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Artículos científicos

La planeación académica en los nuevos modelos curriculares e-learning

Academic Planning in the New E-Learning Curricular Models

O planejamento acadêmico nos novos modelos curriculares de e-learning

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Resumen

El objetivo de este trabajo es documentar de manera sistémica la planeación académica tomando en cuenta la adaptación de material didáctico cuando se realiza la transición de un curso curricular presencial a uno virtual. El método utilizado para documentar la experiencia es el estudio de caso, que organiza la secuencia de actividades de manera participativa, lo que permite organizar una eficaz planeación educativa. Asimismo, se propone un análisis sobre la satisfacción del material didáctico en mejora de la calidad educativa y la vigencia de las modalidades *online* bajo la correlación: un escaso repositorio de material didáctico digital o virtual representa un limitado alcance de los objetivos en la planeación educativa en la oferta educativa *online* de una institución de educación superior. Los resultados son el desarrollo de un amplio acervo de material didáctico que permite concluir que una vasta cantidad de material didáctico digital o virtual promueve una planeación educativa de calidad, aunada a una pertinente determinación de las evidencias de aprendizaje de un curso que ha transitado de la modalidad presencial a la distancia *online*.

Palabras clave: educación a distancia, modalidad *online*, planeación académica, transición digital.

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Abstract

The objective of this work is to document in a systematic way the academic planning considering the adaptation of didactic material when making the transition from a face-to-face curricular course to a virtual one. The method used to document the experience is the case study, which organizes the sequence of activities in a participatory manner, allowing the organization of an effective educational planning. Likewise, an analysis is proposed on the satisfaction of the didactic material in the improvement of the educational quality and the validity of the online modalities under the correlation: a scarce repository of digital or virtual didactic material represents a limited reach of the objectives in the educational planning in the online educational offer of a higher education institution. The results are the development of a wide range of didactic material that allows concluding that a vast amount of digital or virtual didactic material promotes a quality educational planning, together with a pertinent determination of the learning evidence of a course that has moved from the face-to-face modality to the online distance.

Keywords: virtual education, online modality, academic planning, digital transition.

Resumo

O objetivo deste trabalho é documentar sistematicamente o planejamento acadêmico levando em consideração a adaptação de material didático quando se faz a transição de um curso curricular presencial para um virtual. O método utilizado para documentar a experiência é o estudo de caso, que organiza a sequência das atividades de forma participativa, o que possibilita organizar um planejamento educacional eficaz. Da mesma forma, propõe-se uma análise sobre a satisfação do material didático em melhorar a qualidade educacional e a validade das modalidades online sob a correlação: um repositório escasso de material didático digital ou virtual representa um alcance limitado dos objetivos no planejamento educacional no oferta educativa online de uma instituição de ensino superior. Os resultados são o desenvolvimento de um amplo acervo de material didático que permite concluir que uma vasta quantidade de material didático digital ou virtual promove um planejamento educacional de qualidade, juntamente com uma determinação pertinente das evidências de aprendizagem de um curso que passou de presencial. modalidade presencial online.

Palavras-chave: educação a distância, modalidade online, planejamento acadêmico, transição digital.

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Introduction

Moving from a face-to-face educational model to an online distance educational model requires high pedagogical clarity. It implies the mediation of a didactics aligned to the learning evidence that must be demonstrated at the end of any course, especially when the digital content required to teach an online distance course is designed, where the participant, more than listening, reading, writing , discuss, should be questioned, apply concepts, use rules and principles to find a solution to the problems raised during teaching (Gómez, Restrepo & Becerra, 2021). That is, teaching must consider the instructional design of evidence of learning using action verbs that are specific to the application, which is the third cognitive level of Bloom's taxonomy (Cuenca ET AL., 2021).

During the emerging transition from face-to-face educational models of higher education institutions (IES) to digital-virtual educational models, a complex problem was observed: the absence of a systematic procedure that allows the creation of digital-virtual teaching material or of a delimited execution-practice type to demonstrate learning from home-room. This led to the following question: is it possible to develop a systematic didactic planning procedure that allows the prompt generation or adaptation of own didactic material in a new pedagogical model in virtual distance modality?

The objective of this study-proposal is to document the systematization of academic planning taking into account the reduction of the process of elaboration of didactic material when the transition from a face-to-face curricular course to a virtual one is made.

The methodology that guides the documentation is based on a case study and is proposed from the perspective of a fictitious fact that illustrates how complex academic planning is when there is no defined evidence of learning.

Case study

As a case study, it is considered that an IES has an optional carpentry subject in the curriculum of an engineering study plan that includes workshop activities and qualifies the participant with the degree of carpentry officer, when the course is satisfactorily completed. This subject is in high demand because during the face-to-face course the participants make a rectangular chair made of pine wood with a walnut finish as evidence of learning.

It is a face-to-face didactic context that provides them with a medium command of the skills of a carpentry officer and enables the chances of receiving job offers in a local factory that belongs to an international furniture chain.

As the goal of the final evidence is the manufacture of a pine wood chair with a walnut-type finish, its manufacturing process includes the following stages: material selection, chair design, straight bar cutting, splicing and assembling, sanding and prefinishing, assembly and joints, varnishing and drying, resistance test and evaluation based on resistance criteria (withstand a weight of 100 kg), rectangular finish, assembly with box and tenon, and varnished with walnut-type crankpin (annexes figure 5).

To satisfactorily achieve this evidence of learning, basic carpentry tools for personal use are used: the saw, the hammer, the hand planer, the chisel and squares. Likewise, the materials used are: pine wood, nails, glue and walnut-type varnish. Of course, we must not forget the machine tools and the fixed workshop equipment such as the circular saw, the planer, the drill and the milling machine.

About educational planning

When carrying out academic planning for online distance learning, the first complication is the active-participatory methodological condition, because it is necessary to contextualize the work/occupational space to create a zone of proximal development condition for students (Gamboa, 2019). In this type of course, it is about learning the trade in a workshop (which has the essential electrical, sanitary, ventilation, and fixed equipment installations, among others) and not in a classroom or in a room or room of a room house.

In addition to the requirements of the work/occupational context, tools for personal use are essential and are considered equally essential equipment for a teacher, journeyman or apprentice in any trade or profession. This aspect represents a considerable economic investment individually, since maximum dexterity is achieved by combining the geometric and physical dimensions of the tools with the physical characteristics of the individuals (since the limbs of each individual are unique and individualized adjustments are required for IES optimal use).

Having clarified the type of learning evidence that must be demonstrated at the end of an engineering course, the creation of self-developed didactic material and equipment to be used in academic planning becomes highly relevant, with which it seeks to guide meaningful learning for the student through active-participatory teaching. Likewise, it is

important to consider the evaluation criteria, because, even when they have the same function, if the participant delivers a steel chair as a product to be evaluated, it does not meet the previously established criteria, which was the manufacture of a chair. in pine wood.

As the evaluation criteria are specific, the academic planning of the class is limited to the previous experience of the teacher, who must verify well in advance the ability to reproduce the didactic sequence and the instructional design, initially in the workshop classroom and later in a classroom or residential room, and thus achieve the transition from face-to-face modality to digital-virtual modality.

Literature review

When talking about the transition from face-to-face academic content to academic content for online distance education, it is essential to remember the history of distance education in Mexico, because novice teachers are unaware of the great historical burden that it has in the country. Knowing the noble premises that have led Mexico to use the media available in each era is an incentive that provides solutions to the current reality. Among the historical means of communication are the mail, radio, television, and the satellite signal. These technological developments have made it possible to strengthen education and reach the most remote regions of the country with the best intention of making the most vulnerable population literate.

Although currently the use of the Internet greatly reduces geographical distances, its scope must be conceived in conjunction with the capacity of technological means (computer and electronic equipment) to establish stable and constant connectivity. Because there are now more far-reaching educational goals, it is necessary to move from literacy to the teaching of arts, trades, and professions.

For this reason, it is important to understand that, unlike conventional face-to-face education, in distance education it is necessary to go beyond the paradigm in which students do not have to physically attend the place of study and that the didactic materials They allow progress at different learning rates, and recognize that in online distance education, in addition to autonomous and self-taught work, an additional economic investment is required that is also individualized (Navarrete & Manzanilla, 2017).

As essential characteristics of online distance education, in addition to using information and communication technologies (ICT) in an inclusive manner for the vulnerable student population (Cavalcante & Sadi, 2017), the student is required to have: the ability to

self-regulation, fluid communication skills and quick logical thinking for decision making (Navarrete & Manzanilla, 2017). Characteristics that are a key factor in asynchronous education and that, being limited by the low educational quality received in marginalized areas or geographically distant from cosmopolitan or industrial cities, work against learning, which generates low satisfaction and high dropout by the students.

Another element that must be clear in distance education is that the teacher is no longer the center of the process, and the traditional Socratic method lacks effectiveness (Zetina & Piñón, 2016), as the student works self-taught and self-managed. This forces the teacher to become a mediator of the academic contents, whose function includes the execution and verification of educational alternatives proposed through the didactic means of IES own development. Therefore, being a mediator in virtual environments does not mean changing the space of a traditional classroom to an electronic screen, nor does it mean changing books for electronic documents, class lectures for virtual forums, or tutoring or counseling hours for chat or conversation forums (Delgado & Solano, 2009). A communion is required between the means through which the interaction with the information is presented (educational platform), the teaching strategies and the didactic material, aligned by the production of the learning evidence that is requested.

Educational platforms

Regarding the educational platform, among the vast number of alternatives to select the one that best suits the professional profiles offered by IES, the Moodle platform has been chosen here, which has obtained the best scores in a formal evaluation carried out by Clarenc et al (2013).

Moodle is an acronym for Modular Object-Oriented Dynamic Learning Environment (Modular Object-Oriented Dynamic Learning Environment), and is considered adaptive and intuitive because of the way a teacher can present educational content (by subject, by week, in a single or several web pages, colors, typography, among others) and by the ease with which the student can learn from an online distance course even without mastering the platform environment (Delgado & Solano, 2009).

The educational platform must be considered by the instructional designer as the integrated technological tool (computing-multimedia-connectivity) that allows the formal organization of academic content, in which teaching strategies are presented sequentially and instructionally.

To understand the didactics mediated by educational platforms, this is defined as the technique used to manage, in the most efficient and systematic way, the teaching-learning process (De la Torre, 2005, cited in Delgado & Solano, 2009). For this, it must be considered that the actors and components that interact in the didactic act are: the teacher, the students, the content, the learning context and the methodological or didactic strategies. Likewise, that the teaching strategies must be consistent with the learning evaluation strategies (when requesting a procedural product as final evidence, this cannot be evaluated by a theoretical knowledge exam and means such as checklists or questionnaires must be used). rubrics). It should be noted that evaluation is assumed as the process that allows learning to be valued and quantified and that it is necessary to promote student self-regulation in favor of mastering and developing professional skills and abilities. (Ágamez et al., 2018).

Therefore, an effective didactic act allows dosing knowledge in a sequential and instructional way in an online educational platform. For this, the best means of support are methodological or didactic strategies, also called didactic or learning sequences (Díaz, 2013). It is important to clarify that didactic strategies by themselves do not generate knowledge and that the virtual platform by itself does not create an attractive learning space. The difference is the presence of a facilitator who mediates between the themes of a course with creative teaching strategies and who efficiently uses the tools (text-audio-video-connectivity) offered by the educational platform used (Delgado &Solano, 2009).

Open educational resources

Since the figure of the teacher is the most relevant representation of mediation, this requires reinforcement and support such as open educational resources (OER), which expand IES ability to make decisions in the selection of material (textual-audio-video). and free you from the limitation of working with content protected by copyright. Although it is not possible to completely exclude or omit large publishing houses or houses that produce multimedia and virtual reality material, better results are obtained with the use of open access academic content, since it can be reviewed, combined, reused and redistribute, especially if they have a Creative Commons license. Thus, OER can be defined as elements or materials in digital format shared in public repositories to be used in teaching-learning processes by teachers, students and researchers, generally shared under the Creative Commons license (Butcher, 2015).

Regarding the promotion of active learning, Freeman et al. (2014, cited in Gómez et al., 2021) highlight the importance of applying methods, such as cooperative and collaborative learning based on problems and projects, as well as learning through the flipped classroom, which are configured through computer media. as an interactive complement to the teaching of compulsory and conservative analytical knowledge.

The format for creating and producing an OER must have three components: technological, production, and pedagogical (Butcher, 2015). The OER of active-participatory educational models must complement the orientation of cognitive constructivism with the incorporation of connectivism (Torres & Barnabé, 2020), that is, incorporate the integrating idea where the learner takes control of IES learning and operates on the Web. without the guidance of teachers, without regulatory institutions and without pressure linked to the institutionality. Learning by itself is significant, because it starts from the student's own desire and motivation to train and learn.

Own development tools

Among the additional resources to the OER with which the teacher mediator facilitates his work as a digital content designer, there are self-developed formats such as the didactic guide and the format of thematic units also called contextualized didactic unit (UDC):

- The didactic guide is a teaching resource that the teacher uses for a general or specific purpose, it can be printed or virtual and allows him to plan, guide, organize, direct or facilitate teaching-learning as a unique process. It is a tool where the teacher, in his self-preparation process, must achieve the maximum possible precision in writing the synthetic exposition of his course (Pino & Urías, 2020).
- The UDC concept is aimed at training and developing professional skills, understood as knowing how to act, in contexts with different levels of uncertainty. In this sense, the didactic unit is built in such a way that students make decisions and act in socio-professional contexts, through the analysis and resolution of prototypical problems and the application of learning (Pino & Urías, 2020).

At the UDC, the quality of the training materials takes on a special significance in non-contact teaching, as it is the main instrument of the basic instruction of the knowledge available to the participants. It should be considered that the materials used in the online modality can be textual, hypertextual or multimedia, and be designed for use both online

and offline, in order to offer quality self-taught training. Rubio (2003) emphasizes compliance with a set of factors:

- Impeccable technical performance of the multidisciplinary work team.
- A robust and flexible pedagogical model.
- Innovative teaching materials; technical support systems to solve problems related to the computer system.
- Researchers related to the subject of the course.
- Pedagogy professionals related to the teaching-learning model.
- Trained and informed students and teachers.

It is important to highlight that the teacher must have a high command of digital skills to take advantage of the digital tools that are currently being developed in an accelerated and dynamic way (United Nations Educational, Scientific and Cultural Organization [Unesco], 2019) and apply them in such a way that they can obtain the greatest possible benefit from them in the educational process. Consequently, self-regulation, the interests and motivations of each educator affect or modify IES teaching processes and intentions, which leads to a particular organization of objectives, knowledge and methodologies. In fact, this diversity is the characteristic that enriches autonomous learning and keeps it from being monotonous and overwhelmed.

Under this documentary argument, greater flexibility is expected in the active-participatory models so that, with the concurrent articulation of social perspectives, a response is given to the changing situations and circumstances of the work/occupational environment. For this, it is essential to be open to different ideas and educational perspectives that may arise in the future and create opportunities for the configuration of more flexible environments for self-directed learning, especially if the use of communication media and connectivity increases —strengthening the interactive scenarios and environments—; Being able to mediate and guide both active and independent learning and self-management by transforming the traditional teaching spaces circumscribed in person at IES (Avendaño et al., 2021).

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Methodology

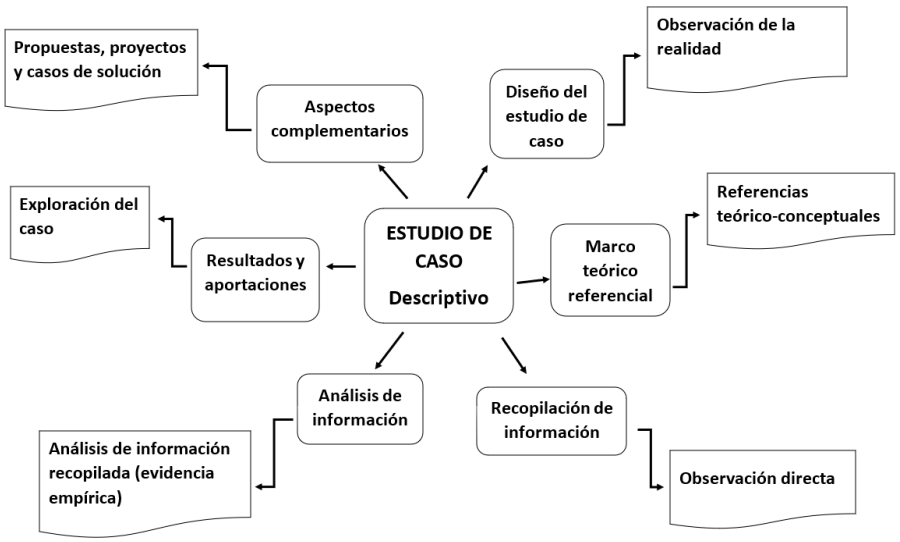
For the elaboration of this work, the case study method was used as methodological support (Muñoz, 2011). The information presented is considered descriptive, since it expresses the experience that the author has acquired during his training process as an instructional designer and summarizing the strategies with the greatest impact and benefit when moving from face-to-face to virtual.

In the design of the case study (figure 1) the observation of reality is taken as a key element and theoretical-contextual elements of the bibliographic review have been considered as part of the referential framework.

In the case of the identification of the degree of satisfaction, the use of a survey applied through the Google Forms tool provided information on the improvement of the capacities of individuals (see annexes) who are trained as digital content designers.

The analysis of the information is carried out based on defined criteria of efficiency and effectiveness (by reducing time and creating exclusive content, respectively); The explanation of the case that supports the results and contributions are based on the increase in the dosing capacity of teachers (decrease in observations in the review of the design of digital content).

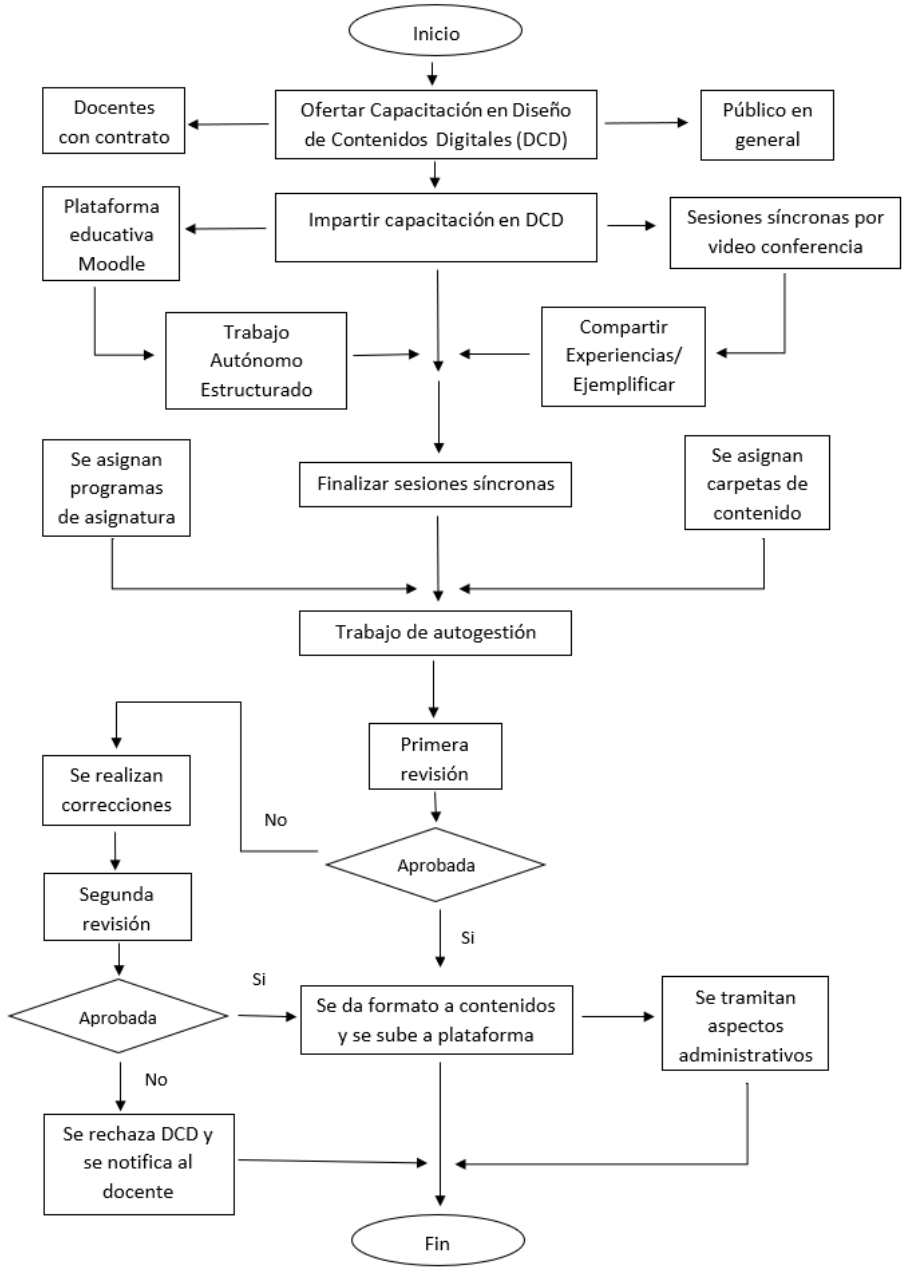
Figure 1. Research approach consisting of a case study.



Source: Own elaboration based on Muñoz (2011).

In the sequential procedure for designing digital content shown in figure 2, the transition to remote teaching in a complex environment of social distancing is considered to be a great challenge, both pedagogically and in technological appropriation, including improvisation, the lack of motivation and the disposition of the actors of the educational event, among others. Therefore, its appropriation must be conducted through systemic processes. (Hernández et al., 2022).

Figure 2. Procedural sequence to design digital content.



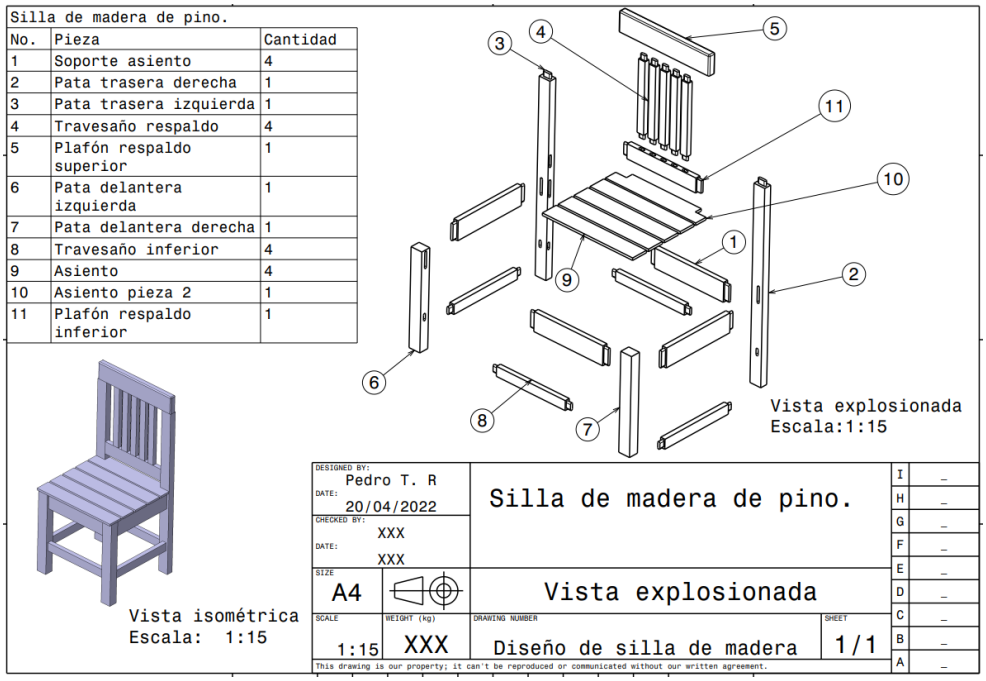
Source: Own elaboration.

Development

Towards the transition from online distance learning

Returning to the case of the course that is taught in a carpentry workshop, manufacturing a wooden chair as evidence of learning, both in the face-to-face modality and in the online distance modality, requires a background or context such as the plan of design (figure 3), which specifies the geometric requirements. It should be noted that in this example the process flow diagram is omitted to simplify the contextualization variables.

Figure 3. Assembly plan for a rectangular pine wood chair.



Source: Own elaboration.

Having a prior design of the learning evidence called a pine wood chair (figure 3) during the transition from face-to-face to virtual allows the teacher to include the maquila concept in IES educational process.[1] by a third party that may even be totally unrelated to the educational processes. The maquila is one of the effective solutions that the teacher can apply so that the participants of his course are not limited by the acquisition of materials, cutting and splicing (step 3 and step 4 of the annexes figure 5). However, another characteristic of online distance education originates that the participants openly reject and that is the additional economic investment that this solution represents.

[1] Realizar en un taller de un país con mano de obra barata el ensamblaje de productos que requieren trabajo manual o unitario y que tienen como único destino ser comercializados en un país desarrollado.

Although making use of the maquila is an alternative that supports distance learning, it is also a reduction in the learning process, since the apprentice will not know the stage of selecting the wood as raw material, such as the raw receipt. (which requires a warehouse, since storing walnut and storing pine demand specific and different environmental conditions). Likewise, experiences related to touch, smell, color and appearance are excluded in online distance academic planning, a situation that can be resolved if samples of the various woods are included in the maquila, so that the participant can carry out an activity that allows to identify the physical characteristics, and that represents the parallel addition of another step to the didactic sequence (step 1 of the annexes figure 7).

Regarding the measurement (management of the aligned and leveled measurement table), the cut (use of the circular saw, the milling machine, the punch and the chisel) and the evaluation of its quality that determines the durability and weight to be supported (verification of the rough, medium or smooth finish and the number of eyes in the wood), these are inherent to the sequence and manufacturing process on site, which leads to the exclusion of steps 2 and 3 of the diagram in figure 5.

Given the various exclusions from the manufacturing process when moving from face-to-face to virtual, it is essential that the name of the course be modified, as is its scope, so it should go from "Manufacturing of a pine wood chair with a walnut type" to "Assembly of a pine wood chair with a walnut type finish", as can be seen in the flowchart of figure 6.

By continuing with the transition from face-to-face to virtual, once a maquila kit has been used as didactic material, it has been possible to replace the labor/occupational context for manufacturing in a carpentry workshop and set the assembly capacity to the space of a room for general use (figure 7).

Under this condition, where the student accepts the additional investment of a makeup kit (condition of very low willingness by the participant), by continuing with the academic planning sequence of the course, the use of the tools is largely limited to the use of a hammer, a chisel and a sandpaper, which reduces the practice of handling equipment and various carpentry tools. This causes that during the teaching there are omissions to reach high skill and dexterity in the trade of carpentry. For this reason, reaching the title of officer will have to be conferred during the professional practice and at the end of the course, only the apprentice grade can be attributed to him.

Sanding and finishing (step 5 of the annexes figure 6) are considered actions that are easy to prepare and carry out in a room for general use. The following instructions are for the

assembly and assembly procedure (step 6 of annexes figure 6), which are carried out with the basic support of a hammer and chisel. Step 7 of the annexes figure 6, which is varnishing by the dolly technique, needs a light vent, as the product is slightly toxic, which, like sharp tools, can cause accidents without due precaution. (Coria et al., 2015). Pin varnishing was selected for the final finish (walnut-type varnish) because it involves low contact with toxic vapors, instead of complex high-gloss glass varnish finishes, which are commonly applied in a carpentry workshop that has extensive ventilated areas or with extractors of toxic gases or vapors.

In all online distance learning, it must be considered that, as it is an autonomous and self-managed work, the physical integrity of the student is at risk. Therefore, any unsafe condition such as varnishing must be explicitly indicated or omitted from the sequence of activities (annexes figure 7). Remember that a simple stiletto (cutter) can cause the loss of a member of the human body. In the situation where the finishes are of the type of high toxicity or risk, exclusions are necessary for the online distance learning processes, which forces the readjustment of the scope of the course, going from manufacturing to assembly and reducing the course to assembly without finish (annexes figure 7). Thus, one additional step is added while at the same time reducing the teaching plan from nine to six steps.

This brief analytical description of the transition from face-to-face to virtual shows the complexity that a digital content designer has to deal with when planning the lesson. It is required that the design of digital content be systematized and guarantee the inclusion of minimum but essential elements that offer a solid and complete learning with fair or minimum knowledge.

Organization of content in online distance learning

During the formalization of a systemic experience, once the importance of learning evidence and didactic complements have been clarified, the elements of content design such as:

- The presentation unit of the course or subject.
- The didactic guide.
- The development of the thematic units.
- The evaluation strategy.

These are aspects that consolidate the training of the digital content designer and allow them to move from face-to-face to virtual with an accessible and disciplined learning curve, but not abrupt and aggressive (Cardona, Del Río, Romero and Lora, 2019). .

Achieving a systematized content design requires IES to provide a solid academic training to the teacher or professional in the educational field to increase IES mastery of digital skills, through a hybrid job qualification course. This training incorporates skills and abilities of a higher cognitive order (evaluation and creation) to IES experience and personal methods of the participant. The minimum elements of form and arrangement are: structured formats, reference scripts for text writing and bibliographic reference guidelines and technological capacity, in order to improve IES capacities, abilities and skills in the design of digital content.

An example of this hybrid training is described below: the training can be carried out in a hybrid mode that includes 45-minute videoconference sessions to establish the work instructions, analyze the elements of each module and clarify doubts about the evidence of learning and use. of the didactic material, but it does not imply emulating the Socratic method as a class to achieve academic objectives.

Also, when moving from face-to-face to virtual, it is necessary to have a multidisciplinary work team (figure 4) that, in an integrated manner, involves various activities such as: proofreading and styling, graphic design and providing both internal technical support (areas involved) and external (participants), to jointly consolidate the presentation of the design of digital content mediated by the teacher in an educational platform.

The course must include a stage of independent work, where progress is made by self-management of the participants who are at the top of the learning-training curve. For this reason, this phase requires high discipline and attitudinal openness, to sequentially dose the contents of the subject that goes from face-to-face to virtual and is structured in the following textual documents.

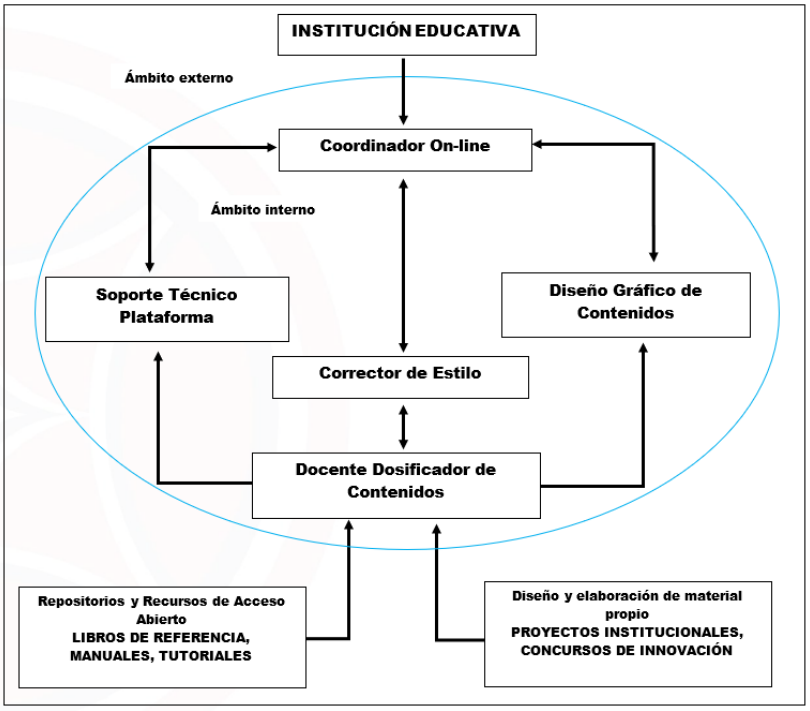
a) The presentation unit of the course or subject.

b) The didactic guide.

c) The development of the thematic units.

d) The evaluation formats.

Figure 4. Organizational chart of the multidisciplinary team to move from face-to-face to virtual.



Source: Own elaboration.

Achieving a smooth systemic sequence of the transition from face-to-face to virtual requires understanding the description of the following pedagogical elements, which must be included in the delivery of a job training course for teachers:

a) In the content of the presentation unit of the course or subject, a video script is incorporated textually that synthetically presents the information with which work will be done during the course and with which the graphic design area of the multidisciplinary team generates a video that is uploaded and presented on the educational platform. Likewise, the means of contact and attention for the student are provided and highlighted, so that fluid institutional communication with the student is maintained.

b) The content of the didactic guide synthesizes the complete organization of the course in which the bibliographic information referring to the textual documents is highlighted, the formats to be used during the course and the description of the activities that are required to be carried out to conclude satisfactorily. the evidence of learning.

c) The thematic units (UDC) imply the description and execution of the teaching techniques for the achievement of achievements or partial objectives, which are integrated in a sequential and concurrent manner in the consultation, analysis, exercise and application of the contents.

d) In an efficient design and dosage of digital content, the evaluation formats must be aligned with the formats of the teaching techniques to establish clear and pertinent criteria for the improvement of the capacities, skills or abilities of which IES teaching is planned.

The following section briefly presents the organization of the training course, which is divided into six hybrid work modules (videoconference sessions and autonomous work) and a seventh self-management work module.:

Course "Digital content design"

Module 1

In this module, the participant recognizes the identity and institutional philosophy, as well as his personal adoption for the instructional design of teaching-learning activities.

- Objective: to identify the pedagogy, the didactics and the cognitive depth of the online educational offer.
- Evidence 01: analyze through an infographic the institutional identity and philosophy for its reference, adoption and reproduction in digital designs.

Module 2

The participant identifies the most widely used didactic techniques in the online teaching modality, in addition to the requirements and functions of a multidisciplinary work team.

- Objective: select the didactic techniques with the greatest affinity to the online distance learning modality, in addition to the requirements and functions required by the multidisciplinary work team.
- Evidence 02: deliver in Word the script of the most widely used digital teaching technique.

Module 3

It seeks to know the OER repositories and IES potential as institutional strategies.

- Objective: to prioritize the free access bibliography over the copyrighted bibliography for the design of digital content in the online educational modality.
- Evidence 03: submit a correlation table in Word (bibliographical copyright vs. free license) of the bibliographical analysis of your course.

Module 4

The teacher in training organizes, describes and presents the information of a course through the didactic guide and the zero unit (course presentation unit).

- Objective: identify the sections that make up the didactic guide and the zero unit.
- Evidence 04: deliver in Word the filling of the sections that make up the didactic guide and the zero unit of a subject program.

Module 5

The participant organizes, describes and presents the information of a course through the systematization of contents of the thematic units format.

- Objective: identify the sections that make up the thematic unit format (UDC).
- Evidence 05: submit in Word the filling of the sections that make up the thematic units format (UDC).

Module 6

Trainee designers organize, describe and present course assessment techniques using Moodle Cloud tools.

- Objective: to identify the Moodle Cloud tools that are used for the evaluation of evidence of online courses.
- Evidence 06: deliver in Word the script of the most widely used digital evaluation technique.

Module 7. Independent work and self-management

The designers organize, describe, elaborate and present in electronic folders the design of the digital contents of a subject programme.

- Objective: to systematize the digital content design procedure of a subject in online mode.
- Evidence 07: deliver as an evaluation a compressed file, in RAR or ZIP format, of the receipts of the dosage of the digital contents of a subject that is taught online.

Results

Coinciding with Hernández et al. (2022), the satisfaction criteria of an online educational offer must be considered as elements that allow supporting or limiting the transition between face-to-face and virtual reality. The criteria selected as favorable towards

the satisfaction of university students are: autonomy, flexibility, individualized attention and delivery of work (IES description is expanded in Table 1).

Identifying the satisfaction of academic planning through these criteria is essential during the digital content design process and its collection should be considered using a feedback survey on the consideration of systematized teaching and self-management of learning (see annexes) through a multiple-choice quiz, which in this case is presented in Google Forms format.

Table 2 below shows the contrast between the factors for and against the transition from face-to-face to virtual. It emphasizes that the difficulties are from the external sphere and the facilities are from the internal sphere. In addition to these considerations within the feedback questions that allow exploring the challenges of digital content designers, Sharif and Cho (2015) recommend including the question "What are the main challenges in your work as an instructional designer?" and confirm that the biggest external disadvantages are the workload and lack of time, which limit being more involved in innovation and research, especially when it is oriented towards the creation of didactic material.

Table 1. Satisfaction criteria for teaching content.

Autonomy • Very autonomous • Autonomous • Moderately autonomous • Little autonomous	Flexibility • Study at your own pace • Study at any time • Freedom of organization to study
Individualized attention • Synchronous attention videoconference • Synchronous attention by mobile • Asynchronous service by mail on the platform	Report of work • Video • Simulations • Augmented reality • Practical jobs • Reports, case studies, projects • Homework, exercises, test

Source: Own elaboration based on Hernández *et al*. (2022).

Tabla 2. Comparativa de satisfacción de los contenidos de enseñanza

Difficulties in moving from face-to-face to distance.	Facilities to move from face-to-face to distance.
• Lack of motivation • Absence of pedagogical interaction • Poor adaptation to loneliness • Concentration deficit	• Conference in real time • Recorded lessons • Textual material for independent study

Source: Own elaboration based on Hernández *et al*. (2022).

A very favorable result with a high impact within IES is the empowerment of instructional designers with autonomy, creativity and innovation in teaching processes. That share and transmit the institutional identity in each transition from face-to-face to virtual and that optimize educational and non-educational resources, in favor of the efficiency and effectiveness of the educational offer in online distance mode.

Discussion

During the textual analysis of various methods of transition from the face-to-face to the virtual to create the syllabus for the digital content design course (Sharif and Cho, 2015), the requirement of a high mastery of the analysis methodology, design, development, implementation and evaluation (Addie) to obtain a full capacity to create zones of own development contextualized to the labor/occupational scenarios. For this, it is essential to have a high certification of teaching skills in ICT (Unesco, 2019). Likewise, it is highlighted that a marked lack of the teacher in his capacities to define the evidence of learning and the own creation of the didactic means generates few opportunities for success in the educational offers in the online distance modality.

As in the post-revolutionary era —with the support of the vision and guidelines of great intellectuals such as Vasconcelos, Bodet and Mistral— the Tolstoian and Tagorean experiment took place, which under the motto "Work and more work" was an experience that generated high satisfaction and favored the social integration of vulnerable and marginalized individuals, currently the experience lived by the conditions of isolation due to the pandemic of the coronavirus disease of 2019 (covid-19) forces the incorporation of energetic decision-making.

Simply explained, in the Tolstoian and Tagorean experiment, production and consumption cooperatives were organized that generated inflection conditions for social benefit (Moraga, 2019). This historical fact recalls that any online distance education offer promoted by IES must achieve the reconciliation of a common collective goal (multidisciplinary team) and distance it from individuality (independent teacher), which is part of active-participatory teaching. And promote a high increase in academic products in OER, which tend to respond to the development needs of the regions in a specific and innovative way.

Although distance education is not a novelty in Mexico (Navarrete and Manzanilla, 2017), reconciling international trends in this is a condition that requires establishing the best strategies through public social development policies to bring digital-virtual education online. communities and vulnerable groups, even when administratively they are not consistent with national policies. The educational offers of the online distance education modality must be innovative, creative, and transcendent in time and space and above all accessible without discrimination of class or social group.

In summary, the permanence in the educational field of a distance educational offer in online modality is achieved when, in its maturity stage, the definition of significant learning evidence is specified and the creation of own didactic material, both by the teacher and by the teacher. multidisciplinary work team that accompanies the content digitization process. Regarding the latter, in its simplest meaning it refers to any educational resource, including curriculum maps, course materials, study books, streaming videos, multimedia applications, podcasts and any material that has been designed for teaching and learning. that are fully available for use by educators and students under free licensing (Butcher, 2015).

Conclusions

It is considered that online distance education should change its discourse and establish an honest reality in its teaching capacity. Although IES work is noble, the transition from face-to-face to virtual learning is limited (see example in the introduction section). This is because even with the ubiquity of knowledge and augmented reality, the reproduction of a work/occupational context and the development of didactic material cannot be substituted and, for this reason, job qualification is partial, even with the best intentions. and reproductions (simulation) of the professional occupation.

Systematizing the design and dosing of content in online distance education offers is a high-impact strategy that allows regulating educational quality and maintaining decent and high satisfaction among university students (students and teachers). As the individual capacity of the teacher to design and dose digital content matures, the systematization ceases to be rigid and allows sufficient flexibility to make IES own contributions that start from the creation and application of didactic materials that are promoted from the systemic way. This aspect allows validating the scope of the objective by documenting the systematization of academic planning, taking into account the reduction of the process of elaboration of didactic material when the transition from a face-to-face curricular course to a virtual one is made.

It is concluded that the planning of a course in the online distance modality will be limited in proportions that depend on the heuristic capacity of the teacher who designs digital content, as well as IES digital competence to adapt academic productivity in evidence of significant learning, such as a consequence of the simplification of occupational/labor operational processes and the creation of didactic material, with sufficient creativity to recreate the limited contextual conditions of confinement in approximations of areas of development of work/occupational activities for the student. Likewise, a repository with extensive content of digital or virtual didactic material represents a valuable opportunity in reaching the objectives and goals of educational planning in the online educational offer of IES.

Future jobs

As future work, we seek to expand the scope of this proposal through the transition from the case study to a quantitative investigation and the design of a correlational experiment based on the scientific method that validates the tools and instruments used to improve the efficiency and effectiveness of the teachers who design digital content.

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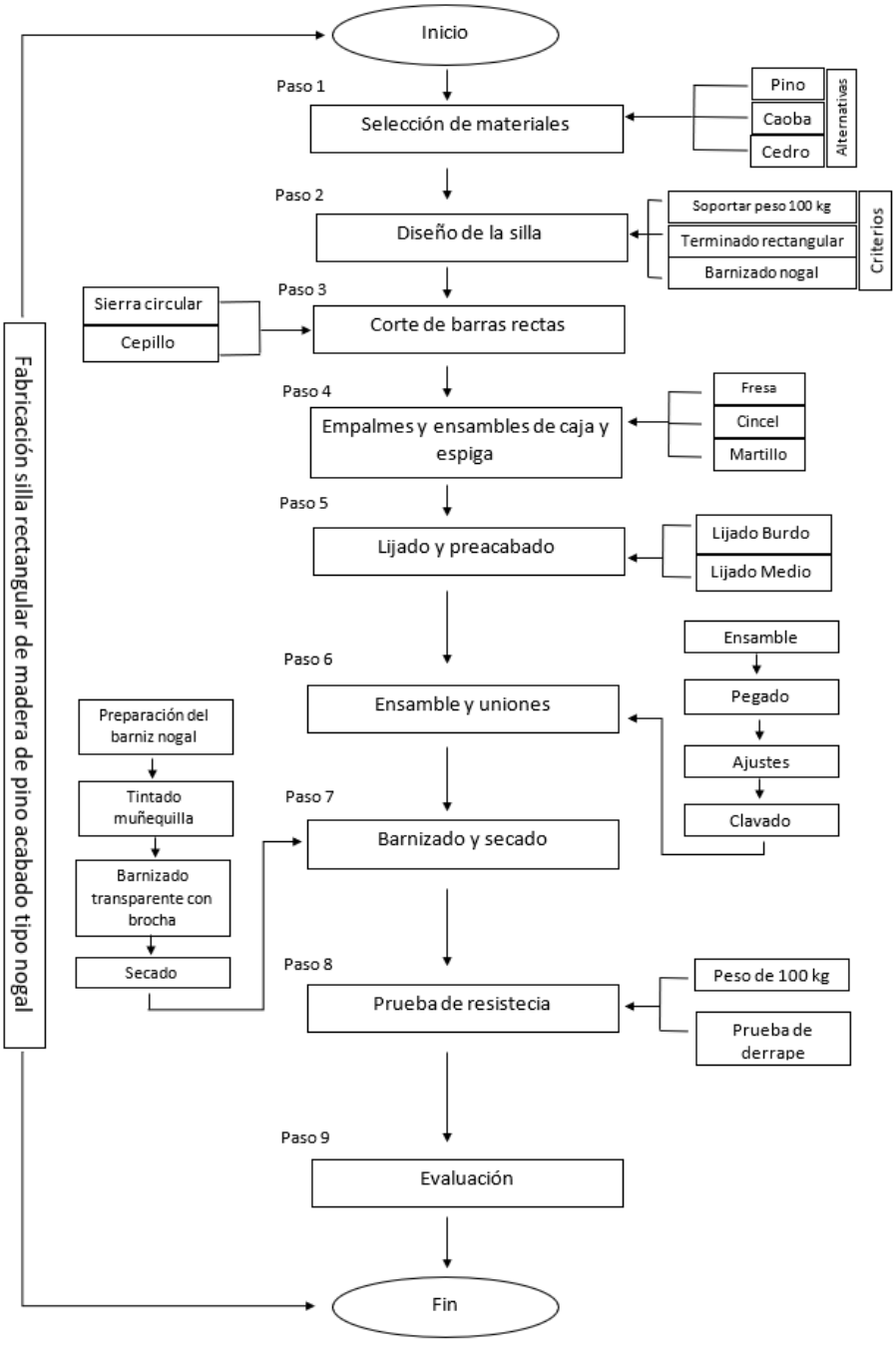
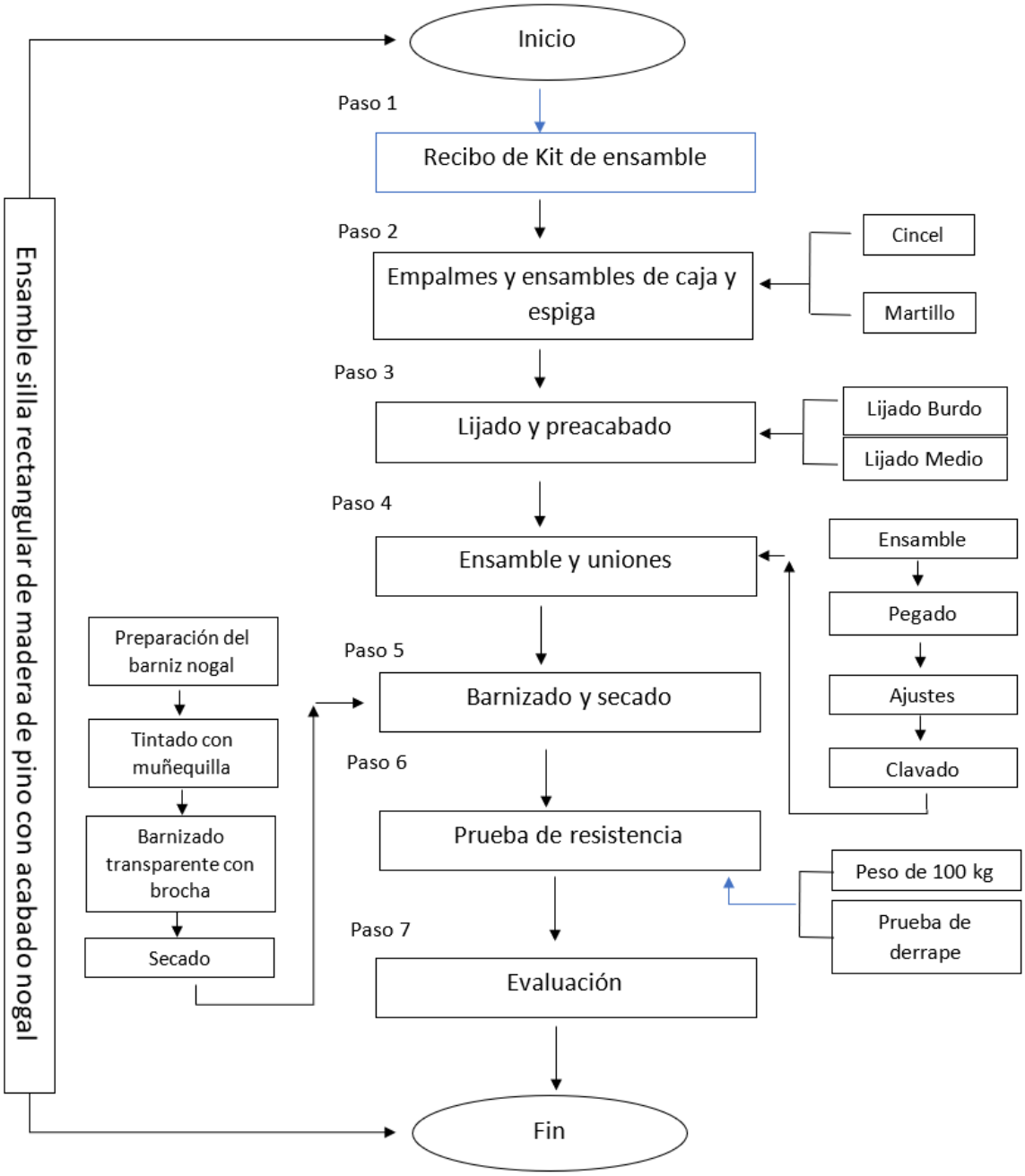
Annexes

Figure 5. Flowchart of the procedure for manufacturing a wooden chair.



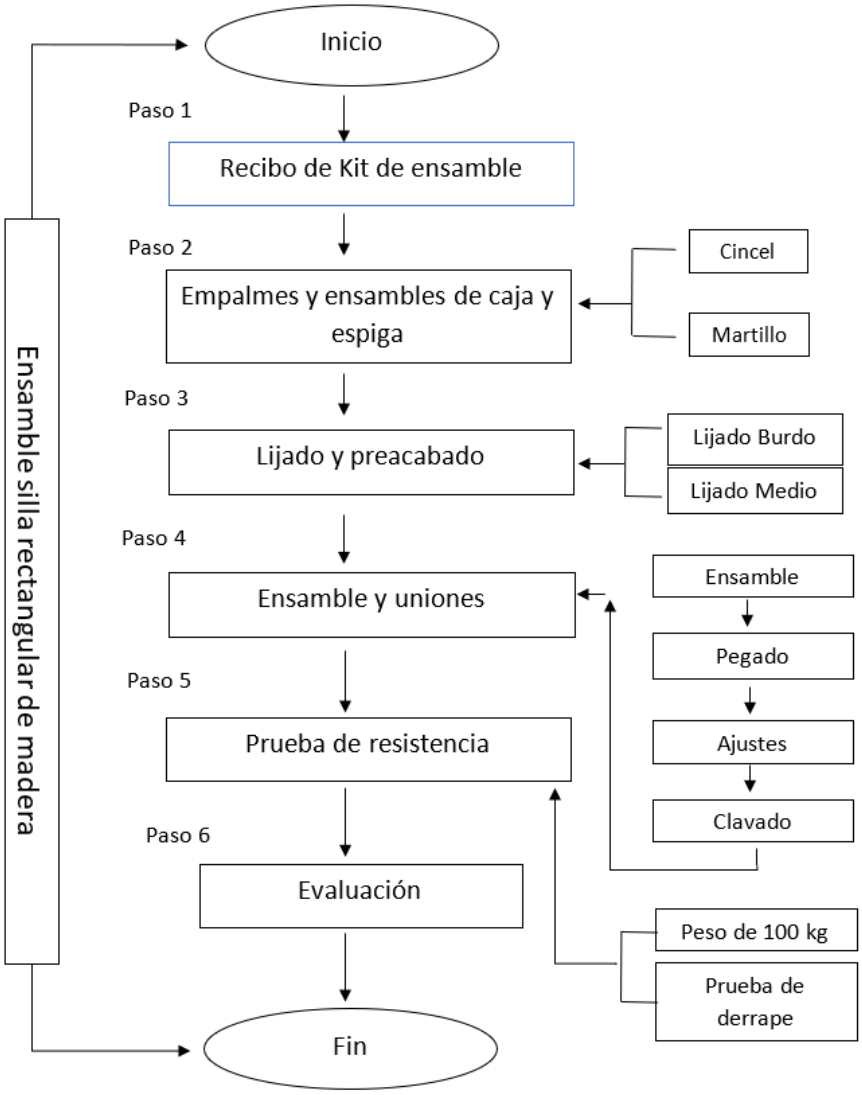
Source: Own elaboration.

Figure 6. Flowchart of the procedure to assemble a pine wood chair.



Source: Own elaboration.

Figure 7. Simplified flow chart of the procedure for assembling a raw pine wood chair.



Source: Own elaboration

Satisfaction survey

1) The degree of autonomy that I achieved during the course was:

a) Very autonomous

b) Autonomous

c) Moderately autonomous

d) Little autonomous

2) The flexibility to study the course and develop the evidence of learning allowed me to:

a) Study at your own pace

b) Study at any time

c) Freedom of organization to study

d) Other

3) Consider that the course can be significantly improved by incorporating:

a) Individualized attention

b) Synchronous attention by videoconference

c) Synchronous attention by mobile

d) Asynchronous service by mail on the platform

e) Other

4) The delivery of partial works is easier when they are requested as evidence:

a) Videos

b) Simulations

c) Augmented reality applications

d) Practical work

e) Reports, case studies, projects

f) Tasks, exercises, tests

g) Other

5) Consider the following factor to be the greatest difficulty in moving from face-to-face to distance online:

a) Lack of motivation

b) Absence of pedagogical interaction

c) Low adaptation to loneliness

d) Concentration deficit

d) Other

6) Considers that it is easier to move academic content from face-to-face to online distance is achieved by incorporating:

a) Real-time conference

b) Recorded lessons

c) Textual material for independent studies

d) Other

7) What are the main challenges in your work as an instructional designer?

a) Workload

b) Lack of time

c) Other