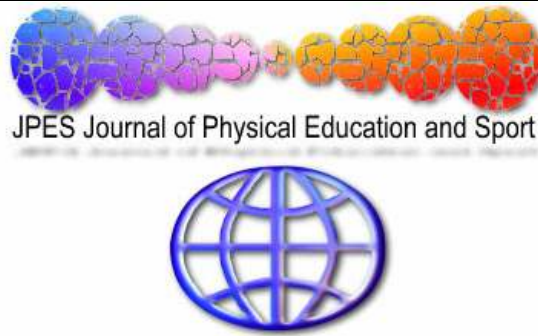




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ORIGINAL RESEARCH

THE ANALYSIS OF THE QUALITATIVE ACQUISITION OF THE SCHOOL CURRICULUM IN HIGHSCHOOL PHYSICAL EDUCATION

DANIEL DOCU AXELERAD

"OVIDIUS" University of Constanta, Physical Education and Sports Faculty

Introduction:

One of the basic criteria in the qualitative acquisition of the school curriculum in "Physical education" is the level of acquiring the technical elements and procedures within the three basic compartments, such as sports games, gymnastics and athletics.

In this regard, we found interest in the way that the qualitative indexes of the school curriculum are going to change in the case where the high school students' preparation was largely based on forming theoretical competences over the period of one school year, according to the proposed method.

Materials and methods: The research took place over 2000-2006, in three stages. In order to accomplish the objectives of the research, we used the following methods:

- The theoretical analysis and generalization of the specialty data
- The sociological survey (questionnaire, interview, discussions)
- The pedagogical observation
- The pedagogical experiment
- The mathematical-statistical method of data processing and interpretation
- The graphic and the tabular method.

Results and discussions:

In order to appreciate the quality of acquiring the "Physical Education" subject, there were selected three representative procedures of each compartment of the curriculum. Therefore, the "gaming sports" compartment was represented by: two steps shot (basketball), movement score (handball) and the spike or direct attack strike (volleyball); for the athletics compartment there were chosen: the extension long jump, oina ball pitching, and the 60m sprint race; for the "gymnastics" compartment there were analyzed the following: for boys, parallels – from equilibrium stance, to shoulder stance; for girls, uneven bars – from tuck on the lower bar swing to vertical handstand on the upper bar; punch vault over the vaulting horse (in length for boys and in width for girls) and the long roll.

All the above listed procedures have been symbolically divided into five phases, each having two points for correct execution, one point for partially correct execution and zero points for not fulfilling the task, the maximum score being ten points.

The evaluation of the quality aspect of the technical execution of the procedures was made by experts, while the statistical processing of their results was presented in centralized tables.

In the "gaming sports" compartment, for all three technical procedures of basketball, handball and volleyball, at the beginning of the pedagogical experiment, the groups were homogeneous, having approximately

the same preparation level. For instance, at the two steps basketball shot, the experimental group had 5.86 ± 0.41 points, while at the end of the experiment it rose up to 8.21 ± 0.43 points. The mathematical calculus proved a significant statistical growth, ($p < 0.01$) on this index.

Despite the fact that the positive difference of the score for the witness group shot was of 1.2 points, it did not bear statistical significance ($p > 0.05$).

The approximately same trend was noted in the case of the qualitative acquisition analysis of the handball movement score. In the beginning of the pedagogical experiment, the students of the experimental group registered an average of 5.63 ± 0.42 points, while the witness group had 5.68 ± 0.82 points. In the end of the experiment, the experimental group reached 8.06 ± 0.41 points, while the witness group had a score average of 7.13 ± 0.89 points. Just as in the previous case (the basketball compartment), the results growth was a statistically significant one only for the experimental group ($p < 0.001$).

The third test in the “gaming sports” compartment was the volleyball spike. This was a particularly complicated procedure and the initial testing showed low scores for both groups from a kinetic point of view of the technical execution of the procedure.

Thus, the experimental group had an initial 5.01 ± 0.43 points and a final 7.20 ± 0.41 points. The witness group had 5.04 ± 0.91 and 7.06 ± 0.89 points, respectively. The difference was statistically significant only for the experimental group ($p < 0.01$).

To a superior quality level compared with other compartments was the “athletics” one. Here there were analyzed three technical procedures reflected in the school curriculum such as the extension long jump, oina ball pitching, and the 60m sprint race. Observing the first procedure, the extension long jump, the initial testing brought by approximately similar results: the experimental group had 6.31 ± 0.35 points and the witness group had 6.29 ± 0.32 points. The final stage of the testing showed that the differences were statistically significant for both groups ($p < 0.001$).

Nevertheless, the experimental group had a better conduct than the witness group as it reached a 9.11 ± 0.36 score at the initial testing, a quite important score since the maximal score was 10.

Another analyzed procedure was oina ball pitching where, just as in the previous case, the beginning of the pedagogical experiment registered scores of 6.71 ± 0.35 points for the experimental group and 6.74 ± 0.52 points for the witness group. At the end of the experiment, those indexes rose to 9.24 ± 0.34 in the experimental group and 8.31 ± 0.53 points for the witness group. The differences were statistically significant for both groups, but the experimental group scored higher as their significance stage was $p < 0.01$, while the witness group had ($p < 0.001$) < 0.05 .

The last test of the athletics compartment was the 60m sprint race. As it was a relatively technically complicated test, the initial tests of both groups brought by sensibly qualitative equal results. For instance, the experimental group had an initial score of 5.82 ± 0.37 points, the witness group 5.79 ± 0.39 points. The final test showed that the experimental group progressed to 8.11 ± 0.40 points and the witness group to 7.23 ± 0.36 points. In both cases the difference was statistically significant, but the experimental group rose above the witness group ($p < 0.001$), which proves a better acquisition of the sprint technique at the 60m race.

The third examined compartment of the conducted research was “gymnastics”, where there were proposed three most representatives tests of the compartment, such as: the combined parallels exercise, the punching vault and the long roll.

Technically, the most difficult proved to be the parallels combination where the students, according to the school curriculum, had to swing from balance stance to shoulder stance. This was also proved by the initial tests of the pedagogical experiment where the students scored an average of 4.86 ± 0.39 for the experimental group and 4.82 ± 0.82 for the witness group. These indexes were tested again at the end of the pedagogical experiment and reached 8.21 ± 0.38 and 7.61 ± 0.84 , respectively. The statistical significance for the experimental group was $p < 0.001$ and $p > 0.05$ for the witness group.

Therefore, both groups had significant improvements in their results, but they were more conclusive for the experimental group where the students had a better theoretical preparation directed towards a clearer understanding of the tasks at hand during the physical education classes, including gymnastics classes.

Another procedure to represent gymnastics at pre-university level, as mentioned above, was the length vault. According to the centralizing table, both students groups had an approximately equal level of execution of the above mentioned exercise. The experimental group scored on average, 5.76 ± 0.37 points, while the witness group had 5.77 ± 0.56 points. At the end of the pedagogical experiment both groups had significantly better results, as the experimental group improved by almost three points, reaching 8.20 ± 0.39 ($p > 0.001$). The witness group progressed in what regards the vault, but to a statistically less significant level than the experimental group ($p > 0.05$). The reason, in our opinion, being that, despite the equal amount of practice for the witness group as for the experimental one, they lacked the theoretical knowledge which had a positive transfer regarding the element given in the experimental group.

The third procedure of the “gymnastics” compartment was the long roll on the floor, a basic gymnastics procedure of the floor exercises.

For the high school students, this exercise did not present any essential difficulties as regards the execution technique. This was obvious from the results registered at the beginning of the pedagogical experiment where both groups had virtually the same result with 5.84 ± 0.23 points for the experimental group and 5.80 ± 0.81 points for the witness group. At the end of the pedagogical experiment, both groups managed acquiring the procedure to a relatively high degree and both cases had statistical significance ($p > 0.001$ for the experimental group) and ($p < 0.05$ for the witness group). The final scores of both groups at the end of the pedagogical experiment were one of the highest compared to the other observed procedures, including those from the other compartments of the school curriculum. Therefore, the experimental group reached 9.26 ± 0.28 and the witness group 8.53 ± 0.87 points.

As mentioned before, all exercises were examined and marked by experts and the results were statistically processed with the purpose of appreciating the level of expert opinion agreement. Observing the table recorded data, it is clear that all three compartments and all analyzed tests the W agreement coefficient varied between 0.70 and 0.99 units, which proves a good opinion agreement over the exercises, thus ensuring that the objective recording of the results.

The same treatment was applied in the case of the school curriculum acquisition evaluation for the “Physical Education” subject for the girl’s lot where the experimental group had 62 girls and the witness group-60. The results were analyzed in the same manner for the three compartments where there were selected three procedures for each compartment, according to the high school curriculum: sporting games, athletics, and gymnastics. The level of school curriculum quality acquisition was evaluated with the aid of the experts and used the ten points marking system.

Following the evolution of the quality acquisition of the basketball procedure at the initial tests, the girls from both groups (experiment and witness) had virtually the same score: the experimental group had 5.70 ± 0.41 points and the witness group had 5.68 ± 0.89 points. In the final test, the girls from the experimental group improved their results up to 7.94 ± 0.63 points with a statistically significant rise ($p < 0.01$), while the witness group girls improved their indexes up to 7.21 ± 0.86 points. Although they also registered a rise of 1.53 points, it proved statistically insignificant ($p > 0.05$).

There is no practical difference in the evolution of acquiring the second technical procedure of the gaming sports, the handball movement score, where, at the beginning of the experiment, the experimental group girls had a score of 5.02 ± 0.39 and reached 8.24 ± 0.37 at the end., with a statistically significant rise ($p < 0.001$). The witness group had approximately the same result in the beginning of the pedagogical experiment (4.97 ± 0.81 points) and improved it by the end with only 2.38, thus having a statistically insignificant rise ($p > 0.05$).

The most difficult sporting games technical procedure was the volleyball spike or “direct attack strike”. The initial scores indicated by the experts did not go over five points for both groups. Thus, the experimental group had a 4.85 ± 0.52 points initially and the witness group had 4.67 ± 0.87 points. In the end of the experiment, the experimental group improved its index to 8.20 ± 0.39 points and the witness group to 7.19 ± 0.42 points. As in the previous cases, a statistically significant rise ($p < 0.001$) was recorded only for the girls experimental group.

As mentioned before, for the athletics compartment there were chosen: the extension long jump, oina ball pitching, and the 60m sprint race.

For the extension long jump, both girls groups had homogenous results at the initial test: the experimental group – 6.28 ± 0.42 points and the witness group – 6.24 ± 0.89 points. A better evolution in the end of the pedagogical experiment was shown by the experimental group girls who reached 8.84 ± 0.43 points, compared with 7.95 ± 0.78 points from the witness group. The mathematic calculus proved a statistically significant rise for both groups, but the experimental group had a more significant one ($p < 0.001$).

One of the relatively simpler procedures from the point of view of the technical execution was the oina ball pitching. This was pointed out right from the start of the pedagogical experiment when the girls from the experimental group registered the score of 6.33 ± 0.48 points and the witness group had 6.35 ± 0.39 points. In the end of the experiment, both groups had statistically significant differences, with higher values for the experimental group which had an average score of 8.35 ± 0.46 points ($p < 0.001$) and 7.46 ± 0.37 points for the witness group ($p < 0.05$).

The results for the 60 m sprint race were slightly lower as the most frequent mistakes made by the girls in the pedagogical experiment were related with the start position and the exit from the start position, which is why the initial test had the following scores: the experimental group 5.48 ± 0.39 points and the witness group 5.52 ± 0.81 points.

The end of the experiment brought progress for both groups as follows: the experimental group 9.02 ± 0.37 and the witness group 8.23 ± 0.83 points. In both cases there was a statistically significant rise, with a slightly better improvement for the experimental group ($p < 0.001$) compared with the witness group $p < 0.05$.

One of the more difficult to acquire compartments was the gymnastics one here the girls involved in the pedagogical experiment had to proceed with one or several gymnastics elements contained by the pre- university curriculum for the high school stage.

The most difficult from a technical point of view was the combined exercise on the uneven bars: from tuck on the lower bar swing to vertical handstand on the upper bar.

With respect to the appreciation of the quality of the uneven bars combination performance, the students managed to get the lowest scores compared with all the previous tests. Therefore, the experimental group was marked with 4.74 ± 0.45 points and the witness group with 4.77 ± 0.67 points. In the final test, the execution quality improved for the experimental group up to 7.94 ± 0.48 points and to 7.18 ± 0.61 points for the witness group. Regardless of the lower results for the final test, the results difference for both groups compared with the initial test had a statistically significant rise, in the first case $p < 0.001$ and $p < 0.05$ in the second.

The punching vaults were tested in the case of the girls, as well, where the vault was made over the width of the vaulting horse. The scores' average for the initial test was 4.83 ± 0.34 for the experimental group and 4.80 ± 0.65 points for the witness group, sensibly equal results. The final testing brought by a significant progress for the experimental group - with scores as high as 8.36 ± 0.35 points ($p < 0.001$), but only 7.28 ± 0.57 for the witness group ($p > 0.05$).

The final exercise from the gymnastics compartment and the general experimental block was the long roll on the floor.

This exercise faced no obstacles neither for girls or boys as to its execution. Therefore, the girls from the experimental group registered the initial score of 5.36 ± 0.39 points and the witness group had 5.39 ± 0.78 points. In the end of the experiment, both groups had statistically significant differences, with higher values for the experimental group which had an average score of 9.14 ± 0.34 points ($p < 0.001$) compared with 8.25 ± 0.80 points for the witness group.

The mathematic calculus determined the coefficient of expert opinion agreement with regard to the quality appreciation of the execution level for the technical elements and procedures on the three compartments of the pre-university curriculum of the "Physical Education" subject. Observing the recorded data, the agreement coefficient varied similarly to the case of the boys, from 0.63 (at the sporting games tests - basketball) to 0.91 (at the athletics tests – the 60m sprint race).

Conclusions:

As a result, the experts had approximately identical opinions regarding the quality acquisition of the execution technique for the evaluated procedures.

In general, analyzing the quality acquisition of the technical elements and procedures of the three compartments of the pre-university curriculum, there is noted a clear improvement of the results for the experimental groups of boys and girls who managed to acquire to a higher quality degree the subject matter comprised in the normative documents for the organization of the education process. There can be observed a clear correlation between the theoretical preparation of the students and the quality of the school curriculum acquisition. The more the theoretical preparation level grows, the more obviously increases the level of the technical procedures from the curriculum of the "Physical Education" subject. The given correlation expresses a thorough knowledge of the content and the necessity for the motor activities comprised in the school curriculum – a fact which had a positive impact on its successful acquisition by the experimental group students based mostly on the theoretical preparation of the high school students.

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