Profiling the Instructional Designer: Towards a Systematization of the Profession

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Abstract

In recent years, particularly after the COVID-19 pandemic, the need to rethink learning experiences has become evident. Instructional design is a field that can contribute significantly to developing new ways of learning in digital environments; however, as a profession within the European context, it has not been regulated, nor the requirements for the practitioners of this field have been thoroughly systematized. This paper looks at instructional design and outlines the profile that a European Instructional Designer expert (EID) should meet. We contend that this person should be responsible for designing, developing, and delivering learning products and experiences and coordinating the Instructional Systems Design process. The learning products may include online courses, instructional manuals, video tutorials, learning simulations, among other digital learning experiences. We argue that Instructional Designers are poised to become key professionals in the educational domain and that, given their potential skills, they are in a critical position to contribute to the success of the 2021-2027 Digital Education Action Plan and the European Union's policy and strategy on digital and green transitions at large. The research is being developed in partnership with six European organizations (ISQe, IADE-UE, EFCoERT, EDEN, FIP, UT), focusing on developing competencies and a professional profile for the EID in line with the European Qualifications Framework Level 6. Namely, on articulating existing instructional design approaches with design methods. Ultimately, we intend to develop and empirically validate the profile and learning outputs for the EID, aiming to create a European level accredited training program.

Keywords: Instructional Design, Design Thinking, eLearning Experience, European Qualifications

Introduction

The COVID-19 pandemic accelerated online learning at an extremely high pace. Remote teaching and learning models, which were heavily popularized by Massive Open Online Courses (MOOC) since the late 2000s and early 2010s, became a matter of absolute necessity for educational institutions across the world. The pandemic caught most of those institutions unprepared, even those who already had some form of blended model and infrastructure in place found themselves hastily reinventing their pedagogical models and training their staff to tackle the complexities of wholly remote learning. The unprecedented reliance on technologies for learning purposes forced all stakeholders, teachers, trainers, learners, and their families, onto a steep learning curve, which also showed how little digital technologies were in fact integrated into educational and training systems. Regarding the shortcomings exposed by the pandemic, the European Commission has alerted that within some Member States, "the vast majority of educators and learners had little if any experience of teaching and learning online and the different pedagogical approaches needed for this mode of instruction", and thus concluded "the crisis requires us to rethink how education and training, in all disciplines, are designed and provided to meet the demands of a rapidly changing and increasingly digital world (European Commission, n.d.a, p. 3). As countries around the world are seemingly overcoming the emergency, at least when it comes to educational responses to the pandemic, developing long-term strategies for robust digital education and training is an imperative. Instructional design thus emerges as a key field for the future of education. However, even though instructional design is not a new field, as a profession it is still struggling for recognition, needing more professional educational opportunities and recognizable experts. Due to its interdisciplinarity, the profession has been constantly subsumed under other designations, such as training course designer, designer of corporate training, instructional developer, instructional engineer, instructional systems designer, among others.

The approach used in instructional design depends on the context, the identified training needs, and the resources available (Brown & Green, 2016; Gibbons, 2014). The instructional design process involves systematic application of specific educational methods based on instructional theory and practice, to ensure the quality of instruction. Normally, the instructional design process begins with an analysis of the learning needs and objectives, followed by the development of all the instructional intervention's materials and activities, and evaluation of the different phases of instruction (University of Michigan, 2003). The systematization inherent to the development of any given instructional design project can follow several approaches. The most well know is the ADDIE (Analyse, Design, Develop, Implement, and Evaluate) framework, which is essentially a synthesis of several instructional design models, and which breaks down the instructional design process into five phases.

This paper looks at instructional design and outlines the profile that a European Instructional Designer expert (EID) should meet. We contend that this person should be responsible for designing, developing, and delivering learning products and experiences and coordinating the Instructional Systems Design process. The learning products may include online courses, instructional manuals, video tutorials, learning simulations, among other digital learning experiences. We argue that Instructional Designers are poised to become key professionals in the educational domain.

Background

Instructional design has its origins in (early twentieth century) educational psychology, and was subsequently influenced by general systems theory in the 1950s. Instructional design is an interdisciplinary area informed by cognitive psychology, communication science, design, and creative technologies, whose main goal is to develop innovative methods for education (Brown & Green, 2016). Consequently, it is common for instructional design teams to be composed of experts from different areas of knowledge, including designers, communication specialists, educators, programmers, project managers, assessment specialists, among others. The main goal of the instructional designer is the development of instructional experiences for diverse training courses, while making the acquisition of knowledge and skills more efficient, effective, and appealing (European Commission, n.d. b).

Instructional design now relies heavily on information technologies and—especially after the COVID-19 pandemic—on e-learning authoring tools. Which brings a particular set of challenges at the individual and professional levels, such as the need to maintain adequate levels of digital literacy for all stakeholders. Moreover, since current approaches to educational practices have become increasingly participatory, the specific needs and views of all stakeholders must be considered. Some learning solutions allow the beneficiaries of instructional design to actively participate in their learning process, for example by allowing them to control some of the variables involved. These learning solutions may include custom mobile and web-based software applications, augmented reality systems, online content, collaborative learning and communities of practice, games, interactive video, podcasts, research through social networks, among other technological possibilities (Cennamo & Kalk, 2019).

The QUEST Project

The QUEST (Qualifying for the Ultimate Engaging Smart Training) is a transnational project within the Erasmus+ Program. It is an Action Type focusing on Cooperation partnerships in vocational education and training. The Project began at the end of 2021 and will be developed until the end of 2023.

The QUEST project aims to contribute to the skilling of all educators in using digital technologies effectively in their teaching and training process by qualifying them for high-quality Instructional Design (ID) and contributing to the Digital Education Action Plan 2021-2027. The QUEST's specific objectives are to:

1. Contribute to the harmonisation, at the European level, of the skills of the Instructional Designer profession;
2. Facilitate the mobility of Instructional Designers at the European level;
3. Increase the capacity to develop attractive eLearning projects at the European level; and
4. Qualify professionals with previously acquired knowledge and skills in Instructional Design.

The consortium is composed of small and medium-sized organisations, such as the ISQ e-learning (Portugal), the Foundation EFCoCert (Switzerland), the Future in Perspective Limited (Ireland), EDEN Digital Learning Europe (Estonia), IADE-Universidade Europeia (Portugal), and the University of Turku (Finland).

Among the problems that the partners identified as priorities that could structure the Project are:

- the issues of (1) remote teaching and learning at a global scale;
- the need to promote (2) the green transition in education;
- the demand for enhancing (3) the quality and inclusiveness of education and training.

Concerning remote teaching and learning at a global scale, there is (a) the need to rethink the way education and training in every discipline are designed to meet the demands of the digital transformation; (b) issues related to the use of technologies for teaching and learning; the (c) lack of experience in teaching and learning online; the (d) need to improve alternative forms of education, which are flexible and promote lifelong learning; and (e) the COVID19 reality which enforced social restrictions. About the green transition in education, the consortium agrees with (f) the need to adapt existing curricula to include sustainable development goals; and (g) the urgency to promote teaching and learning experiences with lower–carbon emissions. Finally, focusing on the quality and inclusiveness of education and training, it highlighted (h) the need to systematise and implement learning experiences and digital skills for all citizens.

Our approach to Instructional Design

We adopt the view that *learning* and *experience* are closely interconnected. However, let us first consider these two terms in isolation. Learning is an ability that all humans possess; it is the process of acquiring new understanding, knowledge, behaviors, skills, values, attitudes, and preferences (Gross, 2020). The current view is that learning theories are founded on a constructivist theory of knowing. Notice that, in the introduction to The Cambridge Handbook of The Learning Sciences, Sawyer (2014, p.9) argues that "the learning sciences are based on a foundation of Constructivism (...) learning sciences research has resulted in particular findings about what support the learning environment must provide for learners to effectively construct their own knowledge.".

Constructivist learning theory proposes to explain how people know what they know. The key idea is that people construct knowledge using an active process in which experiences relate to what a person already knows. The current view of learning is that people construct knowledge based on what they already know and believe (Steffe & Gale, 1995). Thus, present-day educational theories view people as goal-directed individuals who seek information actively and build their knowledge. Furthermore, when people experience a formal education situation, they do it with prior knowledge that influences how they organize and interpret information. This collision between environment and prior knowledge impacts people's ability to memorize, reason, solve problems, and acquire new knowledge (Bransford, Brown, & Cocking, 2000).

Thus, experience is a crucial dimension of learning. Nevertheless, defining experience, on the other hand, is less clear-cut; Dewey (1980) offers a starting point, and his ideas have influenced design theory. For Dewey, actual knowledge is knowing how, rather than knowing that; in that sense, his perspective aligns with Polanyi's ideas of knowing (2005, 2009). Furthermore, Dewey understood perception not as something passive but as the participatory activity of a person interacting with the environment. Furthermore, Dewey distinguishes between an everyday experience (the mundane daily interaction with the environment) from experience, a singular event whose characteristics are linked with aesthetic quality.

So, experience refers to what can be perceived through the senses, whether information from external sources or through inner reflection. As such, experience is related to empirical observation. Given that experiences rely on sensory perception, experience relates closely to aesthetics (in a broad sense of the term), meaning what is perceived by the senses.

Given the above, we assume that people's knowledge and meaning are fundamentally generated by their experiences. As such, any pedagogical proposal has to be developed (designed) with a concern for the experience of the people involved. This is consistent with the contemporary concerns of design theory. Notice that, over the last century, the way designers think about the relationship between people and the artificial world shifted focus from the objects' form and function to a holistic concern with the overall experience the objects elicit from the people that use them (Buchanan, 2001).

How to design a *learning experience* is the heart of our focus. The overall meaning of experience design is in the name itself: it is a human-centred approach that focuses on people's experiences with the world of artefacts. Experience design is based on people's needs and feelings and also their specific contexts to design experiences that are meaningful to them. Designing a learning experience expands beyond making the interaction of the users with the designed artefacts easier, more functional, or accessible (the conventional user-centred goals mentioned in design theory); it means shaping the way people feel while experiencing an educational event. The most important consideration is that, when designing an educational service, regardless of how much the experience is prioritized, in the end, people will have an educational experience.

Furthermore, this experience is extended and multiplied across time: every web page, human interaction, and software or app will elicit a reaction from the people involved. Just recall how frustrating an experience it can be to interact with a learning management system that was poorly designed. This means that high-quality experience design requires every interaction to be well considered and solved as part of a system designed to offer a complete and coherent learning experience. As mentioned above, we are no longer focusing solely on a specific artefact but on the learning experience as a whole.

Also crucial for Instructional Design is the fact that it is not possible to separate the instructional process from the social and cultural circumstances in which the educational needs are embedded. Consequently, any instructional process is necessarily complex and cannot be approached from a linear, reductionist worldview. It follows that ID ought to be pluralist because knowledge and reality are experienced differently by every stakeholder. Therefore, a critical attitude towards the methods employed in the instructional process should be not an exception but a constant (Solomon, 2000).

It is also important to mention the advantages that rapid prototyping can bring to ID. Rapid prototyping is a recent method initially developed in the software industry that, as the name implies, focuses on short, iterative cycles of design, prototyping and testing with actual end users. Rapid prototyping brings a more empirical and constructive view to problem-solving and leverages the entire systematization process with a more democratic approach that incorporates more opportunities for everyone involved to participate throughout the design process (Brown & Green, 2016).

The European Instructional Designer professional profile

The EID professional profile in focus is based on the existing knowledge in ID, which originated in the early twentieth century in educational psychology and was later influenced by general systems theory in the middle of the same century. Subsequently, ID was informed by other areas of knowledge – psychology, communication, design, and information technology – becoming an interdisciplinary territory, welcoming specialists from different areas. It is essential to mention the ADDIE framework (Analyse, Design, Develop, Implement, and Evaluate) for developing a given ID project, which represents the basis from which the notion of the instructional designer was expanded, to create the EID professional profile.

In parallel, it is proposed to cross the principles that characterise the ADDIE systematization process with the Design Thinking methodology (Empathise, Define, Ideate, Prototype, and Test), whose primary focus is the cognitive approach used by designers in the human-centred design approach. The synergy between both processes allows for deepening the existing knowledge in ID, creating an innovative framework for the EID.

In this context, the ID initial phase is marked by the analysis of the problem and the associated lack of instruction. Understanding the socio-cultural and educational context through an empathetic approach is fundamental. The data collected in this phase must be processed to allow a straightforward reading of the identified instructional needs and all implied for good planning and systematization. This is followed by the phase of ideation and development of educational content that enables the best possible learning experience. The next step, dedicated to the instruction implementation, begins with an experimental approach: prototyping the instructional service to prepare the context where the learning experience takes place. Finally, in the testing and evaluation phase of the entire instructional process, its resources and methods, it is possible to understand the tested approach, which enables necessary corrections and improvements. This last phase occurs iteratively and is repeated until a quality instructional model can be implemented.

Based on the interdisciplinary sphere of ID, as well as the ADDIE and Design Thinking processes, the logic used for the creation of an EID professional profile is based on the inclusion and adaptation of a set of competency frameworks with proven relevance in the European Community, to emphasise the holistic nature of the professional profile in question. The primary reference is the document entitled (1) European Skills/Competences, qualifications, and Occupations (ESCO) for the Instructional Designer; followed by other relevant references: (2) Design perspectives: design skills strategy, elaborated by the Design Council, (3) OECD PISA global competence framework for students in an interconnected world, (4) EntreComp: The Entrepreneurship Competence Framework, by the European Commission, (5) DigComp 2.0: The Digital Competence Framework for Citizens, by the European Commission, (6) GreenComp: The European sustainability competence framework, by the European Commission.

In addition to scientific knowledge, the necessary competencies are defined, namely the specific personal and social skills that enable a quality performance. With a transversal nature, it is also essential to mention the innovative character, responsibility, and autonomy that the EID must demonstrate to implement and manage professional situations of great complexity, in particular, the creation of educational experiences of unparalleled quality and the mission of guiding the professional development of specific individuals and groups.

Considering the mentioned frameworks, the EID professional profile is defined through four essential Learning Outcomes: (1) scientific and empirical knowledge and skills, in the areas of Instructional Design, Cognitive Psychology and Psychology of Learning; (2) Design skills and mindsets for problem-solving and Human-centred design; (3) ICT knowledge and skills for developing digital learning experiences; and (4) multifaceted cognitive, socio-emotional and civic skills towards intercultural development and collective well-being.

These Learning Outcomes are transversal to a set of Competence Units (CU), described below, that define the EID professional profile, namely: (1) Foundations for ID 101; (2) Learning Methodologies; (3) Design Considerations; (4) ID Development; (5) ID Implementation; (6) ID Evaluation; and (7) Project Management.

Foundations for ID 101

In this CU, learners must understand ID as an iterative design process that produces instructional solutions to solve the audience's problems by interacting with the given environment (i.e., the existing faculties, tools, and resources) and interpreting the other CUs as an iterative ID process. Learners should also understand ID as a process of applying scientific learning principles to provide effective instructional solutions.

Another essential foundation is the development of the ID identity as a continuous-developed profession actively engaging in creative and holistic design, interdisciplinary collaboration, and intercultural communication. Finally, developing awareness of the different roles of technology in instructional design is also meaningful within this CU.

Learning Methodologies

In this CU, learners are expected to translate the customer needs and requirements to learning and pedagogical needs. They should also generate the instructional solution based on scientific learning principles through an iterative problem-solving process and convert the instructional solution into a learning path for detailing the ID. Also fundamental is developing the instructional designer identity to engage in the ID system with interdisciplinary and intercultural perspectives.

Design Considerations

In this CU, learners should translate the learning path idea to a storyboard that will be later used in the development stage. They should also align the storyboard with the Learning Methodologies CU, providing instructional functions in a product. Also critical is learning to prepare the templates for collecting the content from clients, which will then be transformed into a learning product.

ID Development

In this CU, learners will create desirable, convenient and enjoyable learning scenarios that enhance the learning experience—followed by implementing content development processes that allow for flexible outcomes based on the users' needs. Finally, design learning products that deliver high-quality learner experiences through multimedia are expected.

ID Implementation

In this CU, learners should prepare the instructional process's learning environment and engagement approach. They should also organise the instruction materials and set the necessary conditions for both the teacher and the learners. Within this phase, the quality of the instructional materials review is also expected, and the learning setup involves the client.

ID Evaluation

In this CU, learners will define and apply quality criteria for all the ID stages. They should prepare evaluation tools that assess the quality of the learner experience of both teachers and learners. Also important is reviewing the evaluation outcomes to improve and modify the ID processes.

Project Management

In the last CU, learners will become aware of the importance of adopting a systematic approach to effective project management. They should know the different areas involved in project management (scope, time, budget and cost, HR, risk and communication) and the impacts of mismanagement of an ID project. Finally, learners are introduced to the main processes, techniques and tools to support their project management.

Conclusions

The EID professional profile results from a holistic learning experience, in which the qualified professional gather the necessary scientific and empirical knowledge, which will allow him/her to intuit, reflect, design, and implement specific instructional actions in the context of different socio-cultural dynamics, involving students and their contexts.

The European Instructional Designer (EID) professional profile presented in this document results from a set of determinant factors. First, it is essential to consider the existing knowledge in Instructional Design (ID), which originated in the early twentieth century in educational psychology and was later influenced by general systems theory in the middle of the same century. Subsequently, ID was informed by other areas of knowledge—psychology, communication, design, and information technology—becoming an interdisciplinary territory, welcoming specialists from different areas.

It is essential to mention the ADDIE framework (Analyse, Design, Develop, Implement, and Evaluate) for developing a given ID project, which represents the basis from which the notion of the instructional designer was expanded, to create the EID professional profile. In parallel, it is proposed to cross the principles that characterise the ADDIE systematization process with the Design Thinking methodology (Empathise, Define, Ideate, Prototype, and Test), whose primary focus is the cognitive process used by designers in the human-centred design approach. The synergy between both processes allows for deepening the existing knowledge in ID, creating an innovative framework for the EID.

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