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ACTIVE METHODOLOGIES IN THE DEVELOPMENT OF EMPLOYABILITY SKILLS IN UNIVERSITY STUDENTS

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Abstract— The transition from higher education to the labor market is characterized by a persistent gap between academic training and employers' demands, especially regarding soft skills and strategic thinking. This article presents a pedagogical intervention that combines the active methodologies Design Thinking and LEGO® SERIOUS PLAY® (LSP) to foster the development of employability skills in psychology students. A four-hour workshop was implemented in which participants built three-dimensional models to explore their future professional vision, identify obstacles, and recognize personal strengths. Based on a qualitative descriptive–interpretive design, students' written reflections were analyzed using inductive content analysis. The results show that the experience facilitated the clarification of short- and long-term goals, increased awareness of internal barriers—such as insecurity and low self-esteem—and the recognition of key skills such as creativity, communication, and complex problem solving. It is concluded that these experiential methodologies are valuable tools for training resilient and adaptable professionals, better prepared for the challenges of today's labor market.

Keywords— Active methodologies, Design Thinking, employability, higher education; LEGO® SERIOUS PLAY®, soft skills.

I. INTRODUCTION

Higher education faces the challenge of training professionals whose competencies are aligned with the needs of the labor market. Globally, the youth unemployment rate is notably higher than that of adults. According to the International Labour Organization (ILO), in 2022 it reached 14.9%, more than three times the adult unemployment rate of 4.3%. In Mexico, the youth unemployment rate is around 5%, almost double the national rate of 2.7%. This figure indicates that more than half of the unemployed in the country are under 30 years old, highlighting the vulnerability of this group. The weak linkage between academic training and employers' requirements has meant that upper-secondary and higher education students are among the most affected, since they often lack support to evaluate ideas, build solutions, and develop decision-making or strategic thinking skills.

Most students, even when they have received training in business models, professional development strategies, or the design of services and solutions, still show shortcomings related to product positioning, market selection, or simply understanding clients' needs and the characteristics of their environment. Employers seek not only technical knowledge, but also soft skills such as communication, creativity, empathy, and strategic thinking—areas in which recent graduates frequently present gaps.

Active methodologies have emerged as a response to this need, as they allow students to learn through experimentation, reflection, and structured play, while promoting critical thinking, creativity, collaboration, and the solution of real problems. According to Vázquez and Manassero (2019), "active methodologies shift the focus from traditional teaching towards experiential learning, where students develop skills that transcend the classroom." Among the most relevant active methodologies is Design Thinking, a strategy focused on creative problem solving through an iterative, five-stage process: empathize, define, ideate, prototype, and test (Brown, 2008).

Rivera Rodríguez (2022) argues that "the use of methodologies based on the creation of three-dimensional models favors reflection and facilitates the understanding of abstract concepts, promoting student participation." In the specific field of employability, active methodologies are especially pertinent because they allow the recreation of authentic professional situations in which students must negotiate meanings, make decisions, and justify their proposals to others. Design Thinking promotes iterative problem solving, empathy with stakeholders, and tolerance for uncertainty, all of which are central elements of contemporary work environments. In turn, LEGO® SERIOUS PLAY® facilitates the externalization of tacit knowledge and emotions through three-dimensional metaphors, opening a space to reflect on professional identity, internal barriers, and available personal resources.

By combining both approaches, this study seeks to support students in constructing a coherent professional vision and in recognizing the socioemotional competencies needed to make that vision viable.
This article describes the application of these methodologies with undergraduate psychology students at the Centro Interdisciplinario de Ciencias de la Salud (CICS) Santo Tomás del Instituto Politécnico Nacional (IPN).

II. METHOD

A. Study Design

A qualitative descriptive–interpretive study was conducted, aimed at understanding how a formative experience based on active methodologies contributes to the construction of employability in psychology students. The focus was not on measuring quantitative changes, but on analyzing the meanings that students attributed to their professional vision, perceived obstacles, and personal strengths as a result of the workshop.

B. Participants and Context

One hundred psychology students from the Centro Interdisciplinario de Ciencias de la Salud (CICS) Santo Tomás del Instituto Politécnico Nacional (IPN) participated in the study. They were enrolled in the seventh and ninth semesters of the program. Their ages ranged from 22 to 26 years (M = 23), and the majority were women (83%). Participation was voluntary, and the activity was carried out within a course focused on organizational development. The intervention took the form of a workshop implemented by the instructor and was not formally included in the official syllabus.

III.PROCEDURE

A. Core LSP Process

According to the Association of Master Trainers, the core process of the LEGO® SERIOUS PLAY® (LSP) method consists of four stages:

1. The facilitator designs the questions in advance.
2. Participants build their answers using LEGO bricks and pieces specifically developed for this application.
3. Each participant assigns meaning to their model and shares it. Since the models are three-dimensional, they facilitate the exchange of knowledge and the understanding of different points of view, which contributes to problem solving and decision making.
4. All participants reflect on what was shared through the models. Everything is about the model: if you cannot see it, you do not talk about it.

B. Workshop Design

A four-hour workshop entitled “Building the Professional Vision toward 2030” was designed and facilitated by the author, acting as instructor and certified LEGO® SERIOUS PLAY® facilitator. The workshop had three objectives: (1) to foster the development of systemic thinking and the construction of professional networks; (2) to analyze future scenarios by exploring hopes, fears, and students’ worldview; and (3) to provide tools based on structured play and the use of metaphors to support students’ induction into the labor market.
The structure of the workshop followed four fundamental stages of the LSP process:
Familiarization. Students became acquainted with the bricks and the methodology through an initial task.
Building the Vision. Each student built an individual model representing their professional vision for the year 2030 and shared its meaning with the group.
dentifying Obstacles. Internal and external obstacles that could hinder the achievement of this vision were explored. Participants built models to represent these barriers.
Recognizing Strengths. Finally, students identified and modeled their “superpowers” or personal talents that could help them overcome the obstacles identified.

C. Data Collection

At the end of the workshop, students were asked to write a short reflection. For this purpose, they produced a brief report in which they responded to open-ended questions such as: “What did you discover about your professional goals as a result of the workshop?”, “What obstacles do you identify on your path toward this vision?”, and “What personal strengths do you recognize in yourself to face these obstacles?” These reflections constitute the main source of data, complemented by brief field notes on the explanations that students offered when presenting their models.

D. Data Analysis

An inductive analysis of the written reflections was carried out. First, a global reading was conducted to identify recurrent themes related to employability. The texts were then segmented into meaning units associated with three central axes: (a) professional vision and goals, (b) perceived obstacles, and (c) strengths or personal resources. These units were coded and grouped into broader categories, which led to themes such as clarification of goals, internal barriers (insecurity, low self-esteem, fear of failure), and recognition of key skills (resilience, perseverance, creativity, communication). The categories were reflexively reviewed in relation to the images and descriptions of the models built during the workshop, so that the interpretations remained consistent with the lived experience. In addition, the coding scheme was discussed with a colleague experienced in active methodologies and employability training, which helped refine the naming of themes and verify the coherence between data and interpretation.

E. Ethical Considerations

The activity was carried out within a regular course and was presented to the group as a strategy to support their professional projects. Students were informed that their reflections could be used for academic and research purposes to improve teaching practices, while guaranteeing the anonymity of responses. In dissemination products, images of the models do not allow individual participants to be identified, and no personal data are included.

IV. RESULTS AND DISCUSSION

The analysis of students' written reflections at the end of the workshop revealed several key findings.

A. Clarification of Professional Vision and Goals.

The reflections indicate that the workshop helped students clarify their professional vision and short- and long-term goals. Several students moved from general statements ("I want to be a good psychologist") to more specific descriptions that included fields of practice, target populations, and concrete actions for their professional development. For example, one participant wrote: "I was surprised by how, just through the LEGO pieces, I was able to show my way of thinking. I do not just want to be a psychologist; I am interested in the organizational area and, more specifically, human resources. I have been able to see my limits, my resources, and the tensions between what I want to be and what is holding me back." This type of statement suggests that building and narrating three-dimensional models facilitated the organization of ideas about the future, consistent with reports in the literature on the use of LEGO® SERIOUS PLAY® for vision building and strategic planning. (See Fig. 1.)

Fig. 1. Vision model toward 2030.

B. Recognition of Internal Obstacles.

A recurring theme was the identification of internal obstacles, expressed as insecurities, fears, low self-esteem, or doubts about their ability to practice as professionals. In their models, many students represented these obstacles as pieces blocking a path or surrounding the central figure, as shown in Fig. 2. One student wrote: "Sharing something so personal in front of the class was difficult, but also liberating. I felt that opening up not only made it easier to talk about what holds me back, but also to connect with others and showed me that I do not need to have everything figured out in order to move forward. It was having a safe space to try, make mistakes, and learn." These narratives show that active methodologies not only make it possible to talk about external conditions of the labor market, but also to make visible emotional and cognitive factors that affect employability—such as self-efficacy and emotional regulation—which are usually under-addressed in traditional curricula.

Fig. 2. Obstacles.

C. Identification of Strengths and Personal Resources.

Alongside difficulties, students recognized personal strengths or "superpowers" such as resilience, perseverance, the willingness to seek help, creativity, and the ability to work in teams. In their models, these resources appeared as tools, allies, or support structures sustaining the path toward their 2030 vision (see Fig. 3). One participant described: "Recognizing that I myself am the creator of my own limits gives me the power to transform them and move forward. My vision of the future, supported by the love and motivation I receive, drives me to continue exploring opportunities and making decisions based on what I truly value. In the end, the whole process is about finding a balance between challenges and what strengthens me, knowing that the power to build what I desire, step by step, is in my hands." Thus, the workshop not only allowed students to name barriers, but also to construct

a more active position and sense of agency regarding their professional trajectory, in line with previous experiences that have used LSP to strengthen communication, critical thinking, and collaborative work in higher education.

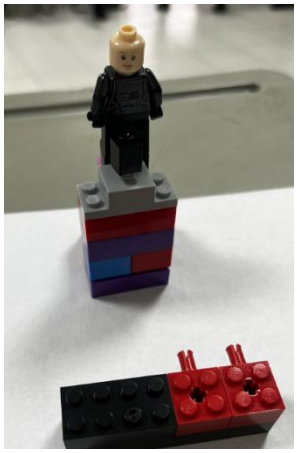

Fig. 3. Resources and strengths ("superpowers").

Beyond the specific context of psychology education, this experience adds to a growing body of literature on the use of active methodologies to develop soft skills and employability in higher education. Previous studies have shown that Design Thinking can bridge the gap between theoretical knowledge and real-world problem solving, while LEGO® SERIOUS PLAY® promotes deep engagement, communication, and collective reflection. The results of this study reinforce these claims by showing that even in a brief, four-hour intervention it is possible to promote the clarification of goals, the recognition of internal barriers, and the identification of personal resources relevant to labor market insertion. Compared with more traditional guidance approaches based on lectures, the use of tangible models and narrative metaphors appears to offer a richer medium for exploring students' professional identity and agency as they transition from university to work.

V. CONCLUSIONS

The implementation of the workshop each semester has made students' needs more explicit: doubts, uncertainty, aspirations, unworked goals, lack of recognition of strengths, and, above all, a need for support. The study has shown that active methodologies, the use of visual metaphors, and storytelling seem essential not only to keep students' attention away from their mobile phones, but also to help them "think with their hands" and develop innovative solutions to real problems—skills that are highly valued in the labor market. These findings are consistent with Villamizar and González (2015), who state that "working with LEGO SERIOUS PLAY generated a greater number of problematic situations, as well as more solutions to them, than the pencil-and-paper model." This methodology allows students to articulate theoretical concepts with real-life situations, strengthening their ability to solve complex problems. It also fosters deep reflection and the development of social skills, enabling students to improve interpersonal relationships and teamwork. As Rivera Rodríguez (2022) notes, LSP supports the strengthening of communicative and contextual competences in students.

Future research could examine the impact of this type of intervention in other disciplines and institutional contexts, as well as incorporate mixed strategies that combine qualitative analysis of narratives with quantitative pre- and post-workshop measures, for example, of self-efficacy, employability skills, or resilience. It would also be relevant to explore the effect of implementing such workshops systematically throughout the training trajectory, rather than as isolated experiences, in order to analyze their influence on career decisions and effective transition into the labor market. From a practical standpoint, the relatively low cost and flexibility of these methodologies suggest that they can be scaled and adapted to different university programs interested in strengthening students' socio-emotional development and employability.

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REFERENCES

[1] Benavides, L., et al. (2021). El Design Thinking como metodología de enseñanza. AMIDI. Retreived from https://www.amidi.org/design-thinking-metodologia-ensenanza/

[2] Brown, T. (2008). Design Thinking. Harvard Business Review.

[3] Comunidad de los Facilitadores LEGO® SERIOUS PLAY® (s.f.). Metodología. Retreived from https://seriousplay.community/mexico/metodologia/
[4] Kelley, D., & Littman, J. (2001). The Art of Innovation: Lessons in Creativity from IDEO, America's Leading Design Firm. Doubleday.
[5] Kristiansen, P., & Rasmussen, R. (2014). Building a Better Business Using the LEGO SERIOUS PLAY Method.
Rivera Rodríguez, H. A. (2022). Metodología LEGO® SERIOUS PLAY® en los cursos de estrategia empresarial: una experiencia de clase con Objetivos de Desarrollo Sostenible. Universidad del Rosario. Retreived from https://repository.urosario.edu.co/items/a0c7d38d-2873-46cf-bcaf-595464e663b8
[6] Simon, H. A. (1969). The Sciences of the Artificial. MIT Press.
[7] Vázquez-Alonso, Ángel ., & Manassero-Mas, M. A. (2019). La educación de ciencias en contexto: Aportaciones a la formación del profesorado. Tecné, Episteme Y Didaxis: TED, (46), 15–37 https://doi.org/10.17227/ted.num46-10538
[8] Villamizar Acevedo, G., & González Ambrosio, J. E. (2015). El lego serious play como herramienta para solucionar problemas sociales. Estudio con alumnos de administración de empresas. Cultura Educación Sociedad, 6(1). Retreived from https://revistascientificas.cuc.edu.co/culturaeducacionysociedad/article/view/754