IMPACT OF MUSICAL RESOURCE ON TIME DISTRIBUTION IN CLASSICAL DANCE CLASSES: A COMPARISON OF DANCE STYLES

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Abstract

Introduction. This paper tries to elucidate the possible differences in time distribution in a classical dance (CLD) class, depending on whether it is taught using recorded music (CD) or live music played by the piano teacher accompanying the dance (PD). **Material and methods.** In this work, different temporal categories have been compared according to the style of dance of 89 female students divided into two groups: classical-contemporary dance and Spanish-flamenco dance, with CD or PD. **Results.** Higher values were obtained in most of the categories in the classical-contemporary group than in the Spanish-flamenco group, and the differences were maintained according to the musical resource used, with better results when using live music. **Conclusions.** PD in CLD classes can result in more profitable sessions for both students and teachers due to more cost-effective use of time during classes.

Key words: motor activity, efficiency, music, motor activity time

Introduction

There is an undeniable link between bodily activities related to dance and the development of the emotional education of the human being [1], contributing to the integral growth of the person. Other studies [2, 3] have already shown the benefits of dance for the individual's physical development, health and quality of life.

It is therefore necessary to manage the teaching activity as effectively as possible, transmitting all the knowledge required and proposing improved time management [4]. For this reason and given the undeniable link between CLD and Physical Education (PE) [2, 3, 5], it is important to extrapolate these objectives, studied in the field of PE, to the field of CLD, analysing the way in which time is distributed during CLD sessions.

There are many studies in the field of Physical Education and sport [6, 7, 8, 9, 10] as well as on time management competence and its impact on the organization of the class in PE [11, 12, 13, 14, 15, 16, 17, 18]. However, although research in CLD is a constantly developing field, very few studies deal with time distribution in CLD classes. Likewise, it is also necessary to highlight the high degree of exigency and specificity of CLD, which in its most academic and pure form, is relegated to the Dance Conservatories, where it is aimed at future professionals due to its specific and technical language [19, 20].

In this context, the aim of this study is to determine the distribution of classical dance class time and the differences according to the musical resource used, live music (PD) or recorded music (CD), comparing the possible differences between the classical, contemporary, Spanish and flamenco dance styles.

Material and methods

Sample

The sample is made up of 89 female dance students who are in their first to fourth year of Higher Artistic Education and

have been voluntarily recruited for this work in two groups according to the style of dance they are studying: 1) classical dance and contemporary dance (24 students) and 2) Spanish dance and flamenco dance (65 students). Seven teachers of classical dance and five accompanying pianist teachers also participated in this research. Once the sample was obtained, the subjects were told what the study involved and were asked to give their consent. The study complied with the ethical considerations of Sport and Exercise Science Research [21] and with the principles included in the Helsinki Declaration [22], which defines the ethical guidelines for research on human beings. Throughout the procedure and subsequently, action was taken under the stipulations of Spanish Organic Law 15/1999 of December 13 on the protection of personal data.

Instrument

Based on Campos, Garrido and Castañeda [23], a pre-experimental research strategy has been adopted; the study had an intra-group design and took place in a natural context [24]. The main instrument for data collection has been a video recording in an.mpg format made with a Sony camera model DCR-SR37 HDD. When it comes to the technique of systematic observation, a record of temporary duration has been used, with the resulting data given in minutes and seconds. The Match Vision Studio Premium (MOTS) software was used for data collection and processing, and the SPSS Statistics V.22 package was used for statistical analysis. The observational tool used in this research is based on the one proposed by Telama, Varstala, Heikinaro-Johansson, and Pauku [25], whose time variables can be extrapolated to the learning situation of the CLD class. The six categories used to record student behaviour were the following:

1. organizing (ORG),
2. following teachers' explanations about the subject (EXP),
3. getting feedback (GFB),
4. time on task (TT),

5. waiting for turn (TURN),
6. other activities (OA).

Procedure

Fifty-four classes in CLD technique were recorded, and four of them were rejected due to logistical and time errors. All of them had a scheduled time or time established by public agencies in the academic schedule [16] of one hour and a half. Once the data collection process was completed, the information was analysed using MOTS software and the statistical programme SPSS Statistics v. 22.

Statistical analyses

Differences in the distribution of classical dance class time according to the musical resource used, live music (PD) or recorded music (CD), considering the possible differences between the classical, contemporary, Spanish and flamenco dance styles, were analysed using ANOVA. The level of significance was set up at $p < 0.05$.

Results

The results of the two groups studied, classical-contemporary and Spanish-flamenco, are presented below, where the differences found according to the musical resource used (CD or PD) and the comparison between the two samples are discussed.

Results of the classical-contemporary group (CD vs. PD)

Depending on the musical resource used by the teaching staff in the classes (CD or PD), statistically significant differences were found in the classical-contemporary group. Six of the categories obtained more significant indicators, as compared to three categories with significant indicators in the Spanish-flamenco group. This could mean a greater impact of the musical resource used in this group, both with respect to higher TT with PD and time loss with CD, in which higher ORG values have been recorded. The categories with statistically significant differences are: number of occasions and time spent in ORG,

number of EXP occasions, duration of TT, duration of TURN, and number of OA events. These parameters show the greatest differences depending on whether CD or PD is used (Tab. 1).

As a result, the times obtained in this sample are higher with PD, except in the ORG, EXP, GFB and OA categories, which have higher times with the use of CD. From this information, it can be concluded that more time is needed to organize the session with the use of CD. Likewise, higher values were recorded with CD in the categories of EXP, which had a higher frequency with this resource. This reduced number of occasions used by teachers to explain, up to almost half with the PD, can be seen as evidence of a greater understanding of the choreographic variation with live music by students, leading to fewer interventions and clarifications of the exercise with this resource. The same conclusion can be drawn for the GFB category, where higher values are also obtained with the use of CD.

Finally, the frequency of other non-specific session activities (OA) was also higher with the use of CD, which would indicate more interruptions in the course of the activity when using CD with shorter periods of time devoted to other activities. Higher values in these categories usually mean the use of time for other activities that do not involve the motor activity of the students, namely organizational tasks (for example, placing or moving barres), explanations, and other activities such as unexpected events, so a lower value of these data with the use of PD could be an indicator of greater motor performance with this musical resource in the classroom.

Similarly, in the TT category, higher values were recorded in the classes in which live music was used (PD): $34'21'' \pm 04'50''$ as opposed to $29'24'' \pm 03'53''$ with CD, which, together with the lower ORG values with PD, may lead to the conclusion of greater time efficiency in the CLD class accompanied by PD. In this regard, there are a number of pre-established working structures in CLD (both on the barre and in the centre of the classroom) which, as in the PE class, should promote motor activity without affecting the positive working atmosphere [21].

Results of the Spanish-flamenco group (CD vs. PD)

The values with the greatest differences found in this sample have been recorded in the ORG category, in total time, in

Table 1. Statistical data of the classical-contemporary group: CD (n = 8) vs. piano (n = 17)

	CD (M $\pm$ SD)	Piano (M $\pm$ SD)	p
No. of occasions of organizing	143.63 $\pm$ 37.652	27.94 $\pm$ 8.807	.000*
Time spent organizing (min:sec)	0:18:13 $\pm$ 0:04:23	0:03:04 $\pm$ 0:02:21	.000*
No. of occasions of explaining	44.25 $\pm$ 10.348	23.18 $\pm$ 6.227	.000*
Time spent receiving explanations (min:sec)	0:21:48 $\pm$ 0:03:24	0:24:35 $\pm$ 0:03:23	.069
No. of occasions of getting feedback	126.38 $\pm$ 35.924	118.82 $\pm$ 38.414	.645
Time spent getting feedback (min:sec)	0:33:38 $\pm$ 0:10:26	0:32:24 $\pm$ 0:12:57	.817
No. of occasions of Time on Task	173.13 $\pm$ 66.521	207.35 $\pm$ 72.821	.272
Task time length (min:sec)	0:29:24 $\pm$ 0:03:53	0:34:21 $\pm$ 0:04:50	.019*
No. of occasions of waiting for turn for task practice	27.75 $\pm$ 45.124	64.29 $\pm$ 54.338	.113
Time spent waiting turn for task practice (min:sec)	0:02:55 $\pm$ 0:04:10	0:08:09 $\pm$ 0:05:37	.029*
No. of occasions when other activities were performed	11.00 $\pm$ 10.392	5.00 $\pm$ 2.208	.029*
Time spent performing other activities	0:09:35 $\pm$ 0:08:09	0:08:15 $\pm$ 0:03:17	.561

* - $p < 0.05$.

the frequency or number of events organized, and in the EXP frequency (Tab. 2). It is noteworthy that in this group, the differences between both musical resources that were already found in the previous sample are again visible, but not as markedly, as will be seen in the next section. However, there is still a longer time with CD in ORG, EXP (only in the frequency; the average total time is longer with PD), GFB, and OA (except in the average time, which is longer with PD) unlike in the classical-contemporary sample.

On the other hand, more time is again recorded with PD in the total average of EXP (although not in the frequency), in TT (both in the frequency and in the average time) and in TURN (which would suggest an increase in the number of group variations with PD).

Comparison: classical-contemporary group vs. Spanish-flamenco group (CD vs. PD)

With regard to the comparison of the two groups in the sample (classical-contemporary and Spanish-flamenco), depending on the use of the musical resource, both behaved simi-

larly according to the results achieved in the observational categories, and there were no significant differences between the two groups. Statistically significant differences have only been found in one of the variables in the case of the piano: length of task times (Tab. 3). Thus it seems it is not the dance style that causes the least use of teaching time but the use of a specific musical resource (CD or PD).

Despite the similarities recorded in the two groups with respect to the differences with both resources (CD and PD), the group made up of the female students of Spanish and flamenco dancing generally obtained lower values than the classical-contemporary dancing group in the categories studied (it should be remembered that, as mentioned above, the sample of classical-contemporary dance shows significant values in six categories depending on the musical resource used). However, this is not the case with GFB frequency, in which the Spanish-flamenco group outranks the classical-contemporary group. This could be due to the fact that CLD is not as related to their style (Spanish-flamenco) as is the case with classical-contemporary students, and they need to be corrected more frequently by their teachers.

Table 2. Statistical data of the Spanish-flamenco group: CD (n = 15) vs. piano (n = 10)

	CD (M ± SD)	Piano (M ± SD)	p
No. of occasions of organizing	124.67 ± 26.375	24.90 ± 7.894	.000*
Time spent organizing (min:sec)	0:16:31 ± 0:04:47	0:02:38 ± 0:01:04	.000*
No. of occasions of explaining	39.33 ± 10.574	19.10 ± 3.542	.000*
Time spent receiving explanations (min:sec)	0:19:44 ± 0:05:09	0:23:10 ± 0:05:15	.118
No. of occasions of getting feedback	138.87 ± 54.512	132.70 ± 42.578	.766
Time spent getting feedback (min:sec)	0:33:21 ± 0:17:35	0:31:21 ± 0:09:18	.746
No. of occasions of Time on Task	200.20 ± 139.862	229.90 ± 90.943	.560
Task time length (min:sec)	0:28:10 ± 0:05:38	0:28:57 ± 0:07:09	.762
No. of occasions of waiting turn for task practice	37.67 ± 59.909	47.20 ± 71.597	.722
Time spent waiting turn for task practice (min:sec)	0:04:28 ± 0:05:25	0:04:53 ± 0:07:18	.869
No. of occasions when other activities were performed	8.80 ± 9.660	4.90 ± 2.234	.225
Time spent performing other activities (min:sec)	0:06:48 ± 0:05:19	0:07:57 ± 0:04:15	.576

* - p < 0.05.

Table 3. Statistical data of the classical-contemporary group (CC) vs. Spanish-flamenco (SF) group (CD vs. piano)

	CD (M ± SD) CC vs. SF	Piano (M ± SD) CC vs. SF
No. of occasions of organizing	143.63 ± 37.652 vs. 124.67 ± 26.375	27.94 ± 8.807 vs. 24.90 ± 7.894
Time spent organizing (min:sec)	0:18:13 ± 0:04:23 vs. 0:16:31 ± 0:04:47	0:03:04 ± 0:02:21 vs. 0:02:38 ± 0:01:04
No. of occasions explaining	44.25 ± 10.348 vs. 39.33 ± 10.574	23.18 ± 6.227 vs. 19.10 ± 3.542
Time spent receiving explanations (min:sec)	0:21:48 ± 0:03:24 vs. 0:19:44 ± 0:05:09	0:24:35 ± 0:03:23 vs. 0:23:10 ± 0:05:15
No. of occasions of getting feedback	126.38 ± 35.924 vs. 138.87 ± 54.512	118.82 ± 38.414 vs. 132.70 ± 42.578
Time spent getting feedback (min:sec)	0:33:38 ± 0:10:26 vs. 0:33:21 ± 0:17:35	0:32:24 ± 0:12:57 vs. 0:31:21 ± 0:09:18
No. of occasions of Time on Task	173.13 ± 66.521 vs. 200.20 ± 139.862	207.35 ± 72.821 vs. 229.90 ± 90.943
Task time length (min:sec)	0:29:24 ± 0:03:53 vs. 0:28:10 ± 0:05:38	0:34:21 ± 0:04:50 vs. 0:28:57 ± 0:07:09*
No. of occasions of waiting for turn for task practice	27.75 ± 45.124 vs. 37.67 ± 59.909	64.29 ± 54.338 vs. 47.20 ± 71.597
Time spent waiting turn for task practice (min:sec)	0:02:55 ± 0:04:10 vs. 0:04:28 ± 0:05:25	0:08:09 ± 0:05:37 vs. 0:04:53 ± 0:07:18
No. of occasions when other activities were performed	11.00 ± 10.392 vs. 8.80 ± 9.660	5.00 ± 2.208 vs. 4.90 ± 2.234
Time spent performing other activities (min:sec)	0:09:35 ± 0:08:09 vs. 0:06:48 ± 0:05:19	0:08:15 ± 0:03:17 vs. 0:07:57 ± 0:04:15

* - p < 0.05; CC = classical and contemporary group; SF = Spanish and flamenco group.

Figure 1. GFB time (minutes and seconds).

Figure 2. TT time (minutes and seconds).

Figure 3. TURN time (minutes and seconds).

Figure 4. ORG time (minutes and seconds).

In the average GFB time, the classical-contemporary group still obtains higher values than the Spanish-flamenco group, and, as in the case of GFB frequency, higher values with CD than PD are maintained (Fig. 1). In the Spanish-flamenco group, compared to the classical-contemporary group, there are also longer periods in the frequency of TT with both musical resources. However, the difference between the classical-contemporary group and the Spanish-flamenco group in the average time of TT with the use of PD is very significant. This increase of TT with PD in the classical-contemporary sample could mean greater use of this musical resource by these students (Fig. 2).

Another category in which the Spanish-flamenco group has higher values than the classical-contemporary group is TURN, but only with CD; with PD the classical-contemporary group has higher values (Fig. 3). It should be noted that this category shows the waiting times of the students in the performance of group variations; therefore, a greater time means a greater number of these exercises, as well as a greater number of students per class. Finally, with respect to the other observational categories, when using CD compared to PD, in both the classical-contemporary group and the Spanish-flamenco group, there is a time increase in ORG, EXP (frequency) and OA, with similar values but slightly higher ones in the classical-contemporary group (except in

the categories already mentioned). It is, therefore, very significant, together with the increase of TT with PD, the decrease of ORG time (Fig. 4) with this resource, both for the development of the CLD session and for the whole learning process as will be seen in the discussion and conclusions of this study.

Discussion and conclusions

The most remarkable conclusion is the small impact of the dancing style of the students on the influence of the musical resource on the time distribution of the class. In both samples (classical-contemporary group and Spanish-flamenco group), significant differences were found depending on the musical resource used in the organizational time of the class (ORG), the time used in the explanations received by the female students (EXP) and task time (TT). It should be noted that, as we have already mentioned, the differences are more marked in the classical-contemporary group when compared to the Spanish-flamenco group, given that six categories studied in the first sample obtained more significant indicators versus three in the second group. This distinction could suggest a greater impact of musical support on the activity of classical-contemporary students and a better adaptation to CD by the Spanish-flamenco

group, which, traditionally, as stated in the research, has fewer hours with PD and more with CD because of the curriculum of this style. However, in both samples, the study has shown a remarkable decrease of the time of organization (ORG) in the classes accompanied by PD, as well as an increase in the time of motor activities (TT) that has been greater with the first group of the sample, as has been mentioned. This could also be seen in the first part of this research and in earlier works where these changes were registered in the same observational categories depending on the musical resource used [24, 27]. Therefore, it can be stated that the use of live music (PD) in CLD classes would be beneficial for teachers and students, regardless of their dance style, and its use would be a strategy to increase motor practice time in those classes [23]. In addition, given the connection of the practice of physical and bodily activities with the emotional development of the person [1], in this case of both the students and the teaching staff, live music (PD) could favour the evolution and improvement of not only the emotional aspects but also the motivational and maturation aspects of the students. Live music would mean an improvement in the attention of all participants in the educational event, who, with a sound source coming from a human agent (PD) and not a machine (CD), would move from “hearing” the musical stimulus, that is casually receiving it without paying attention to it, given that they tend to work with these musical resources in a repetitive way and the music is known to them, to “listening”, moving to a deviation of attention and distinguishing listening as an object of perception [28], having to include it in their own movement. Likewise, and as it has been recorded in the longest time of ORG with the use of CD, the distractions and waiting times of the students are greater than with PD, leading to greater loss of time and therefore to demotivation and lack of continuity in the development of the class. Therefore, it is necessary to continue broadening the field of knowledge by presenting these results to all those responsible for this training, by suggesting an improvement in time management [4], as well as by encouraging the creation of an appropriate theoretical framework that currently lacks piano support to dance [30].

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