

**Case Study of a Climbing Activity as an Educational Tool  
for Primary School Children: looking for significative learning experiences  
through climbing games and the innovative use of the climbing space.**

**Epelde Merino, M. J. - maepelde@ucm.es**

Faculty of Education, Department of Musical and Corporal Expression.  
Universidad Complutense, Madrid, Spain.

***Abstract***

The study of a new climbing activity designed and put into practice for primary school children allowed us to examine the dynamics between different pedagogic resources and the issue of meaningful learning experiences within the climbing lessons. Our intention was to analyse climbing didactics and methodology considering two main spheres of action: climbing/motor games and an innovative use of the climbing space. Participants were children from 5 to 7 years old and the fieldwork took place during climbing sessions throughout a whole academic year. Various qualitative/quantitative research tools were used to study the evolution and outcomes of the project whereas we focused the teaching methodology in how to arrange and provide the proper conditions and scenario so meaningful climbing and learning experiences could occur. Results are showing the importance of developing specific climbing didactics in young ages and how different teaching practices can have a positive impact in children's increase of confidence about their body expression and movements while improving their climbing skills and performance. Also, this project opened new and interesting research perspectives and allowed us to gain comprehension about the creation, dynamics and potential of a climbing activity that contributed positively in a wide educational community.

**Keywords:**

Motor creativity, climbing abilities, teaching practices, movement efficiency, self-confidence.

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## ***Résumé***

La mise en pratique d'une activité originale d'escalade avec des enfants de l'école primaire nous a permis d'étudier la dynamique entre les différents outils pédagogiques et d'identifier quelle sont les expériences d'apprentissage significatives dans les cours d'escalade. L'analyse a été conduite sur la didactique et la méthodologie de l'escalade en considérant deux domaines d'action principaux: les jeux d'escalade/moteurs et une utilisation innovante de l'espace d'escalade. Les participants étaient des enfants de 5 à 7 ans, et le travail de terrain a eu lieu au cours des séances d'escalade pendant toute l'année scolaire. Divers outils de recherche quantitative et qualitative ont été utilisés pour étudier l'évolution et les résultats du projet, sachant que nous avons orienté la méthodologie d'enseignement sur la façon d'organiser et de fournir les conditions et scénarios appropriés pour que des expériences d'escalade et d'apprentissage significatives puissent avoir lieu. Les résultats démontrent non seulement l'importance de développer des didactiques d'escalade spécifiques à un jeune âge, mais aussi l'impact positif que les différentes pratiques pédagogiques peuvent avoir sur le gain de confiance des enfants. L'acquisition d'assurance dans l'expression corporelle et dans les mouvements permet aux enfants d'améliorer leurs compétences et performance d'escalade. De plus, ce projet a ouvert de nouvelles et intéressantes perspectives de recherche et nous a permis de mieux comprendre la création, les dynamiques et le potentiel d'une activité d'escalade qui a contribué positivement dans une vaste communauté éducative.

## **Mots clés:**

Créativité motrice, compétences d'escalade, pratiques pédagogiques, mouvement efficace, assurance.

## INTRODUCTION

In our previous work we addressed the subject of how rock climbing can result in a valid and beneficial activity for various educational purposes and contexts and how many studies consider the positive outcomes of including rock climbing experiences in schools ((Martínez et al., 2009). Following their principles we designed and put into practice an innovative climbing activity for young children, were we could analyze how participants developed different capabilities related to their technical climbing skills, cognitive abilities, emotional balance and energy management (Epelde, 2016). Then the project took an interesting turn, refocusing our attention from how children learn to how to teach them, in order to improve the richness of their gestural repertoire and at the same time assist participants to gain self-confidence, fluency and efficiency in their climbing movements.

Literature shows how the joy of motor learning occurs thanks to success situations in the experience of managing and mastering each one's corporal dimension (Goodway, 2008). Also that the best way to foster this situations is through playful tasks and motor games, were didactically organized activities are closely related to the continuous exploration and adaptation to the space (Navarro, 2002). In a climbing activity skills acquisition implies the integration and development of basic and specific motor coordination. And this happens through observation, imitation, try, repetition and success, in a series of processes that result in concrete climbing practices, knowledge, competencies, attitudes and cultural beliefs (Harvonville, 2014).

According to our experience, climbing in early ages can be mainly understood as a motor game and a creative learning process. Creative behavior or movement implies imagination, purpose, originality and value; and it appears to favor self-esteem, motivation and achievements (QCA, 2004). Among the many areas of interest this study provided, our aim here is to show within the context of our didactic proposal, the dynamics between climbing/motor games and the innovative use of the climbing space, intending to foster motor creativity and significative learning experiences that could result beneficial for the climbing performance and the children's positive growth.

## METHODS

This is a case study research with an specific methodology that was designed, tested and put into practice throughout a whole academic year during the sessions of an extracurricular climbing activity in a public school. For the study of the mentioned dynamics data was gathered from January 2014 to June 2014 with children between 5-7 years old, in the course of indoor climbing classes that consisted in a wide range of games adapted for the climbing space and facilities (Epelde, 2016). Quantitative/qualitative research tools included a field notebook, researcher's diary, drawing/handicrafts notebook made by the participants, video recordings, children's feedback, in-depth interviews with members of the educational community and diverse evaluation systems.

Among the principal objectives of the study we can highlight the elaboration and implementation of a new didactic proposal and the description and analysis of several aspects of this particular educational experience, with the focus on its didactic resources and methodologies. Motor creativity was encouraged by designing tasks and games in a semi-defined manner, where objectives were not unique and included innovative routines (Blández, 2016). This together with an imaginative use of the climbing area, provided children enough freedom to experiment and explore their own movement. Indicators, variables and spheres of action were defined in order to properly manage the field work, while the study had also to maintain enough flexibility to adapt to changing conditions, such as improvements in the climbing areas or the rising amount of children regularly being involved in the project.

## RESULTS

For the qualitative aspects of the study, gathered information was processed through Atlas.ti data analysis software. This helped enormously to bring sense and an overall picture of the research, as we had such a big amount of documents, categories, variables and entries. One of the challenges was how to represent the results of the qualitative study, and this was finally solved in three different manners: in a narrative way, through different visual compositions and in what we called comprehension networks. Apart of the interaction processes we highlight in this paper, results gave us a considerable amount of key findings in different subjects and also unexpected relations between categories and observation outcomes.

As mentioned in the introduction, the purpose here was to show the dynamics between climbing/motor games and the innovative use of the climbing space, in relation to motor creativity and learning experiences. For that, we analyzed the collected data inside the following categories: Climbing sessions dynamics, Teaching methods, Contents and climbing games, Playing and flow, The climbing space, In class resources, Competence acquisition, Motor creativity, Significant learning experiences, Assessment and Outcomes of the project. After our work studying and interpreting this data, the inferences we can remark are: 1) Designing and developing climbing/motor games and using the given climbing space in innovative ways can function as essential pedagogic resources to favor meaningful learning experiences in children, as a proper planing of the tasks and an specific disposition of space resources are decisive depending on the didactic objectives we are looking to achieve. 2) Developing good practices and a methodology around these resources we could appreciate in considerable cases, an increase in children's self-confidence attitudes towards their own movement, gained richness in their gestural repertoire and diverse motor creativity actions that we believe they do have an influence in climbing general performance, fluency and movement efficiency.

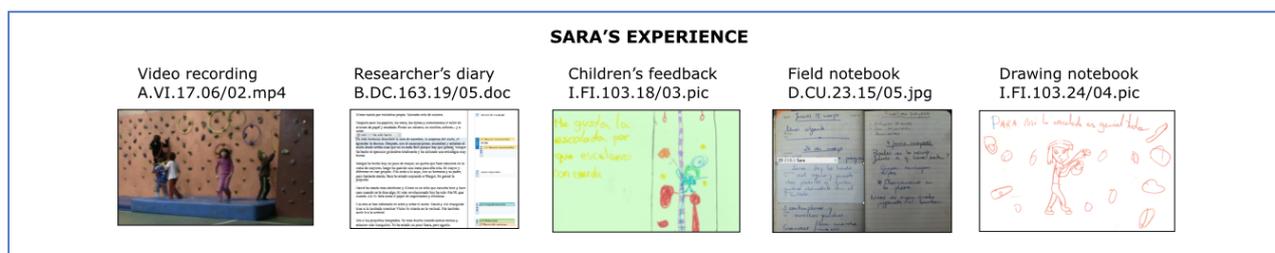
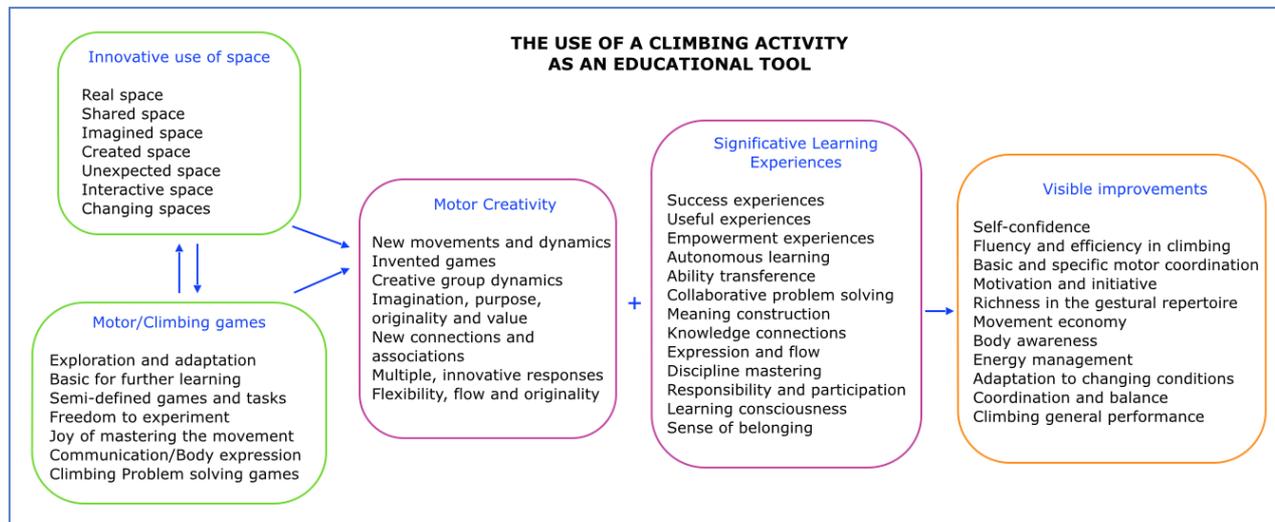


Figure 1. Schematic representation and detailing of the concepts developed and put into practice throughout the research.

Figure 2. Sample of qualitative results showing how children's experiences were observed and recorded using different observation tools. All the images are part of our own database.

## DISCUSSION

Among other issues, the study addresses the importance of an in depth reflection about how to teach a physical discipline like climbing having as an objective that children acquire motivation, self-confidence, physical competency, understanding and knowledge of their own movement (Whitehead, 2010). Different studies refer how the construction of the self-image is intimately related with movement expression and abilities (Feldenkrais, 1997), and we find that a properly oriented climbing activity has an enormous potential to develop these matters. Further more it can result in the acquisition of better climbing skills, a richer gestural repertoire and it can provide children with personal abilities to find a balance managing experiences and emotions in order to solve more complex climbing problems.

How to provide or make possible these learning experiences to children was one of the main questions that emerged during the study. One of the contributions we could make was the creation of an specific methodology and didactic program that made different combinations with two of the spheres of action we could create and adapt: climbing games and climbing space. The findings can result in further research about creating valid practices to set different scenarios that enable motor creativity and valid learning experiences within a climbing activity. In this sense, our research is related to an interesting area of study about the evolution of in-door climbing spaces where different facilities are specially conceived to train and favor diverse climbing techniques and specific movements.

Also, this project can provide a starting point for new case study research that relate climbing didactics with other areas of interest, for example the creation of learning environments (Blández, 2016) or the so called physical literacy (Goodway, 2008) that understands the importance of the children being in charge of their own corporal experiences and movement. The findings could also be useful to analyze how participants of the climbing activity use the act of playing as a way of adapting to the medium, being able to read all the elements that shape their environment and anticipate and respond with intelligence and imagination while improving their climbing skills. Finally, as a long-term intervention program inside a public school, our research also provided us with guidelines to contribute positively in an educational community, a comprehensive review of the literature and practices around climbing didactics (Neumann & Schädle-Schardt, 2000) and could also be used as a reference point concerning climbing teaching practices for those willing to impulse similar projects in other social and cultural contexts.

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