Chapter 6
Pedagogy as a Fundamental Part of School Furniture Design

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ABSTRACT

The teaching-learning processes are carried out through established objectives for each grade level and these are achieved with didactic activities based on principles, educational concepts, and pedagogical contents. Activities that are divided into specific tasks that are performed with physical aids such as furniture and classroom generate diverse forms of work. Through observations it was detected that the current furniture did not respond to the pedagogical and didactic practices and there is no data indicating that it is designed according to the anthropometric variability of the students of the metropolitan area of Guadalajara according to the school grade taken by the student. Therefore, the authors sought to know the physical and functional characteristics required by school furniture to be a facilitator of pedagogical and didactic practices to make a proposal of a furniture design that meets both the pedagogical demands and the anthropometric variability of schoolchildren.

INTRODUCTION

The traditional teaching was strict, the teacher imposed order from the front of the room where he made his authoritarian and obedient class. On the other hand, the pedagogical and didactic practices by competences, its objective is to create a teaching-learning environment to create a practical experience, which is linked to the student’s learning and knowledge. Factors of time, resources, academic preparation and even the classroom change the pedagogical models among teachers, so that the fulfillment of the purposes, content and expected to learn of the programs require the distribution of time in class, omitting didactic projects or Permanent activities, as well as the organization of class in group, team or individual activities. The teaching-learning processes are carried out through established objectives for each grade level and are achieved through didactic activities based on principles, educational concepts and pedagogical contents. Activities that are divided into specific tasks that are carried out with physical aids such as furniture and classrooms; Generating diverse forms of work. From the general to the
Pedagogy as a Fundamental Part of School Furniture Design

particular, we arrive at the school furniture since it is the physical object where the students and teachers have the greater interaction, reason why they must fulfill based on the pedagogical practices and with the ergonomic principles.

Because there is no data or research related to the subject in Mexico, this motive makes this research the first study carried out where the elements are determinants of furniture design, in addition to the anthropometric adjustments. The objective of this research is to propose an efficient, safe and comfortable school furniture that adapts to the pedagogical practices of our school system. For this, the functional and ergonomic aspects of the current school furniture were identified, according to the pedagogical and didactic practices carried out in the classroom. It was analyzed if the furniture adapts to the different pedagogies imposed by the teachers. And the dimensions were established based on the anthropometric data of the users to propose an ergonomic school furniture design.

BACKGROUND

Mexico is currently experiencing a crisis in Mexico’s education system and the challenge for the authorities is to regulate the teaching and learning system to increase the academic level. Based on the program for the International Assessment of Students (PISA) students do not learn the minimum content and have a low reading level. Since the 1990s the National Union of Education Workers (SNTE) and the federal government have modified curricula to competency-based education. From 1992, an agreement was made between the SNTE and the Federal Government for the modernization of basic education; modifying the curriculum to competency-based education, establishing preschool, primary and secondary education as mandatory. The competency method has the capacity to respond to different situations and implies skills, knowledge, as well as values and attitudes. At the elementary level, the students coexist in the same space and are coordinated by a teacher, who works with all or most of the subjects, which allows them to locate meeting points between the subjects and establishing forms of work. The teacher aims to create a teaching-learning environment to create a practical experience, which is linked to the student’s learning and knowledge.

Teachers have a “Teacher’s Book” that is distributed by the Secretary of Public Education (SEP) according to the grade they teach. These contain the purposes of the subjects in progress, as well as the didactic proposals and permanent activities that students and teachers must carry out to achieve the objectives. Students also have their own free textbooks provided by the SEP with didactic activities and projects to be carried out by students during the school year.

Although the SEP provides teachers with books, materials, and training; these are the ones who generate the pedagogical activities within their classroom to try to capture the attention and interest of the students. Whether it is a teacher-centered pedagogy, student-centered pedagogy or a balance between both has an assignment of tasks and objectives, as well as a usable time. The time, resources, academic preparation and even the classroom (Martin, 2002) factors change pedagogical models among teachers, so the accomplishment of the purposes, content and expected learning program demands time distribution class in different moments of work omitting didactic projects or permanent activities, as well as the organization of the class in group, team or individual activities.

Current educational methods in Mexico, a competence-based education is proposed based on a constructivist approach to development is proposed. Although they are different currents at some point they connect. Constructivism postulates the need to provide the student with that allow him to create his own
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