



Perceived Effort, Satisfaction and Performance Times during a Mime and Drama Unit of Study

Josune Rodríguez-Negro* and Javier Yanci

Department of Physical Education and Sport, Faculty of Education and Sport, University of the Basque Country/ Euskal Herriko Unibertsitatea (UPV/EHU), Spain



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Abstract

The objectives of this study were to describe, taking student age into account, the perceived effort, satisfaction, useful time and available time in a mime and drama unit of study in primary education students and also to analyse intersession variability and the association between the different variables. The results of this paper show that students experience a low perceived effort (2.48 ± 2.33 out of 10) but high satisfaction (3.52 ± 2.68 on a -5 to +5-point scale) during mime and drama sessions in the body expression block. Moreover, of the 90 minutes of weekly physical education included in the official syllabus, the average useful time per session was 53.22 ± 10.52 min per week (58% of total time), of which only 27.06 ± 6.97 min (30% of total time) corresponded to the time available, which is far from the recommendations on school-age physical activity.

Keywords: physical education, curriculum, teaching, study, body language

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*Corresponding author:

Josune Rodríguez-Negro
josune.rodriguez.negro@gmail.com

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Introduction

In the official primary education curriculum, physical education (PE) content is divided into separate blocks which support overall student development (LOMCE, 2013). However, although the official curriculum stipulates that all blocks are important, previous studies have shown that in primary education (PEd), the body expression (BE) block is the one that enjoys least time in PE programmes (Coterón & Sánchez, 2012) and the one that is rated lowest by teachers (Archilla & Pérez, 2012). However, since BE promotes body awareness, it renders it possible to achieve progressive sensitisation from the motor and expressive standpoint while also facilitating the development of creativity (Loveless et al., 2005), it is important that sufficient time be dedicated when this content block is programmed (Archilla & Pérez, 2012). This block covers contents intended to promote communication and expressiveness through the body and movement, such as dance, rhythm, imitation, mime and drama (LOMCE, 2013).

In order to learn about the features of BE-content units of study, more specifically the ones based on mime and drama, they may need to be analysed from a variety of standpoints. Firstly, the overall intensity of PE sessions has been measured by means of rating of perceived effort (RPE) scales, known to be a simple and useful instrument for quantifying effort in PE sessions (Kang et al., 2003). The OMNI perceived effort scale is frequently used in PEd as it was developed for use with children and has shown a high correlation with objective variables (Kang et al., 2003; Robertson, 2004). Using this scale, previous studies have measured the perceived effort of PEd students during a range of activities in PE sessions (Bendiksen et al., 2014), concluding that BE is the content in which the lowest perceived effort is observed (Hernández-Álvarez et al., 2010). From another standpoint, another factor that has featured heavily in research is the study of student emotions and satisfaction in PE sessions. Student satisfaction can be evaluated in a number of ways (Ekkekakis, 2012); one of the most widespread methods is the Feeling Scale (FS) (Hardy & Rejeski, 1989), which measures emotional response to an activity through the subjective experience of a positive or negative feeling (Schneider & Kwan, 2013). The affective experience or satisfaction depends on a number of variables, particularly the type of activity performed (Wei et al., 2006).

It may be important to ascertain PEd students' satisfaction with BE, since a high degree of satisfaction is related to greater adherence to physical activity (Kwan &

Bryan, 2010), greater motivation for physical exercise (Focht, 2009), more fun during the session and long-term learning retention (Parfitt et al., 2006). Although students mainly experience positive emotions during BE activities (Torrents et al., 2011), they have been shown to attach scant value to BE content (Moreno & Hellín, 2007). Equally, it is unknown whether perceived effort and satisfaction in BE sessions varies by age or school year, so further studies examining these aspects in PEd students are called for.

Another significant aspect to be considered when different units of study are implemented from different content blocks may be the time allocated to them (Olmedo, 2000). Previous studies have shown that programme time, i.e. the time officially allocated to PE in school timetables, does not match the useful time or the time available for performance (Hernández-Álvarez et al., 2010; Olmedo, 2000) which depends on aspects such as the type of sessions proposed (Calderón & Palao, 2005) and the motivational climate (Silverman, 2005). It is crucial that useful time and time available in BE sessions be as long as possible, since students who spend more time engaging in good practices tend to learn more (Rink, 2003). Although it is important to know both the time available for performance and the useful time when conducting BE units of study, no scientific research which examines these variables in BE sessions in the primary education stage has been found.

Accordingly, the objectives of this study were 1) to describe, according to school year, the perceived effort, satisfaction, useful time and time available in a unit of study in body expression based on mime and drama in primary education students, and 2) to analyse intersession variability and the association between the different variables.

Methodology

Participants

This study used a convenience sample and involved 131 students in PEd Years 1-6 at a state school, 66 of whom were girls and 65 boys.

The total sample was divided into six groups by the students' school year, called first year (G1, $n = 20$), second year (G2, $n = 24$), third year (G3, $n = 21$), fourth year (G4, $n = 21$), fifth year (G5, $n = 22$) and sixth year (G6, $n = 23$) of primary education. Table 1 presents the age, weight, height and body mass index (BMI) of all the participants and of each one of the groups. Before the research began, the procedures,

Table 1
Student characteristics

	Age (years)	Weight (kg)	Height (m)	BMI (kg·m ⁻²)
All	8.56±1.76	33.48±10.31	1.34±0.10	18.15±3.37
G1	6.05±0.21	23.78±5.00	1.19±0.05	16.54±2.62
G2	7.08±0.27	26.45±5.58	1.27±0.04	16.12±2.74
G3	8.05±0.21	33.20±8.39	1.31±0.06	18.86±3.06
G4	9.14±0.35	37.14±8.46	1.39±0.07	18.83±2.64
G5	10.05±0.22	40.97±12.04	1.42±0.05	19.87±4.39
G6	11.13±0.34	40.28±8.01	1.45±0.05	19.06±3.21

Note. G1-6: group based on school year.

methodology, benefits and possible risks of the study were explained to the participants and all the parents or legal guardians signed the informed consent form. The study followed the guidelines set out in the Declaration of Helsinki (World Medical Association, 2013) and was approved by the Ethics Committee for Research with Human Subjects (CEISH code 2015/147) of the University of the Basque Country.

Procedure

Between January and March 2016, a unit of study on body expression based on mime and drama was held over eight consecutive weeks in the PE sessions. The students had a weekly PE session lasting 90 minutes, which was taught by the school's PE teacher. In all the sessions, the perceived effort and perceived satisfaction of the students who were familiar with the use of both scales were measured, and at the end of each session they were given a sheet of paper on which they had to mark their perceived effort and their overall satisfaction with the session individually. Two expert researchers attended each session and recorded the useful time and the time available for performance by observing the session directly and using a stop-watch.

Rating of Perceived Effort (RPE). The rating of perceived effort was evaluated using the OMNI scale for girls and boys (Robertson et al., 2000) which has a range of 0-10 and is aided by visual and verbal descriptors (Robertson, 2004). The OMNI scale had been validated for use with students aged 6-15.

Satisfaction. The satisfaction perceived by the students in each one of the body expression sessions was measured by the Feeling Scale (FS) (Hardy & Rejeski, 1989). Students evaluated their satisfaction on an 11-point bipolar scale from -5 (very bad) to +5 (very good). The FS had been validated for use in the context of physical activity.

Table 2
Activities performed in each session

Session	Activities performed
1	Imitation activities in pairs and small groups.
2	Imitation activities in small and large groups.
3	Individual mime games in small groups.
4	Individual mime games in small and large groups.
5	Individual mime games in large groups and with props.
6	Drama: improvisation.
7	Drama: theatre.
8	Drama: theatre and scenario building.

Useful time, time available and useful time/time available ratio. In order to record the useful time (min), the time from the moment the student left the changing room until the moment they entered it again was accounted for (Olmedo, 2000), namely the total time the students were on the court where the PE session took place. To record the time available (min), only the time during which students could perform motor actions in the PE sessions was counted. In this case, the time during which students were in the changing room, the time taken up by explanations by the teachers and all kinds of interruptions during the sessions were excluded (Olmedo, 2000). Finally, the useful time/time available ratio was calculated by dividing the minutes of useful time recorded by the minutes of time available recorded in each one of the sessions.

Intervention programme. The programme lasted eight weeks, with one weekly 90-minute session per group. All the sessions started with a standard 10-minute warm-up consisting of an initial general muscle activation phase and a second more specific phase for BE content. In the main part of the session, students performed age-appropriate body expression activities such as mime, peer imitation or theatre tasks (Table 2).

Statistical Analysis

The results are presented as mean ± standard deviation (SD) of the mean. The intersession coefficient of variation (CV) ($CV = SD/Mean$) was calculated for each one of the variables analysed for all students and for each age group (G1-G6). One-factor ANOVA with post hoc Bonferroni correction was used to analyse the differences between the age groups in the variables. In addition, the Pearson correlation coefficient (r) was calculated to determine the associations between the results obtained in perceived effort, satisfaction, useful time,

Table 3

Perceived effort, satisfaction, useful time, time available and the useful time/time available ratio for each age group

	G1	G2	G3	G4	G5	G6	Diff. between groups
Perceived effort	3.08	2.91	4.15	1.77	1.45	1.17	G1 and G2**, G3**, G4**, G5**, G6**
	± 2.46	± 2.19	± 3.19	± 1.42	± 1.82	± 1.31	G2 and G3**, G4**, G5**, G6** G3 and G4**, G5**, G6**
Satisfaction	3.57	4.00	2.86	3.20	2.78	3.98	G2 and G3*, G5*
	± 2.90	± 2.28	± 3.32	± 2.80	± 3.27	± 1.33	G5 and G6*
Useful time (min/session)	57.33	49.11	54.03	49.06	50.06	57.50	G1 and G2**, G4**, G5**
	± 0.47	± 17.16	± 7.23	± 6.38	± 13.33	± 3.37	G2 and G6** G4 and G6** G5 and G6**
Time available (min/session)	26.55	21.36	25.25	21.38	33.06	35.02	G1 and G2**, G4**, G5**, G6**
	± 4.02	± 6.37	± 3.48	± 13.35	± 5.30	± 2.48	G2 and G3**, G5**, G6** G3 and G4**, G5**, G6** G4 and G5**, G6**
Useful time/time available ratio	2.21	2.25	2.13	2.20	1.49	1.62	G1 and G5**, G6**
	± 0.36	± 0.39	± 0.12	± 0.18	± 0.25	± 0.13	G2 and G5**, G6** G3 and G5**, G6** G4 and G5**, G6**

Note. G1-6: group based on school year.

* $p < .05$; ** $p < .01$, significant differences between years.

time available and the useful time/time available ratio. The following scale was used to interpret the magnitudes of the correlations: < 0.1 , trivial; 0.1 to 0.3 , small; 0.3 to 0.5 , moderate; 0.5 to 0.7 , large; 0.7 to 0.9 , very large; > 0.9 , almost perfect (Hopkins et al., 2009). The statistical analysis was performed with the Statistical Package for Social Sciences (SPSS Inc., version 22.0, Chicago, IL, USA). The statistical significance was $p < .05$.

Results

The result achieved by all the students during the body expression sessions, specifically mime and drama, was 2.48 ± 2.33 for perceived effort and 3.52 ± 2.68 for satisfaction. As for times, the mean per session of useful time for all students was 53.22 ± 10.52 min, the mean per session of time available was 27.06 ± 6.97 min, and the mean of the useful time/time available ratio was 1.99 ± 0.43 . Table 3 presents the results for perceived effort, satisfaction, time available, useful time and the

useful time/time available ratio recorded during the sessions for each age group, as well as the differences between the age groups. Differences were observed between the age groups in perceived effort, satisfaction, time available, useful time and the useful time/time available ratio.

Table 4 shows the results of the intersession CV for perceived effort, satisfaction, time available and useful time for all students and for each age group.

Finally, significant correlations were found between age and perceived effort ($r = -.31$, moderate, $p < .01$), age and useful time ($r = .52$, large, $p < .01$), and between time available and useful time ($r = .60$, large, $p < .01$).

Discussion

The main objective of this study was to describe, according to school year, perceived effort, satisfaction, useful time and time available when performing a unit of study in body expression based on mime and drama

Table 4

Intersession coefficient of variation (CV) for all students and for each age group

	Todos	G1	G2	G3	G4	G5	G6
Perceived effort (%)	0.28	0.23	0.12	0.32	0.61	0.95	0.18
Satisfaction (%)	0.09	0.14	0.15	0.20	0.20	0.58	0.10
Time available (%)	0.15	0.01	0.42	0.24	0.14	0.32	0.05
Useful time (%)	0.10	0.17	0.36	0.22	0.20	0.18	0.38
Time available/useful time ratio (%)	0.09	0.19	0.21	0.05	0.09	0.20	0.09

Note. G1-6: group based on school year.

in PEd students. Another objective was to analyse intersession variability and the association between the different variables. The main contribution of this study is the analysis of BE sessions from a number of perspectives (perceived effort, satisfaction, useful time and time available), since most of the papers that have already examined BE in PEd are restricted to the analysis of a single aspect. Furthermore, this paper includes the analysis of the differences in the variables mentioned according to the students' school year.

The results of this paper show a low perceived effort (2.48 out of 10) for all the students in BE sessions in PEd. These results are consistent with those reported in previous studies (Hernández-Álvarez et al., 2010). In addition, significant differences were found among the different age groups with a higher perceived effort in the first three years of PEd than in the later years. By contrast, in this study students experienced great satisfaction in the sessions, with second- and sixth-year PEd students showing the highest rates. Although scant value is attached to BE by secondary education students in (Moreno & Hellín, 2007), the results achieved with PEd students are in line with those reported by Torrents et al. (2011), who concluded that students mostly experience positive emotions during BE activities. These results might suggest that mime and drama contents in BE do not involve a significant physical effort for PEd students, although satisfaction with this type of unit of study is high.

Furthermore, the results of this study show that of the 90 minutes of PE per week provided for in the programme, the mean useful time per session for all students was 53 min (58% of the total time), possibly due to the time taken to get to the sports hall and time spent in the changing room. Moreover, only 27 min (30% of the total time) corresponded to time available, figures which are far from the recommendations on school-age physical activity proposed by several studies (Pate et al., 2006). These data are similar to results reported in other research with PEd students involving BE (Hernández-Álvarez et al., 2010) or other PE content (Yanci et al., 2016). In addition, in this study significant differences were found in times by school year, where greater time available and higher ratios of useful time/time available per session were observed in fifth- and sixth-year PEd. Accordingly, PE teachers should consider increasing both useful time and time available when implementing mime and drama units of study, particularly in early PEd years, in order to give students more performance time.

The results of this study show that the intersession variation (CV) for both perceived effort and satisfaction

and for useful time and time available was particularly small ($< .95$). These results reflect the minimal intersession variation in the variables analysed. Perceived effort, satisfaction, useful time and time available are apparently very similar in BE sessions, even when different tasks are used in each one or they are conducted on different days or in different weeks. CV results may be influenced by the way the teachers give their lessons. It is likely that when they work on a unit of study, the methodological strategies used and the type of organisation of the sessions have similar traits. It might be worthwhile for PE teachers to change their teaching methodology in the different sessions, even if the block of contents is the same, in order to change the perceived effort, satisfaction and useful time and time available of the students during their sessions.

Finally, the results of this study show a significant correlation between age and perceived effort, age and useful time, and between time available and useful time. As the students' age increases, the values for perceived effort in BE sessions fall. This may be because older students are able to focus on the pure BE task, while younger students have more active classes and also because the same intensity may be higher for them. Similarly, useful time is longer in the groups of older students. This might be because older students need less time to get to the sports centre and get ready for the session than younger students. These data are consistent with previous studies, which found that student characteristics may influence the degree of performance in PE sessions (Hastie et al., 2011). Consequently, in order to increase the time available for younger students as well, PE teachers should consider specific actions that would allow them to increase and optimise useful time and time available, especially in younger years.

Conclusions

The effort perceived by PEd students in mime and drama sessions in BE during this research was low, particularly from third year onwards, which suggests that the sessions on this content at this school do not involve major physical exertion. However, despite this low physical effort, it should be noted that PEd students experience great satisfaction during mime and drama sessions in BE. However, in view of the useful time and time available results achieved in the sessions analysed, they seem to be a long way from the recommendations on school-age physical activity, having 30% of time available compared to the time scheduled in the school syllabus.

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