PREDICTING THE PERFORMANCE OF THE "MORAVAC" FOLK DANCE ON THE BASIS OF MOTOR ABILITIES

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Abstract. *The research was carried out on a sample of 285 examinees divided into two sub-samples. The first sub-sample consisted of 199 male students, and the second of 86 female students of the Faculty of Physical Education in Belgrade.*
The aim of the research was to determine the possibilities of predicting the successful performance of the "Moravac" folk dance on the basis of motor abilities. The set of predictors consisted of the motor ability variables: the motor performance of rhythmic structures (3 variables), segmentary speed (3 variables), coordination (3 variables), strength (4 variables) and flexibility (3 variables). The criterion variable was the numerically expressed successful performance of the "Moravac" folk dance. The evaluation of the motor-dance knowledge of the examinees was carried out on the basis of concrete evaluation criteria with which the examinees were familiar. The results were processed by means of a regression analysis. The multiple correlation coefficient and the percentage of the common variability on the sample of male and female students make possible the assumption that it is possible to predict the success rate for the performance of the "Moravac" folk dance in the case of the studied sample on the basis of concrete motor abilities.

Key words: *"Moravac", motor abilities, success, students*

INTRODUCTION

When it comes to dance, there is a focus on learning movement structures, structures which are put together beforehand by means of certain spatial, temporal and dynamic elements. The external aesthetic impression can not be neglected. What is demanded of dancers is the possession of a certain level of sensory-motor abilities, which enable the successful performance of a dance as a rehearsed composition. A perfect performance

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demands possession of a high quality of motion and a sense for creating an aesthetic impression in the viewer. For this reason, a successful dancer is imposed with the requirement to perfect his abilities for creating an aesthetic experience, sense for motion rhythm, orientation in space, and to possess highly developed motor abilities and motor memory.

For the successful performance of dance structures all motor abilities are necessary to a certain extent. There is limited research whose topic is dance success. Some research has proven the individual contribution of certain abilities and success characteristics to dance, or the contribution of several abilities and characteristics on the whole (Oreb, 1984, Jocić 1991, Kostić, 1992, 1994, 1995, 1996, Ećimović-Žgajnjer 1988, Uzunović 2004).

The aforementioned research has proven that cognitive abilities, motor abilities, music abilities, and connative characteristics are of significant influence. The examinees studied in the course of this research were mostly over 18. The samples of instruments of measurement which were used for the evaluation of the various abilities and characteristics were also different, so that some generally acceptable conclusions cannot be reached.

The available research carried out on a sample of students (Oreb 1984; Jocić 1991; Kostić 1992, 1994, 1995, 1996; Kostić, Jocić & Uzunović 1999) points to the fact that certain abilities and characteristics significantly influence the successful performance of certain dance structures. The available research in the field of folk dance also indicates the influence of certain abilities and characteristics on performance (Oreb 1984, Kostić 1992, 1994, 1996). A similar point was proven when it comes to social and jazz dance. The statistically significant influence of motor abilities on the successful performance of dance structures in sports dance has been proven on a sample of sports dance performers (Kostić & Dimova 1997; Uzunović 2004).

The problem being dealt with in this research is the possibility of predicting the performance of the "Moravac" folk dance on the basis of motor abilities. It is necessary to determine whether a statistically relevant influence of motor abilities on the performance of the "Moravac" folk dance exists. The dance structure of the "Moravac" dance originates from Šumadija – the ethnocoreological zone of central Serbia. It is performed to a 2/4 beat in an open, mixed circle of dancers. Movement is counter-clockwise. In the basic dance unit we find steps accompanied by drawing something/someone to oneself and by flickering, and during the course of the dance, certain "decorative" steps, jumps, jumps including crossing and intertwining occur, which are performed in a single location, in an arch, toward the center or away from it. The whole of the dance consists of eight 2/4 beats and in the beginning is performed at a slower pace, and later, as the dance progresses, at a quicker pace (Koturović & Marinković, 1982).

The aim of the research was to determine the possibilities of predicting the successful performance of the "Moravac" folk dance on the basis of motor abilities.

Two hypotheses have been proposed:

H1 Motor activities significantly influence the prediction of the successful performance of the "Moravac"folk dance on a sample of male students.

H2 Motor abilities significantly influence the prediction of the successful performance of the "Moravac"folk dance on a sample of female students.

RESEARCH METHOD

Sample of examinees

The sample of examinees consisted of 285 students divided into two sub-samples. The first sub-sample consisted of 199 male students, the second sub-sample of 86 female students. The examinees were freshmen, sophomores, juniors and seniors of the Faculty of Physical Education in Belgrade, ages 18 to 24.

Sample of variables

The sample of variables was made up of the predictor variables and one criterion variable. The set of predictor variables numbered 16 variables for the evaluation of motor abilities including: the motor performance of rhythmic structures (3 variables), segmentary speed (3 variables), coordination (3 variables), strength (4 variables), and flexibility (3 variables).

- For the evaluation of the motor performance of rhythmic structures: arhythmical drumming (MARD), beating on horizontal boards (MBOHB) and the drumming of one's feet and hands (MDFAH).
- For the evaluation of segmentary speed: hand tapping (MHATP), foot tapping (MFOTP) and foot tapping against a wall (MFTAW).
- For the evaluation of coordination: rotation in mid air (MRIMA), general coordination according to Motorin (MGCAM) and the "Japan test"(MJAPT).
- For the evaluation of strength: the Abalakov test (MABAT), the depth jump (MDEJM), dynamometrics of the stronger hand (MDSTHA) and 10 sit-ups at maximum speed (M10SU).
- For the evaluation of flexibility: a step and turn (MSTRN), hyper extensions (MHYPEX) and "splits" in the horizontal plane (MSHP).

All the instruments used for measuring were used in accordance with the instructions and descriptions used in the research of Metikoš, Hofman, Prot, Pintar and Oreb (1989).

The criterion variable was the success of the performance of the "Moravac"folk dance. In order to avoid the subjective factor in the evaluation of the motor-dance knowledge, the examinees were graded by three examiners, who were teachers with long-term experience in this field. For statistical management, the means of three grades was applied. The criterion for grading was based on certain recommendations, and the examinees were graded on a scale of 5 to 10.

- The grade 10 was given to the examinee who: performed the dance structure correctly, accurately, with ease, with a full amplitude of motion, at a high aesthetic level (expressively) and in accordance with the music.
- The grade 9 was given to the examinee who: performed the dance structure correctly, accurately, with ease, with a partial absence of motion amplitude and in accordance with the music.
- In order to get the grade 8, the examinee had to: perform certain parts of the dance structure with minor errors which do not influence the performance, with an absence of motion amplitude, with minor errors in the movement of certain body parts and a partial, short-term discord with the music.

- The grade 7 was given to the examinee who: performed the dance structure with errors which caused a break in the performance, with constant errors in body posture, with a significant absence of motion amplitude and an obvious discord between the motions and the music.
- The grade 6 was given to the examinee that performed the dance structure with effort while not demonstrating appropriate technique, with a lot of errors in body posture, without the necessary motion amplitude and at an excessive discord between motion and music.
- The grade 5 was given to the examinee who: could not perform the dance structure in its entirety, made plenty of coarse errors in body posture and with no harmony between motion and the music.

The statistical method

In order to determine the connection between the set of predictor variables and the criterion variable a regression analysis was performed. The purpose of using the regression multivariate analysis is to determine the effects of the factors (predictors) on the success of the performance of the "Moravac" folk dance. For this purpose, the following factors were calculated: the multiple correlation coefficient of the criterion variable and the system of predictors (Mul.R), the coefficient of determination (DELTA), the standard error of the partial regression coefficient (Std.Error), the F-test, the significance of the influence (Q), the coefficient of linear correlation (R), the coefficient of partial correlation (PART-R), the standard coefficient of the partial regression of each predictor variable with the criterion (BETA), the *t*-test, the significance of the correlation of individual variables with the criterion (Q-BETA).

THE RESULTS AND THE DISCUSSION

The results of the regression analysis of the data for the sample of male students are shown in Table 1, and for the sample of female students in Table 2.

On the basis of the value of the multiple correlation coefficient (Mul. R) which in this case is .62, we can conclude that there is a strong linear connection between the predictor variables and the criterion variable, or to be more precise, the success of the performance of the "Moravac"folk dance. By means of a set of applied motor variables it is possible to explain 38% of the criterion variance. On the basis of the significance of the Fisher test (Q= .00) is can be concluded that the chosen model is acceptable, or to be more precise, that the changes in the variables of the regression model cause significant changes in the value of the dependent variable.

In order to analyze the influence of some of the variables on the criterion, a standardization of the coefficients of regression and the obtained value Beta was carried out. On the basis of the analysis of the regression coefficient and its significance derived from the value Q (BETA), it can be concluded that the predictor variables for the evaluation of the segmentary speed of hand tapping (MHATP) and foot tapping against a wall (MFTAW), the general coordination according to Motorin (MGCAM), and the variable for the evaluation of motor research of rhythmic structures of arhythmic drumming (MARD) make the greatest projections on the criterion.

Table 1. The regression analysis of the "Moravac" folk dance on the sample of male students

Test	R	PART-R	BETA	T-test	Q(BETA)
MSHP	−.03	−.06	−.03	−1.10	.27
MHATP	.19	.17	.19	2.95	.00
MRIMA	.07	.03	.08	.68	.49
MHYPEX	−.07	-.02	−.07	−.50	.61
MDFAH	.44	.09	.43	1.57	.11
M10SU	.07	.04	.06	.83	.40
MJAPT	−.02	.00	−.02	.07	.94
MDSTHA	.06	.09	.09	1.61	.10
MSTRN	−.10	−.06	−.10	−1.13	.25
MABAT	.07	.03	.01	.65	.51
MGCAM	.22	.12	.17	2.21	.02
MDEJM	.03	.05	.04	.92	.35
MFOTP	.12	.02	.06	.51	.60
MFTAW	.34	.12	.20	2.18	.03
MBOHB	.32	.08	.14	1.42	.15
MARD	.50	.19	.29	3.33	.00
	DELTA	Mul. R	F-test	St. error	Q
	.38	.62	7.22	.94	.00

Table 2. The regression analysis of the "Moravac" folk dance on a sample of female students

Test	R	PART-R	BETA	T-test	Q(BETA)
MSHP	−.06	−.12	−.06	−1.53	.13
MHATP	−.01	.08	−.01	1.03	.30
MRIMA	−.11	−.08	−.11	−1.05	.29
MHYPEX	.30	.06	.30	.73	.46
MDFAH	.14	.07	.16	.95	.34
M10SU	.00	−.13	−.02	−1.63	.10
MJAPT	−.02	.04	−.05	.51	.60
MDSTHA	−.00	−.03	−.09	−.47	.63
MSTRN	−.09	−.06	−.11	−.73	.46
MABAT	.15	.16	.24	2.02	.04
MGCAM	.61	.28	.58	3.47	.00
MDEJM	−.03	−.06	−.08	−.83	.40
MFOTP	.12	.01	.02	.20	.84
MFTAW	−.02	−.07	−.05	−.90	.36
MBOHB	.47	.13	.21	1.66	.10
MARD	.56	−.08	.14	1.07	.28
	DELTA	Mul. R	F-test	St. error	Q
	.52	.72	4.81	1.02	.00

On the basis of the values of the multiple coefficients value (Mul. R) which here has a value of .72, we can conclude that there is a strong linear connection between the predictor variables and the criterion variable or to be more precise, the success of the performance of the "Moravac" folk dance. The used motor abilities explain 52% of the criterion variance in a statistically significant manner. On the basis of the significance of the

Fisher test (Q = .00) we can conclude that the changes in the variable of the regression model cause significant changes to the values of the dependent variable.

On the basis of the analysis of the regression coefficient and its significance derived from the Q (BETA) value, it can be concluded that the predictor variables for strength evaluation, the Abalacov test (MABAT) and the general coordination according to Motorin (MGCAM) made the greatest projection on the criterion.

In contrast to the male students, when it comes to the sample of female students, the greatest projections on the criterion were achieved by means of the variables of two motor abilities. This does not mean that the other abilities have no influence in the mentioned sample, but that they are not statistically valued. The assumption is that the female students were already in possession of the mentioned abilities to a considerable extent so that the other motor abilities did not appear to a significant extent in the hierarchical structure.

Several authors have confirmed the significant part that motor abilities play in the successful performance of folk dances. Some research results have been mentioned which could be compared to these results.

On the sample of the students of the Faculty of Physical Education, Oreb (1984) researched the relationship between the primary motor abilities and success in dance. The sample of predictor variables encompassed basic motor abilities (coordination, the realization of rhythmic structures, balance, motion frequency, motion speed, precision, flexibility, force, explosive strength, strength, and endurance). The criterion variable was made up of the evaluation of the performance of the following dances: the "Gorenjski valček" (Slovenia), the "Slavonsko kolo" (Croatia) and the "Moravac" (Serbia). The author, among other things, has concluded that the "Slavonsko kolo" and the "Moravac" could be predicted by means of a system of primary motor dimensions. In the explanation of criterion variables what had the greatest influence were the coordination variables, the realization of rhythmic structures, the frequency of alternative motions and balance.

Freshmen studying physical education made up the sample studied in the research of Kostić (1992), which was carried out with the aim of determining whether or not cognitive abilities, connative characteristics, the ability to fall into a set rhythm, musicality and the ability to realize rhythmic structures have a statistically significant effect on the success of the performance of dance structures of folk, social and jazz dances. On the basis of the calculated regression analysis the proposed hypotheses have been confirmed. The successful performance of a folk dance structure has been explained by means of a common variability of 30.28% and a multiple correlation of (.55); the success of the performance of the social dance has been explained by means of a common variability of 43.10% and a multiple correlation of (.66); the success of the performance of the jazz dance has been explained by means of a common variability of 29.22% and a multiple correlation of (.54).

The female students of physical education made up the sample examined in the research carried out by Kostić (1994) with the aim of determining whether or not cognitive and music abilities, connative characteristics and motor performance of rhythmic structures take part in the prediction of the success of the performance of the set folk and social dances. The criterion variables were made up of the numerical values of the grades by means of which the performance of the given dance structures of folk and social dances were evaluated. By means of a regression analysis, a statistically significant multiple predictor correlation and a successful performance of the folk dances of (.61) were

obtained, and common variability was explained with 38%. The success can to a large extent be explained by the motor performance of rhythmic structures. The multiple predictor correlation and the success of the performance of social dances falls slightly short of (.50), and the explained common variability was 25%.

A connection between the motor research of rhythmic structures and the success in dance was confirmed in the research conducted by Kostić (1996) which was carried out on a sample of female students of physical education in Niš. Six instruments of measurement were used by means of which we evaluate the motor performance of rhythmic structures. The success was evaluated on the basis of the basic grade for the practical part of the exam of the folk dance performance of social and jazz dances. By means of a canonical correlation analysis we obtained two significant canonical roots used to confirm the hypothesis about a statistically significant correlation between the abilities of motor performance of rhythmic structures and success in dance.

In the research carried out by Kostić, Jocić, & Uzunović (1999) the hypothesis that connative characteristics influence the success of the dance structures performance of sports and folk dances was confirmed. As the predictors of success of the cited kinds of dance, emphasize was placed on anxiety and hypochondria as disruptive factors.

Motor abilities participate in a statistically significant manner in the prediction of the performance of the "Cicilion" folk dance (Croatia) in the case of a sample of schoolgirls (Srhoj, 2002). The multiple correlation was .63. The largest contribution to the successful performance of this dance was made by the variable of flexibility, the frequency of motion, rhythm coordination, balance, agility and repetitive strength.

Apart from the mentioned research connected with the prediction of the performance success of folk dances, the results of our research can also be brought into a connection with the research carried out by Kostić & Dimova (1997) and Uzunović (2004).

Within the findings of this research, the results that the dancers achieved at sports dance competitions have been explained in a statistically significant manner by means of evaluated motor abilities (in the research of Kostić & Dimova, 1997, with a common variance of 86.48%, and in the research of Uzunović with a common variance of 73%).

In the cited research all the authors have proven the statistically significant influence, which primarily the motor abilities, but also the cognitive abilities, music abilities as well as the connative characteristics have on the performance success of certain dance structures. Seeing that within this research various variables of specific motor abilities have been used, the obtained results can not directly be connected with this research. Yet, it is of some significance that the predictions have been proven by means of various instruments of measurement on different samples of examinees. In the case of the "Moravac" folk dance, the possibility of prediction for its performance has been proven on a similar sample (Oreb 1984), but by means of different instruments of measurement.

The results of this research indicate that the abilities of segmentary speed, general coordination and the motor performance of rhythmic structures have the greatest predictive value. For the successful performance of the "Moravac" folk dance, segmentary speed is necessary, since the tempo to which this dance is performed requires the development of this ability in particular, which is also the expected result. Statistically significant predictive values have been found in the variables for the evaluation of coordination and coordination in rhythm, which is also an expected result, seeing how the performance of dance structures, including the "Moravac" folk dance without the aforementioned abilities is unthinkable. The ability to perform rhythmic structures holds a special place in the

realization of dance structures which has also been shown in the research of Oreb, 1984; Kostić, 1992, 1994, 1996; Srhoj, 2002.

The abilities related to coordination, are quite often connected to specific motor abilities, such as speed, balance, and precision, and we can in no way neglect the significant connection between the coordination factors and the dimensions responsible for the intensity and duration of the excitation, that is, the various types of explosive, repetitive and static strength. Coordination is defined as the purposeful and controlled energetic, temporal and spatial organization of motions into a whole. On the basis of this we can define three levels of coordination. The first level is defined by the spatial precision of motion, where we do not ascribe any value to the speed with which the motion is performed. The second level is defined by spatial-temporal precision and encompasses those motions which are performed precisely in space and in certain units of time. The third level is comprised of those motions which require precision in space and time, combined with the appropriate force, in standard or altered conditions (Popović, 1998). If we accept all the cited levels, for the performance of dance structures we also need the second and third level of coordination abilities.

In all the available research, including this one, a significant part in the successful performance of a folk dance (and dance in general), is played by the motion frequency ability, especially the frequency of leg motion. Considering the fact that folk dances are carried out by means of the caudal body parts and by means of various steps and to a specific rhythm and speed which is in tune to the music, the achieved results are also, logical.

Hierarchically speaking, coordination, speed, and the ability to express rhythmic structures make the greatest contribution to the performance of the "Moravac" folk dance.

What should also be mentioned is that the statistical contribution to individual motor ability variables on a sample of female students is different. The reason for these results could possibly be the fact that the number of examinees in the sample is significantly different.

CONCLUSION

On the basis of the values of the multiple correlation coefficients we can conclude that in the case of the sample of students there is a strong linear connection between the motor abilities variables and the successful performance of the "Moravac"folk dance. A common variability is explained by a 38%. Hierarchically the greatest contribution to the aforementioned influenced was made by the predictor variables for the evaluation of segmentary speed, general coordination according to Motorin and the motor expression of rhythmic structures. On the basis of the sample consisting of female students, we have also obtained a statistically significant connection between the predictor variables and the criterion variable. A common variability is explained by a 52%. On the basis of these indicators we can conclude that the motor abilities are statistically significant predictors of the successful performance of the "Moravac" folk dance, by means of which we have confirmed the proposed hypotheses.

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PREDIKCIJA IZVOĐENJA NARODNE PLESNE IGRE "MORAVAC" NA OSNOVU MOTORIČKIH SPOSOBNOSTI

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Istraživanje je sprovedeno na uzorku od 285 ispitanika podeljenih na dva subuzorka. Prvi subuzorak je činilo 199 studenata, a drugi subuzorak 86 studentkinja Fakulteta fizičke kulture u Beogradu. Cilj istraživanja je da se utvrdi mogućnost predviđanja uspeha u izvođenju narodne plesne igre "Moravac" na osnovu motoričkih sposobnosti. Prediktorski skup su činile varijable motoričkih sposobnosti: motoričko izražavanje ritmičkih struktura (3 varijable), segmentarna brzina (3 varijable), koordinacija (3 varijable), snaga (4 varijable) i fleksibilnost (3 varijable). Kriterijumsku varijablu je činila numerički izražena uspešnost u izvođenju narodne plesne igre "Moravac". Procena motoričko-plesnog znanja ispitanika izvršena je na bazi konkretnih kriterijuma za ocenjivanje sa kojima su ispitanici bili upoznati. Rezultati su obrađeni regresionom analizom. Koeficijenat multiple korelacije i procenat zajedničkog varijabiliteta na uzorku studenata i na uzorku studentkinja omogućuju da se pretpostavi da je moguće predvideti uspeh u izvođenju narodne plesne igre "Moravac" na ispitivanom uzorku na osnovu primenjenih motoričkih sposobnosti.

Ključne reči: *narodni ples, "Moravac", motoričke sposobnosti, uspešnost, studenti*