

# Career maturity: a priority for secondary education

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## Abstract

This study reviews the current state of career maturity in secondary education—a period of education which is critical for development of this construct, when students are faced with ongoing academic and occupational decisions over the course of their studies. This paper is organized in three parts: first we focus on the concept, models, structure and development of career maturity; second, diagnosis and assessment are given shape through the *Cuestionario de desarrollo de la carrera* (CDC) and the *Cuestionario de madurez para la carrera* (CMC), adaptations of Super's CDI questionnaire and the CMI from Crites; and third, we discuss how to improve intervention.

**Keywords:** *Career maturity, instruments, diagnosis and evaluation, intervention, secondary education.*

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## Resumen

En este trabajo se presenta una revisión de estado actual de la madurez para la carrera en la educación secundaria, como uno de los constructos más importantes a desarrollar en esta etapa educativa, que se caracteriza, entre otros aspectos, por las constantes tomas de decisión académicas y profesionales, que el alumnado ha de afrontar a lo largo de estos estudios. Su contenido se estructura en tres partes: una primera parte se centra en el concepto, modelos, estructura y desarrollo de la madurez para la carrera; una segunda parte se concreta en su diagnóstico y evaluación, a través del Cuestionario de desarrollo de la carrera (CDC) y el Cuestionario de madurez para la carrera (CMC), adaptación de los cuestionarios CDI de Super y CMI de Crites. Y una tercera donde se plantean algunas propuestas de mejora para la intervención.

**Palabras Clave:** *Madurez para la carrera, instrumentos, diagnóstico y evaluación, educación secundaria, intervención.*

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## **Introduction**

The present study stems from an elaborate project which began in 1987 with validation of the career maturity construct, and ended in 2007 with the presentation of two instruments (CDC and CMC) for diagnosing and assessing career maturity.

The purpose of this study is to present the current state of the career maturity construct, the validation of certain diagnostic and assessment instruments for the context of Spain, and a proposal for intervention to improve career maturity.

The construct of career maturity (CM) has given a boost to the conception of occupational guidance, understood as lifelong development of one's career. Even though career development is a lifelong process, in our case we focus on adolescence as a maturational stage, which in turn corresponds to the period of secondary education. It is precisely at this stage when CM undergoes greater development and progress, and it becomes more necessary since the student must engage in academic decision-making processes which have important repercussions for the future. Intervention for improving career maturity becomes a requirement, especially as it pertains to career planning and decision making processes.

This study has a three-part structure: the first part introduces us to the CM construct, that is, the concept, its structure and development (models); the second part focuses on CM diagnosis and assessment; and the third part makes proposals for improving CM. The overall intent is to offer some assistance in clarifying, developing and intervening in career maturity.

### **Concept, structure and development of career maturity**

Career Maturity (CM) has its roots in the conception of career development proposed by Super (1951, 1963). Career choice is conceived as a series of events which take place in an individual's life. The process follows models which correspond to a person's stage of life, and is the result of psychological, physical and social factors which interact in the life of the individual.

After half a century of studies on CM, agreement has yet to be reached on the concept and the most suitable model for explaining the CM construct. Studies began in the decade of the

50s, but not until the 70s and early 80s did the CM construct show its greatest development, especially on the part of Super (1974); Super and Thompson (1979); Super et al. (1972, 1981) and Crites (1971, 1973, 1978). These researchers can easily be considered the fathers of career maturity.

### *Conceptualizing career maturity*

Different authors have not agreed on how to conceptualize career maturity. Specifically, for Super (1951, 1963), career maturity is *the maturity which a person shows relative to their developmental stage, that is, comparing the individual's stage of maturity with his or her chronological age*. On the other hand, Crites (1968) *compares a person's maturity with others who differ in age, but are in the same stage of maturity*, for example, students in the exploratory stage (15- 21 years).

Since the two authors did not agree, a symposium was organized in Montreal (1974) in order to try to reach consensus on this concept. After much discussion, the experts attending the Symposium redefined CM as *one's disposition to confront vocational or career development tasks as they are encountered, as compared to others who are in the same stage of life and facing the same developmental tasks*.

In addition to contributions from Super and Crites, we must include work by Fouad (1988); King (1989); Levinson, et al (1998); Luzzo (1993); Savickas (1984, 1994), and in our country, Álvarez González (1989) and Álvarez González et al. (1990, 1995, 2007); Corominas (1989); Salvador (1981); Secadas (1974) and others. All of these have contributed toward defining CM as *behaviors that a person manifests in the intent to carry out different career development tasks, appropriate to each stage of maturity* (Álvarez González, 1995, Álvarez González et al. 2007).

### *Structure of career maturity*

Just as the different authors have not reached agreement in conceptualizing career maturity, the same can be said with regard to the structure of the construct. Fundamentally two models emerge from the different conceptions:

- The *Super model* (1961, 1974) which is structured in five dimensions or factors: *planfulness, resources for exploration, information, decision making* and *reality orientation* and 19 variables. The structure is the same for adolescence and for adulthood, what varies are the content of each of the factors and the variables.
- The *Crites model* (1965, 1971) has three levels: at the first level are the variables (a total of 20); at the second, intermediate level are the four factors (*consistency, realism, competencies and attitudes*) which group the variables; and the third level consists of *the degree of career development*. This is a hierarchical model where significant, relatively high correlations exist between variables within one factor, and moderate correlations are found between variables in different factors.

**Table 1** presents the structure of the Super and Crites models as discussed above. The differences in structure can easily be observed.

**Table 1. The main models of career maturity**

Super (1951, 1974)	Crites (1965, 1971)
<p>1. <i>Career planfulness:</i></p> <ul style="list-style-type: none"> <li>. Distant future</li> <li>. Intermediate future</li> <li>. Present</li> </ul> <p>2. <i>Career exploration:</i></p> <ul style="list-style-type: none"> <li>. Consultation</li> <li>. Resources</li> <li>. Participation</li> </ul> <p>3. <i>Information:</i></p> <ul style="list-style-type: none"> <li>. Education and instruction</li> <li>. Income requirements</li> <li>. Duties</li> <li>. Supply and demand</li> <li>. Conditions</li> <li>. Career advancement</li> </ul> <p>4. <i>Decision making:</i></p> <ul style="list-style-type: none"> <li>. Principles</li> <li>. Practice</li> </ul> <p>5. <i>Reality orientation:</i></p> <ul style="list-style-type: none"> <li>. Self-knowledge</li> <li>. Realism</li> <li>. Consistency</li> <li>. Crystallization</li> <li>. Work experience</li> </ul>	<p><b>Degree of career development:</b></p> <p>1. <i>Consistency:</i></p> <ul style="list-style-type: none"> <li>. Field</li> <li>. Time</li> <li>. Level</li> <li>. Family</li> <li>. Independence</li> </ul> <p>2. <i>Realism:</i></p> <ul style="list-style-type: none"> <li>. Interests</li> <li>. Skills</li> <li>. Personality</li> <li>. Social class</li> </ul> <p>3. <i>Competencies:</i></p> <ul style="list-style-type: none"> <li>. Problem solving</li> <li>. Planning</li> <li>. Goal selection</li> <li>. Self-appraisal</li> <li>. Occupational information</li> </ul> <p>4. <i>Attitudes:</i></p> <ul style="list-style-type: none"> <li>. Orientation</li> <li>. Preferences</li> <li>. Commitment</li> <li>. Involvement</li> </ul>

These models do not agree on the number of variables and factors which make up the structure of career maturity; consequently, they become complementary, while we await new reviews with further data that shed more light on the topic. Both models emerge from the *Career Pattern Study* (CPS, 1951), although each has its specific characteristics and peculiarities which differentiate it from the other.

Both Super's and Crites's structural models of career maturity have experienced advances through ongoing research, but both are still subject to more revision as new data appear in future studies. What has been demonstrated to date is that career maturity is a much more complex construct than what was originally thought. In order to validate how well these models match reality, inventories were constructed: Super's *Career Development Inventory* (CDI) and Crites' *Career Maturity Inventory* (CMI). These inventories are being studied and adapted for the context of Spain (Álvarez González et al. 1990, 1995, 2007).

Additionally, we must include the model by Holland (1973, 1985), which structures CM along three determining factors: *consistency*, *differentiation* and *congruence*. This model considers that *a person is vocationally mature when he or she manifests a high degree of consistency, differentiation and congruence in choosing a career*. Empirical confirmation has been sought using the *Self-Directed Search* (SDS), with its Catalan version “Quadern d’orientació professional” (Bisquerra, et al. 1989; Corominas, 1989; Corominas, Álvarez González & Bisquerra, 1999a) and Spanish version “Programa de orientación profesional autoaplicado” (POPA) (Corominas, Álvarez González & Bisquerra, 1999b), in paper and electronic formats.

This study focuses on the models by Super and Crites, in light of their greater influence and because they offer reliable, validated instruments for diagnosis and assessment of CM. From 1987 until the present, they have been the object of study at different times and in different contexts, and in this country in particular.

### *Developing career maturity*

With regard to development of career maturity, both the Super and Crites models address how the factors or dimensions of career maturity are paced and develop differentially across ages and educational levels. In the case which concerns us, adolescence as the stage of maturity, and

secondary education as the academic period, the process of developing career maturity presents the following characteristics:

- a) The pace of development varies, it is not uniform across the different dimensions of age or educational level. Certainly, greater development of career maturity takes place as the subject grows older and reaches higher levels in education, although in some school years the differences are barely perceptible. Different studies (Álvarez González, 1989; Álvarez González et al. 1990, 1995, 2007; Jordaan & Heyde, 1972, 1979; Super & Overstreet, 1960) confirm that the dimensions of information and decision making show increasing development as age and years in school increase, and the exploration dimension is what shows the least development. In particular, the study by Álvarez González (1989) confirmed that development of career maturity over the years of secondary education does not progress in a linear or uniform fashion during these ages and school years; instead, it becomes stagnant at certain times.
- b) The development of career maturity in adolescents has not reached the level required for making career decisions with any assurance of success. Changes in career development are not as substantial as one might have hoped; there are certain "stoppages" in this development. In the section on proposals for improvement, we will discuss deficient aspects seen at this stage.
- c) The stability of career maturity remains less than that of other traits or variables which, while separate from career maturity, are related to it (intelligence, year in school, self-concept, academic achievement, aspects of personality, ethnic group, socio-economic status, career indecision, cognitive styles, etc.).

Consequently, it is difficult to make predictions as to the career maturity of students in this developmental stage (adolescence) and educational stage (secondary), whether they are in compulsory, post-compulsory or vocational training, since correlations of career maturity with other variables are unsubstantial. The studies do not explain more than 25% of the variance, with one exception, the recent study by Creed and Patton (2003), with a sample of 365 secondary students from grades 8 to 12, where predicting variables were age, gender, family socio-economic status, academic achievement and work experience. Together these variables explained 52% of the attitudinal dimension of CM and 41% of the competency dimension (Álvarez González et al. 2007). And studies have appeared which relate CM with emotional

competencies (Brown, George-Curran & Smith, 2003; Fraga, 2007; Vila & Pérez González, 2007). These studies show moderate correlations between emotional intelligence and CM.

By way of conclusion, career maturity is a development construct which matures with age and years in school. However, this development is not uniform; in certain school years the differences are minor. The factors or dimensions which show greater progression with age and school year are information and decision making and career planfulness; however, what shows the least progression is exploration of resources. All this confirms that the development of career maturity in adolescence goes through phases of intense development, stagnation, and moderate growth.

The characteristics of Super's and Crites's structural and developmental models can be specified as follows:

- They are *multiphasic models* that can be verified empirically, and differ only in the number of factors and their representativeness
- They show a *moderate predictive value*, that is, it is probable that people who are vocationally mature make more realistic, stable decisions
- For both models, career maturity is a *developmental process* which begins in early years and continues throughout a person's life stages.
- Career maturity is a *continuous process* but not uniformly so. Its rate of development is not constant.
- The development process is *partially irreversible*, since once a person has pursued one option of studies, it is difficult to discontinue that option without experiencing some setback.

### **Diagnosing and assessing career maturity**

In taking on the diagnosis and assessment of CM, one must be aware that this is not to be exclusively a psychometric approach, based essentially on standardized tests; rather, other more longitudinal procedures, focused on observation and self-exploration, must be used. The latter will make possible a more comprehensive, global approach to diagnosis and assessment. Other studies (Álvarez González et al., 2007) present one of the most popular models for CM

diagnosis, namely, the *Career Development Assessment and Counseling* model (CDAC) from Super et al. (1992).

Under this model, the diagnostic process begins with an initial examination which collects all available information about the student, mainly through interviewing. The interview should be semi-directed, allowing students to express themselves freely (Stage I: *Preliminary examination*). Next, a more in-depth examination of the main dimensions of career maturity is carried out using different procedures, both quantitative and qualitative, using life-history questionnaires, interviews and observation (Stage II: *In-depth examination*). A third stage evaluates all the information that has been collected using qualitative and quantitative analysis. This requires knowing how to analyze and integrate the information obtained through the different procedures (Stage III: *Evaluating all the information*). The final stage involves a guidance intervention to improve those dimensions that are deficient (planfulness, exploration, information and decision making), by custom designing a career maturity program (Stage IV: *Guidance intervention*).

This article will focus on the psychometric procedure for diagnosing and assessing career maturity, in particular through the use of the CDI questionnaire by Super and the CMI by Crites. These instruments assess the factorial structure and developmental component of CM, based on the theoretical formulations of Super's and Crites' structural and developmental models.

#### *Instruments for diagnosing and assessing career maturity*

An exhaustive review of the primary instruments for diagnosing and assessing CM is presented in Álvarez González et al. (2007). Here we will focus on those which have had greatest impact: Super's *Career Development Inventory* (CDI) and the *Career Maturity Inventory* (CMI). **Table 2** shows these instruments with their dimensions.

The two instruments do not diagnose or assess all the factors or dimensions of career maturity of subjects in this developmental stage (exploration) and in this educational period (secondary education); they focus on those dimensions which are easiest to measure and to quantify. Thus, for example, Super's CDI (Forms I and III) measure four of the five factors in the theoretical model (planfulness, exploration, information and decision making), leaving out

reality orientation (self-knowledge, realism, consistency, crystallization, work experience). Crites' CMI measures two of the four factors (attitudes and competencies), excluding consistency and realism of the vocational choice (it considers the process of career choice without addressing content of the career decision).

**Table 2. Dimensions, subdimensions and variables in the principal instruments for diagnosing and assessing career maturity (Álvarez González et al., 1995, 2007).**

	<b>CDI (Super)</b>	<b>CMI (Crites)</b>
<b>Attitudinal dimension</b>	<ul style="list-style-type: none"> <li>· <i>Career planfulness:</i> <ul style="list-style-type: none"> <li>- Application specificity</li> <li>- Concern with the decision</li> <li>- Definition of plans</li> <li>- Information specialization</li> </ul> </li> <li>· <i>Career exploration:</i> <ul style="list-style-type: none"> <li>- Quality of potential sources</li> <li>- Quality of sources used</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>· <i>Attitudes:</i> <ul style="list-style-type: none"> <li>- Involvement</li> <li>- Guidance</li> <li>- Independence</li> <li>- Preference</li> <li>- Commitment</li> </ul> </li> </ul>
<b>Cognitive dimension</b>	<ul style="list-style-type: none"> <li>· <i>Career decision making</i></li> <li>· <i>Information on career development</i></li> <li>· <i>Knowledge of the work world</i></li> <li>· <i>Information on the preferred occupation</i></li> </ul>	<ul style="list-style-type: none"> <li>· <i>Competence:</i> <ul style="list-style-type: none"> <li>-Problem solving</li> <li>-Planning</li> <li>-Goal-selection</li> <li>-Self-appraisal</li> <li>-Occupational information</li> </ul> </li> </ul>

The authors of these instruments are the first in recognizing that these measurements of career maturity must be complemented by other measurements or instruments that allow for more longitudinal evaluation. Recent studies (Álvarez González, et al. 2007; Levinson, et al. 1998, and others) recommend moderate use of these instruments, combined with other more qualitative measures such as guidance, counseling and personal relating (interview, observation). In summary, the use of a variety of evaluation techniques and resources (qualitative and quantitative) which address different aspects of career maturity in a more global, comprehensive fashion is recommended for assessing career development.

After these considerations, we select the CDI and CMI as useful tools for diagnosis and assessment of career maturity, complemented by other procedures based on a more qualitative, developmental approach.

- **Career Development Inventory (CDI) and Career Maturity Inventory (CMI) for adolescents**

The instruments most used in cross-cultural research are the CDI by Super and the CMI by Crites. In Álvarez González et al. (2007), there is a detailed study of these two instruments and their adaptation to the Spanish context under the names CDC and CMC. Their content and structure are described below.

- **Content and structure of the CDC (Spanish version of the CDI) for adolescents**

A series of studies have been carried out over more than a decade (Álvarez González, 1989; Álvarez González et al. 1990, 1995, 2007), designed for clarifying the construct of career maturity and adapting the two instruments of measurement: CDI by Super et al. (1972) and CMI by Crites (1978). The studies have focused specifically on validating these instruments for diagnosis and assessment of career maturity in the Spanish context.

Although much remains to be done, these instruments are currently available for diagnosis and assessment of career maturity, and they are rooted in the theoretical formulations of these development models. The purpose of these instruments is to: **a)** assess development of career maturity at different ages in adolescence and youth; **b)** diagnose those areas or dimensions where there are differences, and **c)** evaluate programs and see how well they have met their objectives.

After a careful adaptation to the Spanish context (Álvarez González, 1989; Álvarez González et al., 1990, 1995, 2007; Corominas, 1989; Salvador, 1981; Salvador & Peiró, 1986), the CDI questionnaire was reduced from 91 to 50 items (**Table 3**).

The instrument comprises three factors (career planfulness, resources for exploration, information and decision making) with eight variables and 50 items. The first two factors have an attitudinal dimension and the other has a competency dimension. Hereafter we will

refer to this questionnaire as the CDC, *Cuestionario de desarrollo de la carrera*. It can be administered individually or collectively, requiring approximately 30 minutes for application and about 15 minutes for correction. It is designed for students from 14 to 18 years of age, and there are percentiles gauged for the different years of secondary education and for the population in general. Application and correction norms are those typical of any standardized questionnaire, and there is a response sheet and correction template.

**Table 3. Content, structure and number of items in the CDC**

<b>Factors and variables</b>	<b>Description</b>	<b>Nº of items</b>
<i>Planfulness:</i> Specificity of planning Concern with choice Definition of plans Information specificity	This factor addresses the adolescent's degree of knowledge and inclination toward planning and choice	16
<i>Resources for exploration:</i> Quality of potential sources Quality of sources used	This factor assesses the quality and effectiveness of the sources used in exploration	17
<i>Information and decision making:</i> Occupational information Knowledge of the aspects of decision making	This factor assesses knowledge about educational and occupational information and knowledge of different aspects of decision making	17
		50

- **Content and structure of the CMC (Spanish version of the CMI)**

An initial analysis of the questionnaire (Álvarez González et al., 1990) revealed the need to reduce the attitudes subtest from its original 50 items to a total of 40, and reduce the competencies subtest from 100 to 60 items, 30 of these corresponding to form A and 30 to form B (**Table 4**).

**Table 4. Content, structure and number of items in the CMC**

<b>Factors and variables</b>	<b>Description</b>	<b>Nº of items</b>	
<b><u>Attitudes:</u></b>	<p>1. Involvement in the choice process</p> <p>2. Orientation toward work</p> <p>3. Independence in decision making</p> <p>4. Preference for career choice factors</p> <p>5. Conceptions of the choice process</p>	<p>. Extent of active participation in the career choice process</p> <p>. Extent of orientational tasks and attitudes toward work and work-related values.</p> <p>. Degree to which an individual is self-reliant in the decision making process.</p> <p>. Degree to which an individual bases his or her selection on a particular factor.</p> <p>. Precise conceptions or traits of the vocational choice process</p>	40
<b><u>Competency:</u></b>	<p>6. Self-appraisal</p> <p>7. Occupational information</p> <p>8. Goal selection</p> <p>9. Planning</p> <p>10. Problem Solving</p>	<p>. A person's ability to judge the pros and cons of his or her own vocational satisfaction.</p> <p>. Knowledge of the work world (trends, attitudes, employment opportunities).</p> <p>. Ability to make the best suited occupational choice</p> <p>. Understanding and planning a series of steps in order to enter a certain occupation.</p> <p>. Problem solving skill in vocational decision making</p>	30
		70	

The instrument incorporates two of the four factors of the theoretical model (attitudes and competencies) and ten variables with 70 items. As with the previous questionnaire, the CMI will now be referred to as the CMC, *Cuestionario de madurez de la carrera*. The competencies factor has Form A and Form B, which can be used interchangeably. It can be administered individually or collectively, requiring 40 minutes for application and 15 minutes for correction. It is designed for students from 14 to 18 years of age, and there are percentiles gauged for the different years of secondary education and for the population in general. As in the former case, application and correction norms are those typical of any standardized questionnaire, and there is a response sheet and correction template.

In order to better match Spain's multilingual reality, these instruments are presented by Álvarez González et al. (2007) in the four official languages: Castilian Spanish, Catalan, Basque and Galician (CD format).

Both questionnaires have undergone experimentation on several occasions, including item analyses (reliability and homogeneity indices, etc.), reliability calculations and other classic psychometric indices.

### **Intervention proposal for improving career maturity**

Several studies to date (Álvarez González, 1989; Álvarez González, 2006; Álvarez González, et al. 2007; Corominas, 1989; Salvador & Peiró, 1986; Sánchez Pérez, 2001; Valls, 1996) confirm a series of deficiencies in career maturity in secondary students:

- They lack elements of reflection for better self-knowledge
- They demonstrate little career planning in the short- and mid-term
- They make limited use of and do not value resources for self-exploration and exploration of their environment
- They reveal a lack of information about studies, careers and occupations
- They lack strategies for successfully approaching the decision making process
- Finally, they show little connection to the work world and the roles that they will have to exercise in the future.

Consequently, the following are *aspects for improvement*:

- Encourage short- and mid-term career planning, taking into account the following: interest in occupational tasks; concern with occupational choice; extent of information about the career being considered, and extent of self-knowledge
- Give special attention to resources for career exploration (using and appreciating their value)
- Provide access to information which exists in the social setting
- Help them deal with the decision making process in its various dimensions: cognitive, affective/emotional and social
- Bring students closer to the work world, because they lack introspection and judgment about the world of work.

These proposed improvements can be expressed in the following *objectives*:

- Provide the student with strategies, information and resources they need to acquire more objective self-knowledge
- Be familiar with reference material that relates to orientation of one's studies, career, or occupation, and create search strategies for the type of information that the student may have need of at any time
- Help the student develop strategies and procedures for dealing with the decision making process, not only in the cognitive dimension, but also in emotional and social dimensions.
- Prepare students in the process of transitioning from the stage of education to the world of work.
- Help the student define and specify his career plan.

And these objectives could be developed through five *areas of intervention* (Álvarez González et al., 2007):

- *Knowledge of self and others.* Students must become aware of their potentiality: abilities, aptitudes and skills, self-concept and self-esteem, personality, academic record, educational and work experience, interests, level of ambition, motivation, values, life-

style, etc. All these characteristics should be congruent with their preferences.

- *Information on studies, professions and occupations.* Students need not only information about themselves, but also about the environment which they live in. They need information about the different educational options (academic paths), professional options (career paths) and occupational options (socio-labor paths). It is not so much a matter of providing them with information, but rather for them to know how, where and when to find it and then to make use of it.
- *The decision-making process.* Throughout their personal, educational and professional development, students are always making decisions. They should be prepared, during their formative period, to carry out effective decision making. This requires the student to engage in ongoing reflection about himself or herself, about others and about the environment, throughout this educational period. Other studies address a comprehensive model for decision making (Álvarez González & Rodríguez Moreno, 2006).
- *Transition to the work world.* The final years of secondary education should include preparing students to cope effectively with their transition to the work world. They need strategies which enable them to make best use of their education in the work world, and they need to be familiar with employment paths.
- *My occupational plan.* Students who begin vocational training or university preparation (*Bachillerato*) should begin to construct their own occupational plan, based on their personal characteristics, their educational experience and their work experience, if they have any. This occupational plan will give more meaning to what they are doing, in the personal sense as well as educationally and occupationally.

### **By way of conclusion**

From 1958 until the present, the CM construct has been the object of various studies which have helped to clarify, delimit and develop its nature and content. Most of the early studies were carried out within the context of such programs as the *Career Pattern Study: CPS* programs by Super (1957); the *Career Development Study: CDS* by Gribbons and

Lohnes (1968); the Vocational Development Project: VDP by Crites (1961); Vocational Maturity by Super and Overstreet (1960); Vocational Development by Jordaan and Heyde (1972, 1979); and Career Maturity by Álvarez González (1989), Álvarez González et al. (1990, 1995 y 2007), Corominas (1989), Salvador (1981) and Secadas (1974).

These studies have pursued a fundamentally three-fold objective: **a)** to clarify the concept of CM and describe its structure from adolescence to adulthood; **b)** to develop and validate different instruments for measuring CM; and **c)** to design intervention proposals for improving CM.

As for the *first objective*, as was seen under other headings above, there has not been agreement on the number of variables and dimensions which form the structure of CM. That is to say, there is no well-defined taxonomy of variables and dimensions of CM. In particular, studies by Álvarez González (1989); Álvarez González, et al. (1990, 1995, 2007); Salvador (1981); Salvador and Peiró (1986) conclude that Super's model of career maturity is bifactorial (attitudes and competencies) and that Crites's model has a unifactorial structure (degree of career development). There need to be further cross-cultural studies which fine tune the construct and its instruments of measure to the socio-cultural and educational characteristics of each country. In considering CM as a *developmental process*, one concludes that: development is not uniform, but it is continuous; the factors which show the greatest progress with increased age and years in schooling are *information and decision making*, *career planfulness* (Super) and *competencies* (Crites); less progress is found in *career exploration* (Super) and *attitudes* (Crites); year in school is seen as a better predictor than age, and no significant differences were found between genders.

As for the *second objective*, there are important limitations in the CDI and CMI for measuring the main CM factors. The CDI addresses two factors (attitudinal and cognitive) and the CMI only addresses one (degree of career development). In particular, factorial analysis studies by Álvarez González et al. (1990, 1995) confirm a three-factor structure in the CDC, accounting for 54.7% of the variability. However, factorial analysis applied to the CMC confirms the results of other studies. There is no factorial structure in the competency subtest. 20 factors are obtained, on Form A as well as on Form B, which explain 57.3% and 57.5% of the variance respectively, but they do not offer any item grouping which is coherent with the dimensions of the questionnaire; thus we must speak of a single factor. Both questionnaires

show moderate reliability and validity. Validation was demonstrated using a sample of 3052 secondary students, from different Spanish provinces, between the ages of 12 and 18 years and enrolled in 25 different schools. Reliability for the CDC, attitudes dimension, is 0.81, and for the information and decision making dimension it is 0.53. On the CMC, the attitude dimension gives 0.72, and the competency dimension 0.81. Reliability coefficients are quite acceptable, with the exception of the information and decision making dimension on the CDC. Its validity, namely its concurrent validity, is acceptable.

This study has presented the career maturity construct as one of the main areas of career development guidance, especially in secondary education, where students must constantly make decisions for the purpose of selecting the most suitable educational and occupational path. Students must be equipped with a series of competencies that allow them to effectively cope with their own decisions.

However, there are still difficulties in validating the CM construct. These difficulties focus particularly on the construct itself, due to its intercultural nature. There has yet to be a true reconciliation between the theoretical and the empirical model, especially with regard to structure, though the area of development is now indisputable. The other difficulty lies in the instruments of measure: although they have undergone improvements, they still do not measure the main factors of CM. Their limitations with regard to factors or dimensions measured, and their validity for specific contexts, must be recognized. Other procedures of analysis must be used in order to complement these instruments. For example, the CMC measures two of the four factors from the theoretical model and does not clearly express its bifactorial nature. Studies confirm that the two instruments are complementary; they present similar subtests, but they measure different aspects (Álvarez González et al., 2007)

Focusing our attention on the context of Spain, we recognize that these instruments (CDC and CMC) have undergone enough factorial studies to confirm their full validity and applicability to our context. Despite their limitations, they can be useful tools in diagnosing the actual vocational maturity of secondary students, and later can be used to assess CM following an intervention.

The design, planning and execution of programs for improving career maturity require a previous diagnosis, which enables needs analysis. The instruments presented in this study,

together with others, can be used toward this end. Results will assist in the detection of the strong and weak points, providing a basis for designing an intervention plan.

This paper on career maturity intends to make a helpful contribution to guidance and education professionals in secondary education.

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