Essay

Transversal Competences: Their Importance and Learning Processes by Higher Education Students

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Abstract: At a time when the labour market is blocked and simultaneously rapidly changing, with the emergence of new professional and scientific areas, the higher education mission becomes less indisputable and more indeterminate and challenging. This uncertainty was the leitmotiv for this essay, which aims to discuss the importance of attaining transversal competences in higher education. To achieve this goal, a bibliographical research was carried out on the attention that is currently given by higher education institutions to this topic, how they respond to the need for increasingly more transversal training and how they develop a curriculum that meets these requirements. Thus, in methodological terms, a thorough research on the literature addressing the topic of transversal competences was carried out; subsequently, a document search was conducted and a qualitative review and analysis of the documents collected was performed to justify our stance. Our analysis allowed concluding that the context of indeterminacy regarding the future has variations, considering the geographical and political situation, the social context and the activity sector. Furthermore, attitudes, expectations and predispositions are also critical elements for the success of this process of transversal competences' attainment. This latter factor is central in this process, as there is often a gap between students' expectations regarding the competences they expect to attain in higher education and the proposals that frame their training at the micro, meso and macrosocial levels and which take the need to attain transversal competences in higher education for granted.

Keywords: transversal competences; higher education; skills; students; employability; labour market

1. Introduction

Considering the current reconfiguration of higher education, its vision and mission and its constant search to provide its students with the knowledge and competences that will allow them to succeed in their future professional life, higher education institutions (HEIs) are required to provide their students with a strong technical and scientific training. However, more than this, HEIs also have the task of equipping their students with transversal competences that have the special feature of being transferable to any area of knowledge and whose centrality to the success of graduates in the labour market, together with technical-scientific competences, is widely justified by the literature [1–4] and by supranational institutions committed to educating and developing citizens [5] among others.

This scenario makes transversal competences, also called horizontal, generic or general competences, a current topic in the present worldwide educational arena [6–8]. The project funded with the support of the European Commission through the Erasmus + program (http://opc-sfc.eu) and the project "Compétences transversales: un pas de plus pour l'intégration en formation des savoir-faire comportamentaux en situation professionnelle" for employability [9] are examples of

institutional concerns regarding this topic. As referred by Telha, Rodrigues, Páscoa and Tribolet [10] (p. 665), "The introduction of competences in human resources management is one of the changes that organizations are making, with the purpose of picking the most competent workers for each position in the organization."

The initial and continuous training of transversal competences is central to the necessary and always updated preparation of the professional in several fields, as well as to organizational efficiency [10–12]. So as to carry out a reflection and discussion on this topic, this article, which puts forward an analysis of a wide set of articles that address transversal competences, will focus on the following issues: (1) The higher education mission and the place of transversal competences; (2) Transversal competences in a fast-changing professional environment; (3) The relevance of the attainment of transversal competences in higher education; (4) What are higher education institutions doing about it? How are they doing it?; (5) Teaching methods that promote the attainment and development of transversal competences; and (6) Conclusion.

2. The Higher Education Mission and the Place of Transversal Competences

In Europe, higher education has undergone profound changes over the last two decades, especially with the signing, by 29 countries of the European area, of the 1999 Bologna Declaration [13]. This Declaration, which had been founded a year earlier in Sorbonne, had the central goal of establishing a European Higher Education Area, with the aim of reinforcing the convergence of the higher education systems of the various signatory countries [14,15]. This reconfiguration and dynamics that have occurred in higher education are not limited to the European area but are taking place on a global scale. Indeed, there has been a huge renewal both in the (re)definition of the HEIs' mission, in their functioning structure and in the political field but also by the growing importance ascribed to employability and the attainment of competences, by their students [16–19] that may boost this employability [7,15,20].

Thus, both national governments and HEIs themselves have been working towards the convergence of their educational offer, in order to seek to adapt the curricula of their programs to the needs of the labour market and, more than that, to equip their students with transferable competences that will enable them to apply their knowledge in various professional areas [21].

In this context, employability, seen as having the competences required by the (future) employer, is a dimension increasingly ascribed to higher education. However, while progress has been made in terms of curriculum change, the acquisition of employability competences by higher education students is also seriously hampered by an excessively theoretical curriculum that is poorly linked to practice. Furthermore, this curriculum prevents or, at least, does not adequately encourage the development of transversal competences [20], valued by HEIs but, above all, by the students themselves, who are already fully aware of their relevance for their professional future [13].

It is important, in this context, to clearly define the concept of competence, which is not an easy task [16,22]. Literature offers a wide range of proposals regarding the type of competences (for example, core, hard and soft competences, meta-competences) and also different expectations of several stakeholders about what are the most necessary competences in professional terms. Cernuşca, Csorba and Cilan [23] (p. 23), for example, highlight the distinct importance ascribed to hard and soft competences depending on who defines them: "[. . .] employers and students who own a job underlined that soft competencies are more important than hard competencies. The students without jobs give priorities to hard competencies. To achieve work performances, students (future economists) have to possess strong soft skills, able to complete the knowledge acquired during the cycles of studies. To generate sustainable organizational success, the future professionals must combine harmoniously the hard skills with the soft one."

On the other hand, there is still a frequent gap between the perceptions of employers and HEIs regarding those that should be the graduates' desirable competences and there is also a poor articulation between the scientific content and practical needs. In order for this gap to be bridged, a change is

advocated in the (still) present educational and training paradigm, moving from an informative academic preparation to a formative academic preparation, geared towards personal and professional development [24].

What is, then, the place of transversal competences in this context? Next section seeks to answer this question, by trying to clarify the concept of competence and, more specifically, transversal competence.

3. Transversal Competences in a Fast-Changing Professional Environment

3.1. Defining Competence

The concept of competence is not a novelty [5,17]. This concept has been first defined by McClelland [25] as "a sum of knowledge, skills and aptitudes, which contributes to the capacity of a person to effectively perform the duties and responsibilities of the occupied job, in other words, to be competent" [23] (p. 24). However, the literature shows that this is a polysemic concept, the definition of which is difficult and not consensual.

Three basic approaches to the concept of competence may be considered [26]. The first is the behavioural approach. This approach, with strong roots in the United States, places the emphasis on effective professional behaviours. Perceived this way, competences are attained through training/education and development. The features of this approach are behaviour demonstration, observation and assessment, that is, the traits of an individual that allows him/her to have a high-quality professional performance. The second is the generic approach, which seeks to identify abilities and features that explain variation in performance and establishes the overall performance that is appropriate to a specific context. Finally, the cognitive approach refers to the identification of common abilities that explain variations in behaviour. These competences are associated with a set of cognitive prerequisites that individuals must possess to have a high-quality behaviour in a given field.

One of the several definitions of the concept of competence is offered by Eraut, who defines it as "the ability to perform the tasks and roles required to the expected standards" [27] (p. 117). For Arnold and Schüssler [28], competence refers to an individual's ability for action, in a more holistic view that includes not only specific knowledge and competences but also core and general abilities. In turn, Mandon and Sulzer [29] advocate that the competence needs to be understood as knowledge, abilities and qualities in action. Finally, Mulder [30] views competence as the ability that an individual has to complete a given task.

Thus, competence may be defined as "the combination of skills, abilities and knowledge needed to perform a specific task" [31] (p. 7). In line with this definition, Rychen and Salganik [32] (p. 43) define competence as "the ability to successfully meet complex demands in a particular context through the mobilization of psychological prerequisites including both cognitive and non-cognitive aspects." According to this definition, this concept takes on a holistic nature, since: (i) there is a direct link between competence and performance, insofar as competence relates to the successful fulfilment of challenges and requirements; (ii) competence presupposes not one but a vast set of cognitive and non-cognitive abilities; and (iii) competence refers to an "orchestration," that is, to the ability to use various abilities in a deliberate way.

It is possible to differentiate two basic types of competences according to their applicability in the labour market: (i) general or transversal competences, which can be defined as a set of competences that can be applied in any professional situation or task, regardless of where they were attained. Thus, general competences are required for all types of jobs and are the basis for the attainment of more specific or technical competences. These competences are transversal and transferable to different contexts. Some examples of transversal competences are: leadership, communication, problem-solving, teamwork and creativity competences, among others; (ii) specific or technical competences, which are applicable only in the environment for which they were developed. Hence, specific competences are devalued when the environment changes, as they do not apply in other professional contexts [33].

Pârvu and Ipate's [7] definition of competence is close to the one proposed later by Balcar, Janickova and Filipova [33], who group competences into two categories: (i) professional competences, that is, the ability to efficiently and effectively use previously attained knowledge in solving a specific task of a given profession; and (ii) transversal competences that have to do with the values and attitudes that go beyond a given field or study program and that have a transdisciplinary nature. Some of these competences are autonomy, responsibility, social interaction and personal and professional development.

Cabrera Lanzo and Olmo [16] add that competence is something that is permanently being built and developed; it is not something that an individual has or does not have, that is, it is constantly evolving. The authors stress that competence is not determined by what an individual knows but by his/her ability to use that knowledge and those competences in a given environment to successfully solve different situations. Therefore, competence involves action, that is, the ability to know how to act and use the learning attained, in short, to be able to transfer accrued knowledge to a specific context. The authors argue that competence is a composite concept, involving knowledge, know-how, abilities, procedures and attitudes. However, it is not possible to speak of competence as such if knowledge is not put into practice but rather of features or aptitudes [16].

Competences such as creativity [24], digital skills [34] and the ability to cope with complexity seem to be critical [35]. However, the definition of transversal competences is not indisputable and there are perspectives that are not exactly convergent, being, sometimes, vague and/or different depending on the sectors of activity or training in question [3,5–7,12,15,21,22,36,37].

Following the Bruxelles Formation [38], transversal competences take on a complementary nature in relation to technical competences that are necessary for the exercise of a profession. According to this organization, transversal competences may be grouped into three dimensions: (i) methodological transversal competences, linked with the notions of adaptability and autonomy; (ii) social transversal competences, related to the notion of sociability; and (iii) constitutional transversal competences, which refer to notions of responsibility and participation.

3.2. Transversal Competences and Education

Transversal competences can be considered in teaching insofar as they "[. . .] are generic and relevant skills that students have to develop through the several stages of the educational degrees" [6] (p. 334).

According to the Bruxelles Formation [38], although transversal competences are already informally embedded in pedagogical practices, it is necessary to intentionally address and consolidate this educational aspect. This new pedagogical positioning will allow responding more accurately to the current evolution of the organization of work and to the required competences, such as responsibility, proactivity, autonomy, adaptability, resilience and transfer of competences.

Then, "One of the most important tasks of education is to form and develop competences, especially transversal ones, which are basic and guarantee that individuals can handle their future roles" [4] (p. 129). While being essential, these transversal competences can, in the process leading to their learning and attainment, establish close relationships with other types of competences, even contributing to their success. Indeed, according to Langa [2], some of the transversal competences are learned together with technical and scientific ones, either explicitly—through the use of inter-, trans- and multidisciplinary methodologies and approaches—or implicitly—as secondary effects of the contexts in which the technical-scientific competences are learned [4,5].

However, the learning and development of competences entail a teaching-learning logic that goes beyond the traditional university culture in initial, continuous and lifelong training [19,23], essentially in the context of the classroom [18,22,23,37].

4. The Relevance of the Attainment of Transversal Competences in Higher Education

There is a clear valuing of transversal competences for the future profession but also for the accreditation of study programs and HEIs. Both national and international agencies for accreditation of study programs and HEIs integrate in their assessment criteria the attainment by students of transversal competences that are important in their present as students and in their future as professionals. Some examples of such accreditation agencies are the Association to Advance Collegiate Schools of Business (AACSB), the European Association for Quality Assurance in Higher Education (ENQA) and the Council for Higher Education Accreditation (CHEA), just to name a few. Garista, Pace, Barry, Contu, Battle-Kirk and Pocetta [34] remind us of the impact of the accreditation system on the HEIs' pedagogical structures and strategies, specifically at the pedagogical level, with the need for more active teaching strategies, both in initial and in continuous training [15,34], in order to transform the student into a "knowledge producer" [34] (p. 7). This reconfiguration requires, from the outset, a shift in HEIs and institutional actors in order to evolve from results-oriented teaching to competences-oriented teaching [39], involving the need to rethink the entire academic culture established in higher education. As Tsankov [4] (p. 134) points out regarding the implications, "This requires: (1) redefining the goals of education; (2) paying special attention to students' needs and learning motives; (3) introducing adaptive teaching strategies; (4) designing a dynamic environment which supports learning—flexible, mobile, guaranteeing interaction and cooperation; (5) reaching a new level of monitoring and evaluating learning outcomes."

For these requirements to be met, the author advocates the adoption of the constructivist paradigm in higher education as a central way to foster the development of transversal competences, namely through intentional and systematic application and methods that facilitate students' cognitive learning and its application in specific contexts [4]. This new approach to the teaching-learning process requires (i) that it views the student as a subject and not as an object of education; (ii) the adoption of methodologies that allow students to learn and apply actively and independently; (iii) the promotion of students' autonomy, by confronting them with real problems and situations; (iv) an integrative and multidisciplinary knowledge; and, finally, (v) a teacher who has the ability to organize, inspire and motivate his/her students in this new educational approach [4].

For this new perspective to be successful, it is necessary to rethink and reorganize the curriculum, the educational environment, the expectations of institutional actors, the transformation of the current teacher education and the current teacher profile, who will become an expert, consultant, mediator, moderator and enabler in this process of developing transversal competences in students [4]. This professional should, finally, be able to de "bring the real world into the classroom, to design learning situations focused on problem-solving, to learn by collaboration, to use new technology and to focus the didactic process on the learner and the learning process" [1] (p. 175).

5. What are Higher Education Institutions Doing about it? How Are They Doing it?

In order for HEIs to be able to promote, develop and equip their students with transversal competences, change is required at their macro, meso and micro levels and involves a large set of variables, namely expectations, regulations, formal, non-formal and informal learning, the definition of transversal competences and the curriculum and its implementation, the academic and teacher culture, the institution's relationship with the stakeholders, a teaching process that ascribes the student a more active role and the use of new technologies and forms of assessment.

Tudor [15] contends that a plethora of formally defined competences (documents, curricular plans, etc.) does not guarantee that this new approach will be successful. It is also necessary to consider their articulation with the labour market, which is not easy, either because they are two different worlds, or because of the need for precision and reflection in an ever-changing context. In fact, an efficient design of this formative process is critical to prepare for professional life [15].

While there are studies in literature revealing a clear convergence between the competences listed in HEIs' macro academic documents and the employers' perspectives [20], other studies show

that the relevance of the various transversal competences may be perceived differently by different stakeholders. For example, in their study from 2017, Nicolaescu, David and Farcas [8] concluded that students' and employers' perceptions regarding the importance of a set of cross-curricular competences are fairly divergent. An example of that is the first main transversal competence, which, for students of this study, is the "decision making and problem-solving ability," whereas for employers it is "the use of IT technology and communication" [8] (p. 138), which reveals some disparity between them.

These results support the need for studies, prior to the redefinition of curricular plans, that involve all the stakeholders engaged in the educational process (students, teachers, institutional leaders and employers), so as to assess which transversal competences are really valued by each one and, hence, optimize the development of the curriculum in order to integrate those that are most valued.

The teaching of these transversal competences entails the need to define the transversal competences in question and how to develop and assess them in the students with clearness, improving the process for the future [6], in a student-centred teaching model [17]. This poses HEIs a major challenge, as it involves the reformulation of higher education in order to further and better foster these and other competence profiles through a teaching that is stimulating and contextualized for the student in a formal, non-formal and informal dimension. As Tudor [15] (p. 2) states, "The educational model built by them is based on four components: flexible learning methods, the use of technology in the learning environment, authentic institutional framework, which would stimulate autonomous learning, educational programs on modules and flexible curriculum."

6. Teaching Methods That Promote the Attainment and Development of Transversal Competences

Self-learning, the ability for lifelong learning and the ability to select from the myriad of available information are critical functions to be fostered in students, who have a profile and live in a social context that is very different from 100, 50 or even 20 years ago [18]. In this context, the attainment of competences emerges as a critical element to promote in the higher education curriculum [40,41].

This is a rather complex process, which entails a concerted action involving the adoption of educational methodologies that stimulate the development of these competences in the classroom, which may, subsequently, be transferable to the labour world [18]. Indeed, these educational methodologies will, subsequently, ease that transfer of competences through simulated labour market situations that will enable this transfer of competences [18].

So as to correspond to the traits, expectations, aspirations and needs of its students, the demands of the market and work, the mission of the University and the need to foster (transversal) competences, how can they be taught? Its teaching will have to be grounded on an active teaching based, for example, on a work that approaches, in certain moments, the actual professional practice, with the contextualized use of the theoretical component [11,14,18,40,42,43]. Some examples of these methodologies are work-based projects, project work, case-and-problem-based projects, which foster and boost the development of not only technical-scientific but also transversal competences in students. In fact, and according to Costley and Nottingham [42] (p. 2), "The purpose of work-based projects, in our experience, is to achieve the objectives of 'real life,' often 'real time' areas of practice within an organizational setting that can be quite specific to the services or products within that organization. They establish the familiarity and awareness of other practitioners' current thinking on the subject area by means of collected knowledge and information so their expertise and awareness in the project area is evident."

Project-based learning has the advantage of raising students' awareness of the interrelationships of knowledge when approached and worked in different disciplinary areas. Furthermore, this methodology allows the development of several transversal competences, such as the ability to work as a team, problem-solving, acceptance of different perspectives and critical analysis. In addition, through the use of this and other active methodologies by teachers, they have the possibility of enhancing interaction with their students, thus fostering close interaction and a more individualized assessment of

the progress and competences but also the students' difficulties and weaknesses, mobilizing solutions thereafter, preventing or at least minimizing situations of academic failure [40].

For this teaching process to be successful, the student's active role is critical, in a process that should be self-regulated, desirably through real context interventions. An example is the adoption of clearly defined assessment criteria, namely through the use of rubrics, in a work that is necessarily interdisciplinary, iterative and well-known to the students, who, in this way, have a clear perception of the evolution of their learning regarding the competences that they are expected to attain [14].

Concerning institutional structures and labour practices, Pârvu and Ipate [7] emphasize the need for HEIs to focus on and develop the following aspects: (i) a permanent cooperation with the labour market; (ii) the promotion of activities geared towards the real needs of employers; (iii) diversification of pedagogical methods and techniques; (iv) the fostering of the students' ability to adapt to the professional world by providing them with problem-solving, adaptive, resilience and social competences; and (v) the promotion of graduates' motivation to engage in lifelong learning.

This positioning entails, of course, profound institutional implications, with changes in the academic culture [7]. Pârvu and Ipate [7] suggest a set of institutional changes, which are described in Table 1.

Table 1. Relationship between the existing academic culture and the desirable academic culture.

Existing Academic Culture	Desirable Academic Culture
Incentive systems reward individual productivity, creativity, scholarly capacity and intellectual effort	Partnering activities are sought and supported
Independent scholarship	Multi-dimensional collaboration
Disciplinary-based units	Multi-dimensional partnering activities
Lack of accountability (lack of clearly defined goals and effective, measurable performance criteria-and concerns about intellectual property rights)	Better criteria for evaluating multidimensional performance of partnerships and for allocating funds. Equitable ways to resolve intellectual property rights disputes.
Little cooperation between the university and the labour market	Introduction in the academic organizational structures of centres to ensure permanent cooperation between university and the labour market
Content-centred academic activities	Promoting practical activities strictly focused on the real needs of companies wishing to employ graduates
Scientific-focused training	Diversification of professional forms of training
Development of technical-scientific competencies	Development of transversal competencies, complementing the technical-scientific ones

Source: Adapted from Pârvu and Mihai [7].

Through simulated situations, according to Smith [43] (p. 124), "the disconnection lies in the separation of curriculum content from the situations or context in which that content would normally be used." One of the existing solutions is the possibility of, to a certain extent, virtually recreating, through simulation, situations that are close to the professional context [18]. The use of ICT (Information and Communication Technologies) may be an increasingly relevant instrument in this process [18], through which, according to Smith [43] (p. 134):

"1. Pre- and Post-tests showed that students acquired content knowledge from working in the virtual world;

2. The virtual environment is highly engaging for students according to data from both students and teachers;

3. Working in a virtual environment fosters deliberate practice of 21st century competencies in students."

As stated by Cervera, Cela-Ranilla and Barado [18], higher education reform and reconfiguration should be based on a set of challenges, among which the authors highlight two. The first is the adoption, by HEIs and their teachers, of an active learning process, in which students work together on real problems; interact with information, realities, contexts and communities beyond the classroom; debate, investigate and solve problems; and use tools that simulate real contexts. The second challenge relates to the implementation of interactive campuses, in which ICT will play a central role. To be effective, this redefinition of campuses and learning spaces should consider the specific needs of the courses; external experiences, namely from other HEIs; the students' different learning styles; the institutional spaces available and the measurement of new needs for the implementation of these tools; curricular reforms in all cycles; and inter-, trans- and multidisciplinary activities and in the most diverse contexts, both national and international.

However, in the implementation of such a system, there are specific difficulties, such as time, coordination and clarity concerning what is required, both for students and for teachers [40]. In a more specific way, we refer a summary of the students' opinion about their experience in higher education in the attainment of competences [37] and which regard aspects considered critical by these actors: clear definition of the competence in question; engagement of all stakeholders involved in the teaching process; overall perspective of the process, beyond disciplinary areas; articulation of theoretical contents; more immediate professional reality; active teaching; autonomy of the responsible student; practice in context; continuous monitoring; coordination among teachers; a low student-teacher ratio; and assessment [37].

Assessment, as formative moment(s), seems to be critical in this process, if appropriate in terms of the content assessed and when applied. Some important points are to be highlighted [37]: knowledge integration; be contextualised and with clear criteria; feedback during the process; reflexivity and metacognition; instrumentation; and agents [37]. Still on the assessment of competences, Cabrera Lanzo and Olmo [16] consider that assessment should be a learning opportunity and, in this sense, should be used to promote the attainment of competences by students. In this assessment of competences, they should be articulated collectively, integrate diverse knowledge and have an applied nature. On the other hand, they should be specified in thematic objectives consistent with the logic of each course and the moment in which the course is taught. Above all, the assessment of competences should have a formative meaning. Figure 1 presents the summary proposal on the assessment of transversal competences put forward by the authors [16] (p. 26) and which entails the need to define and materialise the competences to be developed and assessed, so as to be possible to clarify and foster the need to diversify agents and evaluation techniques, the need for an academic coordination, the need for the student to be responsible for learning and assessment and the need to understand the competition as a progress, not as an immediate goal.
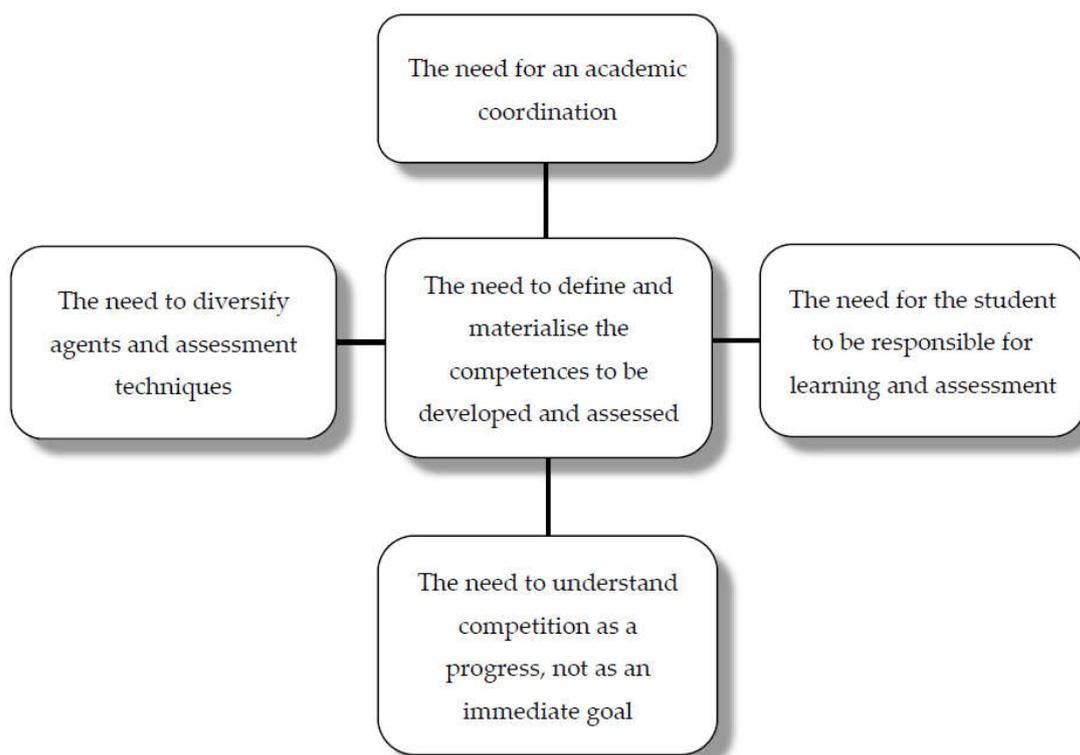
Figure 1. Summary of conclusions on transversal competences assessment. Source: Translated from Cabrera Lanzo and Martínez Olmo [16].

7. Conclusions

This reflection on the importance and learning processes, by students, of transversal competences in higher education sought to demonstrate the relevance of this type of competences to be seized by HEIs, as well as the need for clarity in their definition [14], so as to foster their learning.

In this learning, attitudes, expectations and predispositions of all the stakeholders involved in the educational process (students, teachers, institutional leaders and employers) are also one of the vital elements for the success of this process of attainment of transversal competences.

In terms of limitations, like any essay, this manuscript aims to critically reflect, in a substantiated way, on the topic of the relevance of attaining transversal competences for the education and training of individuals, seeking, in a context in which the labour market is, especially in more traditional sectors, blocked and, simultaneously, in fast mutation, with the emergence of new professional and scientific areas, to focus on the role of higher education in this greater uncertainty. Consequently, given the nature of the manuscript, it does not have an empirical component. Yet, it is our aim that this manuscript may be a good basis for future studies whose purpose is to empirically assess the relevance of the attainment of transversal competences in the individuals' overall education, namely throughout their higher education path.

As implications resulting from this essay, it is considered that the intentionality of transversal competences' learning involves a more active and contextualised form, which entails a profound reformulation of the culture of most HEIs, considering the institutional dimension but also the micro and macrosocial level: "The universities mission, as an education provider, is to manage training, in order to prepare young graduates for a society that is constantly changing and opening up to new. Traditional learning must be combined with modern methods of teaching, learning, evaluation and tools of the new digital technology [. . .]. The education and training system must continue to be

focused on creativity and innovation, on the development of hard and soft skills that allow a personal development and the integration of graduates into the global labour market" [23] (pp. 39, 40).

However, the successful implementation of this of transversal competences' learning entails a deepening of the body of knowledge on what, how and in what context(s) transversal competences must and can be developed in order to enhance their margin of success.

In sum, transversal competences' learning, while being critical to future professional success, is not an easy or straightforward process. It entails the involvement of the various stakeholders, with a higher focus on students and teachers, in a process that has to be explained and participated, involving formal learning but also non-formal and informal learning, in an integral logic of attainment and development of competences.

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