Games and Learning Styles

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Abstract

In this article, we show a method of research-action performed in a second grade primary school (7 year-old students), where the games are used in the didactic activities in order to improve the students' linguistic skills and to analyse the different styles of learning adopted by the children.
This research was conducted according to VK-Selverman model of learning. Firstly, the teacher wrote a fairy tale and secondly she presented it to the students who were surveyed about the following questions: how could they learn it? Why should they learn new things? What is difficult for them?
*Through a creation of working groups, the students developed different personal strategies of learning, also with the use of a role - playing method. Lastly, the children saw a visual novel, where, thanks to the interaction with its characters, they chose a personal "door of knowledge". The research showed that 80% of the students (in a class of 15 children) prefer a visual, not-verbal and kinesthetic approach.*
Moreover, several stories and animations were created by using Scratch, obtaining a significant improvement of the students' linguistic learnings, mainly in terms of speaking and writing. By a creation of play-stories, the children used the visual method of Scratch programme for learning to sequence properly the writing activities. In the meantime, by interacting with the game, they also stimulated the kinesthetic component. All these activities have been performed in a small group of students, in order to stimulate at the same time, their social competences and their conflicts' management.

1. Introduction

Learning is the most important process of the human adaptation. It happens during all life's context and mainly, in school ambience. All pedagogic models (Lewin, Dewey, Piaget and Bruner) [1] demonstrate that learning is a holistic circle within the processes of conflict are integrated. Thus, effective learning represents a mix of creativity and ability to solve problems, make decisions and change attitude. It emerges that learning could be defined as the process within the knowledge is created through the transformation of people experience.

The experimental learning theory (Kolb) [1] offers a new point of view about educational prospective. Wherever effective, learners need four different kind of abilities: concrete experience (CE), reflective observation (RO), abstract conceptualization (AC) and active experimentation (AE) (Scheme 1). Through them, they are able to involve themselves in new experiences, to reflect on and observe their experiences from several different perspectives, to create concepts integrating their observations into logical theories and finally, by using these theories, they must be able to make decisions and solve problems.
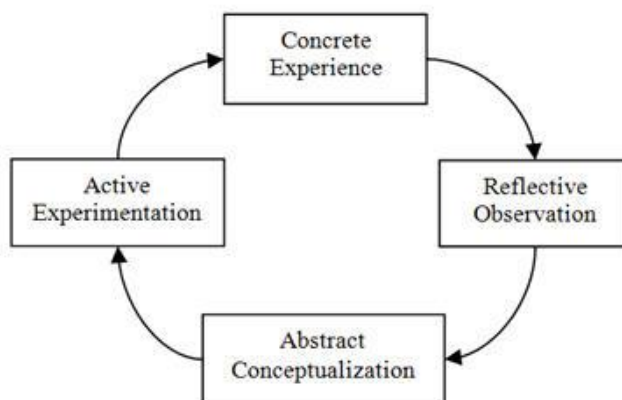
Scheme 1. Kolb learning cycle.

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Students prefer one way of learning and they effectively learn by using their own learning styles (Scheme 2).
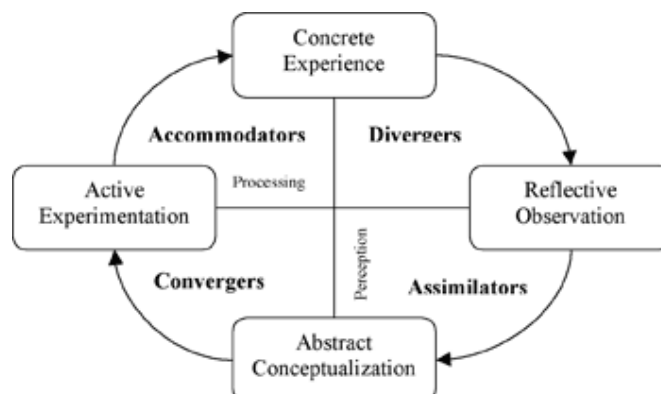
Scheme 2. Learning styles according to Kolb model.

In a school setting, learning styles study can improve the quality of learning by increasing students' motivation and participation and by interacting effectively with educational environment.

Richard Felder and Linda Silverman [2] developed a model that describes different learning styles and types of preferences. Learning styles study is a helpful teaching approach that makes the learning process effective. The Felder and Silverman model shows four areas of personality that can influence the learning process. The combination of these styles constitutes all the individuals' learning preferences. Each learner has a specific preference for each of these dimensions [3] .The first dimension distinguishes between an active and a reflective way of processing information. The second dimension opposes feelings versus intuitive learning. Thus, the third, visual-verbal, dimension differentiates between learners who can remember better through the use of images (as pictures, diagrams, flow-charts) and who apprehend more from the textual representations. In the final dimension, learners are characterised by their understanding abilities. Sequential trainees learn through a linear process. On the contrary, global learners use a holistic approach: they can solve complex problems by finding connections with different areas.

In my research carried out in a second grade primary school (7 years old children), I studied different learning styles using a game-based model, as a result of an integration between the Felder and Silverman model and VAK model (Visual, Auditory, Kinesthetic learner) [2].

"Gamification" approach [4] was an interesting educational tool in order to improve the participation, the social interactions and the quality of learning style of every single student. In fact, the use of games gave them the possibility to stimulate all learning dimensions: therefore, after creating several play-stories with Scratch program, I was able to significantly improve the writing skills of my classroom.

2. Action-Research plain

Action-research is a cyclic and continuous process. The cyclic nature of action-research provides teachers with ongoing opportunities to reflect on the teaching and practice to perfect teaching.

Lewin was the first to introduce the spiral of steps [5]. The action-research cycle (Scheme 3) alternates critical reflection and action. This present action-research plain respect Lewin cycle and it is a qualitative research.
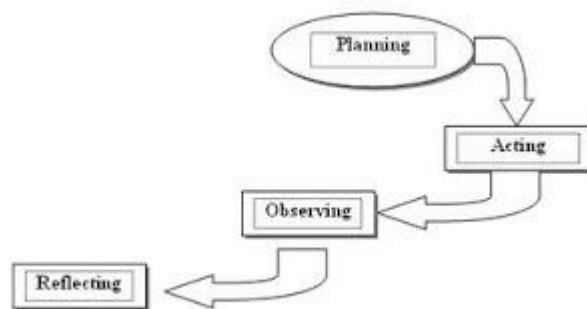
Scheme 3. Action-Research cycle.

2.1 Step 1. To define a focused area of action research

It was necessary to define the level of improving of the writing skills of my pupils through increasing their motivation and participation. This topic was definitely important for my learning styles study in order to create an effective way of learning. Firstly, I proposed a fairly story entitled "Cuore Goloso and knowledge door". Secondly, I planned a collective class discussion asking the following questions to my students: "How could you learn it? Why should you learn new things? What is difficult for you?".

2.2 Step 2. Classroom observation

During our discussions, I used an observation scheme that allows controlling the social dynamics. This scheme is focused on students' attention and participation signals, social relationship within the group, pertinent questions posed and ways of interactions with teacher (Scheme 4).
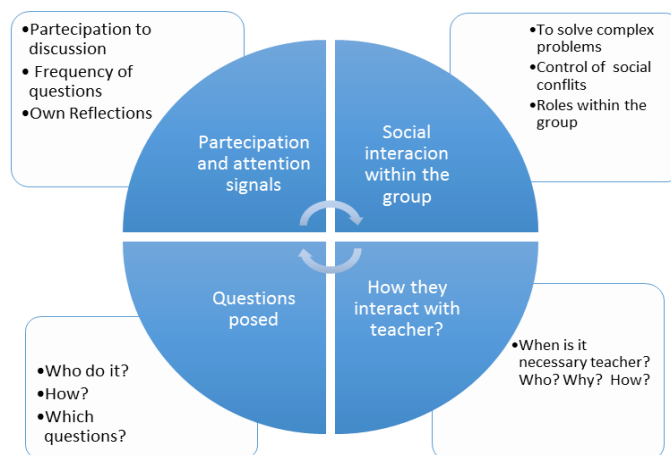
Scheme 4.

During the collective discussions, the majority of my students actively participated and I observed that none of them showed difficulty to learn new objects. Moreover, from this step, I needed to analyse those students who best performed, through questions and a role playing where they imagined to be the Teacher GufoSaggio. Thus, keeping on this action, my students conceived their own "knowledge door" through a writing representation.

2.3 Step 3. Visual novel creation

Through Scratch program, I created a visual novel game that stimulated the participation of my students to discussion about learning styles, by using visual-non verbal way offered by the game. Kinesthetic way was favourite thanks to the interaction with the visual novel. This game was structured with questions that gave the opportunity the students to interact with game in group (Fig.1).

Fig.1   Student's working group

Fig.2 Visual novel introduction

Fig.3 Interaction with story

Fig.4 Words world

In this visual novel, my students chose among five "knowledge doors": Words World, Number world, Music world, Colors world and Doing World (Fig.2, Fig.3, Fig.4). I observed that the 80% of my students (12/15 children) prefer visual-non verbal way and kinesthetic approach.

2.4. Step 4. Game using in writing skills increasing
This approach allows to stimulate, at the same time, all the ways of learning. I used game stories, created with Scratch, in order to improve creativity and writing skills of the learners. The students, split in groups, design different game-stories from ones created initially by myself (Fig.5).
Games improved the writing processes and the consciousness of the learning style of all my students. Thanks to the images taken from the game-stories, the children built their own process of writing codification and they effectively use the chronological sequences and specific schemes of writing. Work groups stimulated social competences and promoted an equal confrontation.

Fig.5 Children at work group creating playing stories

3.Conclusions
The aim of my research was to stimulate writing skills by acting on reticular and more complex writing process through game-based learning styles study. I linked the writing experience to game related to students' reality in order to stimulate their global learning [2]. My research demonstrated that

integrated ways of learning could be used in order to improve linguistic outcomes of the students. The learning styles study helped to facilitate the learning process. It could be considered as an active process within the involved students increase motivation, participation and creativity. Visual novels and game based approaches stimulate the visual-non verbal way of learning. The interaction with games increases games the kinesthetic learning dimension and the active style of learning.

References

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