is a tool which allows to count and to show at the same time. By dedicating keys to events or criteria to be observed, it is easy to count these observations and to show them in real time. We conceived two applications:
- In the first, the observations are to be made in real time. It is "to click to get involved". At the end of the digitized sequence, the user can compare his statement with that of the expert. This comparison of the statements is in fact the moment of training.

Example 1

\begin{itemize}
\item In the example 1, the user should record by pressing on dedicated keys for that purpose, the advantages and the penalties which he observes during the progress of the digitized video sequence.
\end{itemize}

- In the second application, the same principle allowed to collect specific actions then to record them. They are afterwards presented in a specific way. The observations are to be done a posteriori, it is what we call "to click to see". The presentation can take different forms. Either the statement of the actions explains the actions of the video as in example 2, or the actions are presented on a graph which allows the interpretation as in example.
The superimposing of the actions collected for every fight allows to interpret better the system of attack of a fighter, here in the European Judo championships 2001.

Example 3

Results:
The three examples are used by students in physical education. We presented both last examples for the trainings preparing for the teacher's first degree in judo or in training courses. With the example 3 we work with 10 young judokas. The results are in progress and try to show the use and the evolution of their system of attack in judo throughout this sports season.

Discussion and conclusion:
The first example is important in time of achievement. The creation of the graphs for the expertise is long. The user should be rigorous and of an irreproachable attentiveness. Both following examples are easier to realize, it is a question of understanding the principles of organization. From these examples the users become the actors of their projects of training. We must recognize that two last examples are still the most used.

Brief bibliography:
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