Enactive and Embodied Learning In Higher Education
Rosa-María Rodríguez-Jiménez; Sonia García-Merino

Abstract
In the community of movement educators and therapists we interact with others involving our whole selves through an experiencing process of a non-dual body-mind continuum. Education is primarily a communication process, so under our point of view the body must be involved during the teaching-learning processes. Most of cases, especially in higher education in Spain, the body is absent in the classroom in which the acquisition of knowledge is built through “mind” rather than "embodied experiencing", which includes mind and body at the same level. Of course, there are some exceptions regarding studies of Performing Arts, Physical Activity or Dance. The paper presents some experiences carried out to include the experiential and active learning through the embodied practice in higher education, and evaluate the students’ answer regarding a new way to teach and learn. Although some initial resistance was seen among students to changes in the teaching-learning orientation, our surveys show high levels of satisfaction and motivation with this new approach. Authors encourage educational institutions to introduce the enactive learning through a non-verbal approach as a way to improve levels of satisfaction, motivation and compromise with the learning process in students.

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Introduction
Most organizations have accepted that Emotional Intelligence (EI) is as critical as Intelligence Quotient (IQ) to an individual and group's effectiveness. EI results from the combined capacity of the individual to be aware and regulate his own emotions, with the capacity to be aware and regulate others’ emotions. These abilities are essential in education contexts where teaching-learning processes are pure acts of communicating with others. Furthermore, recent studies on neuroscience put the focus on the importance of the interrelation among brain, cognition and body. Researchers as Damasio consider body and mind in a holistic way. In fact, he states that the conscious lecture of our body states defines our emotional states. Herein the concept of embodiment is clue. Embodiment as a field of research, articulates three levels of awareness in relation to the body's expressive and impressive functions: (a) The individual which integrates body, mind, action and perception; (b) The interactional which involves person to person interaction; (c) The extended level which defines person to environment interactions.

For movement therapists it is clear that awareness of the environment we live and work in can be acquired by broadening the body awareness. Embodiment becomes under this scope, relevant to all aspects of an integral model of organisational emotional intelligence: embodiment at the individual level has a direct effect on how teams relate amongst themselves and ultimately, with the environment.

Although this is assume in the field of knowledge directly related with therapy and body, it is not so clear in education, in particular in higher education in which the
The process of teaching-learning is made through a cognitive point of view, so far of the embodied experience. Of course, there are some exceptions in studies of Physical Activity, Dance and Body Therapy, for instance. On the other hand, previous research experiences have showed the effect of improving the body awareness on academic results and motivational levels.1-3 In particular, there are many studies about the connection between body image (which is closely connected with body awareness), self-efficacy, and well-being.4,5 It is also well-known the influence that the teacher’s availability to manage his own emotions has on the students,6 and finally on the learning process.12,13

Objectives

The general objective of the work was to include the experiential and active learning through the embodied practice in higher education.

Specific objectives were:

- To include experiential activities in formal higher education, in particular, in different subjects and degrees.
- To analyse the difficulties manifested by students regards new methods of learning.
- To evaluate the students’ answers about level of satisfaction and usefulness with respect to enactive learning.

Method

In particular, tools and principles from Dance Movement Therapy (DMT)14 and Body-Mind Centering (BMC)15 have been introduced. Expressive movement, dance, body awareness, play, integration of body systems, imagery and Laban Movement Analysis were some of the resources used. Different activities and workshops were organized to developed different contents of a variety of subjects and degrees. Students under 18 to 25 years old were studying engineering, carton design & videogames and psychology among others. In particular, students of the next knowledge field participated (in parenthesis number of students who participated):

- Bachelor’s Degree in Carton Design and videogames (22 students)
- Bachelor’s Degree in Engineering (32 students)
- Bachelor’s Degree in Psychology (16 students)

Different activities were organized for each degree. The activities were introduced in a specific matter as a workshop or experiential activity according the curricula. The workshops were entitled:

- The 12 basic principles of animation. The topic was part of the syllabus of the subject “Drawing and animation 2 by Script” which is taught during the second course of the Degree in Carton Design and videogames. They were developed by the ‘old men’ of Walt Disney Studios15 during the 1930s. The workshop consisted on play dynamics and body awareness exercises both individual and in groups to explore the twelve principles. A final integration exercise was designed to establish the level of acquisition of knowledge about the topic.
- Empathy and Assertiveness. The topic was part of the syllabus of the subject “Personal and Professional Efficacy” which is compulsory for all the students of engineering in the first course of the degree. Specific exercises were designed for working in pairs the two concepts empathy and assertiveness, as part of an efficient communication.
- First-year development, Body image, Play and Late Adulthood. These four workshops were designed in the subject “Life span Development Psychology” (3º course of Psychology).

Specifically, motor development during the first year of life was worked through individual exploration of different phases of the development and reflection on the different landmarks acquired in it. Older adult’s session consisted of a previous observation of motor patterns of people older than 65 years outside the classroom, and the further work through kinesthetic imitation of these patterns with the aim of reflecting on difficulties, muscular and postural adaptations, and associated feelings. Body image session consisted of elaboration and representation of the proper concept of corporal image using artistic materials (drawing and collage). The game session consisted in the implementation of various cooperative games that served as a basis for working on the importance of the game, the objectives that may work and their adaptation to different age groups.

A mixed methodology was implemented to analyse the effect of the introduction of enactive learning in higher education. Data were collected through reflexive diaries, semi-structured interviews and satisfaction questionnaire. A Likert scale was used for the questionnaire, which allowed data analysis with descriptive statistics. In particular, all students answered the questions in Table 1.

The qualitative analysis was realized following the habitual method from an inductive approach,16 that would enable us to reflect on the work done and the impact on students. This analysis was conducted on the basis of the reflections made by participants. The information was transcribed, and subsequently analyzed, with the purpose of extracting a set of significant categories of the process.17 The obtained categories are listed below, along with some evidence of observed issues. The following codes are used: Bachelor’s Degree in Carton Design and Videogames (CDV); Bachelor’s Degree in Engineering (DE); Bachelor’s Degree in Psychology (DP).
It is interesting to learn in a different and experiential way
The knowledge acquired "doing" is useful and it is maintained during more time
I am more conscious about the importance of the body and its influence in the relationships
The atmosphere of respect and non-judge in the classroom has helped me to participate
I have had difficulties to do the proposals during the lessons
I felt some anxious at the beginning of the lesson

Table 1. Likert scale used at the end of each session. Numbers indicate the level of agree or disagree with the sentence, that is, 1 = strongly disagree; 2 = disagree; 3 = undecided; 4 = agree; 5 = strongly agree.

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Learning doing is useful
The participants reflected about the utility that the experiential learning has in their academic and personal life:

“All the activities have contributed something to myself” (DE)
“It has allowed me to learn about myself ... the neutrality state allows me to be a better professional and person” (DE)
“Honestly I prefer not to know theoretically the twelve principles and know how to use them because I’ve experienced them” (CDV)

In relation to the question about the usefulness of learning doing, 81.6% of the students answered affirmatively (43.3% strongly agree; 38.3% agree). This is more evident in the students of engineering (average 4.5 over 5) compared to the design students who value less the usefulness (average 3.6 over 5). In opinion of authors, this difference could be explained by the fact that engineer students seem being more focused on the final results instead of experiencing the process.

Resistances
This category collects difficulties manifested by students in relation to the introduction of new methods of learning. It is important to point out that some of the activities required a classroom change, therefore a change in the normal learning setting. In addition, others required that participants attended with sports clothes and ready to work in bare feet. Previously the participants were informed about the kind of work they were to conduct. In some cases, at the beginning of the activity some students felt surprise, vulnerability and restlessness.

“In the first exercise (awareness of the different parts of the body) I felt vulnerable, exposed and I had difficulty in having eyes closed” (DE)
“Initially I was surprised, since I didn’t know what we were going to do” (DE)
“The interaction with the other participants was initially a little uncomfortable” (CDV)
“A lot of tension the fact of having eyes closed” (DE)

Experiential Learning
The students emphasized the importance that learning from experiential mode has for them. Learning is acquired through experience; it is also named learning through reflection on doing. Students are totally involved during all the teaching-learning experience, which increase the motivation to work. The teacher is accompanying the students, in a non-traditional role. He is also opened to learn from the students.

“Getting in the shoes of the different stage of development is easier to understand through experience” (DP)
“It was a nice way to work in empathizing” (DP)
“It is not normal to perform this kind of activity in an academic environment and it has seemed to me much positive to learn the beginning of the animation of a so visual and practical way” (CDV)
“The practical examples made in the classroom have helped to understand a little better and remember some of the principles” (CDV)
“It has been an excellent way to learn about empathy and assertiveness” (DE)

The results confirm those obtained from quantitative analysis, with a high percentage of students (90%) showing interest in experiential learning (66.7% are strongly agree and 23.3% are agree). By areas of knowledge, the students of psychology show high interest (average = 5), in a 100%, while students of the degree in Cartoon Design and Videogames show lower interest (4.18 over 5). (Figure 1)
As for the questionnaire only 18.4% shows to have felt some anxiety at the beginning of the session and only 11.7% indicates to have had some difficulties of realizing the dynamics, although they are able to draw some positive conclusions related to their behavior. Psychology students were less nervous (1.33 over 5) at the start of the session compared to students of other degrees. On the other hand students for the degree of carton design and videogames are those who seem to have more difficulties during the session (2.36 over 5).

“In my personal experience, I suffered difficulties when doing activities because I am quite shy and I felt awkward … It has helped me to get to know new people and lose the shame” (DE)

Classroom atmosphere

Students recognize that the environment of respect and confidence generated in the classroom during the implementation of activities has helped them to overcome difficulties and realize the dynamics. It has been verified the importance of create friendly environments in learning. Researchers such as Hamann & Mao18 shows as friendly looks activate our brain system of gratification producing higher levels of motivation and commitment with an activity.

“At all times they have taken me into account; there has been a very good understanding with everyone” (DE)
“I have been able to relaxing and learning about myself and the others through the exercises” (DE)
“Each exercise has allowed and facilitated that there was interaction among us being able to appreciate the personality of each one mostly” (DE)
“The atmosphere in the classroom and the relationship with people there has been especially positive” (CDV)
“I liked a lot because we made a good session; it was silence and quiet ordered atmosphere” (DP)

The reflections of participants are consistent with the results of the questionnaire in relation to the work atmosphere generated in the classroom. The 81.7% of the participants agree or strongly agree, in which the environment of respect in the classroom has favoured the implementation of the dynamics raised. Again the psychology students are those who give greater importance to this item. Although, there was not gathered quantitative information about specific aspects relating to the body awareness, or competences aspects about the self-knowledge, from the reflections of the students we could draw two more categories:

Body Awareness. Participants often named corporal sensations or parts of the body that attract their attention, like this:

“Stress on the knees, my breathing was quiet and constant” (DE).
“The correct position of the muscular and skeletal structures and how to relax them properly” (DP)

Figure 2. average value in the Likert scale (1-5) about difficulties and anxious feelings (two last sentences in Table 1, respectively) with experiential learning in students from different areas of knowledge.

“I have felt much much relaxed up to the point of getting drowsy if it wasn’t for the concentration in the stress zones” (DE)

They emphasize the moments of attention to the body as well as relaxation experienced through this exercise:

“What I most liked about the late adulthood session is the attention payed to de body” (DP)
“I felt relaxed, comfortable, pleased and wiser” (DP)

Self-knowledge. Particularly numerous are the reflections about the awareness of personal aspects, that is to say, the increase in the degree of knowledge about yourself, but also from others:

“A very interesting activity to get to know about yourself a little more” (DE)
“There were people who were doing a movement that was representing them perfectly” (DE)
“I felt more comfortable with my body; I felt like if I learn new things about myself” (DP)

This knowledge is extrapolated to environments outside of their own experience, what turns it into an element of real learning:

“I have verified that to be tense constantly is tired” (DE)
“At a personal level, I have got to explore myself and get to know my body and how can I feel more comfortable with it” (DP)
“I have to take care of my body and love it more” (DP)
“Each movement said something about the person who performed it” (DE)

Conclusions

A variety of experiential activities were introduced in the lessons of different subjects and degrees. The proposal was something new for the majority of students. Although
some initial resistance was seen among students to changes in the teaching-learning orientation, our surveys show high levels of satisfaction and motivation with this new approach. Students felt grateful for the kind and non-juice atmosphere during the sessions; the atmosphere allowed them to participate in a freely way giving them the possibility to interact with companions in a different way through a non-verbal approach. Students are happy with this enactive and embodied teaching approach; they pointed out they learned more through an approach in which they are the principal actors. They also add that learning processes are more useful and interesting in this way.

They have increased their own body-awareness, being more conscious about their difficulties regarding the own body and its expression. In particular, it is worthwhile to show the impact of the different proposals on the self-knowledge level.

Authors encourage educational institutions to introduce the enactive learning through a non-verbal approach as a way to improve levels of satisfaction, motivation and compromise with the learning process in students.

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References