



# Internal Articulation and Strategic Linkage: Key Components in the Design Workshop for Post-pandemic Meaningful Learning

Articulación interna y vinculación estratégica: Componentes clave en el taller de diseño para el aprendizaje significativo postpandémico

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## Abstract

This article intends, on the one hand, to promote the positioning of the design workshop as a relevant didactic instrument for meaningful learning among higher level and postgraduate students who participate in it and, on the other hand, to put on the table two variables which, according to the experience of a specialized work group, significantly affect their performance and the implications regarding the generation of knowledge, skills and competencies of the participating students: internal articulation and strategic linkage with the environment.

In the final part, the article ponders the design workshop as a relevant didactic instrument not only to promote meaningful learning, but also to assume it as a learning assessment instrument in higher level and postgraduate educational programs not necessarily related to the art, design or architecture.

**Keywords:** articulation, linkage, design workshop, meaningful learning

## Resumen

*El presente artículo pretende, por un lado, impulsar el posicionamiento del taller de diseño como un instrumento didáctico relevante para el aprendizaje significativo entre los estudiantes de nivel superior y de posgrado que participan en él y, por otro lado, poner sobre la mesa dos variables que, de acuerdo con la experiencia de un grupo de trabajo especializado, inciden de manera importante en su desempeño y en las implicaciones respecto a la generación de conocimientos, habilidades y competencias de los estudiantes participantes: la articulación interna y la vinculación estratégica con el entorno.*

*En la parte final, el artículo pondera al taller de diseño como un instrumento didáctico relevante no sólo para impulsar el aprendizaje significativo, sino además para asumirlo como un instrumento de evaluación del aprendizaje en programas educativos de nivel superior y de posgrado no necesariamente relacionados con el arte, el diseño o la arquitectura.*

**Palabras clave:** articulación, vinculación, taller de diseño, aprendizaje significativo.

### ❖ Post-pandemic challenges of meaningful learning in the design workshop

**S**ignificant learning is a concept widely analyzed and discussed by various authors, who from different perspectives and in recent decades have tried to fully reveal the nature of the phenomenon. Although its approach has been carried out from different approaches or areas of study, there seems to be a greater emphasis in the area of educational research, because, ultimately, learning is a key component in the discussion about the object of study. teaching study..

When trying to identify an outstanding period for its contributions to the study of *significant learning*, it is possible to place the period between the sixties and eighties as one of the most prolific. In this regard, the theory of significant learning, developed by David Ausubel (1963), proposes an alternative in opposition to behaviorism, which during that period maintained a certain presence among those who discussed the phenomenon of teaching-learning.

His work is characterized by a description of the cognitive process that allows the student to acquire new knowledge and offers, at the same time, an important component for the development of this article: *experiential and emotional experience*, phenomena that could well be interpreted as the resulting effect of the student's interaction with their peers, with their advisors, with the problems or challenges to be solved, and with the other aspects that end up structuring each project in the design workshop scenario of an important part of educational programs related to the design or the architecture. Referring to what was said by David Ausubel, for Moreira (2012):

meaningful learning derives from the non-arbitrary and non-literal interaction of new knowledge with specifically relevant prior knowledge (subsequent). Through successive interactions, a given sub-subject progressively acquires new meanings, becoming richer, more refined, more differentiated and more capable of serving as an anchor for new significant learning. (p.34)

The experiential and emotional experience driven by the interaction that occurs throughout the time that the design workshop is carried

out acquires a key role, since it contributes significantly to detonating new knowledge or meanings through the implementation of certain activities that are part of work methods based on design and innovation. These methods are even the guiding thread of the didactic instrument and use a significant number of tools that make it possible to identify and define problems among participating teams, their subsequent validation with the end user, the statements of challenges, the detection of needs and the value co-creation, among other tools contained in the innovation methods.

Therefore, the interaction is a condition that drives the signification process, that is, of giving meaning to new packets of information received or perceived during its performance, which works as a type of system:

If we take into account that each meaning can only exist within a larger system, we can understand that the formal meaning is more a process than a thing. It is better to speak, then, of "signification", that is, of the process by which meanings are added, subtracted and transformed in relation to the total set of significant forms. (Cardoso, 2011, p. 95)

Consequently, in the work process that takes place inside the workshop, the student is exposed to a whole set of information, concepts and dynamics imposed by design and innovation methods that constantly iterate in the search for value for the end user. This single process has a high load of information packages that participants must interpret from a multidisciplinary perspective that demands reciprocal action between participants to systematically interact and collaborate.

Although *experiential and emotional experience* is only one of the components that explain the process proposed by Ausubel (1963) to generate new meanings and knowledge, the truth is that this action by itself assumes greater importance when it is transferred to the fact of didactic act that occurs inside the design workshop, where students, professors, companies and organizations external to the university participate, through processes characterized by collaboration and multidisciplinary work.

By its very nature, the foregoing generates a significant number of experiences and emotions, since students who work in teams must face the perception and opinion of third parties who participate in them, who, in general, have a perspective considerably different from that of their peers. the university students involved in each project.

This set of actions within the face-to-face classroom allows us to recognize the additional complexity that we must consider in the completely unprecedented situation that affects those who currently transfer or receive knowledge and experiences for the subsequent development of skills and competencies within the design workshop, both from physical and virtual way:

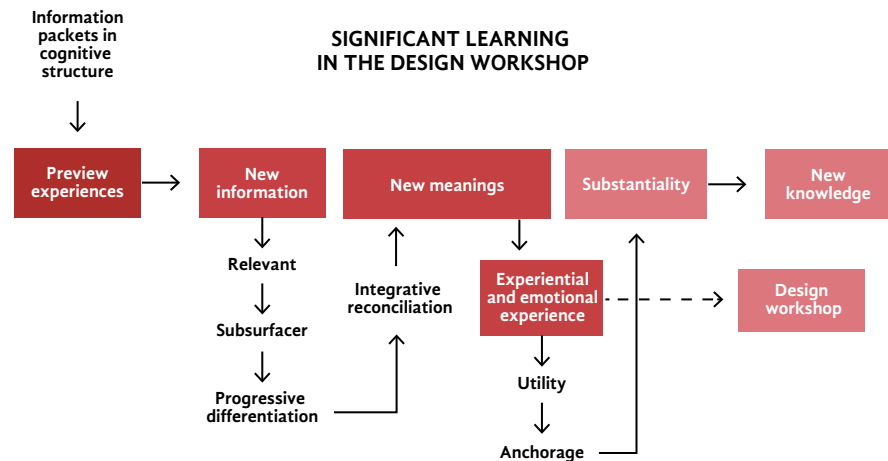


Figure 1. Significant learning in the design workshop. Source: Own elaboration based on the theory of David Ausubel, 1963.

In the previous scheme it is possible to identify the process proposed by David Ausubel (1963) to explain the generation of new knowledge. The element that corresponds to the *experiential and emotional experience* is precisely the moment when the didactic act of the design workshop occurs, and it manifests itself as a factor to promote meaningful learning among its participating students. At the same time, it is the stage of the process where the main challenge referred to in this section of the document is identified, since it specifically implies the necessary dynamics to comply with the process proposed by Ausubel.

Given the isolation and distancing caused and promoted in times of pandemic, together with the conditions or problems that the student has within their home or in their immediate environment, the necessary collaboration process for the development of pertinent solution proposals within of the design workshop has been substantially hindered, which forces the review and discussion of said scenarios.

In relation to this, in the workshops given before the pandemic, the students implemented face-to-face dynamics, which allowed them to assume roles within the work teams that were related to the particularities of the project and delivery times. Virtual work seems to hinder the necessary approach to analyze, discuss or manage the decisions of each work team based on the project in progress. Suffice it to say in this regard that the conditions in which university students live and work in their homes are particularly different, which brings with it different scenarios of responses and interaction with the development of the workshop and, of course, with their ability to learn.

If we consider as an argument what was expressed by Marco Antonio Moreira (2012) in the article "In the end, what is significant learning?", we will be able to dimension the problem that prevents the closure of the process

necessary for the fulfillment of the objectives of meaningful learning:

Meaningful learning is that in which symbolically expressed ideas interact in a substantive and non-arbitrary way with what the learner already knows. Substantive means non-literal, which is not to the letter, and non-arbitrary means that the interaction does not occur with any previous idea, but with some specifically relevant knowledge already existing in the cognitive structure of the learner. (Moreira, 2012, p. 30)

From this perspective, the *subsubjector*, a concept proposed by David Ausubel (1963) to describe the prior knowledge that makes it possible to anchor new knowledge based on the relevance that the latter has for the individual learner, is the key aspect that determines that meaningful learning can occur. In this regard, Moreira (2012) continues:

In simple terms, subsupposer is the name given to a specific knowledge, existing in the knowledge structure of the individual, which allows to give meaning to a new knowledge that is presented to him or that is discovered by him. By both reception and discovery, the attribution of meanings to new knowledge depends on the existence of specifically relevant prior knowledge and interaction with it. (p.30)

Up to this point, prior knowledge or, rather, the information packages found in the cognitive structure of the individual who learns or has learned, require more attention if the conditions that currently prevail in work environments are recognized. post-pandemic scholar from virtually any university of higher education.

Since March 2020, universities have been forced to redesign their training strategies due to the pandemic; therefore, the information packages that the students received in their different subjects, at least in the period that corresponds to the year 2020, had to be adequate to the circumstances of each teacher, educational program and university, which evidenced a limited capacity of educational institutions, at least at the national level, to make pertinent decisions in the face of the phenomenon of isolation and online work. In this regard, a publication issued by the Organization for Economic Cooperation and Development (OECD, 2019) expresses the following:

The COVID-19 pandemic also seriously affected higher education, as universities closed their facilities and countries closed their borders to respond to lockdown measures. Also in this sector, this affected the continuity of learning and the delivery of teaching materials, the security and legal status of international students in their host country and the students' perception of the value of their career. (p.1)

If for a moment the situation that commonly occurs within the university classroom is analyzed, where didactic instruments and strategies are applied to promote meaningful learning in higher education, it is possible to identify the difficulty that this action implies and recognize two key conditions for it to occur: that "the learning material must be potentially significant and that the learner must present a predisposition to learn" (Moreira, p. 36, 2012). In addition to these two aspects, mention should be made of the workspace, both physical and virtual, which requires certain qualities and characteristics to promote compliance with the learning objectives of each course taught, as well as the teaching capacity to operate it.

Related to the latter, an article published by the International Institute for Higher Education in Latin America and the Caribbean (IESALC), belonging to the United Nations Educational, Scientific and Cultural Organization (Unesco, 2020) states:

The use that, in practice, each teacher makes [...] depends to a large extent on their ability to give continuity to their teaching. To this we must add that the subjects that seek the development of professional skills through practice (clinics, pedagogical residences, design careers, engineering, science and, in general, all those heavily dependent on practical workshops, work in laboratories or institutional practices) generate greater uncertainty, which will result in a series of differential effects within each university and on a systemic scale. (p. 20)

It is then a matter of specifically pointing out the complexity that surely occurred in the 2020 school period, since the packages of prior information located in the cognitive structure of the students, who during the A and B school cycles of the year 2020 had in virtual classes, could hardly have generated anchorage in the 2021 school year, due to the fact that, among other things, the redesign of teaching planning, including the courses and seminars that were traditionally taught in educational centers, particularly at the national level, were possibly done without experience and without the knowledge that will guarantee the fulfillment of the learning objectives of each course during the change to online education.

The foregoing had a direct impact on the delivery of value by educational institutions, since the effect of the pandemic forced the redesign of the didactic strategies of educational programs in short periods and to this was added the limited experience generated by the sudden appearance of the phenomenon, which led to the challenge ending up being resolved in each case in the best possible way. The OECD (2019) mentions in this regard:

Higher education institutions quickly replaced face-to-face classes with online learning, though they often struggled with insufficient



experience and time to devise new delivery formats for education and assignments. (p.1)

At the moment, the main challenges of significant learning that have been identified within the university classroom, specifically in the design workshop, both face-to-face and virtual, not only relapse into the need to create didactic-pedagogical strategies that have as a starting point the experience generated by the confinement, but also in the importance of designing hybrid didactic actions that increase the indicators of reading comprehension, problem solving, collaborative work, knowledge about technology, etc., including the discussion of two key components for learning significant in the design workshop: internal articulation and strategic linkage.

### ◆ Internal joint

In this document, the concepts of internal articulation and strategic linkage are used to refer to them as key components to promote meaningful learning in university students who participate in design workshops. This affirmation is based on the work carried out for more than five years by a group of research professors belonging to an academic body (UDG-CA-734) of the University Center of Art, Architecture and Design, of the University of Guadalajara, whose performance teaching, management and research is located in the areas of design, innovation and strategic communication both in the Industrial Design degree and in the quality postgraduate: Master's in Industrial Design and Innovation (from the University of Guadalajara).

The internal articulation mentioned in this section is assumed as the necessary interaction between the directive and administrative areas, the academic bodies and the academies of professors to ensure the fulfillment of the substantial objectives of universities or higher education institutions. In particular, the concept refers to the necessary collaborative work between teaching peers and administrative and managerial entities that makes it possible to carry out actions that translate into indicators for each of the parties involved.

The organization of design workshops within the academic programs of educational institutions concentrates a significant workload in regard to its planning and implementation, which demands a high administrative and managerial capacity to deal with all the instruments that validate it: letters of intent signed by administrative authorities; university-business and university-government collaboration agreements, collaboration agreements, development of publications, trademark registrations, intellectual property registration, signing of technical reports, publication of articles, etc.

The foregoing requires recognition of the importance of the management and administrative entities of each educational center in this

management process, since these areas are the ones that allocate economic and human resources that promote the materialization of projects, programs and other institutional actions, including those that may arise with the development of special projects that are not specifically considered in institutional planning.

Internal articulation is recognized, therefore, as a factor of institutional growth and development that has an important impact on the generation of measurable indicators: a necessary quality in institutions whose educational models seek to achieve international recognition. Although the internal articulation is an easily understandable process, the truth is that it can be affected by behaviors that refer to the bureaucracy that each institution suffers in particular.

In this regard, and with the aim of having clarity on the concept of bureaucracy, we approach what was expressed by Humberto Muñoz García (2019) in his article "The university bureaucracy":

The university bureaucracy forms a fundamental group for the institutional operation: it is linked to the academy, it is present in the social and political relations that occur in the community, in relations and ties with the outside world, and it carries out the administration. It is key for the university to be an organized and functional entity according to its principles and objectives. It carries out its tasks integrated into an administrative hierarchy. (p.74)

The researcher's vision allows dimensioning from his perspective the relevance of bureaucracy in the operational functioning of higher education institutions, which has an important impact on the performance of the functions required for the materialization of projects in general. In the same way, this underlying collaboration exercise serves to understand the problems that can arise when an efficient and precise internal coordination management process is required, prior to the design, planning and execution of an academic program within a design workshop, where entities external to the educational organization are involved. The author continues:

A bureaucracy that supports the management of an institution requires, again in the terms of Weber (2008), to be precise, to make calculations, for example, of the time that a procedure takes, to provoke confidence in the public that carries out the procedure. (Muñoz García, 2019, p. 75)

The internal articulation necessary for the development of university-company strategic linkage projects seems to show the limited institutional capacity to match the projects developed in design workshops with the times that characterize the dynamism of industry, commerce or any other sector, with which strategic collaboration exercises are carried out with the capacity to impact the development of the environment.



From a critical position, the strategic and necessary link between universities at the national and local level with the different elements that structure the contemporary urban space (society, companies, governments, civil associations and Non-Governmental Organizations) of the main cities of the country continues to manifest problems in certain administrative and managerial areas that exercise internal articulation, since apparently they do not end up clearly understanding the academic and professional training implications that their daily work performance has on university students, particularly among those who participate in training workshops. design. Many of their actions contribute to generating a perception that places the administrative process above academic and training objectives.

The internal articulation processes necessary for the development of any type of activity require certified internal quality procedures to significantly impact their workflows, response times, etc., since they are a fundamental part of the principles of governance and the objectives established in the Institutional Development Plans of each educational institution.

It seems necessary to systematically promote substantial improvements in these processes in order to create a culture of continuous improvement that allows reaching international standards characterized by educational innovation.

In an article published by the researcher Frida Díaz-Barriga Arceo (UNAM, 2012), mention is made of the curricular reform effort that has been carried out in our country since the 1990s to incorporate educational innovations, as they did in other countries, with the purpose of accessing international educational levels. As expressed by Díaz-Barriga Arceo (2012):

From the point of view of educational administrations, but also of many authors, the long-awaited innovation had the intention of meeting the demands that Mexican education had to face in a complex and increasingly globalized society, the so-called knowledge society. (p.3)

In her article, the author expresses the need for a considerable effort to adapt the particularities of each educational center or university so that they make possible a transformation towards established criteria based on quality evaluation, certifications, accreditations and evaluation. linked to the financing of education (Díaz-Barriga Arceo, 2012). In all the aforementioned aspects, internal articulation underlies as a determining factor for its development.

The efforts to closely articulate managerial and administrative work with academic work seem not to have ended in the best way. This statement does not imply a negative state of affairs; however, it suggests its recognition in order to locate it as a starting point for the implementation of systematic improvements in all the processes involved. Part of

the argument that supports the previous expression refers to the meaning of a text issued in the section "Linking HEIs with the environment", on the official page of ANUIES (2019), where it is expressed: "ANUIES seeks to promote initiatives of projection and consolidation of the link, as well as promoting, promoting and articulating the various strategies that are carried out from the affiliated HEIs". From the individual perspective and in relation to what was expressed in the article by Díaz-Barriga Arceo (2012), all of this requires, in principle, an optimal state in the internal articulation process in higher education institutions.

### ◆ The strategic link

The strategic link referred to in this article is one that establishes instruments and tools that promote and allow close collaboration between the higher-level educational programs of universities, particularly public ones, and the needs, problems, challenges and opportunities of companies, civil organizations, society and government offices. Although it is not complicated to describe the necessary process for the strategic linkage to occur, it is necessary to express that its weighting as "strategic" obeys precisely the current state of the higher education system itself in our country, which is expressed in a OECD article (2019) as follows:

In Mexico, higher education must be better aligned with the changing needs of the economy. Almost half of employers report a skills gap in their sector and consider that the education and training of job seekers is not adequate for their needs. (p.3)

The foregoing serves to support the need to establish closer links between the reality of companies, organizations in general, society and governments with the educational programs of universities, especially at a higher level. Now, with the aim of identifying some of the implications that the above may have on the development of our country, we can review, for example, the latest edition of the World Innovation Index (OMPI, 2021), which ranks our country in the 55th place out of 132 countries with the most innovative economies on the planet. This classification can be understood, among other factors, as the result of a limited strategic relationship, possibly supported by scarce resources and the conditions that still seem to exist in educational centers that generate research, knowledge, and technology.

It is not necessary to show how complex the management of resources, infrastructure or institutional operations is, unlike other latitudes, for the development of strategic linkage projects in the design workshop that include the participation of companies, entities or organizations external to the university.

Said collaborations require, to cite a few examples, organizing on-site visits to production plants, use of administrative facilities, logistical support, use of adequate laboratories, efforts for transversal work between

academies of different careers, legal and administrative support that guarantees both the safety of students and teachers involved as well as financial support to materialize. Additionally, the places where the organizations external to the universities are located are, in general, in different geographical areas from those of the educational centers, which brings with it requirements that must be addressed prior to the development of any linkage project.

This undoubtedly affects the fulfillment of the established management and learning objectives. In other words, strategic linkage requires the involvement of a greater number of people or work groups than those who directly participate in the design workshops. Due to the above and assuming the benefit not only for the institutions or organizations involved, but specifically for the students who participate in the design workshops, it is necessary to reconsider the current state of management processes in order to implement systematic improvements in each one of the parties that influence the organization and the performance of this didactic exercise of collaborative and multidisciplinary actions that promotes the creation of value.

Let us remember that design workshops, particularly those organized in advanced semesters of educational programs related to design and architecture, seek to bring students closer to the specific realities of the environment in order to improve their process of incorporation into the labor market. which according to the OECD (2019) leaves 14.5% of graduates without participation.

The strategic link (university, companies, governments, society) is, therefore, a determining quality for the development of projects that detonate knowledge, skills and competences among university students involved in didactic instruments such as the design workshop. Its implementation makes it possible to promote significant learning through the materialization of solution prototypes in accordance with the needs, opportunities, problems or challenges of organizations outside the university environment.

The previous statement should be assumed, more than as a critical statement, as a challenge to promote didactic exercises such as the design workshop, whose main attributes are the co-creation of innovative solution prototypes for companies or organizations of different types that represent an area of expertise. opportunity for each school year. With this, not only the professional training of the participating students is affected, but the role of educational institutions in the innovation and entrepreneurship ecosystems that today are recognized as key elements for the transformation of society as a whole is also consolidated.

Although it is true that recent studies show that 95% of Latin American universities develop some type of link with their environment, what is really remarkable is that the same study describes that most of

these types of link projects do so from the beginning. informality, that is, on their own, without the involvement of the university authorities (OECD, 2019).

◆ **The group experience as a point of reference**

The design workshop is a collaborative and flexible space, not only in the cognitive aspect, but also in its ability to adapt to the circumstances of each project at hand. In it, the students involved interact with each other and, with this, promote a close correlation between prior knowledge and new knowledge that is exposed during the performance of the tools and instruments.

By having design and innovation methods recognized and validated by companies and institutions at an international level as a common thread, the progress of the projects implies putting into practice analytical procedures regarding the information that the different stages generate and that needs to be interpreted. In other words, the solution proposals that will result from each project do not obey individual and independent knowledge anchored in the previous cognitive structure of the students, since constant collaboration is required with the other members of the teams present in each workshop, with the end user and with external experts, including the representatives of the participating organizations, to create relevant solution proposals, filtered through feasibility and feasibility analysis, which are the result of the previous analysis that allows the emergence of new meanings that end up influencing in the cognitive structure of the participants.

The experience accumulated in at least five years of implementing design workshops using design and innovation methods by an academic work group, allows us to state that the work process within each workshop puts into practice the knowledge, skills and the competences that the student has accumulated during his previous academic training, which supposes greater complexity the more advanced the semester in which he is. The foregoing includes management exercises with external actors, which allows, in some way, to promote the development of skills and competencies among the participants that are not necessarily considered in the learning objectives of the educational programs.

The co-creation process within the design workshop represents, from the perspective of the person preparing this document, a quality that higher education institutions should consider with greater relevance, because it enables the involvement of research groups belonging to the centers. education and, consequently, the generation of quality indicators. We could even say that the design workshops serve as learning evaluation instruments, since they promote the materialization of projects that are based on the knowledge obtained during the development of each work project.

However, this set of qualities of the design workshop generally faces two situations that significantly impact its performance. The first of these corresponds to the internal articulation necessary to guarantee procedures, resources, support and logistics essential for the fulfillment of the objectives of each project. The second corresponds to the work times of external organizations, which generally have dynamics that are particularly different from those of educational institutions, a condition that obviously complicates the implementation of a strategic linkage process that ensures the delivery of value for the organizations. parties involved.

These two situations, together with the effects derived from the pandemic, ended up evidencing the limitations that exist in terms of internal articulation and strategic linkage in a significant number of higher education institutions.

In this regard, authors such as Muñoz García (2019) argue the necessary review of internal processes in this type of institution, in order to implement substantial improvements that create the conditions for the creation of scenarios in accordance with the dynamics of complex societies such as ours.

Let us remember that, although there are indicators that describe the significant number of projects developed from the university classroom linked to entities external to educational institutions, recent studies indicate that most of them are carried out informally, that is, from the initiative teaching staff and researchers.

There is, therefore, important evidence that suggests that design workshops are relevant didactic instruments for consolidating meaningful learning among students who participate in them in some way, as long as there are internal articulation conditions that significantly involve both administrative and managerial staff in the performance of these value co-creation exercises, as an institutional management process that promotes the strategic relationship that allows university students to work directly in the generation of value proposals in the face of problems, challenges and opportunities of the different organizations that structure the urban environment, both locally and nationally.

Part of the argument that supports the previous affirmation lies in the indicators of linkage and internal articulation that at the academic body level (UDG-CA-734) have been promoted in the last five years, which allowed the incorporation of undergraduate Design students Graphic, Industrial Design and the master's degree in Industrial Design and Innovation belonging to the University Center for Art, Architecture and Design, of the University of Guadalajara, in work teams with a multidisciplinary approach.

The following table describes the companies and organizations that, during said period, materialized collaboration agreements under the

dynamic of strategic linkage to develop projects based on design and innovation methods:

Table 1. Companies and organizations under the dynamic of strategic linkage

2017	2018	2019	2020	2021
Digital Creative City Association	Chenson HB	Ureblock	Dipro Innovation Design	Black Neon
Creative Association Mexico	UDG-CA-918	Cultural and Creative Industries	The Sign	Plus Design
	ETYOS	SINGREM	Pragnanz	Bodyworks Madrigal
	BECCAR		Cocula City Hall, Jalisco	Lupher Furniture
				CODEBAY


Source: Academic body UDG-CA-734, 2022.

This work process is mainly the result of integration dynamics between teacher academies and academic bodies, or specialized groups that are not necessarily part of an institutional program strengthened with extensive resources to ensure compliance with indicators. The foregoing does not leave aside the support work of authorities and administrative personnel, but it does suggest the need to rethink internal processes that allows the development of an educational model different from the one that existed before the pandemic.

Díaz-Barriga Arceo (2012) expresses in this regard: "innovation is located in the central discourse of the reformist processes in Latin American universities that propose new functions and the need for revisions and adjustments in structures, processes and regulations, but above all, in the performance of its actors and in the way of linking with society" (p. 28).

**◆ In conclusion** Suggesting actions to mitigate or, in the best case, solve the problems or challenges raised in the previous paragraphs is fundamental for a reason: design workshops are relevant teaching strategies and instruments, not only because of their contribution to multidisciplinary work, but also because allow their incorporation into careers or academic programs that are not necessarily related to art, design or architecture. Additionally, the design workshops promote transversal collaboration that involves students and professors, but also governing and administrative authorities and, of course, organizations in the urban environment where the university entities are inserted.




The use and application of design and innovation methods from the university classroom, both physically and virtually, ponders the design workshop as a minimal, but necessary, contribution to the transformation of a country with significant demands for value creation. 

## References

- Asociación Nacional de Universidades e Instituciones de Educación Superior (ANUIES). (2019). Vinculación de las IES con el entorno. Recuperado el 2 de septiembre 2022 de <http://www.anuies.mx/programasy-proyectos/proyectos-academicos/vinculacion-de-las-ies-con-el-entorno>
- Ausubel, D. (1983). Teoría del aprendizaje significativo. *Fascículos de CEIF*, 1, 1-10. Recuperado el 19 de mayo de 2021 de [https://www.academia.edu/10435788/TEOR%C3%8DA\\_TEORIA\\_DEL\\_APRENDIZAJE\\_SIGNIFICATIVO](https://www.academia.edu/10435788/TEOR%C3%8DA_TEORIA_DEL_APRENDIZAJE_SIGNIFICATIVO)
- Cardoso, R. (2011). *Diseño para un mundo complejo*. México, D.F.: Ars Optika Editores.
- Cuerpo académico UDG-CA-734. (2022). Cuerpo académico UDG-CA-734. Recuperado el 26 de septiembre de 2022 de <https://www.cuerpoacademico734.com/>
- Díaz-Barriga Arceo, F. (2012). Reformas curriculares y cambio sistémico: Una articulación ausente pero necesaria para la innovación. *Revista iberoamericana de educación superior*, 3(7), 23-40. Recuperado el 19 de mayo de 2021 de [http://www.scielo.org.mx/scielo.php?script=sci\\_arttext&pid=S2007-28722012000200002&lng=es&tlng=es](http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S2007-28722012000200002&lng=es&tlng=es)
- Moreira, M. A. (2012). ¿Al final, qué es aprendizaje significativo? *Qurrriculum*, 25, 29-56. Recuperado el 31 de agosto de 2022 de <https://dialnet.unirioja.es/servlet/articulo?codigo=3943478>
- Muñoz García, H. (2019). La burocracia universitaria. *Revista de la Educación Superior*, 48(189), 73-96. <https://doi.org/10.36857/resu.2019.189.617>
- Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura (Unesco)-Instituto Internacional para la Educación Superior en América Latina y el Caribe (iesalc). (2020). *Covid-19 y educación superior: De los efectos inmediatos al día después. Análisis de impactos, respuestas políticas y recomendaciones*. París, Francia: Unesco. Recuperado el 26 de septiembre de 2022 de <http://www.iesalc.unesco.org/wp-content/uploads/2020/04/COVID-19-060420-ES-2.pdf>
- Organización Mundial de la Propiedad Intelectual (OMPI). (2021). *Índice Mundial de Innovación*. Recuperado el 23 de febrero de 2022 de [https://www.wipo.int/edocs/pubdocs/es/wipo\\_pub\\_gii\\_2021\\_exec.pdf](https://www.wipo.int/edocs/pubdocs/es/wipo_pub_gii_2021_exec.pdf)
- Organización para la Cooperación y el Desarrollo Económicos (OCDE). (2019).

*Higher Education in Mexico: Labour Market Relevance and Outcomes, Higher Education.* Paris, France: OECD Publishing.

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