

Phenomenography in the Student Learning Perspective: A Review of Studies in Academic Contexts*

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Abstract

Academic institutions have gradually structured their policies on the basis of their students' perceptions, satisfaction and needs. This paper explores the use of phenomenography in the Student Learning Perspective, which claims that students' perceptions of the learning environment, in light of their motivations and expectations, determine how situational factors influence approaches to learning and learning outcomes. Firstly, the article investigates the context of development of this line of research and the studies concerning the effect of environmental, organizational and contextual factors on students' perceptions and learning; secondly, it describes the phenomenographic research methodology and the theoretical models of learning process developed. Finally, the paper reviews the studies on study approach and contextual variables, and discusses the applicability of SLP models to different academic systems and practical applications concerning teaching quality, assessment tools and students' perceptions of the quality of the learning environment.

Le Università hanno progressivamente strutturato le loro politiche in base alle percezioni, ai bisogni ed alla soddisfazione dei loro studenti. Il contributo esplora l'utilizzo della fenomenografia nella Student Learning Perspective, una prospettiva di studio che considera l'insieme delle percezioni degli studenti relative all'ambiente di apprendimento come fattore in grado di modulare l'effetto dei fattori situazionali e di contesto sugli approcci allo studio e gli esiti dell'apprendimento. In primo luogo, la rassegna analizza il contesto di nascita della SLP e dell'insieme di ricerche che indagano l'effetto di variabili ambientali, organizzative e contestuali sull'apprendimento degli studenti; in seconda battuta, l'articolo descrive l'approccio metodologico della fenomenografia ed alcuni modelli teorici sviluppati. Infine, passa in rassegna le ricerche sull'approccio allo studio e le variabili ambientali, considerando l'applicabilità dei modelli della SLP ai differenti contesti accademici, e le applicazioni pratiche riguardanti la qualità dell'insegnamento, gli strumenti di valutazione e le percezioni degli studenti relative alla qualità degli ambienti di apprendimento.

Keywords: Phenomenography; Students' Perceptions; Higher Education; Learning Environment; Study Approach

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1 Phenomenography and Student Learning Perspective

The Student Learning Perspective (SLP) is a study perspective that pertains to the learning process in educational contexts and is based on phenomenography (Entwistle & Ramsden, 1983; Marton, 1981). According to Marton (1988), the phenomenographic approach is suitable for studying how people, depending on their experiences, perceive, understand, learn and conceptualize aspects of the real world. In the field of study behavior, researchers have focused their attention on the role that the subjectivity of the academic experience plays in determining the student's learning outcomes and have analyzed how the learning environment impacts on the student's system of perceptions, how it interacts with the individual self-representations and produces results in terms of study quality (Marton & Booth, 1997). Phenomenography claims that the knowledge of the world emerges from the relationship between the individual and the world itself; in fact, learning means perceiving the subject of study in different ways, whereas experience is seen as the relationship between the person who experiences and the experienced object (Prosser & Trigwell, 1999). This vision openly contradicts the dualistic learning theory according to which knowledge exists regardless of who knows and can be learned and applied separately from its context (Marton, Prosser, Trigwell, Ramsden, & Benjamin, 2000). The phenomenographic analysis of learning processes allows to gather qualitative information on students' beliefs about a given subject of study, thanks to a methodology that uses in parallel questionnaires and interviews conducted as far as possible in ecological contexts (Prosser & Barrie, 2003), without assuming a priori interpretative categories that could contextualize the collected data. The results achieved are used to create new interpretative categories of the reality being investigated that do not necessarily relate to constructs and theories derived from previous researches in other contexts (Marton & Booth, 1997). According to the phenomenographic perspective, the context in which it occurs plays a key role in differentiating the phenomenon from other similar phenomena. This research approach, when applied to learning processes and aimed at studying the influence that contextual variables (such as teaching methods and types of assessment) have on the study process in universities and on outcomes, provides not only a contextualized interpretation of the learning phenomena, but also useful information relevant to the development of a teaching strategy that can enhance the quality of students' learning experience (Marton & Säljö, 1997). The phenomenographic approach, along with the attention to students' perceptions and the importance these perceptions have in the process of continuous improvement regarding teaching and learning context, were the key elements of the Student Learning Perspective.

2 The origins of researches related to the SLP

One of the most notable figures associated with the SLP was Ramsden, whose researches date back to the late '70s, in line with the growing academic interest in the environmental variables influencing student learning. In particular, Ramsden (1979) noticed that the academic literature showed an apparent disagreement with the definition and measurement of the variables making up the academic context; in fact, some authors referred to physical and organizational factors that define the academic environment as an institution, or acquired information on the learning context by taking into account teachers' perceptions (Gaff & Wilson, 1971), indexes of students' interaction with the staff and indexes of attendance and classroom engagement (Astin, 1968). Other authors (Pace, 1967; Stern, 1970) developed questionnaires aimed at measuring the socio-psychological characteristics of universities by taking into consideration what students thought about teachers, colleagues and university policies. A similar methodology had already been adopted in studies about the academic environment and its sub-cultures. Clark and Trow (1966) had proposed a model able to explain students' behavior depending on the four different sub-cultures (Vocational, Academic, Collegiate and Non-Conformist) they belong to and that are defined by the interaction of two dimensions, that is engagement in academic subjects and identification with their own college. Other authors had proved that the different sub-cultures students belong to affect their view of the academic context (Long, 1978). It is important to point out that reference literature showed critical points, since the measurements carried out did not distinguish between different departments and faculties (Ramsden, 1979). Therefore, the focus of analysis had to be shifted from the whole academic environment to the specific departments and academic contexts. Some authors had carried out a series of researches on the institutional climate of several faculties within the same university and observed different perceptions and departmen-

tal peculiarities regarding especially the relationships between students and professors (Gaff, Crombag, & Chang, 1976; Hermans, 1979). There were also researches focused on the relationship between the students' performance in different faculties and the specific physical and organizational features of the faculty itself (Hartnett & Centra, 1977). According to the investigations based exclusively on questionnaires, the academic environment did not affect performance significantly, whereas other researches based on participant observation and interviews had produced important results pertaining to the influence of contextual variables on study approach (Ramsden, 1979). Becker and colleagues (Becker, Geer & Hughes, 1968) had introduced the term situational adjustment to define the student's behavior depending on the specific social situation he has to face and that leads him to devising strategies in order to interact properly. In doing so, the student will be able to meet the requirements of the academic context. The author revealed the presence of a clear distinction between the hypothetical formal goals promoted by the academic environment (development of critical thinking, creativity, competence and independence) and the goals actually perceived by students (memorization, concept learning, reproduction and conformity) (Becker et al., 1968). Ramsden (1979) compared the dichotomy between the formal requirements of the academic environment and the requirements perceived by the students to the dichotomy between deep and surface learning proposed by Marton and Säljö (1976a); in fact, the concept of deep approach was very close to what the professors described as one of the main goals of the academic training, namely the development of critical thinking. Nevertheless, study approach was influenced more by university requirements than by formal educational goals. Marton and Säljö's researches (1976b), in line with Becker's investigations, showed that students chose suitable study approaches according to their expectations about the task requirements. For example, students believed that some assessment methods (such as multiple-choice tests), along with teachers' expectations, required memorization and information retention instead of a deeper understanding of the content. It is important to mention a later research on economics students' performance, whose results showed that many learners lacked a real understanding of basic concepts, since the task requirements (memorization of a huge amount of information) led them to choosing a surface approach rather than reworking the concepts they had studied (Dahlgren & Marton, 1978). A qualitative research focused on learning strategies in different subjects and involving science and engineering students showed that most of them usually chose a different study approach (deep vs. surface) depending on the specific situation; in fact, the adoption of different study approaches was not an individual feature pertaining only to the student but was ascribed to the student in connection with the specific learning context (Laurillard, 1979). In order to determine what characteristics of the learning context can influence students' study strategies and by using several interviews and a questionnaire on course perceptions (known as Course Perception Questionnaire), Ramsden (1979) identified in the academic environment those dimensions that, according to the students, were particularly important and were able to define the contextual features of different faculties. The dimensions he identified are the relationship between teacher and student, teacher's educational efforts, workload, teaching methods, usefulness of the subject of study in the job market, social climate of classroom and faculty, clarity of goals and required study standards, promotion of students' independence in the learning process. The research was carried out among students belonging to six different departments and faculties (social sciences, applied sciences, natural sciences, department of arts, school of independent studies), who were asked to explain how they approached academic tasks and how they perceived their learning, study, educational and institutional context. The questionnaire on perceptions of the learning context showed that students from the faculties mentioned above perceived the learning and teaching processes in completely different ways. Every department apparently was characterized by different climates and specific cultures that influenced study approaches. Furthermore, different departments and faculties seemed to require different study approaches. It was evident that study approach could be considered as a response to learning context. The research clearly showed that not only the environmental factors associated with the learning process, but also the relationship between students and teachers and the types of assessment used, were able to determine the adoption of different study approaches. In fact, according to Ramsden, a key role was played by the concept of "rapport," which concerns the teachers' ability to understand that students are an essential component of teaching and learning (Rogers, 1969), and the concept of "frame strength," namely the strength of the context to which the pedagogical relationship belongs in relation to the transmission of knowledge (Bernstein, 1971).

3 Models of SLP

Since the early '90s, in the field of phenomenographic perspective, notable figures associated with the SLP have been proposing a series of learning models (Prosser, Trigwell, & Taylor, 1994; Prosser & Trigwell, 1999; Ramsden, 2003) that succeeded in working as a point of reference for academic and teaching quality assessment and, in parallel, integrated the recent theoretical perspectives on study approach (Biggs, 1999). Prosser (1994) described a model of academic learning according to which the interaction of the characteristics of the academic context with the previous learning experiences impacts on the student's system of perceptions concerning the environmental variables, which apparently could affect academic performance in terms of quali-quantitative outcomes through the adoption of specific study approaches (deep vs. surface) (Figure 1).

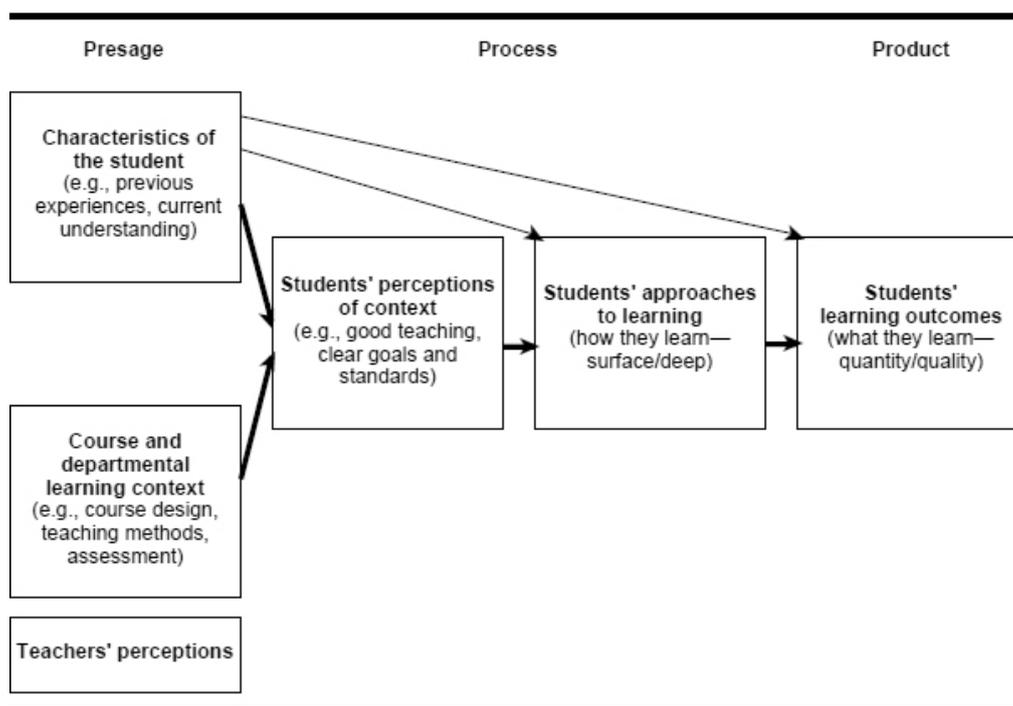


Figure 1 – Biggs 3P model edited by Prosser and Trigwell (1994)

Later, Prosser and Trigwell (1999) reformulated the previous model in order to provide a more complete description of the individual learning experience, that is the student's situation in a specific learning context (Figure 2). The model shows two areas: the first represents the student and the second the learning and teaching context. In order to define precisely the components of the model and how they are related to one another, authors use the terms "context" and "situation." The term "context" refers to the physical elements of the learning environment, such as laboratories or classrooms, and "situation" corresponds to the relationship between the learning context and the student and is unique to every individual. The absence of relationships between the components of the model indicates that student's previous experiences, perceptions, study approach and learning outcomes simultaneously contribute to the perception of the field (awareness), although, in some contexts, one or more elements may be salient and others less relevant.

According to this model, in every academic task, learning is affected neither by individual knowledge nor past experiences as a whole; in fact, it is mainly influenced by those past experiences being recalled in a specific learning situation that does not correspond to the mere sum of the elements present in the field during the learning process but takes into account the subjective perception (awareness) too. This model is undoubtedly innovative, since it refers exclusively to the student perspective rather than being teacher- or researcher-centered (Prosser, 2004). Recently, Ramsden (2003) proposed a model of academic learning (Figure 3) that, in line with the assumptions of the phenomenographic perspective, does not focus on the

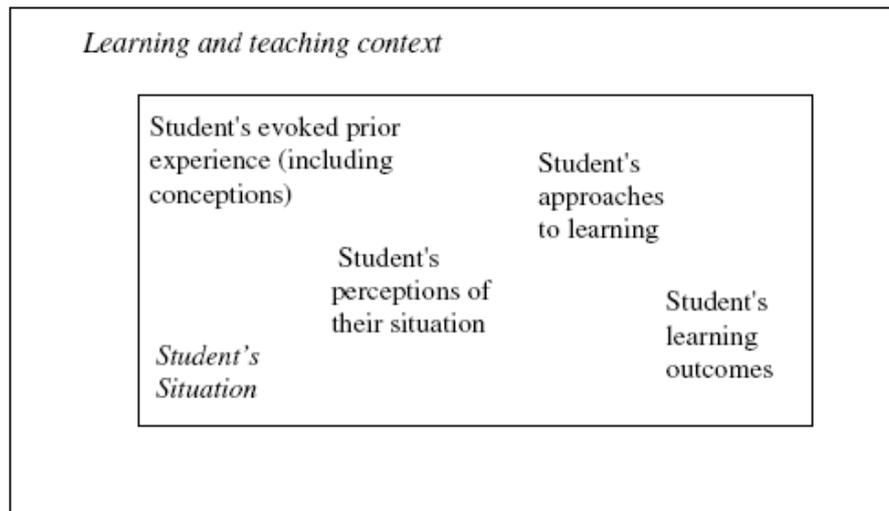


Figure 2 – Prosser & Trigwell's model of academic learning (1999)

objective characteristics of the learning environment, but investigates how students' perceptions of the academic environment influence their attitude towards study and choice of study approach. In fact, the model is focused neither on course design nor on assessment systems, but on what students build in terms of perceptions within the environmental and situational context. Therefore, Ramsden's model offers a heuristic and nondeterministic interpretation of the relationship between the elements described above. In addition, it is important to point out that the model is characterized neither by causal nor linear relationships, but by continuous connections at different levels. The model also claims that previous study experiences and contextual variables, such as subjects of study, teaching methods, type of assessment and its requirements, teacher's engagement and student's ability to manage the learning process affect the approach to the task (learning approach). These variables are mediated by the general study approach (stable construct strictly related to personality and called "orientation to studying") and the perception of the contextual features of the specific task. Student's task performance (learning outcomes) is strongly influenced by the study approach he adopted and that, according to Ramsden, is evidently an adaptive response to the learning environment.

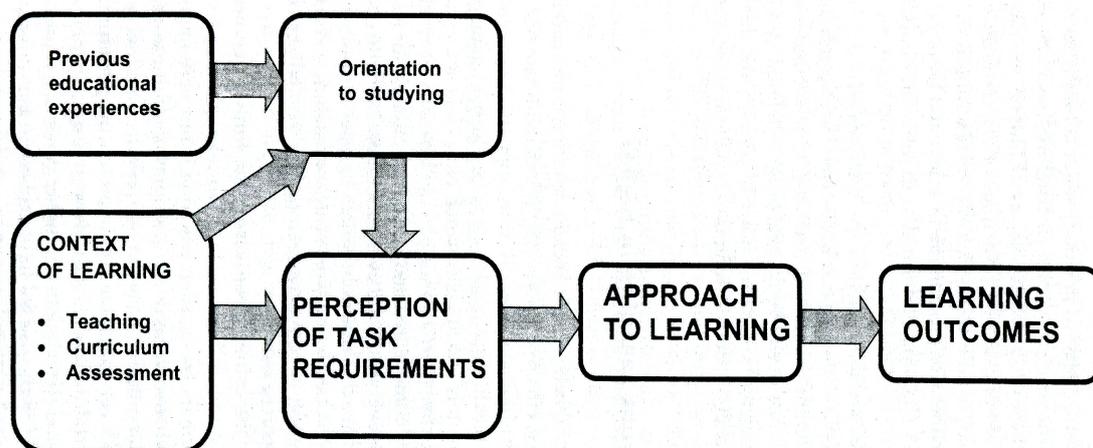


Figure 3 – Ramsden's model of academic learning (2003)

By understanding the individual system of perceptions concerning the personal sphere and the learn-

ing context, it is possible to interpret the variations pertaining to the results of the study and to work on the structure of the learning environment, in order to encourage the best study approach and academic outcomes. Ramsden claims that study approach is related to two dimensions: the student's willingness to understand the real meaning of the learning material (analysis of the task and of the meaning given by the author) or the absence of this willingness (surface approach to the text); student's ability to organize his study activity according to a holistic (focus on text structure and on the relationship between its components) or atomistic approach (text segmentation and specific analysis). The two types of study approach, which result from the combination of an intentional and a processual dimension, are called by Ramsden "deep-holistic" and "surface-atomistic." Study approach is not an individual feature; moreover, there is no direct relationship between student's poor performance and the adoption of surface approach. Study approach is also seen as the student's response to the requirements of the learning environment. For example, deep approach can lead to a better performance and a more structured and complex learning process. On the contrary, surface approach results in a mere retention of specific topics, often for short periods.

4 Researches on study approach and contextual variables

As a part of a research project (Ramsden & Entwistle, 1981; Entwistle & Ramsden, 1983), a questionnaire on perceptions of the academic context was handed out to more than 2000 English students and showed that when students perceive a good teaching quality within the faculty, their learning performance improves considerably. In addition, students showed a greater engagement and a bigger interest in achieving a deeper understanding of the learning material when they perceived that teaching was clear and well structured. On the contrary, when they had to deal with a heavy workload and the choice of learning approach and content was limited, students adopted specific strategies aimed at minimizing their efforts and maximizing learning outcomes by focusing on the type of assessment and its requirements. Later, several studies investigated the relationship between study approach, academic outcomes and perceptions of the learning context and its variables, by using specific measuring tools (questionnaires mainly derived from CPQ, such as CEQ and SCEQ, namely Student Course Experience Questionnaire, which pertains to students' perceptions of the learning context; ASI, which stands for Approach to Study Inventory; SPQ, also known as Student Process Questionnaire, which focuses on study approach) and collecting results that were not always comparable, but that clearly showed how the perceptions of the academic context and its variables affect study approach and academic performance (Lizzio, Wilson, & Simons, 2002). According to many researches, the adoption of surface approach is often related to the perception of an exaggerated workload, whereas deep approach is usually associated with the perception of a good teaching quality (Barrie, Ginns, & Prosser, 2005; Crawford, Gordon, Nicholas & Prosser, 1998; Entwistle & Tait, 1990; Prosser, Martin, Trigwell, Ramsden, & Lueckenhausen, 2005; Trigwell & Prosser, 1991). Other researches showed that deep approach is usually related to the perception of helpful teaching, clarity of goals, clarity of educational standards (Lizzio, Wilson, & Simons, 2002) and overall satisfaction with the course (Ramsden, 2003), whereas surface approach is often associated with the perception of a poor assessment. Nevertheless, the relationship between study approach and academic performance is not clear and this is also demonstrated by the conflicting results of some researches that, in general, underline a more evident connection between deep approach, academic success and qualitative learning outcomes (understanding of educational goals and satisfaction) rather than quantitative outcomes (grades) (Eley, 1992; Entwistle & Ramsden, 1983; Lizzio et al., 2002; Trigwell, Ashwin, & Millan, 2013). By taking into account different academic systems, many researchers analyzed the applicability of models that were centered on study approach (Barattucci, Pagliaro, Cafagna, & Bosetto, 2017; Byrne & Flood, 2003; Eley, 1992; Espeland & Indrehus, 2003; Lizzio et al., 2002; Ramsden, 1991; Richardson, 1994, 2005a, 2005b; Trigwell & Prosser, 1991; Wilson, Lizzio, & Ramsden, 1997) and used at the same time in European, Asian, African and Latin American academic contexts, which did not always coincide with the closed campus model. In Latin American and Iberian contexts, the theoretical evolution of models centered on study approach was supported by *SAL* (Pina, Sanz & Sánchez, 2005; García Berbén, 2005; Rosário, González-Pienda & Cerezo et al., 2010; Beltrán-Herrera & Díaz-Barriga, 2011) and by *Estilos de Aprendizaje* (Barros, García & do Amaral, 2008; Lugo, Hernandez & Montijo, 2012). Muñoz and Gómez (2005), who were undoubtedly influenced by Biggs (1999), revealed a plurality of attributions regarding learning theories and investigated how these attributions were adapted to different physical lo-

cations and were affected by specific cultural variables. In Central and South America, the investigation of learning and teaching styles has progressively involved the use of *CHAEA – Cuestionario Honey-Alonso sobre los Estilos de Aprendizaje* (Alonso, Gallego & Honey, 1997; Ojeda & Herrera, 2013; Bocciolesi, 2016), which is one of the most used questionnaires in Latin American research projects on study approach. This questionnaire identifies 4 different learning styles (active, reflective, theoretical, pragmatic) and is also used in post-applications stages. Learning space and the need for creation of positive environments, possibly student-centered and led by expert teachers, play a key role not only in closed campus model, but also in other educational systems (García-Hoz & Medina-Rivilla, 1994). The transversality of SLP and SAL, and the contemporary development of CHAEA and researches on learning styles in Latin American and Iberian contexts, facilitated the improvement of educational systems, requiring from an interdisciplinary point of view huge attention to the student's individual learning process. These approaches, in addition to the structure of quantitative assessment of teaching and academic contexts, further enhanced also practices and qualitative learning researches (García & Gallego, 2010).

5 Practical applications

The quality of academic teaching is strictly related to productive processes, such as innovation and research, economic development and more generally to the “production of value” of socio-economic systems. The more a country, a government or a local community succeeds in building up an excellent academic system, the more short- and long-term effects will impact on the factors of socio-economic development. Therefore, since the mid '70s, the quality of the academic “product” has been drawing the attention of centers for decision making and university boards. Every university focused its attention on the structure of the academic system and, if necessary, started providing not only teaching and training, but also support in other areas. In fact, universities gradually introduced several services that became more and more strategic: orientation, tutoring, counselling, job placement and leisure activities, such as conferences, cultural events, sport and entertainment. These services, when associated with a good teaching quality, guarantee the overall effectiveness of the educational system. As acknowledged by recent European institutional guidelines, the student is definitely the cornerstone of all the top-level universities aiming to provide education in line with learners' expectations and an ever-changing job market that usually rewards only good quality (Barattucci & Zuffo, 2012; Barattucci, 2017). Among the variables predicting a successful relationship between education and employment, it is important to mention theoretical knowledge, skills development and cross competences, without forgetting a learning environment that allows students to face their academic life with awareness and initiative (Biggs, 1999). In order to realize these conditions, universities need continuous reorganization and measurement of the effectiveness of the services they provide; in fact, assessment has gradually become a systematic procedure and a key factor in the academic systems, since they have to compete in an international market and contend for students and their tuition fees. Universities have gradually started using measuring tools to investigate the quality of the learning environment and the students' perceptions of the academic context and its educational value, assessment systems, workload, clarity of goals and the potential impact of their studies on their professional career (Trigwell, 2006; 2012). The distribution of academic funds is currently influenced also by the results of these assessments (Entwistle & McCune, 2004). It is important to point out that many universities supervise regularly the quality of academic programs and organization, since their main goal is to ensure excellent educational standards in line with the global system and the totality of services they offer. Thus, most academic institutions rethought their organization according to perceptions, satisfaction, tendencies and needs of their primary client: the student. The analysis of the relationship between university and student has gradually become more and more important and has paved the way to studies and researches on the influence of academic environment on the quality of learning.

Phenomenography, and its recent evolution, the Variation Theory, attempt to describe the different categories of conceptions of a phenomenon from the perspective of participants, but going further than the simplistic assessment of clients' point of views, and building a partnership relation between students and faculties in order to first improve student learning (Åkerlind, 2008). The focal point is on the variation in the experience of a group of people, and on specific issues which highlight differences in the ways a phenomenon is experienced (Marton & Pong, 2005). This means that the interest is addressed to the

explanation of dissimilarities, and to variables that promote these dissimilarities: student's experience is a measure of the functioning of the teaching process and of the quality of faculty services and programs, and not just a customer's feedback (Åkerlind, 2005; Sin, 2010). Learning being a function of discernment, it presupposes an experienced variation: we need to discern the object from its context in order to learn; then, we must experience variation of the object to discern it from its context and distinguish it from other objects (Marton & Booth, 1997; Bowden & Marton, 1998; Lo, 2012). This means that the role of the teacher is to facilitate their students to modify their ways of watching the object of learning. Teachers will have to project learning experiences to allow students to understand the object of learning, concentrating especially on students' learning difficulties and on which features of the object they focus on: teachers will have to evaluate students' prior knowledge and ways of seeing the object of learning, and set proper educational goals and aims (Lo & Marton, 2012).

Phenomenography is integral to the overall research and tightly bound to the interest in higher education practice (Åkerlind, McKenzie & Lupton, 2014; Tight, 2016): the research-based approach is functional to the precise intention to improve learning, teaching, and institutional development, a "reflective practice" that universities take on to examine the process of learning as seen by their students (Booth, 1997; Richardson, 1999). This practical application has been observed since early phenomenographic studies, and continues through the current development of the Variation Theory (Dahlin, 2007; Lo, 2012; Tight, 2014). Quality of teaching can benefit from studies that investigate on teachers' conceptions towards their own subjects and students' understanding; evaluation methods can profit from research on teachers' and students' conceptions towards assessment instruments; environmental aspects can be analysed and adapted to students' conceptions of learning environments (college, faculty, classroom, etc.) which are able to improve learning (Ho, Watkins, & Kelly, 2001; Pang & Lo, 2011). Moreover, the functional importance of phenomenographic *modus operandi* is present in the opportunity that: (a) teachers will modify their conceptions of teaching, which will influence their approach to teaching and professional growth; (b) students will vary their learning styles, leading to an improvement of learning outcomes; (c) faculties and universities, then having an understanding of the experience of students and teachers, would have multiple elements to propose organisational transformation, didactic and support services development, and study plan, course design, curriculum or educational methodologies changes or ad-hoc projects (teachers' effectiveness, lesson analysis, etc.) (Lo, 2012). This last aspect is confirmed by the interest of phenomenographic research in varied academic features (contextual variables and environmental conceptions, study support and understanding, tutoring services, grades and outcomes, online/offline courses, internationalisation, feedback, research, etc.) and by its utilisation within a wide range of disciplines and educational institutions (Tight, 2016).

6 Conclusion

The different geopolitical spaces, which are the result of a heterogeneous evolution of European and non-European countries, were often affected by irregular applications of a plurality of education reforms and learning-oriented projects that now are increasingly associated with the use of specific electronic technologies. Within these enduring reformative processes, educational goals are again at the center of the pedagogical and academic action, which is aimed at training versatile and functionally competent people. This means learning according to a democratic and qualitative process and a Deweyan perspective centered on pragmatic education and educational communication; in fact, learning is seen as a real liberation process crossing people's chronological growth (Rivilla, Concepcion, Garrido, & Dominguez, 2016). The Student Learning Perspective primarily focuses on the understanding of the student's system of perceptions concerning the personal sphere and the academic environment. By referring to a specific dimension of individual needs and assessments, this phenomenographic perspective allows an accurate interpretation of context variables, which can be considered as independent variables acting on the "client system" of reference. The analysis of learning contexts in terms of environmental, educational and organizational variables allows to develop academic and institutional strategies aimed at encouraging the best outcomes in different situations. Nevertheless, there are divergent views (Ekeblad, 1997; Howie, & Bagnall, 2013); for example, Webb (1997) highlighted critical elements in the phenomenographic approach, apparently too strict and too influenced by quantitative methods. In fact, this approach is likely to pay a high price to the educational

conformity aimed at pleasing and, as claimed by TQM theorists, delighting the student, since his opinion is the cornerstone of the academic policies oriented towards retention and marketing. The price could be paid in terms of excellence in career opportunities, entailing a possible underestimation of research and, in the long term, a bad reputation. Furthermore, the phenomenographic approach seems to be conservative and partially renounces to the empowerment of the academic system as key factor of change and influence of the social and political systems. Another criticism relates to the dichotomy deep/surface, considered as “overly simplistic;” moreover, Webb himself describes it as “immediate, universal and with a huge metaphoric power,” whereas Entwistle (1997), in defense of the construct, highlighted the undeniable influence it has on the understanding and on the effects of the teaching practice (Barattucci, 2017). However, with its student-centered approach, the SLP undeniably obtained a positive outcome and spread widely. By taking into consideration the context and the historical background in which it developed, it is possible to identify therein the influences of some elements that, more generally, characterized the development of the organizational and productive systems as a whole. The approach fostered by the SLP represented the opportunity to implement an organic, advanced and systematic control that focused on the teaching quality of a specific subject and its assessment, the measuring tools of teaching quality and the contextual variables of the academic environment, the quali-quantitative surveys on study approach and the environmental variables. Nowadays, thanks to the methodologies developed by these models, it is possible to supervise properly many universities and to use assessment tools that are acknowledged worldwide in the academic system. The models discussed here can propose ideas, experiences and experimentations of high quality with regard to teaching, quali-quantitative features of outcomes, limitation of the drop-out rate and actual employability.

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