CASE STUDY

INTERVENTION MODEL NAME

Date of Enrollment: 01-04-2021

Registration No.: L001

Case Study Date: 27-12-2022

I. LEARNER'S DATA

Full Name: Nuno

Name to be addressed: Nuno

Date of Birth: Age: Gender: ☐ F ☑ M

Level of Education: 12º ano Diagnosis:

Address: Rua do Outeiro de cima

Zip Code: 2837-001 Telephone:

Nactonality: Portuguesa Mobile phone:

Citizen Card: 123456789 Valid through: 09-09-2024

II. LEARNER'S RESPONSIBLE DATA

Full Name: Fernanda

Kinship/Relationship: Mãe

Date of Birth: 19-10- Age: Gender: ☑ F ☐ M

Address: Rua do Outeiro de cima

Zip Code: 2837-001 Telephone:

Nationality: Portuguesa Mobile phone: 999253792

Citizen Card: 123456789 Valid through: 16-03-2024

III. GROUNDS FOR REGISTRATION IN THE PROJECT

Nuno is a 31-year-old person diagnosed with autism spectrum disorder. He is a calm and curious young man and enjoys being with his colleagues and coaches. He likes to communicate with others. However, he doesn't do it in the best way, talking only about subjects of interest to him. His greatest difficulties relate to communication, the speech he presents, his behaviour in unexpected situations and the ability to solve problems.

Participation in the project would give Nuno an opportunity to improve his skills in relating to others, as well as understanding and accepting his own personal characteristics, bringing him the possibility of experiencing new intervention methodologies, meeting new technicians and new colleagues. that could help him to be a more confident young man, more autonomous and more active and socially participatory.

IV. SUMMARY OF THE DIAGNOSTIC EVALUATION

1. Communication area: sometimes needs explanation and clarification to understand simple instructions given to him. Presents a running speech, without pauses and is not receptive to intervene.
2. Social Interaction Area: likes to be with colleagues and technicians and establishes a relationship with them. Demonstrates pleasure in being in a group, interacts and demonstrates affective behaviours.
3. Cognitive Skills Area: knows how to read and write, however, has some difficulty in reading texts, not respecting the punctuation marks. Recognizes numbers and quantifies, but needs help with simple additions and subtractions.
4. Autonomy in Activities of Daily Living: in general, he is able to carry out all basic activities, such as dressing and undressing, bathing and taking care of personal hygiene. Need help tying the laces.
5. Global and Specific Motricity: does not show significant impairment. It presents some difficulties in flexibility and little tolerance for performing physical exercise over a long period of time.
6. Behaviour: Nuno is communicative and most of the time he is calm. Reveals some difficulty in adapting his behaviour in circumstances that cause greater discomfort, when

contradicted or in situations that cause greater anxiety. At these times, he moves away and remains silent, not responding to requests made to him.

V. GROUNDS FOR REGISTRATION IN THE MODEL

This model presents the horse as a facilitating factor for the acquisition of skills, with the riding arena being an unusual context which promotes an increase in experiences and knowledge related to the equestrian area. Nuno has the skills to be able to influence the horse, leading it with adapted reins in step-by-step.

The integration of Nuno in the Therapeutic Riding model is considered relevant to improve his lack of self-esteem and self-confidence with driving and controlling the horse, promoting autonomy and communication when cleaning and placing equestrian equipment (blanket, girdle, etc) and improve some cognitive components such as attention, concentration, memory and planning capacity when carrying out activities on horseback, such as tests or recreational activities.

VI. INITIAL EVALUATION AND INTERVENTION OBJECTIVES

In the initial assessment, it is intended to assess three domains by filling in an Assessment Form:

- **Domain I –** Horse grooming: assessed during horse grooming and using Table 1 and corresponding labels.
- **Domain II –** Anatomy of the horse: image 1 of the horse must be presented for the learner to paint the body segments, according to the colours indicated in the table.
- **Domain III –** Control of the horse: the learner must mount the horse, and the aspects will be evaluated during the step-by-step movement through the arena. The technician must ask the learner to carry out the exercises, according to the table, and evaluate their execution**.**

The primary objectives in this intervention model are mostly of a motor, cognitive and sensory nature, and the main ones can be listed, such as:

- Promoting spatial and temporal orientation, attention and concentration and memory;
- Reduce pathological posture patterns, facilitate typical posture and movement patterns; and facilitate rectification and balancing reactions;

- Stimulate bilateral integration and promote the dissociation of movements;
- Promoting sensory integration (through the sounds and smells of the horse, variety of tactile stimuli, etc).

VII. INTERVENTION DESCRIPTION

The outlined intervention is structured for learners who have previously experienced and been in contact with this context and with the horse, and who agree to ride.

The elaborated intervention contains sessions that present a theoretical component and a practical component, and the practices will be carried out in a riding arena and the theoretical ones in a classroom context. The sessions will mostly take place in the arena lasting approximately 15 minutes, however, 5 sessions are contemplated with a theoretical component lasting approximately 45 minutes. Theoretical sessions were introduced in the intervention with the aim of making it possible to carry out activities in a more controlled environment and without stimuli, so that there is a greater consolidation of the concepts that are addressed in the sessions carried out in the riding arena.

The practical sessions have an individual character so that there is a greater focus on learning and understanding the themes, however, some tasks/group activities may be carried out, such as cleaning the horse. The sessions carried out in a classroom context will be carried out in small groups of two to three participants.

VIII. FINAL EVALUATION, CONCLUSIONS AND RECOMMENDATIONS

In general, Nuno was very pleased to be part of this model and was interested and motivated in most of the activities. Nuno is a young man who enjoys contact with animals and participating in Therapeutic Riding proved to be an asset as the horse was a facilitating factor for the acquisition, development and maintenance of skills.

The sessions took place as expected and regarding involvement in the activities, Nuno showed greater pleasure in carrying out routes, cleaning the horse and in group activities, more specifically those carried out in the theoretical sessions.

Initially, when executing the routes, Nuno needed some help to understand what was intended, requiring some time to analyze the cards that contained the routes and some

guidance from the riding monitor. Throughout the sessions, the learner was able to memorize the routes and achieve autonomy in controlling the horse, as can be seen in images 1, 2 and 3.

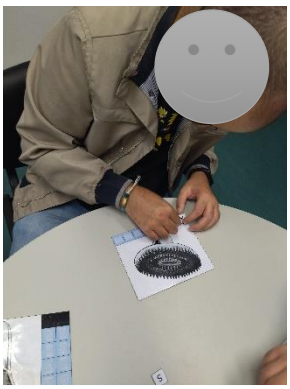
Image 1-Route: Proof

Image 2-Route: Contour of cones

Image 3-Route: Contour of bars

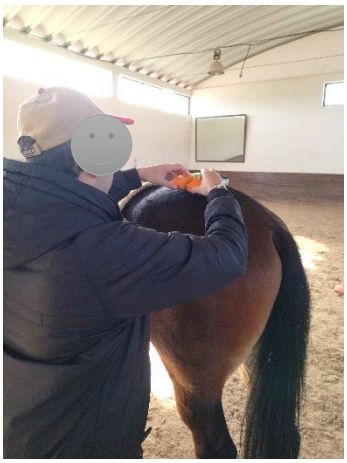
The theoretical component sessions constituted the moments in which Nuno consolidated the knowledge that was addressed in the practical sessions, such as the name of the cleaning materials, their sequence and purpose (image 4). One of the activities that Nuno particularly appreciated in these sessions was the activity “Let's dramatize” (images 5 and 6), more specifically the task of leading his colleague across the room using a rope. This activity allowed a greater awareness of the movement to be made with the reins when driving the horse. Initially, he only showed some difficulty in perceiving the exact place on the rope where he should hold, holding the grip too far ahead, making the rope short.

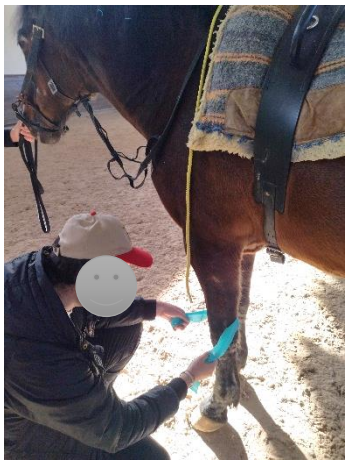
Image 4-Activity “Disorganized letters”



Images 5 and 6-Activity “Let’s dramatize”

With regard to the practical sessions held in the riding arena, the activity “Where does the object belong?” and the “Let's Clean” activity. The first task consisted of placing certain objects (rope, ribbon, rubber bands, sponges and springs) in the different anatomical zones of the horse, according to the card provided. Nuno's evolution in terms of knowledge of body segments was notorious, thus managing to independently carry out the activity “Where does the object belong? - 2” performed in one of the last sessions (images 7 and 8).





Images 7 and 8-Activity “Where does the object belong?”

The “Let's clean” activity consisted of cleaning the horse with some materials such as pillow, scrub, teasing and horsehair brush. In these activities, concepts, sequence and the horse's body segments were reinforced. This task was fundamental throughout the intervention because, in addition to working on cognitive aspects, it also developed relational aspects, such as contact with the horse, and the sensory component due to the touch of various textures, both in the structure of the horse and in the various materials, the heat and horse odours, among others.

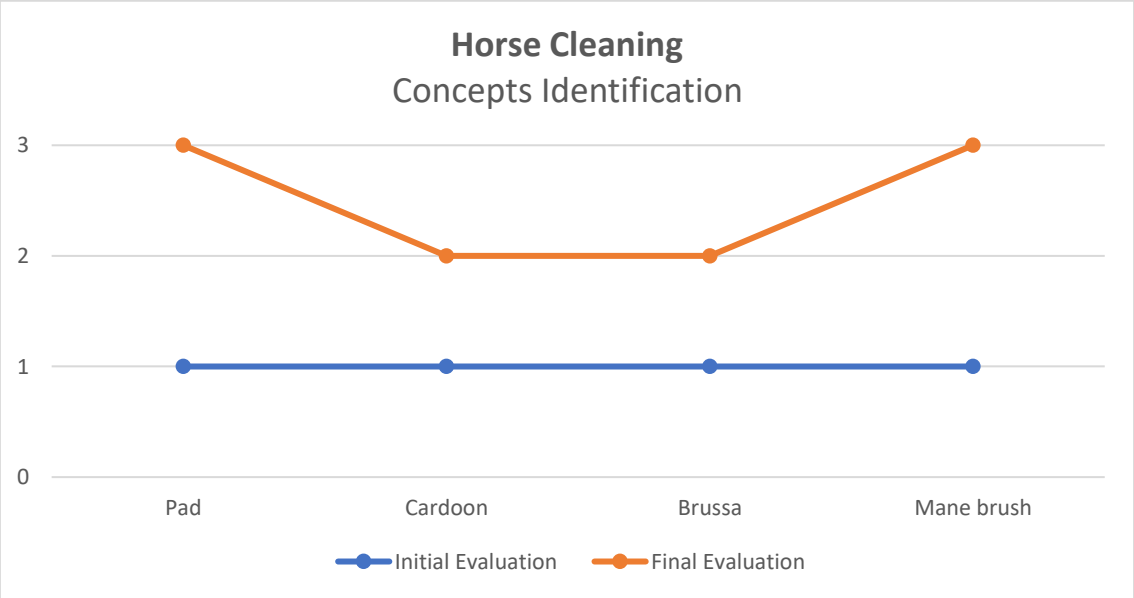
Nuno was involved in this type of activity and, initially, he revealed some difficulty in associating the concepts with the respective materials. With regard to the movements to be carried out with each material and the body areas where they were applied, the learner showed ease in understanding these aspects. In this activity, he always maintained safety rules and created a connection with the horse, as this task heightened awareness of the care that this animal needs.

Image 9-Activity "Let's clean"

With regard to the results of Nuno's assessment, these will be presented below in graphs, divided into three domains. In general, Nuno was very involved during the sessions, which was reflected in the improvement at all levels, only showing some difficulty in associating the names with the corresponding materials and their sequence.

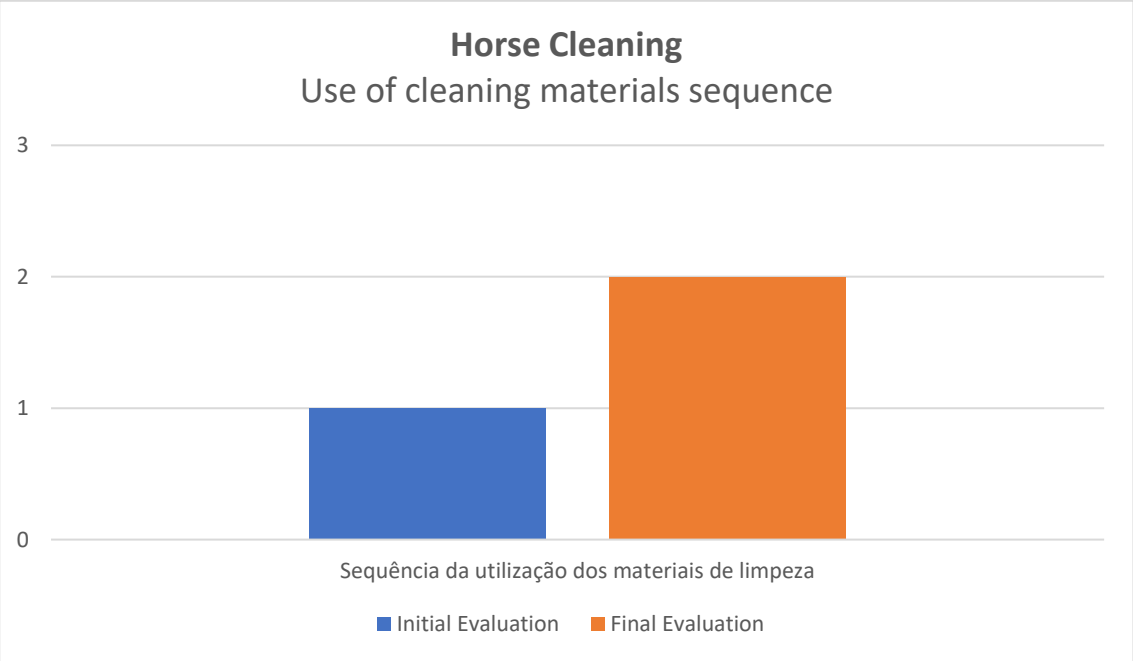
Domain I – Horse cleaning

In the concept identification component (graph 1), as previously mentioned, the learner presents knowledge of the concepts, but reveals greater difficulty in associating the name of the cardoon and the brussa, confusing them, keeping the final score of these two at level 2 (partial aid).



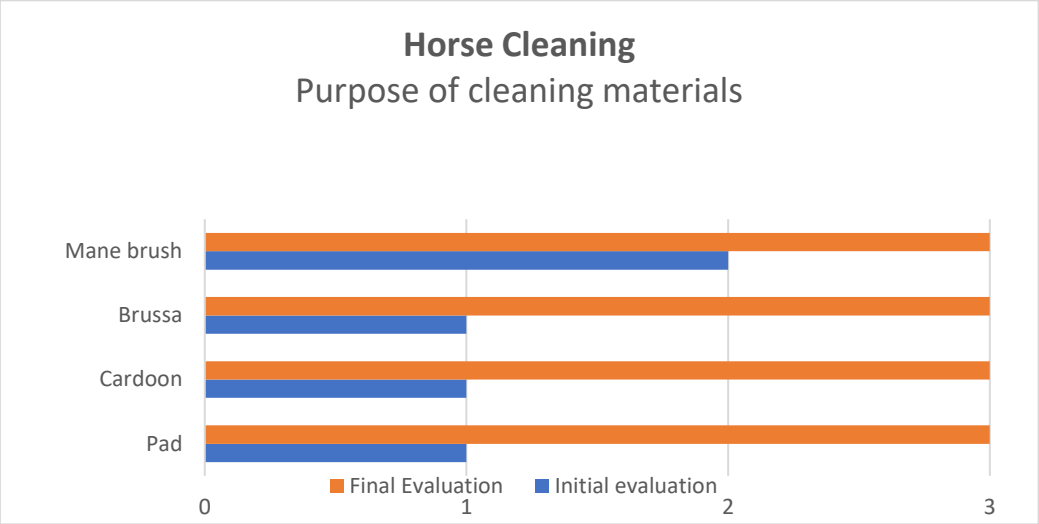
Graph 1-Component Horse Clean: Concepts Identification

Regarding the sequence of use of the cleaning materials (graph 2), Nuno needs some help to identify the order in which the card and brush are used, these being the materials that he confused most recurrently throughout the intervention, improving in this component only by full aid (1) to partial aid (2).



Graph 2-Component Horse cleaning: Use of cleaning materials sequence

The learner achieved autonomy (score 3) with regard to the purpose of the materials component, as seen in graph 3. It should be noted that Nuno only correctly matches the purpose to the materials after sequencing these objects with the help of the technique, or that is, the learner recognizes the steps of the cleaning process but does not associate them correctly in the case of cardoon and brussa.



The results of the three graphs presented were based on the cleaning of the horse and on the analysis of the filling in the table found in images 10 and 11.

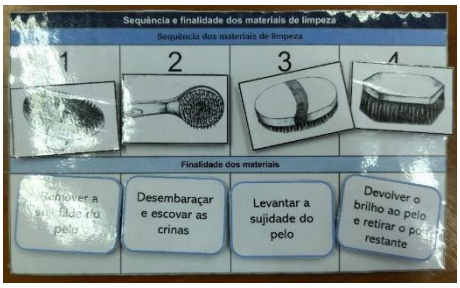


Image 10-Table 1: Sequence and Purpose of Cleaning Materials – Initial Evaluation

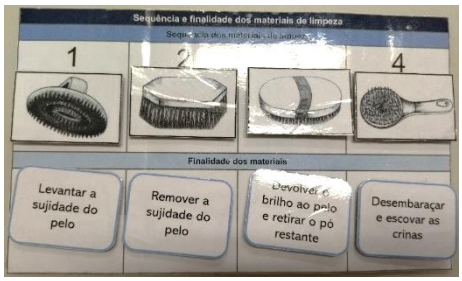
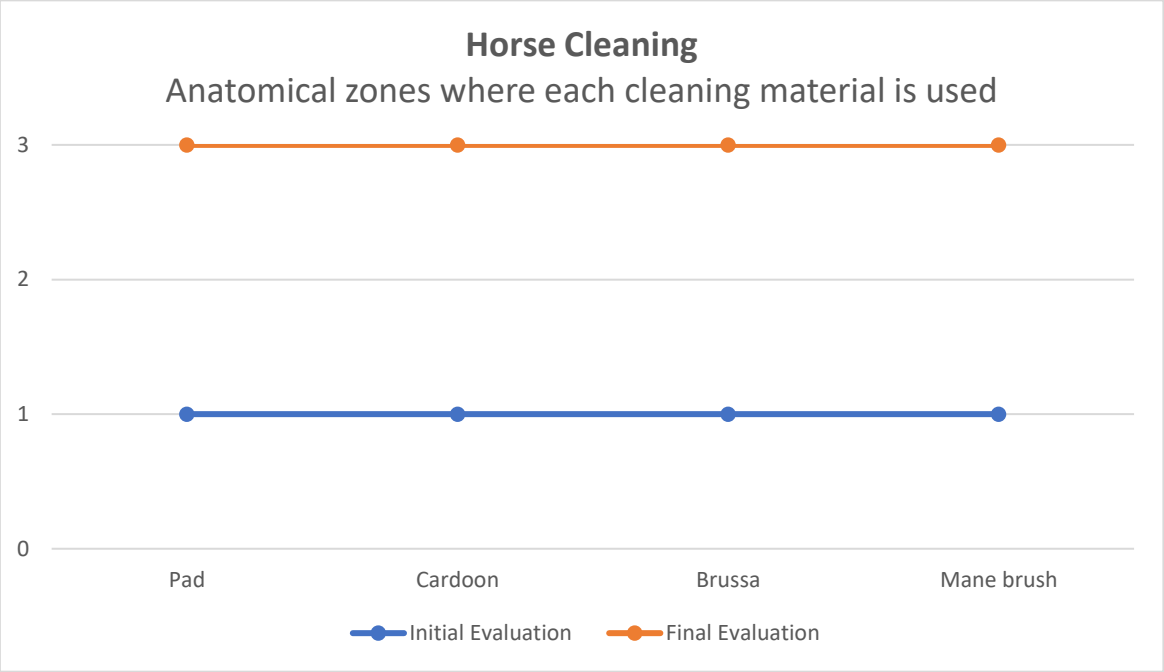


Image 11-Table 1: Sequence and Purpose of Cleaning Materials – Final Evaluation

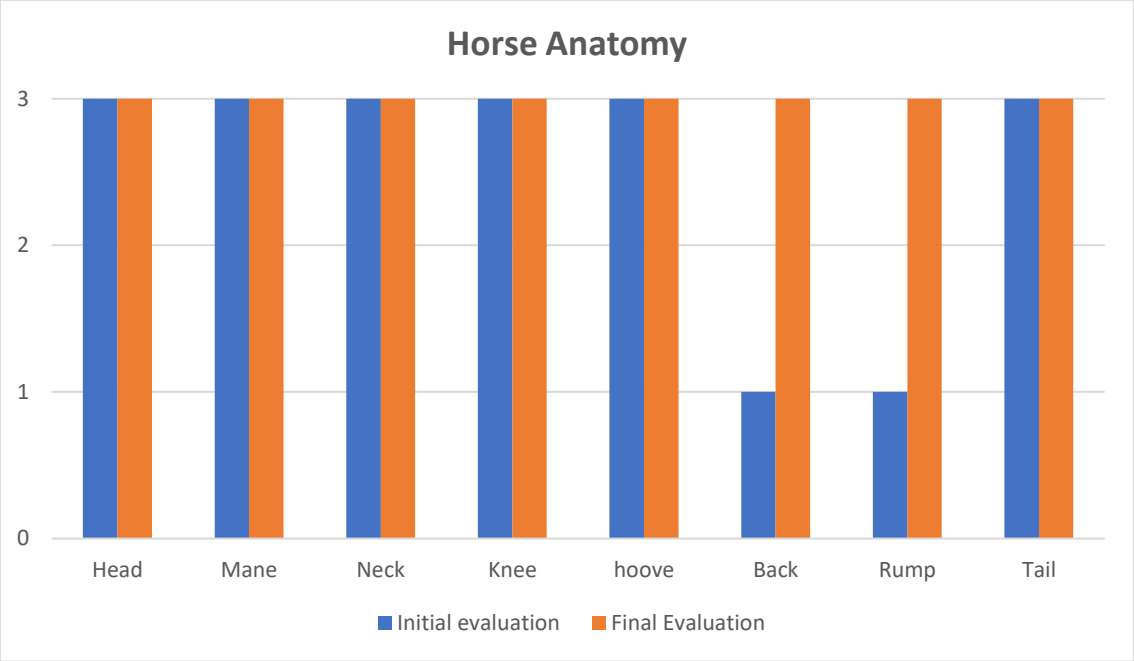
With regard to the anatomical zones in which each material can be applied, Nuno showed no difficulty in understanding and performed correctly at the time of cleaning, thus achieving autonomy (3) in the final evaluation, as can be seen in graph 4.



Graph 4-Component Horse Cleaning: Anatomical Zones where each cleaning material is used

Domain II – Horse Anatomy

When identifying the main areas of the horse's anatomy, Nuno initially only failed to recognize the back and rump, obtaining a score of 1 (total help) in these two parameters. However, after the intervention, it was able to correctly locate all segments, including the two previously mentioned, reaching autonomy (5) in all parameters, as can be seen in graph 5.



Graph 5-Component Horse Anatomy

The conclusions present in Graph 5 were inferred by filling in the drawing of a horse. Initially, Nuno coloured the shoulder area as the back, and the back area as the rump, as seen in images 12 and 13.

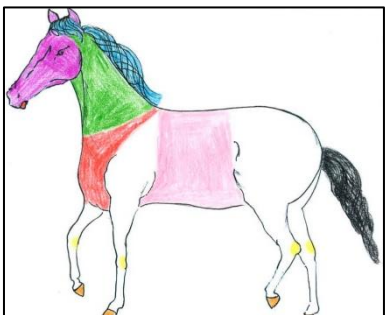


Image 12-Horse Drawing-Initial Evaluation

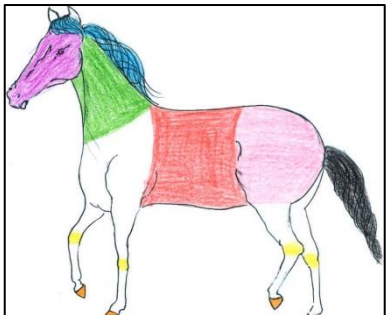


Image 13-Horse Drawing-Final Evaluation

Domain III – Horse Control

In the last domain, the learner achieved autonomy (score 3) in all parameters, except for control of the reins in stepping with the left hand, reaching a score of 2. In this last aspect, he obtained a score of 1 (total help) in the evaluation initial stage, and he was very close to obtaining level 2, as shown in table 1. At the beginning of the intervention, Nuno had some difficulty holding the reins correctly and memorizing the routes, however, he improved over the years. sessions showing greater control over the horse, requiring only

supervision by the riding instructor. This aspect can be seen in the increase in the final score of the table, changing from 12 to 17.

III. Horse Control (Direct observation during step-by-step movement)	**NC** **0**	**TH** **1**	**PA** **2**	**A** **3**	**NC** **0**	**AT** **1**	**AP** **2**	**A** **3**
Indicação para andar e parar (Indicação verbal de "anda" ou "para")				X				X
Indicação para andar (Toque firme e preciso da parte interior do membro inferior do cavaleiro no costado do cavalo)			X					X
Indicação para parar (Puxar as rédeas)			X					X
Controlo das rédeas no deslocamento a passo na mão direita			X					X
Controlo das rédeas no deslocamento a passo na mão esquerda		X					X	
Controlo das rédeas na mudança de mão (diagonais e linhas centrais – AXC e EXB)			X					X
Score	**__12__ /18**				**__17__ /18**			

Table 1-Component Horse Control
NC – non compliant; TH – Total help; PA – Partial help; A - Autonomous

In general, the applied intervention was designed according to Nuno's characteristics and needs, which manifested itself in an improvement in all parameters, achieving greater autonomy in many of the aspects analysed. It is therefore considered that the learner's participation in this model was beneficial, with a positive change in their well-being, self-esteem and maintenance of motor skills.