

# Impact of motor interventions oriented by mastery motivational climate in fundamental motor skills of children: A systematic review

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REVIEW ARTICLE

## ABSTRACT

The domain and maintenance of fundamental motor skills are essential for acquisition of more complex skills that are used in sport activities. The aim of this study was review systematically the experimental and quasi-experimental studies which implemented the mastery motivational climate in motor interventions and verify impact in fundamental motor skills of children. A search without language and date restrictions in eight databases was realized. Motor intervention studies that used the mastery motivational climate with focus in strategy for optimize the locomotors and object control skills performance in children 3 to 10 year-old were included. The evaluate of methodological quality was realized by two independents reviewers. Six papers that described motor interventions oriented by mastery motivational climate were included. The participants were children with identified motor delay, with or without cognitive or motor disabilities. All the studies indicated positive effect of intervention programs in locomotor and object control skills. The mastery motivational climate is an efficient methodological proposal teaching to promote development of locomotors and object control skills in children with motor delay.

*Keywords:* fundamental motor skills; motor intervention; climate motivation; mastery; children; systematic review.

## INTRODUCTION

The domain and maintenance of fundamental motor skills are essential for the acquisition of more complex skills, which are used in sports activities (Clark & Metcalfe, 2002; Gallahue, Ozmun, & Goodway, 2013). The competence in fundamental motor skills during childhood is essential for participation in games and sports in adolescence and adulthood (Barnett, Van Beurden, Morgan, Brooks, & Beard, 2008; Robinson et al., 2006; Stodden et al., 2008). Therefore, involvement in physical activities may have a positive effect on increasing physical activity levels and adopting a healthy lifestyle, reducing the problems related to physical inactivity and obesity (Larouche, Boyer, Tremblay, & Longmuir, 2013; Laukkanen, Pesola, Havu, Sääkslahti, & Finni, 2014; Lloyd, Saunders, Bremer, & Tremblay, 2014).

A considerable number of researches in several countries report data from children with delays in fundamental motor skills and below expected competencies in a period of childhood in which they should have a diverse and efficient motor base (Draper, Achmat, Forbes, & Lambert, 2012; Goodway, Robinson, & Crowe, 2010; Hardy, King, Espinel, Okely, & Bauman, 2011; LeGear et al., 2012; Spessato, Gabbard, Valentini, & Rudisill, 2013; Venetsanou & Kambas, 2009). Considering the increasing rates of children with motor delays, researchers and teachers have been concerned with promoting compensatory programs with intervention strategies to minimize motor difficulties. Several studies report that motor interventions with appropriate strategies stimulate development and promote learning of key motor skills (Logan, Robinson, Webster, & Barber, 2013; Lubans,

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Morgan, Cliff, Barnett, & Okely, 2010; Morgan et al. Myer et al., 2015; Riethmuller, Jones, & Okely; 2009, Robinson et al., 2015, Valentini, 2002).

Researches also report that when methodological strategies that promote the motivation and autonomy of the child in the learning process their gains in motor intervention are optimized (Martin, Rudisill, & Hastie, 2009; Robinson & Goodway 2009; Valentini & Rudisill, 2004, 2002). At the present time, the teaching-learning methodologies implemented in compensatory programs involve less traditional classes with emphasis on the autonomy of the child, such as the motivation climate for mastery (Logan et al., 2013; Martin et al., 2009; Robinson & Goodway; Valentini & Rudisill, 2004a; Valentini, 2002)

Children motivated for mastery tend to accept challenges, to engage more in the task and to recognize that success is related to effort (Valentini, Rudisill, & Goodway, 1999). By engaging more in activities proposed in this climate (Valentini, 2002), children practice more skills and engage themselves more in physical activity and sports. The methodology with Motivational Climate Oriented for Mastery implements the practice of fundamental motor skills from an environment of autonomy for the child. To implement this methodology, the TARGET structure is used, which, through 6 dimensions of the classroom (task, authority, recognition, grouping, evaluation and time), creates a favourable and autonomous motivational climate for students to learn different motor skills of the children (Valentini, Rudisill, & Goodway, 1999a; Valentini et al., 1999b; Valentini, 2002).

The TARGET dimensions allow the mapping of strategies related to the characteristics of the task (proposed activity) that the children engage in, the autonomy of the students, the recognition by the efforts, the groups formation with different characteristics, the monitoring of the learning process and the adequate time for the learning of each child (Valentini et al., 1999a, 1999b).

Given the benefits of Mastery Oriented Motivational Climate for learning fundamental motor skills, the aim of the present study was to systematically review the effectiveness of motor based intervention programs based on Motivation for Mastery in the fundamental motor skills of children.

## METHOD

This is a systematic review study. For this study, the PRISMA (Statement) guidelines will be used (Moher, Liberati, Tetzlaff, Altman, & Grp, 2009).

### Kind of Studies and Eligibility criteria

The following inclusion criteria were defined: (1) quasi-experimental or experimental studies with a pre- and post-intervention design with a control group; (2) studies used the first or second edition of the Test of Gross Motor Development (TGMD), 2000); (3) had a sample aged less than three years or greater than 10 years and 11 months. Studies were excluded when: (1) they did not use validated test batteries for motor performance evaluation in children aged three to 10 years; (2) when they did not present locomotion skills, object control and broad motor quotient (sum of locomotion skills and object control scores); (3) were characterized as abstracts, theses, dissertations and articles of literature review or systematic and meta-analyses; (4) did not present all complete data from one or more groups, as well as studies without a group control.

### Comparator Group and Variables

The Control group with children 3 to 10 who participated in other methods of motor intervention different from the climate of motivation to mastery were considered in the present study. The variables investigated were performance in locomotion skills, object control and the broad motor quotient, characterized as continuous variables.

### Sampling

The search for the articles occurred in the Academic Search Premiere databases, CINAHL,

PsycArticles, PsycINFO, Pubmed, Scopus, Sport Discus and Web of Science. In addition, a manual search was carried out in the references of the studies found to verify the existence of more studies that were not found in the search strategy, as well as known studies not located by the databases. The search for the data occurred until April 15, 2015. From a review of the literature, from the consultation to Descriptors in Health Sciences (DeCS) and search terms, Mesh and not Mesh (Pubmed) the following were defined Terms "children" "motor skill", "intervention", "mastery climate" and associated terms. Boolean operators AND and OR were used. The search terms were combined according to the characteristics of each database. There were no language restrictions on the search.

### Studies Selection and Data Extraction

The Initially, two independent reviewers selected the studies. The stages of independent selection followed the order: step 1: electing

studies evaluating titles and abstracts; Step 2: reading the article in full when the title and abstract were not enough. After the independent evaluation processes, the reviewers will compare individually chosen studies to identify decision-making differences, and therefore to establish a consensus in the selection of the studies. After defining the included studies, the reviewers read the complete articles selected for data extraction. The eligibility criteria assumed in the survey were considered in this process. Data were extracted by two independent reviewers, using a standardized form considering the main characteristics of the studies: participants, type of intervention and variables, methodological characteristics.

## RESULTS

### Study Overview

The organization and selection of studies was careful and respected the process that can be observed in Figure 1.

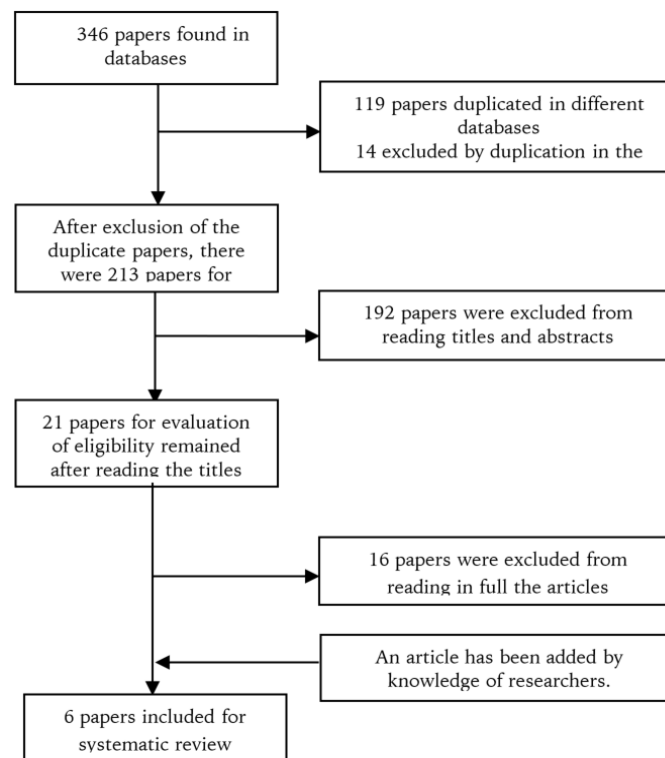


Figure 1. Flow Diagram of search results

The methodological quality of the studies was evaluated by the scale proposed by Goodson, Buhi, and Dunsmore (2006) adapted by Spessato (2012). The studies presented an

average of 9.5 points out of a total of 14. In the study design, in the use of theory or model, and in the methods of analysis, 100% of the studies had a maximum score (Table 1).

Table 1  
Methodological quality assessment of studies

Criteria	Score	n (%)
Uses Theory or Model Explicitly	No - 0	0(0)
	Yes - 1	6 (100%)
Study Design	Transversal - 0	0(0)
	Longitudinal - 1	6 (100%)
	No coefficient present - 0	3 (50%)
Validity of Instruments	Display coefficient only for data parts - 1	0(0)
	It presents coefficients of other studies or of the instrument's own validation - 2	0(0)
	It presents coefficients of all instruments validated in the sample itself - 3	3 (50%)
Methods of Analysis	Qualitative - 0	0(0)
	Univariate / Descriptive Statistics - 1	0(0)
	Bivariate Statistics / ANOVA - 2	6 (100%)
	Multiple Regression / logistics - 3	0(0)
	Multivariate Statistics (discriminant function analysis, path analysis, structural equation model) - 4	0(0)
Sample size	Some kind of effect size is displayed (eta square, R2, Confidence Interval) -5	6 (100%)
	Small >100 - 0	5 (83.3%)
	Average 100-300 - 1	1 (16.7%)
Sample Selection	Large > 300 -2	0(0)
	Non-probabilistic convenience - 0	1 (16.7%)
	No representative nationally random - 1	5 (83.3%)
	Representative nationally random - 2	0(0)

Characteristics of Studies and Participants

From the 6 articles analysed, 4 were conducted in the United States (Logan et al., 2013, Martin et al., 2009, Robinson & Goodway, 2009) and 2 were carried out in Brazil (Valentini & Rudisill, 2004a, 2004b; Valentine, 2002). In relation to the methodological design, five studies were characterized as experimental (randomized) with a pre and post-intervention design with group control (Logan et al., 2013, Robinson & Goodway, 2009; Valentini & Rudisill, 2004a, 2004b; Valentine, 2002); a study was characterized as quasi-experimental with group control (Martin et al., 2009). The children in the studies were between four and 10 years old, in one study, children in a subgroup of intervention and control had physical and cognitive deficits (Valentini & Rudisill, 2004b), in the other studies the children had a typical development (Logan et al., 2013; Martin et al., 2009; Robinson & Goodway 2009; Valentini, 2002; Valentine & Rudisill, 2004a). All studies selected children according to motor performance, children with delays were included in the research, after that stage the children were randomized, except for the study by Martin et al. (2009) in intervention and

control groups. The characteristics of the Studies are described in Table 2.

Characteristics of Motor Interventions

In all studies, the intervention groups were submitted to motor intervention programs using the Motivation Climate for Mastery with the TARGET structure for the design of strategy in the classroom dimensions (Logan et al., 2013; Martin et al., 2009; Robinson & Goodway, 2009; Valentini & Rudisill, 2004a, 2004b; Valentini, 2002). In the studies by Valentini (2002), Valentini & Rudisill (2004a) and Valentini & Rudisill, (2004b) the interventions were conducted in 12 weeks with 24 class sessions lasting between 60 and 70 minutes. In the study by Logan et al. (2013) the intervention lasted nine weeks with 18 sessions lasting 30 minutes; in the study by Martin et al. (2009) were 30 sessions in five weeks and in the study by Robinson & Goodway (2009) were 18 sessions in nine weeks with an average duration of 30 minutes. All interventions were conducted by experienced physical education teachers or by the researchers themselves with the assistance of trainees.

Tabela 2

Descrição dos estudos avaliados.

Authors	Country	Type of Study	Intervention Group	Control Group	Motor Intervention	Test and Variables evaluated	Statistic	Results	Follow-up
Logan, Robinson, Webster, Barber (2013)	United States	Experimental (randomized) pre and post intervention design;	12 children (7 boys and 7 girls, age M = 4.03 SD = 0.64) subdivided into two groups: (1) children with high motor performance (N = 5, M = 39.6 SD = 5.8); (2) children with low motor performance (N = 8 M = 12.4 SD = 7.1)	13 children (8 girls and 5 boys) were subdivided into two groups: (1) children with high motor performance (N = 6, M = 43.5 SD = 7.1); (2) children with low motor performance (N = 7, M = 12.4 SD = 4.6)	Intervention Group: 9 weeks intervention (twice a week - 30 min.) Focusing on motor skills of object control. Control Group: Traditional intervention with focus on the teacher	TGMD-2** Object Control Percentile	ANOVA with repeated measures 2 (skill level) x 2 (intervention-control group) according to the climate (split file) Effect size estimated from $\eta^2$ .	Significant intra-group interactions ( $p < 0.001$ ) and between groups (according to the motor performance level in the control variable object) ( $p < 0.001$ ). The children showed better motor performance in object control skills regardless of the weather. Children with low motor performance presented significant improvements when compared to children with high motor performance.	Not measured
Martin, Rudissil, Hastie (2009)	United States	Quasi-experimental design with pre and post-intervention	42 children (24 girls and 18 boys) from a kindergarten school (Age M = 5.72 SD = 1.39)	22 children (10 girls and 12 boys) from a kindergarten school (Age M = 5.43 SD = 0.78)	Intervention Group: 6 weeks of intervention (30 sessions) focused on FMS Control Group: 6 weeks of intervention (30 sessions) with a low teacher autonomy approach.	TGMD-2** Gross Locomotion and Object Control Gross Score	ANOVA with repeated measures 2 (time) x 2 (group) intervention-control Effect size estimated from $\eta^2$ Continuity Testing	Significant interactions of time x group in the subscale of locomotion ( $p < 0.001$ ) and in the subscale of object control ( $p < 0.001$ ). The intervention group improved significantly from pre- to post-intervention. In the control group there were no significant improvements	Not measured

Valentini and Rudissil (2004b)	Brazil	Experimental (randomized) pre and post-intervention design	19 children (12 boys and 7 girls, age M = 5.45 SD = 0.51)	120 children (13 boys and 7 girls age M = 5.40 SD = 0.60)	Intervention Group: 12 weeks, 24 sessions (70 min.) Focused on FMS Control group: Low autonomy Traditional classes with a teacher-centered approach.	TGMD * Gross Locomotion and Object Control Gross Score	3 Anova 2 (group) x 2 (time) Effect size estimated from $\eta^2$ . Continuity Testing	Locomotion Interaction group x time (p = 0.042) and main group effects (p < 0.05) and time (p < 0.001). In the postintervention the intervention group had better performance compared to the control group (p < 0.001). The two groups presented better performance from pre to postintervention. Object Control Main effect time (p < 0.001). The groups had improvement from pre to post intervention, intervention group (Pre M = 8.90, SD = 2.10 and Post M = 14.45, SD = 1.43) and control group (Pre M = 8.80, SD = 1.96 and Post M = 14.20, DP = 1.28).  After the intervention program the children in the intervention group maintained the gains in locomotion; Already the control group had a decline in relation to the postintervention. The intervention group had a statistically superior performance to the control group at follow-up (p < 0.001) In the intervention group gains in the control of the object remained; The control group there was a decline in performance. The intervention group had a statistically superior performance to the control group at follow-up (p < 0.001)
Valentini and Rudissil (2004a)	Brazil	Experimental (randomized) pre and post-intervention design	50 children in 2 groups: (Age M = 7.46 SD = 1.31 15 girls and 16 boys) and (2) Interventive without disability (age M = 8.14 SD = 1.60, 3 girls and 16 boys)	54 children in 2 groups:	Intervention Group: 12 weeks, 24 sessions (60 min each) focused on FMS Control Group: free games classes supervised by a teacher.	TGMD * Gross Locomotion and Object Control Gross Score	Anova 2 (locomotion, object control) x 2 (group) x 2 (subgroup) x 2 (pre and post intervention) with repeated measures. Correlation and plots Box plots to test the normality of the data. Effect size estimated from $\eta^2$ Continuity Testing	Locomotion: Significant interaction in the factors groups x subgroups x time (p < 0.04). Significant improvements from pre-post intervention to intervention group (p < 0.001). In the comparison between the groups in the pre-intervention the control group presented better performance when compared to the intervention group, however in the post intervention the intervention group reached the performance of the control group (p = 0.032). In the comparison of the subgroups, the children in the intervention group with and without disability had improvement after the intervention program (p < 0.001 and p < 0.001, respectively). In the comparison between the pre and post intervention subgroups, the interventive subgroups with and without disabilities performed better after the intervention when compared to their peers. Object Control: Significant interaction in the factors groups x subgroups x time (p < 0.04). Significant improvements from pre to post intervention in the intervention group (p < 0.001). In the post-intervention the intervention group presented superior performance in comparison as a control group (p < 0.001). In the subgroup, pre and post-intervention groups improved only from the intervention groups with and without disability (p < 0.001 and p < 0.001, respectively). In the post-intervention the intervention groups with and without deficiency presented better performance (p < 0.001 and p = 0.004, respectively) when compared to their pairs.  Not measured

Valentini (2002)	Brazil	Experimental (randomized) pre and post-intervention design	41 children (17 girls and 24 boys, age M = 7.56 SD 1.02)	50 children (16 girls and 34 boys, age M = 7.57 SD 1.13)	Intervention Group: 12 weeks, 24 sessions (60 min.) Control Group: Traditional physical education classes.	TGMD * Gross Control of Locomotion Control of Object	Anova 2 (time) x 2 (group) Continuity tests Effect size estimated from $\eta^2$ .	Locomotion Significant group-time interaction (P <0.001). Significant differences in locomotion skills for the Prevention Intervention Group For post-intervention (p <0.001). In the post intervention the intervention group presented superior performance when compared to the control group (p = 0.03). Object Control: significant group x time interaction (P <0.001). There were significant differences in the object control skills for the Pre-for post-intervention (P <0.001). In the post-intervention the intervention group presented superior performance (p <0.001) when compared to the control group.	Not measured
Robinson e Goodway (2009)	United States	Experimental (randomized) pre and post intervention	39 children (20 girls, 19 boys, age M = 47.6 SD = 7.5)	Two groups (1) low autonomy (18 girls and 20 boys, age M = 46.6 SD = 5.9) and (2) Comparator (16 girls and 24 boys, age M = 48.3 SD = 5.0)	Intervention Group: 9 weeks, 18 sessions (30 min.) Focusing on object control skills Group Low Autonomy: 9 weeks, 18 sessions (30 min each) with a teacher-centered approach to teaching focusing on object control skills. Comparison group: 9 weeks, 18 sessions (30 min.) With free play approach observed by teachers.	TGMD-2 ** Gross Object Control	Anova 3 (groups - intervention - low autonomy and comparator) x 3 (time - pre, post and follow-up) Effect size estimated from $\eta^2$ . Post Hoc Tukey	Significant Interaction Group x Time (p <0.001) and main group effects (p <0.001) and time (p <0.001). Significant differences were found between the intervention group and the comparator group (p <0.001) after the intervention. There were significant changes in the intervention group (p <0.001) and in the low autonomy group (p <0.001)	In the retention, no differences were found in relation to after-intervention, between the intervention groups and low autonomy, however, statistically significant differences were observed between the intervention group and the comparator group in the retest (p <0.001). Significant post-intervention changes for the retest were observed in the intervention group (p <0.001) and in the low autonomy group (p <0.001).

M = Mean / SD = standard deviation/ % = percentile / FMS = Fundamental Motor Skills

\* TGMD (Ulrich, 1985) / \*\* TGMD-2 (Ulrich, 2000)

*Test Batteries, Variables and Statistical Procedures*

In order to evaluate the fundamental motor skills, three of the six studies used the Test of Gross Motor Development (TGMD) first edition (Valentini & Rudisill, 2004a, 2004b; Valentini, 2002) and three used the second version of TGMD-2 (Logan et al., 2013; Martin et al., 2009; Robinson & Goodway, 2009). In the studies of Logan et al. (2013) and Robinson and Goodway (2009) were evaluated only the impact of intervention on the percentile and gross object control score, respectively. The other studies evaluated the impact on gross locomotion and object control scores. Regarding statistical procedures, all the studies used ANOVA with repeated measures in the time factor and comparisons between groups and subgroups. The size of the effect was estimated through the partial eta ( $\eta^2$ ).

*Impact of interventions on locomotion and object control skills*

The studies that evaluated the impact of motor intervention based on motivation climate for mastery reported a significant effect of the program on locomotion and object control skills in the children who participated in the intervention (Logan et al., 2013; Martin et al., 2009; Robinson & Goodway, 2009; Valentini & Rudisill, 2004a, 2004b; Valentini, 2002). From six studies four evaluated the impact of the intervention on locomotion skills and object control (Martin et al., 2009; Valentini & Rudisill, 2004a, 2004b; Valentini, 2002), studies by Robinson and Goodway (2009) and Logan et al. (2013) evaluated only the impact of the intervention on object control skills. It is noteworthy that in the latter similar study changes resulting from the intervention program were reported in the intervention and group control.

Only two studies evaluated the impact of the intervention at other times (follow-up). The study by Valentini and Rudisill (2004b) reported that gains from intervention in locomotion and object control skills were maintained after six months in the intervention group. In the group control there was no change

from pre to post intervention after this period and performance was similar to pre and post test performance. The study by Robinson and Goodway (2009) reported that in the follow-up were found significant improvements in the gross locomotion score in the children of the intervention group and the low-autonomy group.

**DISCUSSION**

The aim of this systematic review was to synthesize the evidences on the impact of motor interventions with the Motivation Climate for Mastery in the motor skills of locomotion and object control of children. The strategies used in the Motivation Climate for Mastery lead children to a motivating and challenging environment, experiencing diversified activities with different levels of difficulty, the child has autonomy to choose its tasks, is recognized by the efforts, works in groups and has strategies of self-evaluation. All these strategies of the Motivation Climate for Mastery allow meaningful and contextualized learning (Ames & Bell, 1990; Ames, 1992).

When the child has significant learning, persistence in motor activities and adequate perceived competence are guaranteed (Kirk, 2005; Valentini & Rudisill, 2004a, 2004b; Valentini, 2002). Following the methodological proposal implemented in the reviewed studies, the more the child performs an activity in a varied way, the more competent it can become; even more, if she is aware that success in the task depends on her work, the possible failures are perceived as an impulse to work harder (Valentini, 2002; Valentini & Rudisill, 2004a, 2004b). The feeling of competence can be strengthened when the child is faced with moderate levels of challenges, which with effort can overcome; perceive itself competent, therefore, it is possible when performing tasks with the objective of self-overcoming (Píffero & Valentini, 2010) factors that contribute to achieving motor proficiency.

It is fundamental that children achieve motor proficiency at the appropriate age. All studies



reviewed reported improvement in scores or percentiles of locomotion and object control skills in children undergoing motor intervention. These results are consistent and follow a positive trend of studies that used the Motivation Climate for Mastery as an interventional approach that have generated positive impact, such as increased physical activity levels (Wadsworth, Robinson, Rudisill, & Getchell, 2013); improvement in eating habits and more controlled physical activity practices (Papaioannou, Milosis, Kosmidou, & Tsigilis, 2007) strengthening the perception of competence (Valentini & Rudisill, 2004a); greater proficiency in specialized tennis skills (Piffero & Valentini, 2010), decreased anxiety (Barkoukis, Tsorbatzoudis, & Grouios, 2008); and more frequent use of competitive athletic learning strategies (Morgan & Carpenter, 2002).

However, few studies are devoted to investigating the gains of motor intervention after the period of its implementation. Of all the studies reviewed, only two studies investigated whether gains were maintained over time after the end of the (follow-up) (Robinson & Goodway, 2009; Valentini & Rudisill, 2004b). In the study by Robinson and Goodway (2009) the gains from the intervention group remained in the follow-up, however the post-follow-up interval was only one week, considered a relatively short time to check changes in movement patterns. The study by (Valentini & Rudisill, 2004b) re-evaluated the children who participated in the intervention and group control. The authors reported that even after six months the gains from the intervention were still present in the intervention group. This information allows us to better understand the effects of this Climate of Motivation over time which probably has generated in children greater meanings in the skills learned. But little is known whether these gains remain and evolve over time.

Of the six studies, only one, conducted motor intervention in a school environment (Martin et al., 2009), but only in six weeks, a shorter period than other interventions and different from the school curriculum. All other studies implemented programs in other

contexts, this information indicates the need for studies that investigate the effectiveness of the Motivation Climate for Mastery in the regular school physical education classes and with a duration that is closer to this school reality. Teachers nowadays facing a growing need to implement educational contexts that accommodate a wide variety of children who have different levels of development in the same group. The Motivation Climate for Mastery is an alternative that leads all learners to engage in the learning process and builds effective perspectives to meet the needs of all children.

None of the interventions reported the time of practice and engagement of children in fundamental motor skills, this information would be important since some theories of motor development indicate that one of the central points of development is related to engagement (Robinson et al., 2015; Silverman, 1991) Interventions from the reviewed studies lasted from six to 12 weeks, suggesting the need for longer interventions that go along with development of the children for a longer period as well.

All interventions assessed total scores or percentiles of total scores on locomotion and object control skills, and no assessed study investigated the impact of interventions on specific motor skills (running, galloping, jumping, kicking, throwing, bouncing, receiving the ball). This information would be important for teachers and researchers to plan interventions based on the most difficult skills and in the future, it would be important for the Physical Education area to plan a curriculum based on age, gender and level of development.

### **CONCLUSION**

The motivational climate for mastery is an efficient methodological proposal of teaching to promote the motor skills of locomotion and control of objects in children with motor delays. The following highlights the strengths, limitations of the study and implications for practice.

### Limitations

It were not evaluated other variables related to motor skills, such as the perception of competence, level of physical activity and nutritional status

### Implications for practice

Assess specifically the impact of interventions in motor skills not only the total scores or percentages of the total scores of locomotion and control of object; Assess the impact of the intervention over time, and to evaluate whether children proficient remain engaged in physical activities and sports; To include parents in motor interventions; Implement motor intervention programs in school contexts and with a greater period of time.

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