

## **Analysis of continuous assessment as quality assurance in distance education graphic design course**



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**Abstract:** The aim of this research is to analyze the performance of students in the graphic design course, in the Distance Education (DE) modality, in the continuing assessment applied to this course, at a private Higher Education Institution (HEI), in the city of São Paulo. The methodology used in the research is a case study, with quantitative data analysis. As a result, it was observed which topics the students had difficulty to understand, which allowed the development of strategies to overcome these gaps in learning.

**Keywords:** Formative assessment; distance education; design teaching.

### **Análise da avaliação continuada como garantia de qualidade no curso de design gráfico EaD**

**Resumo:** A presente pesquisa tem como objetivo analisar o desempenho dos estudantes no curso de design gráfico, na modalidade de Educação a Distância (EaD), na avaliação continuada aplicada nesse curso, de uma Instituição de Ensino Superior (IES) privada, localizada na cidade de São Paulo. A metodologia utilizada na pesquisa é o estudo de caso, com análise de dados quantitativos. Como resultado, observa-se quais os temas que os discentes têm dificuldades de compreensão, o que permite o desenvolvimento de estratégias para sanar essas lacunas na aprendizagem.

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**Palavras-chave:** Avaliação formativa; educação a distância; ensino de design.

## **Análisis de la evaluación continua como garantía de calidad en un curso de diseño gráfico EaD**

**Resumen:** El objetivo de esta investigación es analizar el desempeño de los alumnos del curso de diseño gráfico, en la modalidad de Educación a Distancia (EAD), en la evaluación continua aplicada a este curso en una Institución de Enseñanza Superior (IES) privada localizada en la ciudad de São Paulo. La metodología utilizada en la investigación es un estudio de caso, analizando datos cuantitativos. Como resultado, es posible ver cuáles son los temas que los alumnos tienen dificultad en comprender, lo que permite el desarrollo de estrategias para remediar estas lagunas de aprendizaje.

**Palabras clave:** Evaluación formativa; educación a distancia; enseñanza de design.

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## 1 INTRODUCTION

In Distance Education (EaD in Portuguese), the quality of teaching is a determining factor in the training of graduates and the institution's reputation. In graphic design courses, where creativity and the relationship between theory and practice are essential, continuous assessment ensures that quality is constantly checked and that student progress is monitored throughout the course, making it possible to update teaching strategies.

To better understand how this type of evaluation method contributes to the quality of distance education in Higher Technology Courses (CST) in Graphic Design, this study adopts a descriptive-exploratory research methodology, focusing on a case study of a distance education course in Graphic Design. The purpose of this research is to analyze the performance of students in the Distance Education Course in Graphic Design at a private Higher Education Institution (HEI) located in the city of São Paulo, identifying the impact of the results obtained from the application of the exam, which covers all subjects in the four semesters of the course.

The data collected, of a quantitative nature, refer to the percentage of errors and correct answers to the questions, which were divided into five different groups and compared with the skills and competences set out in the profile of the graphic design professional, as set out in the National Catalogue of Higher Technology Courses (CNCST). This study provides an in-depth analysis of continuous assessment through a specific case study, intending to contribute to the management of teaching quality in Distance Education Graphic Design and updating strategies aimed at student learning and professional training.

The article is divided into four parts. In the first section, we look at quality as a result of strategies that include: compliance with the regulatory standards proposed by the Ministry of Education (MEC), the organization of the curricular structure of the course with a view to interactive formation between teachers and students, and the development of activities and assessments that prepare students for the job market. The second section focuses on the tests administered to students as a way of analyzing the quality of their formation.

In the third section, we present the case study environment and the data collected through the annual test applied to graphic design students as a way of identifying learning gaps concerning the curricular content worked on in the curricular components of the course, the professional preparation of graduates for the job market and for the National Student Achievement Exam (ENADE). The last

section deals with the research considerations that reveal the need for continuous evaluation as a way of observing the quality of students and training materials.

## 2 QUALITY IN EaD

For Distance Education to have the training of students as its ultimate goal, the Ministry of Education's (MEC) Quality Benchmarks for Distance Education provide various regulations regarding the pedagogical and organizational planning that Higher Education Institutions (HEIs) must have to offer courses, so that there are no problems in the teaching process. Regarding quality, Tarcia *et al.* (2019, p. 15) indicate that "to analyze quality in Distance Education (DE), it is necessary to consider a set of elements or aspects that constitute the educational action" (translated by us). Therefore, all materials and products designed for distance education should stimulate the training and professional qualification of graduates. It is not enough to organize undergraduate distance learning courses with only a minimal and general structure in mind. It is necessary to think about quality, to study the organization of curricular components, the development of teaching materials that meet the needs of the market, and activities that promote professional practice, putting students in situations that they could face in the job market. In the same dimension, Tarcia *et al.* (2019, p. 15) also point out that "quality is not only in the content but also in the interactivity of the process, the dynamics of the group, the use of activities, the style of the teacher and the materials used" (translated by us).

In this process of structuring distance learning courses, the experiences of students must be taken into account when they enroll, understanding that interactivity - whether synchronous or asynchronous - becomes the link between the student body, pedagogical practices, and the teaching staff. In this sense, we question the autonomy of students concerning their learning, as Paulo Freire (2015) argues when he writes that "teaching is not the transmission of knowledge, but the creation of possibilities for its production or construction" (p. 36, translated by us). The teaching staff of the courses must develop learning objects and assessment materials that take into account this autonomy and the reality in which distance education students find themselves.

Although each university has its characteristics and methodologies, they all have to respect the requirements formulated by the MEC to offer the courses and thus dissolve the territorial barriers between teachers and students. Therefore, there are basic rules that must be respected, namely:

There is no single model for distance education! Programs can have different designs, multiple combinations of languages, and pedagogical and

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technological resources. The nature of the course and the real everyday conditions and needs of the students are the elements that will determine the best technology and methodology to be used as well as the definition of the necessary and obligatory face-to-face moments provided by law, supervised internships, practice in teaching laboratories, course completion work, when applicable, face-to-face tutoring in decentralized face-to-face support centers, and other strategies (Brasil, 2007, p. 7, translated by us).

The MEC document allows us to understand that, first of all, although there is no single model for distance education, all the regulatory guidelines must be respected to guarantee academic training, that is, the Pedagogical Course Project (PPC) must provide for the type of methodology for the test, the teaching materials, a multidisciplinary team, infrastructure, and academic and administrative management. All these elements are essential for building a quality distance education program (Mill *et al.*, 2010).

To work effectively, any educational institution must have a structure that favors communication between the members of the educational management body, in other words, teachers, coordinators, tutors, educational design, and teaching staff, so that all agents are aware of the work they are doing. The people involved in distance education work towards systematized teaching so that the content and objectives to be achieved reach the students with clarity and quality, making them learn from the resources at their disposal.

### 3 CONTINUING ASSESSMENT

Continuous assessment, also known as formative assessment, plays an important role in the educational process, especially in creative courses such as the CST in Graphic Design. According to Barreira, Boavida and Araújo (2006, p. 98), this type of testing should be "student-centered and concerned with the objectives that the student can and should achieve, questioning the intervention of the teacher, the learning conditions, the school and the educational system" (translated by us).

This approach to assessment is not limited to a single moment or assessment tool but extends throughout the course, allowing for a constant analysis of student performance and the course itself.

The concept of continuing assessment is based on the idea that evaluation is part of the object of evaluation, be it a program or a policy. From this perspective, evaluation should support the design and implementation of a program or policy and not be used only to measure its results and impacts after the intervention has ended. This perspective is not new from a conceptual point of view, although in practice it is still under construction (Carneiro; Bin, 2019, p. 173, translated by us).

This type of assessment in the learning process provides constant, personalized feedback to students, allowing them to identify their strengths and areas for improvement concerning the curriculum components and the way they are being worked on. This assessment allows students to experiment and learn through practical or theoretical material throughout the course, rather than relying on a single evaluation that may not adequately reflect their true potential. In addition, it allows teachers to monitor students' progress and identify the interventions needed to ensure each student's academic progress (Carneiro; Andrade; Telles, 2017).

In the context of graphic design, this evaluative object guarantees the quality of the course. By obtaining regular feedback from students, teachers can develop strategies that contribute to the development of students' technical and creative skills. For example, a continuing assessment allows instructors to identify gaps in students' knowledge and adjust course content to address those specific needs. It also allows instructors to monitor the quality of student work throughout the course and make adjustments to the curriculum as necessary to ensure that learning objectives and professional training for the job market are being met.

Continuous assessment also encourages self-awareness in students, helping them to develop skills that are essential for their future as graphic designers. By receiving regular feedback on their work, students are encouraged to reflect on their work practices and processes, identify areas for improvement, and develop strategies to overcome challenges.

Maintaining a continuing assessment in a graphic design course helps to promote a culture of learning in which students are encouraged to take responsibility for their progress and look for opportunities to improve their work. It is also important to ensure that the course curriculum is relevant and up-to-date (Tarcia; Cabral, 2012).

#### **4 CONTINUING ASSESSMENT IN EAD GRAPHIC DESIGN: CASE STUDY**

The purpose of this research is to analyze the annual test taken by students of a Higher Education Course in Graphic Design, in Distance Education, at a Higher Education Institution located in the State of São Paulo. Research is "the process, the form, the way, the paths followed to arrive at answers to a question about a problem, a fact, obeying principles, norms and techniques" (Santos, 2005, p. 171, translated by us). Concerning the nature of the research, it is descriptive-exploratory and

uses, as a procedure, a case study with quantitative data analysis of the results of students from all semesters of the Graphic Design course concerning the test that assesses the knowledge worked on in the curricular components of the entire course, preparing them for ENADE and, consequently, for the job market.

About the research environment, the University has been offering the Graphic Design course in distance learning mode for three years, with around 800 students enrolled and active in the course. The characteristics of the course can be seen in Chart 1:

**Chart 1** - Structural and Evaluation Characteristics of the CST in EaD Graphic Design

|                              |  |
|------------------------------|--|
| <b>Course Workload</b>       | 1.720 hours  |
| <b>Course length</b>         | 4 semesters  |
| <b>Courses offered</b>       | Offered every semester   |
| <b>Classes</b>               | 7 live classes per subject lasting at least 50 minutes.  |
| <b>Assessment activities</b> | Each course has 4 assessment activities related to the didactic material, worth 40% of the grade, and a final exam worth 60% of the grade. |
| <b>Continuing assessment</b> | An annual test for all periods of the course involving all the curricular components worked on over the course of the four semesters.      |
| <b>Structure</b>             | Composed of 20 objective questions.  |
| <b>Period</b>                | Available over seven days.   |
| <b>Duration</b>              | Three hours to complete  |

Source: Created by the authors (2024).

In relation to the curricular components, the graphic design course meets the guidelines presented in the National Catalog of Higher Technology Courses of 2016 which, for the formation of the graphic design professional, must present the following competencies:

Designs visual programming in physical and digital media. Develops visual languages. Supervises the functionality and usability of projects adapted to different types of processes and graphic production. Produces creations integrated with communication and art systems. Prepares portfolios using differentiated graphic expression techniques. Evaluates and issues technical opinions in their area of training (CNCST, 2016, p. 105, translated by us).

Based on the CNCST (2016) guidelines, the HEI's graphic design PPC distributes the curricular components in four axes, aimed at multidisciplinary training that prepares graduates for the job market. The axes are described according to the PPC of the course.

General Education includes the basic subjects in the curriculum that provide students with general knowledge about the profession. These subjects are the basis for the development of

competences, skills, and attitudes specific to the field of work. Also worthy of mention are the subjects that deal with cross-cutting issues, which meet the legal and regulatory requirements of the federal legislation in force in our country in an excellent manner. The subjects of the professional axis include Communication and Language; Environment, Society and Citizenship; Visual Language and Aesthetics; and History of Art and Design. Chart 2 gives a summary of the curricula components belonging to this axis:

**Chart 2** – Syllabus of the Curricular Components - General Education Axis

| Subject                                     | Content   |
|---|---|
| <b>Communication and Language</b>           | The course covers the concepts of speech, language, communication and text. It presents the elements of communication and the functions of language within the universe of verbal and non-verbal texts, highlighting the importance of linguistic variation. The notions of text and textual typology provide a framework for getting to know various types of texts and practicing reading and writing.  |
| <b>Environment, society and citizenship</b> | This course aims to provide students with an integrated education in anthropological studies on identity and diversity. To this end, it proposes an investigation into the set of theories that deal with issues related to the cultural and social production of contemporary identities. From a panoramic perspective, the emergence and disputes surrounding identity diversity will be studied, emphasizing ethnic-racial, ethnic-national and gender identifications, among others.  |
| <b>Visual language</b>                      | It covers the syntax of visual language, color theory, typologies and the technical elements for materializing creative ideas. It shows the convergence between the theory and practice of visual communication, aiming at methodologies for developing visual projects. It guides the creative process within the aspects of art direction, including discussing elements of inclusion and representativeness of different public profiles, majority and minority, from a critical perspective on societies.   |
| <b>History of art and design</b>            | The subject covers production systems and their relationship with design; the idea of taste and its education in the 19th century; standardization and industrial rationalization; functionalism and rationalism; and the interaction between technological innovation and transformations in society. In addition, it deals with the main aesthetic movements linked to Graphic Design; studies economic, political and technological developments and their consequences for graphic production, covers the modernist project; the evolution and the main movements and trends in Brazilian graphic design up to the present day. |

Source: Created by the authors (2024).

The subjects on the **Professional Training** axis provide professionals with the skills and abilities to work in specific areas of the course. Technical knowledge is extremely important to the job market as it meets the demand for qualified professionals. Some subjects have a practical workload so that students can apply the theories presented. The Professional Axis subjects include Two-Dimensional Representation - Marketing and Branding. Chart 3 gives a brief summary of the



curricular components belonging to this axis:

**Chart 3** – Syllabus of Curricular Components - Professional Training Axis

| Subject                               | Content  |
|---------------------------------------|--|
| <b>Marketing and branding</b>         | The course aims to work on the definition of branding. It also covers elements such as brand diagnosis and planning, brand identity and positioning, the application of graphic and digital design in corporate identity, the development of graphic elements in visual identity, and the construction of a brand manual.  |
| <b>Two-dimensional representation</b> | It studies the means of graphic representation with the correct use of Brazilian technical standards, as well as the perception of two-dimensional space. It presents two-dimensional graphic representation using technical drawing standards and conventions. It also demonstrates orthographic projections; drawing scales; isometric perspectives and drawing solids, and studies programs created specifically for technical drawing. |

Source: Created by the authors (2024).

Subjects in the **Area Training** axis include subjects focused on the area of knowledge to which a given course belongs. The aim is to learn common teaching content in the "area" grouping, thus increasing the training of individuals capable of working in multi-professional teams. The subjects include Information Design and Design Management. Chart 4 gives a brief summary of the curricular components belonging to this axis:

**Quadro 4** – Syllabus of Curricular Components - Area Training Axis

| Subject                  | Content   |
|--------------------------|---|
| <b>Infodesign</b>        | The digital interface as a cognitive mediator. Principles of information design. Data organization and presentation. Transforming data into meaningful and valuable information. The process of perceiving, reading, understanding, remembering, and using presented information. Interface and interaction design. Differentiation, hierarchy, and support. Principles of signage design. Pictographs, signs, and signage. Wayfinding.   |
| <b>Design management</b> | The course presents the main concepts and definitions of Entrepreneurship and Innovation, as well as the profile and characteristics of the entrepreneur, their skills and necessary competencies. It also seeks to understand the world of companies and businesses, the process of coming up with new ideas and identifying opportunities, as well as the tools that help entrepreneurs to develop their businesses efficiently, such as the business plan and company identity. Finally, it introduces concepts of business resource management, promoting a critical view of the importance of business, teams and areas within a company, as well as the world of innovation and startups. |

Source: Created by the authors (2024).

The **Specific Training** Subjects comprise the specific training subjects in the field that provide, in addition to knowledge, the competencies and skills relevant to the professional. Some

subjects have a practical workload so that the student can apply the theory presented. The following subjects stand out: Graphic Production; Typography and Motion Graphics. Chart 5 gives a brief summary of the curricular components belonging to this axis:

**Chart 5** – Syllabus of Curricular Components - Specific Training Axis

| Subject                   | Content   |
|---------------------------|---|
| <b>Motion Graphics</b>    | An overview and history of animation. Animation techniques and styles in film and advertising. Application of storyboard, animatic, vignette, animation and motion graphics concepts to digital media. Creating subtitles and titles for video. Transitions in motion graphics. Animation rendering. Motion graphics software and applications.   |
| <b>Typography</b>         | The course is designed to cover the principles of typography: formal, functional, and technical aspects; and the written word: functional, expressive, and technical aspects. In addition to concepts and terminology, the course covers the history of typography, the development of digital fonts, and the creation of lettering.  |
| <b>Graphic Production</b> | The course covers the elements that make up editorial design in its complexity, effectively using the compositional elements of a layout for digital and print editorial projects, properly integrating text, image, composition and space, and understanding how these elements behave and interact in the project. Identifies the various printing processes and media, encourages reflection on the relationship between project and technology in the graphic design process, and emphasizes the influence of knowledge and mastery of media and materials. Metrically explores the characteristic supports of the means of production. |

**Source:** Created by the authors (2024).

Based on the presentation of the curricular characteristics, we can say that the main objective of the test is to stimulate the students' analytical and interpretive capacity, to get to know the positive and negative points of the curricular components worked on during the course (Barreira; Boavida; Araújo, 2006), as well as to prepare them for the ENADE test, which analyzes the students' performance. The test is prepared by the teachers of the course and structured taking into account all the curricular components of the four semesters, with a total of twenty questions that address the content of the training axes presented. The analyzed test was administered in the first semester of 2023. Chart 6 shows the thematic organization of the questions:

**Chart 6** – Composition of the test by theme

| Question   | Subject                   | Theme  |
|------------|---------------------------|--|
| Question 1 | Marketing and branding    | Concept of branding and market positioning.                |
| Question 2 | Motion Graphics           | Animation techniques for graphic design.                   |
| Question 3 | History of art and design | Use of iconography in the history of the Catholic Church.  |
| Question 4 | Design management         | The relevance of the project phase for design              |
| Question 5 | Design management         | Strategic and entrepreneurial vision in design management. |
| Question 6 | Infodesign                | The importance of infodesign for signage design.           |

|             |                                      |  |
|-------------|--------------------------------------|--|
| Question 7  | Visual Language                      | Visual language on its abstract, representational and symbolic levels. |
| Question 8  | Two-dimensional representation       | Aspects of human-computer interaction.                                 |
| Question 9  | Communication and Language           | Aspects of collective and individual language.                         |
| Question 10 | Motion Graphics                      | Animation techniques for graphic design.                               |
| Question 11 | Two-dimensional representation       | Fundamental elements of communication.                                 |
| Question 12 | Two-dimensional representation       | Scale of graphic representation.                                       |
| Question 13 | Communication and Language           | Organizational management and the creative economy.                    |
| Question 14 | Communication and Language           | Language from a philosophical perspective.                             |
| Question 15 | Environment, society and citizenship | Construction of narratives from places of social behavior.             |
| Question 16 | Typography                           | The development of writing throughout history.                         |
| Question 17 | Visual Language                      | Gestalt laws - closing.  |
| Question 18 | History of art and design            | Design movements - <i>arts and crafts</i> .                            |
| Question 19 | Typography                           | Color coding for letterpress printing.                                 |
| Question 20 | Graphic Production                   | Grids and <i>layout</i> organization.                                  |

**Source:** Created by the authors (2024).

From the analysis in Chart 6, we can see that the questions selected cover the topics offered by the course and are designed to monitor the students' understanding of the content studied. Since this is an optional activity, only 30% of the enrolled students participated in this test in the first semester of 2023. Despite the low participation rate, it was possible to obtain an estimate of student performance.

#### 4.1 Results and Discussion

In this section, we present the percentages of errors and correct answers to the questions posed in the test, as well as interpretations of the results and strategies to address any gaps identified. We, therefore, present the results grouped by unit, divided into: a) Design, History and Visual Language; b) Design, Typography and Graphic Production; c) Design, Representation and Information; d) Design, Management and Marketing; e) Society, Communication and Language. All the subjects have been grouped in thematic units for a better visualization of the results, taking into account the guidelines of the National Catalogue of Higher Technology Courses and following the PPC, which divides the training in four axes: general, professional, in the field and specific, as seen

above.

The first results belong to the group a) Design, history and visual language.

**Chart 7** – Group issues: design, history and language

| Question    | Subject                   | Theme  | % of correct answers |
|-------------|---------------------------|--|----------------------|
| Question 3  | History of art and design | Use of iconography in the history of the Catholic Church.              | 43%                  |
| Question 7  | Visual Language           | Visual language on its abstract, representational and symbolic levels. | 53%                  |
| Question 17 | Visual Language           | Gestalt laws - closing.  | 63%                  |
| Question 18 | History of art and design | Design movements - <i>arts and crafts</i> .                            | 73%                  |

**Source:** Created by the authors (2024).

The data shown in Chart 7 allows us to understand that the students have a good perception of the topics related to the history of art and design and visual language. Despite the low percentage in question number three, which deals with sacred iconography, students performed well in the other questions on the same theme, which includes visual and aesthetic recognition of movements and periods in the history of design. It is important to work on questions with the same theme in future assessments to check students' understanding and comprehension.

Reflecting on the professional profile of graduates set out in the CNCST (2016), we can see that the questions include the competency to develop visual languages, providing integration with the fields of communication, visual language and art, which are essential for creating a creative repertoire for project development. To support this discourse, Lessa (2021, p. 14) argues that the disciplines that study these areas ensure that the designer is able, in the market, to "respect the parameters of production and meet the objectives defined in the relationship with the client, as well as satisfying the conditions of use/consumption" (translated by us).

The next questions analyzed belong to group b) Design, typography and graphic production, the results of which can be seen in Chart 8.:

**Chart 8** – Group questions: design, typography and graphic production

| Question | Subject | Theme | % of correct answers |
|----------|---------|-------|----------------------|
|----------|---------|-------|----------------------|

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|             |                    |  |     |
|-------------|--------------------|--|-----|
| Question 16 | Typography         | The development of writing throughout history. | 90% |
| Question 19 | Typography         | Color coding for letterpress printing.         | 93% |
| Question 20 | Graphic Production | Grids and <i>layout</i> organization.          | 37% |

**Source:** Created by the authors (2024).

Analyzing the questions in Chart 8 from the Design, Typography and Graphic Production group, we can see that the percentages were satisfactory concerning the topics that included the typography curriculum component. The relevance of typography in the training of graphic designers is explained by Farias, Gouveia and Oliveira (2005, p. 5), when they argue that the purpose of the subject is to familiarize students with "traditional typographic forms and the possibilities of modifying them, thus developing the perception of letter design, to enable students to understand the analysis of the application of typography in the different branches of graphic design" (translated by us).

In the question about the curricular component of graphic production, students had a low percentage of correct answers when it came to a specific topic for the professional training of graphic design students. In this sense, Calomeno (2016, p. 28) points out that "students need this knowledge to explore the material characteristics and graphic expressiveness in their projects, as well as to build a vocabulary that allows them to establish a dialogue with the production instances" (translated by us). Although there is only one question on the subject, which does not allow an in-depth interpretation of the subject, it is appropriate to explore the subject further through live classes and practical activities to learn more about it.

Up to this point in the interpretation of the data and in terms of fulfilling the competencies for training professionals established by the CNCST (2016), we have analyzed that the questions deal with competencies aimed at producing creations integrated with communication systems for the preparation of portfolios and graphic expression techniques.

The next questions belong to group c) Design, Representation and Information, dealing respectively with the curricular components of infodesign and two-dimensional representation. Chart 9 shows the percentage of correct answers for each question:

**Chart 9** – Group questions: design, representation and information

| Question   | Subject         | Theme                                    | % of correct answers |
|------------|-----------------|--|----------------------|
| Question 2 | Motion Graphics | Animation techniques for graphic design. | 53%                  |
| Question 6 | Infodesign      | The importance of infodesign for signage | 77%                  |

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|             |                                | design.                                  |     |
|-------------|--------------------------------|--|-----|
| Question 8  | Two-dimensional representation | Aspects of human-computer interaction.   | 50% |
| Question 10 | Motion Graphics                | Animation techniques for graphic design. | 62% |
| Question 11 | Two-dimensional representation | Fundamental elements of communication.   | 60% |
| Question 12 | Two-dimensional representation | Scale of graphic representation.         | 47% |

**Source:** Created by the authors (2024).

The four questions in the group shown in Chart 9, specifically targeting the Motion Graphics, Two-Dimensional Representation, and Infodesign components, received average results in terms of content related to aspects of human-technology interaction and content related to communication and graphical representation. The two-dimensional representation theme explores practical content, such as CAD software, which is considered difficult to understand. In this sense, Costa and Santos (2016, p. 1297) state that representation is essential for "the designer to be able to manipulate imaginatively the object under study, turning it in all directions and exploring the possibilities of the depth of space and the nature of the different materials used, in order to enhance its representation in the eyes of the observer" (translated by us).

One suggestion for improving the percentage of students who answered correctly was to develop strategies such as workshops on the topic to comply with the guidelines of the CNCST (2016), which recommends that graphic designers, as graduates, design visual programming in physical and digital media and monitor the usability of projects.

The three questions shown in Chart 10 belong to group d) Design, Management and Marketing, and are related to the Marketing and Design Management curriculum component. The table shows the percentage of correct answers for each question:

**Chart 10** – Group questions: design, management and marketing

| Question   | Subject                | Theme  | % of correct answers |
|------------|------------------------|--|----------------------|
| Question 1 | Marketing and branding | Concept of branding and market positioning.                | 57%                  |
| Question 4 | Design management      | The relevance of the project phase for design              | 20%                  |
| Question 5 | Design management      | Strategic and entrepreneurial vision in design management. | 30%                  |

**Source:** Created by the authors (2024).

By analyzing the percentages of correct answers to these questions in Chart 10, we can see that students performed poorly in understanding the phases of a project and the strategic vision in design management. As indicators, these unsatisfactory percentages leave room for discussion of strategies for structuring the content of the curricular component and ways of working during live classes, as well as offering lectures and workshops to improve performance.

It is worth noting that the components of design management and marketing are relevant to the training of graphic designers, since, according to Libânio and Amaral (2011, p. 566), these subjects aim to "unite design, innovation, technology, management and clients to offer competitive advantages by promoting collaboration and synergy between design and business, thus improving the effectiveness of design" (translated by us).

In terms of compliance with the CNCST (2016) guidelines for the training of graphic design professionals, the questions cover the skills of monitoring the functionality and usability of projects related to graphic production processes.

The last questions were classified into group e) society, communication and language, which deals with the disciplines of communication and language. Chart 11 shows the results for each question:

**Chart 11** – Group questions: society, communication and language

| Question    | Subject                              | Theme  | % of correct answers |
|-------------|--------------------------------------|--|----------------------|
| Question 9  | Communication and Language           | Aspects of collective and individual language.                   | 80%                  |
| Question 13 | Communication and Language           | Organizational management and the creative economy.              | 60%                  |
| Question 14 | Communication and Language           | Language from a philosophical perspective.                       | 57%                  |
| Question 15 | Environment, society and citizenship | Construction of narratives based on places and social behaviors. | 61%                  |

**Source:** Created by the authors (2024).

These issues are related to the training provided in CNE/CP Resolution No. 1/2012 (Brazil, 2012), which focuses on the theme of human rights, which should constitute the content of curricular units, and Law No. 11.645/2008 (Brazil, 2008), which deals with the theme of Afro-Brazilian and indigenous history and culture and ethnic-racial relations.

Components such as Communication and Language and Environment, Society and

Citizenship ensure that students are aware of socio-environmental responsibility and have a critical and reflective spirit concerning issues of society and citizenship (Campos, 2023). Thus, we observed that the percentages were satisfactory in terms of understanding the content worked on with the students.

## 5 CONSIDERATIONS

The result of the students' performance on the test makes it possible to identify the gaps in their learning concerning the content covered. It should be noted that the assessment does not cover all the content covered in all the curricular components, and it is necessary to periodize it so that other content is covered by the questions in each edition of the test. Furthermore, even though the general education axis is not specific to the course, it must be part of the test structure so that faculty can get a sense of the students' mastery of economic, socio-cultural, and regulatory issues that affect everyone in society, as well as the exercise of interpretive and critical skills.

By analyzing the quantitative data from the exam, faculty can develop strategies to better prepare students for the exam by exploring other learning objects that broaden the discussions raised by the course materials and assessments. In the graphic design course in the case study, continuous assessment is already used as an indicator to prepare additional training for students who are ready to take the ENADE, ensuring that the indices established by the MEC based on the exam are maintained.

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