

Decision-making profiles and characteristics in secondary-school students

Perfiles y características de la toma de decisiones en estudiantes de secundaria

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Abstract

The present study set out to identify the profiles and characteristics pertaining to the decision-making processes of secondary-school students. In order to identify these profiles, variables were considered including demographic variables (gender, age, school year, school type and family educational background), dimensions of decision-making, career decision-making styles, self-esteem, perceived stress, decision-making self-efficacy, and exploratory behaviour. The participating sample comprised 519 students undertaking their fourth year of ESO (Spanish compulsory secondary education) or their second year of baccalaureate (equivalent of sixth form in Spain). All students were attending one of four schools in the province of Barcelona (two state schools and two state-subsidised private schools). Six scales were used to estimate outcomes for study variables and participants also responded to two open questions. Significant outcomes were found which enabled identification of decision-making profiles according to school year (fourth year of ESO or second of baccalaureate), school type (state or state-subsidised private) and another series of variables associated with the study model. Participants' responses to open questions revealed that they held the view that information about themselves, their education and the social and professional world around them played an extremely important role in their decision-making. They also revealed that both family and school support was needed in this process, and that schools should develop programmes to assist students when making educational and career decisions.

Keywords: secondary education, decision-making, profiles, students' perceptions, tutor, family.

Resumen

En este estudio se trata de identificar los perfiles y las características en el proceso de toma de decisiones en el alumnado de secundaria. Para identificar estos perfiles se han tenido en cuenta variables sociodemográficas (género, edad, curso académico, tipo de centro y nivel formativo de la familia) y las dimensiones correspondientes a la toma de decisiones, estilos de decisión vocacional, autoestima, estrés percibido, autoconfianza en la toma de decisión y conducta exploratoria. En el estudio participaron 519 sujetos de 4º de ESO y de 2º de Bachillerato de cinco centros de la provincia de Barcelona (3 públicos y 2 concertados). Para ello, se aplicaron 6 escalas para medir las variables objeto de estudio y la contestación a dos preguntas abiertas. Los resultados obtenidos aportan datos estadísticamente significativos que nos permiten identificar perfiles en función del curso académico (4º de ESO y 2º de bachillerato) y del tipo de centro educativo (público y concertado) en el proceso de toma de decisiones y en función de una serie de variables que aparecen asociadas a dicho modelo. Igualmente, a través de las preguntas, el alumnado percibe que la información de sí mismo, de estudios y del mundo sociolaboral juega un papel importantísimo en la toma de decisiones, que tanto la familia como el centro educativo le han de ayudar en este proceso y que el centro educativo ha de desarrollar programas que contribuyan a facilitar dicha toma de decisiones de estudios y profesional.

Palabras clave: Educación secundaria, toma de decisiones, perfiles y características, percepciones del alumnado, tutor/a, familia.

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Secondary education plays an extremely important role in students' overall development. It is a schooling stage defined by a series of characteristics which make it a key period in adolescent student development. Various scholars (González-Benito & Velaz de Medrano, 2014; Álvarez-Justel, 2017, 2018) agree that the following features characterise secondary education: (a) student heterogeneity; (b) a more diverse educational offer that is more challenging whilst also providing students with greater autonomy over planning and time management; (c) a new student-teacher relationship with enhanced freedom and responsibility; (d) a curriculum that obliges students to choose subjects and make important decisions about their future; (e) an educational style that is both more academic (i.e. in *baccalaureate*, Spanish equivalent of sixth form) and more professionally-orientated (vocational training); and, (f) a series of vital academic transitions that oblige students to constantly make decisions.

It should also be added that the corresponding stage of maturation makes secondary education a very important period of the lives of secondary-school students, being important for their personal and educational growth, with emotional, cognitive and social factors playing a highly significant role in shaping their life projects (Allen & Waterman, 2019). In this phase of growth students continually have to face decision-making processes that are of vital importance. Through these processes they will also have to choose the educational path that is best suited to their academic and professional futures (Sánchez-García, 2017; Álvarez-Justel, 2017; Pérez, et al., 2020).

Decision-making as a key factor

At this stage of education students constantly have to make academic decisions. To do this, students need guidance to give them the best chance of success when making these decisions. They need to be aware of all of the factors that play a key role in this process. In this sense, the *emotional dimension*, which refers to them becoming aware of their own feelings, knowing how to

manage them and having greater emotional autonomy, socio-emotional competency and life/welfare competency (Bisquerra & Pérez, 2007; Lerner, et al., 2014; Álvarez-Justel & Pérez-Escoda, 2020). Next, the *cognitive dimension* involves going through a series of steps which begins with clarifying the decision to be made and ends with putting the decision into action after having searched for information and alternatives, and discarded the least interesting options (Oppenheimer & Evan, 2015, Lent & Brown, 2017, 2020). Finally, the *social dimension* broadly considers the roles taken and support offered by the educational environment and the family (Slaten & Baskin, 2014; Olle & Fouad, 2015; Fouad, et al., 2016; Lim & You, 2019). Various studies have investigated the role of these three dimensions in the decision-making process (Gomes-Cordeiro, 2016; Nelson, et al., 2018; Song, et al., 2019; Keelin, et al., 2019; Álvarez-Justel, 2019b).

The present study is based on the comprehensive approach to decision-making developed by Álvarez-González & Rodríguez-Moreno (2006). This model brings three dimensions into play: *cognitive, emotional and social*. In addition to these dimensions, the following factors pertaining to secondary-school students' decision-making processes were taken into account: gender; school year (4th year of ESO of 2nd of *baccalaureate*); school type (state or state-subsidised private schools); family educational background (educational qualifications and profession); career decision-making style (rational, intuitive or dependent); self-esteem (overall, academic, emotional and social); stress (perceived stress); decision-making self-efficacy; and, exploratory behaviour (career planning). A number of studies have urged the importance of these variables and their relevance to the decision-making process (*gender*: Lozano & Repetto, 2007; Santana, et al., 2012; Byrne & Worth, 2016; Allen & Waterman, 2019; Vázquez-Romero & Blanco-Blanco, 2019; *school year*: Lozano & Repetto, 2007; Álvarez-Justel, 2019b; *school type*: Santana & Feliciano, 2012; Fouad, et al., 2016; *family educational background*: Fernández-García, et al., 2016; Xing &

Rojewski, 2018; Abdinoor & Ibrahim, 2019; *career decision-making style*: Curseu & Schruijer, 2012; Hamilton, et al., 2016; Geisler & Allwood, 2018; Palmiero, et al., 2020; *self-esteem*: Santana, et al., 2009; Montgomery & Goldbach, 2010; Shafir, et al., 2017; Geisler & Allwood, 2018; Álvarez-Justel, 2020; Sillero, et al., 2020; *perceived stress*: Remor & Carrobles, 2001; Regueiro & León, 2003; Cote & García-Becerra, 2016; Simonovic, et al., 2017; *decision-making self-efficacy*: Carbonero & Merino, 2003; Chiesa, et al., 2016; Falco & Summers, 2019; and, *exploratory behaviour*: Álvarez-González, 2008; Park, et al., 2017; Storme & Celik, 2018; Denault, et al., 2019.

The aforementioned factors define and shape the profile and characteristics pertaining to students' decision-making during this educational stage.

Objectives

- a) Determine the influence of the emotional, cognitive and social dimensions that characterise decision-making in relation to the rest of the studied variables.
- b) Identify different decision-making profiles according to demographic variables (stage of education and type of school), the dimensions of decision-making, career decision-making styles, self-esteem, perceived stress, decision-making self-efficacy and exploratory behaviour.
- c) Determine students' perceptions, feelings and beliefs regarding their decision-making and the roles of tutors and family in this process.

Method

Sample (participants)

The sample was non-probabilistic and intentional. The final sample was made up of students undertaking their 4th year of ESO or 2nd year of *baccalaureate* at five schools (three state schools and two state-subsidised private schools) in the city of Barcelona and its outskirts. The sample, made up of 519 students

in total, was defined by the following characteristics: 284 (54.9%) undertaking ESO and 235 (45.1%) undertaking *baccalaureate*; 297 (57.27%) attending state-subsidised private schools and 222 (42.73%) attending state schools; 274 (52.9%) were female and 245 (47.1%) male. Ages ranged from 15 to 19.

Instruments

The following instruments were used to explore the dimensions of decision-making, career decision-making styles, perceived stress, decision-making self-efficacy, exploratory behaviour, two short open questions and questions regarding demographic variables. Due to the complexity of the object of study, six scales were used to ensure validity. Three expert judges (one methodologist and two experts in the field of study) designed the open questions following discussion and consensus reaching.

- *Secondary-school career decision-making scale* (Álvarez-Justel, 2019a). This scale gathers information on the three dimensions of decision-making: *emotional*, *cognitive* and *social*. It comprises 15 items and has a reliability of .78.
- *Career decision-making style scale* (Rivas, et al., 1989). This scale measures three styles: *rational*, *intuitive* and *dependent*. It comprises 12 items and has a reliability of .71.
- *Secondary-school student self-esteem assessment scale* (shortened version adapted from the self-concept in schools inventory conceived by García, 1995). This scale measures 4 types of self-esteem: *overall*, *academic*, *emotional* and *social*. It comprises 12 items and has a reliability of .70.
- *Perceived stress scale, PSS-10*. Adapted from Remor and Carrobles (2001). Comprises 10 items with a reliability of .81.
- *Decision-making self-efficacy scale* (shortened version adapted from Carbonero and Merino, 2003).

Comprises 10 items with a reliability of .76.

- *Exploratory behaviour scale* (shortened version adapted from Carbonero and Merino, 2003). Comprises 10 items with a reliability of .70.

Open questions:

1. What do you think you need in order to be able to make the right decisions about your education and professional career?
2. What roles do your tutor and your family play in your decision-making about your education and career?

The demographic variables were: school type (categorical variable: state school or state-subsidised private school); school year (categorical variable: 4th year of ESO or 2nd of *baccalaureate*); age (continuous quantitative variable); and, gender (categorical variable: male or female).

Procedure

Firstly, participating schools were contacted to inform them about the study and seek their cooperation. Following their agreement to participate, a study timetable was set up. Students were informed of the study objectives, the purpose of the scales and how to fill them in. The scales were then administered to the sample of 519 students undertaking their 4th year of ESO or 2nd year of *baccalaureate*. Questionnaires took around 45 minutes to complete.

Data analysis

Data analysis was carried out using two statistical programs: SPAD 5.6 and IRAMUTEQ 0.7 alpha2. These two applications enable the performance of differentiated and, in some cases, joint analyses depending on the type of data collected from the scales. SPAD was used for multivariate classification analysis of criterion variables in order to identify profiles, whilst IRAMUTEQ was used to process textual data (open questions) via similarity analysis. The latter employs an algorithm to identify statistically significant relationships between

words based on graph theory and produced a connected graph without cycles (Ruiz-Bueno, 2017).

First, outcomes produced by descriptive analysis are presented followed by analysis of the criterion variables used to characterise all variables in the form of clusters. As indicated by Sánchez-Martí and Ruiz-Bueno (2018, p. 44), this involves finding “the most *explanatory* set of individuals through the means of qualitative variables [...] considering the fact that each group should be as homogeneous as possible with regards to its members and as heterogeneous as possible with regards to non-members” (Rubio-Hurtado, et al., 2016, p.232). For profile determination, scale variables were categorised according to quartiles. Scores for each item were grouped in the following way: ‘1’ or ‘Low’ = 0, 1, 2 and 3; ‘2’ or ‘Medium’ = 4, 5, 6 and 7; ‘3’ or ‘High’ = 8, 9 and 10. Lastly, similarity analysis was performed of textual data from the open questions with “the aim of studying the closeness of and relationships between the elements of a set” (Ruiz-Bueno, 2017, p.9). In this case, the elements were provided by the words used.

Results

The first results presented here pertain to the profiles that emerged from the three examined characteristic variables. Concretely, these were the overall score from the decision-making scale (divided into the three categories of low, medium and high, on the basis of the corresponding quartiles), school year (4th of ESO or 2nd of *baccalaureate*) and school type (state school or state-subsidised private school). In all analyses performed, statistical significance was taken as equal to or below 1%.

Table 1 presents the *variable categories* that characterised overall scores from the decision-making scale. The table presents significant categories in terms of groups, score comparisons and statistical significance. With regards to student groups characterised by **low** overall decision-making scores (25.3% of the sample), low scores were also found for the dimensions of the decision-making scale (emotional, cognitive and social) and,

typically, lower scores emerged for career decision-making style (rational, intuitive and dependent). Further, this group of participants reported low overall scores for decision-making self-efficacy and exploratory behaviour. As for self-esteem scores, the table shows that the overall dimension of self-esteem was high, whereas the academic dimensions was low. In this group, high scores for perceived stress were also noticeable. The school type most associated with this group was that of state schools.

The group with **medium** scores (46.2% of the sample) was characterised by medium scores in relation to decision-making categories (emotional, cognitive and social), alongside medium scores for the rational,

intuitive and dependent career decision styles. Further, this group reported medium scores for decision-making self-efficacy.

When decision-making scores were **high** (28.3% of the sample), emergent categories corresponded to all three decision-making dimensions (emotional, cognitive and social), with these all being scored highly, and career decision-making styles (rational, intuitive and dependent) which were also high. This group also registered high scores for decision-making self-efficacy and academic self-esteem, while, in contrast, they reported low scores for perceived stress. The school type found to be most associated with this group was that of state-subsidised private schools.

Table 1. Characterisation of students according to overall scores on the decision-making scale

Group: low scores on the decision-making scale (n: 132 - %: 25.43)			
Variables	Category	Test score	p =
EMOTIONAL dimension of decision-making	Low	13.76	0.000
RATIONAL style of career decisions	Low	12.67	0.000
INTUITIVE style of career decisions	Low	12.40	0.000
COGNITIVE dimension of decision-making	Low	11.81	0.000
DEPENDENT style of career decisions	Low	11.59	0.000
SOCIAL dimension of decision-making	Low	9.97	0.000
Overall decision-making self-efficacy scale	Low	7.92	0.000
ACADEMIC dimension of self-esteem	Low	6.19	0.000
Overall exploratory behaviour scale	Low	4.20	0.000
Perceived stress, item 3	High	3.89	0.000
School name	Ferrer i Guardia	3.22	0.001
OVERALL dimension of self-esteem	High	3.16	0.001
Group: medium scores on the decision-making scale (n: 240 - %: 46.24)			
Variables	Category	Test score	p=
EMOTIONAL dimension of decision-making	Medium	9.57	0.000
RATIONAL style of career decisions	Medium	8.05	0.000
INTUITIVE style of career decisions	Medium	6.93	0.000
COGNITIVE dimension of decision-making	Medium	6.49	0.000
DEPENDENT style of career decisions	Medium	6.14	0.000
SOCIAL dimension of decision-making	Medium	4.15	0.000
Overall decision-making self-efficacy scale	Medium	3.75	0.000
Group: high scores on the decision-making scale (n: 147 - %: 28.32)			
Variables	Category	Test score	p =
EMOTIONAL dimension of decision-making	High	13.12	0.000
INTUITIVE style of career decisions	High	12.45	0.000
RATIONAL style of career decisions	High	12.19	0.000
COGNITIVE dimension of decision-making	High	11.47	0.000
DEPENDENT style of career decisions	High	11.01	0.000
SOCIAL dimension of decision-making	High	9.09	0.000
Overall decision-making self-efficacy scale	High	8.85	0.000
ACADEMIC dimension of self-esteem	High	4.47	0.000
Perceived stress, item 3	Low	4.05	0.000
School type	Private	2.85	0.002

Turning our attention to *profiles according to school year* (54.7% of the sample undertaking their 4th year of ESO and 45.2% undertaking their 2nd year of *baccalaureate*), the characterisation of each group can be observed in Table 2. With regards to *baccalaureate* students, this student group was most characterised by the fact that they were aged 17-18 or above and that outcomes pertaining to the stress scale varied depending on the set of items under consideration. Specifically, items with **high** scores were item 3 (*How often in the last month have you felt nervous or stressed?*), item 2 (*How often in the last month have you felt incapable of controlling the important things in your life?*), item 10 (*How often in the last month have you felt that there are so many difficulties piling up that you can't overcome them?*) and item 1 (*How often in the last month have you been affected by some unforeseen happening?*). Stress scale items with **low** scores were item 9 (*How often in the last month have you got annoyed because the things happening to you were out of control?*) and item 6 (*How often in the last month have you felt that you couldn't cope with all the things you had to do?*). This group scored **lowly** on the social dimension of self-esteem, whilst, in contrast, scores for exploratory behaviour scores and dependent career decision-making style were **high**. Items on the decision-making scale with high scores and, therefore, associated with this group were item 7 (*I look for information on the different educational and career options open to me*) and item 12 (*Before making a decision on my education or career, I first look for information*). With regards to career decision-making style outcomes, item 2 (*I rarely make an important decision without gathering all the information I can find*) was found to emerge as significant. Lastly, this group was

found to most commonly attend state schools.

As shown in table 2, students undertaking their 4th year of ESO were characterised by generally being aged 15 or 16. **High**-scoring items on the perceived stress scale were 9, 5 and 6 (item 9: *How often in the last month have you felt annoyed because the things happening to you were out of your control?*; item 5: *How often in the last month have you felt that things were going well?*; and, item 6: *How often in the last month have you felt that you couldn't cope with all the things you had to do?*). The **low**-scoring items on the same scale were 3, 2, 10 and 8 (item 3: *How often in the last month have you felt nervous or stressed?*; item 2: *How often in the last month have you felt unable to control the important things in your life?*; item 10: *How often in the last month have you felt that so many difficulties were piling up that you couldn't overcome them?*; and, item 8: *How often in the last month have you felt that you had everything under control?*). Further, members of this group were more likely to report low scores on the perceived stress scale. Item 7 on the overall decision-making scale also emerged within this profile, corresponding to **medium** scores (item 7: *I look for information on the different educational and career options open to me*). Likewise, this group reported medium scores in relation to the social dimension of self-esteem, although scores were generally low in response to item 5 of the exploratory conduct scale (item 5: *I don't find the tutorial sessions on educational and career guidance very interesting*). Another emerging characteristic pertained to parental educational background, with the most typical qualification being vocational training. Lastly, this group was associated with state schools.

Table 2. Profiles according to school year (significant categories established at $p \leq 0.01$).

Group: 2 nd year <i>baccalaureate</i> (n:235 - %: 45.28)			
Variables	Category	Test score	p =
Age, category	17	17.53	0.000
Age, category	18 or over	10.38	0.000
Name of school	Ferrer i Guardia	5.54	0.000
Perceived stress, item 3	High	4.41	0.000
Perceived stress, item 9	Low	4.07	0.000
SOCIAL dimension of self-esteem	Low	3.50	0.000
Perceived stress, item 2	High	3.20	0.001
Perceived stress, item 10	High	3.08	0.001
Overall exploratory behaviour, quartiles	High	2.98	0.001
Decision-making, item 7	High	2.80	0.003
Perceived stress, item 6	Low	2.75	0.003
Group	B	2.60	0.005
Career decision-making style, item 2	High	2.50	0.006
Perceived stress, item 1	High	2.47	0.007
DEPENDENT career decision-making style	High	2.43	0.008
Decision-making, item 12	High	2.43	0.008
Group: 4 th year ESO (n:284 - %: 54.72)			
Variables	Category	Test value	p =
Age, category	15	20.44	0.000
Group	D	7.57	0.000
Age, category	16	7.48	0.000
Perceived stress, item 9	High	4.59	0.000
School name	Esteve Terrades	4.32	0.000
Perceived stress, item 3	Low	3.83	0.000
Perceived stress, item 5	High	3.69	0.000
Perceived stress, item 10	Low	3.17	0.001
SOCIAL dimension of self-esteem	Medium	2.87	0.002
Overall perceived stress, quartile categories	Low	2.77	0.003
Perceived stress, item 2	Low	2.76	0.003
Perceived stress, item 8	Low	2.76	0.003
Perceived stress, item 6	High	2.70	0.004
Decision-making, item 7	Medium	2.68	0.004
Parents' education	Vocational training	2.50	0.006
Exploratory behaviour, item 5	Low	2.35	0.009

Table 3 presents outcomes pertaining to school type profiles (57.2% state-subsidised private schools versus 42.8% state schools).

Table 3 presents the main characteristics of participants who attended state-subsidised private schools. This shows that these students parents had university qualifications. Further, students scored **highly** with regards to item 8 of self-esteem (*I think I have a good number of good qualities*), item 1 of decision-making self-efficacy (*Normally, I make the right decisions about my educational and professional future*), rational career decision-making style, overall decision-making and

item 3 of self-esteem (*Overall, I feel happy with myself*). This group reported **moderately high** scores with regards to item 4 of career decision-making styles (*I like to find out as much as possible about the possible consequences of my decisions before making them*), the social dimension of decision-making and item 5 of self-esteem (*My parents are too demanding about my education*). This group reported **low** scores on items 1 of self-esteem (*I do a lot of things badly*) and item 8 of perceived stress (*How often in the last month have you felt that you had everything under control?*). Male students were most commonly found in this group.

Table 3. Profiles according to school type (significant categories established at $p \leq 0.01$).

Group: State-subsidised private (n: 297 - %: 57.23)			
Variable	Category	Test score	p =
Parent's education	University	7.95	0.000
Self-esteem, item 8	High	3.72	0.000
Career decisions, item 4	Medium	3.22	0.001
Decision-making self-efficacy, item 1	High	3.02	0.001
RATIONAL career decision-making style	High	2.85	0.002
Overall DECISION-MAKING	High	2.85	0.002
SOCIAL dimension of decision-making	Medium	2.73	0.003
Self-esteem, item 5	Medium	2.66	0.004
Self-esteem, item 1	Low	2.45	0.007
Gender	Male	2.37	0.009
Perceived stress, item 8	Low	2.35	0.009
Self-esteem, item 3	High	2.34	0.010
Group: State school (n:222 - %: 42.77)			
Variable	Category	Test value	p =
Parents' education	High school	5.94	0.000
SOCIAL dimension of decision-making	Low	4.18	0.000
Self-esteem, item 12	High	4.14	0.000
Parent's education	Primary school	4.06	0.000
Parent's education	High school	3.69	0.000
Decision-making, item 14	Low	3.38	0.000
Perceived stress, item 2	High	3.31	0.000
Overall decision-making, quartile categories	Medium	3.15	0.001
Self-esteem, item 1	High	3.08	0.001
Decision-making self-efficacy, item 1	Medium	2.96	0.002
Parent's education	Baccalaureate	2.90	0.002
ACADEMIC dimension of self-esteem	Low	2.89	0.002
Career decisions, item 4	High	2.86	0.002
Self-esteem, item 5	High	2.79	0.003
Decision-making, item 5	Low	2.76	0.003
Self-esteem, item 8	Medium	2.54	0.006
EMOTIONAL dimension of self-esteem	High	2.38	0.009
Gender	Female	2.37	0.009
Perceived stress, item 5	Low	2.36	0.009

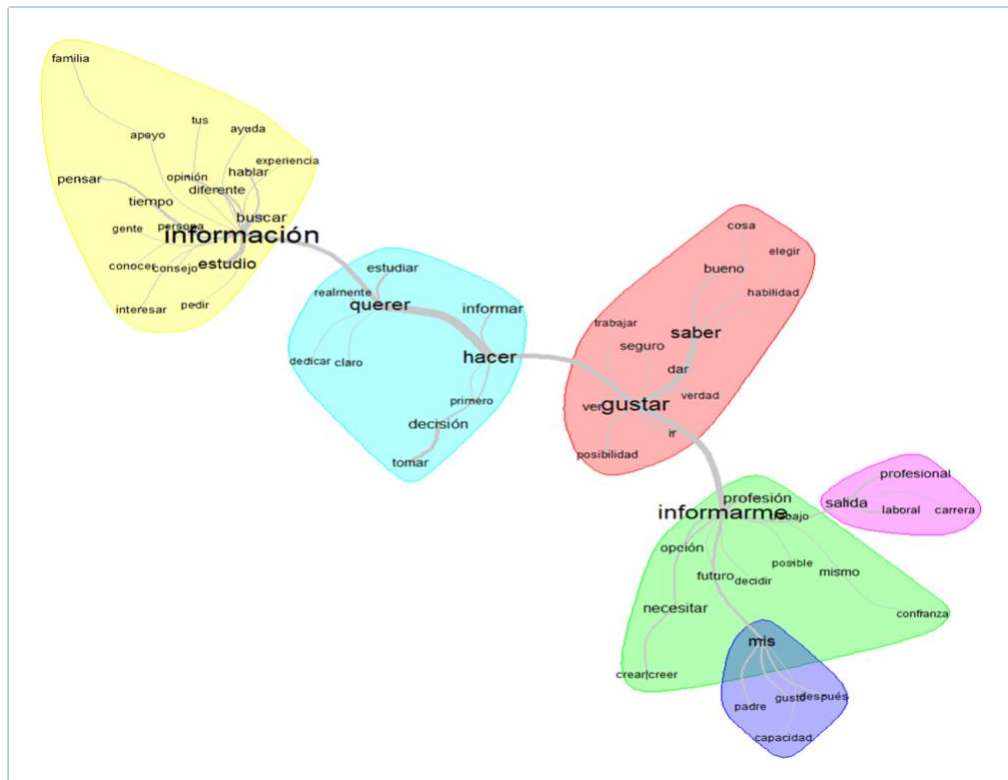
In contrast, within the group of state school students, most common characteristics were that their parents an educational level corresponding to sixth-form, high-school, primary-school or vocational training. Females were also more prominent in this group. Further, this group had **low** scores in the social dimension of decision-making and the academic dimension of self-esteem. These low scores corresponded to items 14 (*If I need help in making a decision I ask my tutor*) and 5 (*When I have to make a decision I ask for advice from a member of my family*) of the decision-making scale, respectively, and item 5 of perceived stress (*How often in the last month have you felt that things were going well?*). **Medium** scores were found in relation to the following items: overall career decision-making styles; item 1 of decision-

making self-efficacy (*Normally, I make the right decisions about my educational and professional future*) and item 8 of self-esteem (*I think I have a good number of good qualities*). Lastly, **high** scores emerging within the state school profile corresponded to the emotional dimension of self-esteem (with significant items on this scale being item 12: *I tend to think that I'm a failure in everything*; item 1: *I do a lot of things badly*; and, item 5: *My parents are too demanding about my education*), item 2 of perceived stress (*How often in the last month have you felt unable to control the important things in your life?*) and, lastly, item 4 of career decision-making (*I like to find out as much as possible about the possible consequences of my decisions before making them*).

Outcomes from textual data analysis (responses to open questions) are presented here in the same order in which they appeared in the questionnaire given to students. First, findings from the similarity analysis

pertaining to the first question, “What do you think you need to make correct decisions about your education and career?” are shown (Figure 1).

Figure 1. Similarity analysis of the question “What do you think you need to make correct decisions about your education and career?”



As shown in Figure 1, this analysis produced six factors corresponding to three blocks of content: *information*, *information seeking* and *making decisions properly*. In order to make a decision, students needed to know what they liked and what made them happy in relation to their education and career, and how they could achieve this (relevant responses: “Having information, knowing yourself and looking for what you’re really passionate about”; “I need to feel good and happy about what I do and what I want”). Further, to this end, they needed to know themselves (relevant responses: competencies, skills and abilities, interests, self-confidence) and to be in receipt of information about sixth-form studies, professional training, universities, degrees,

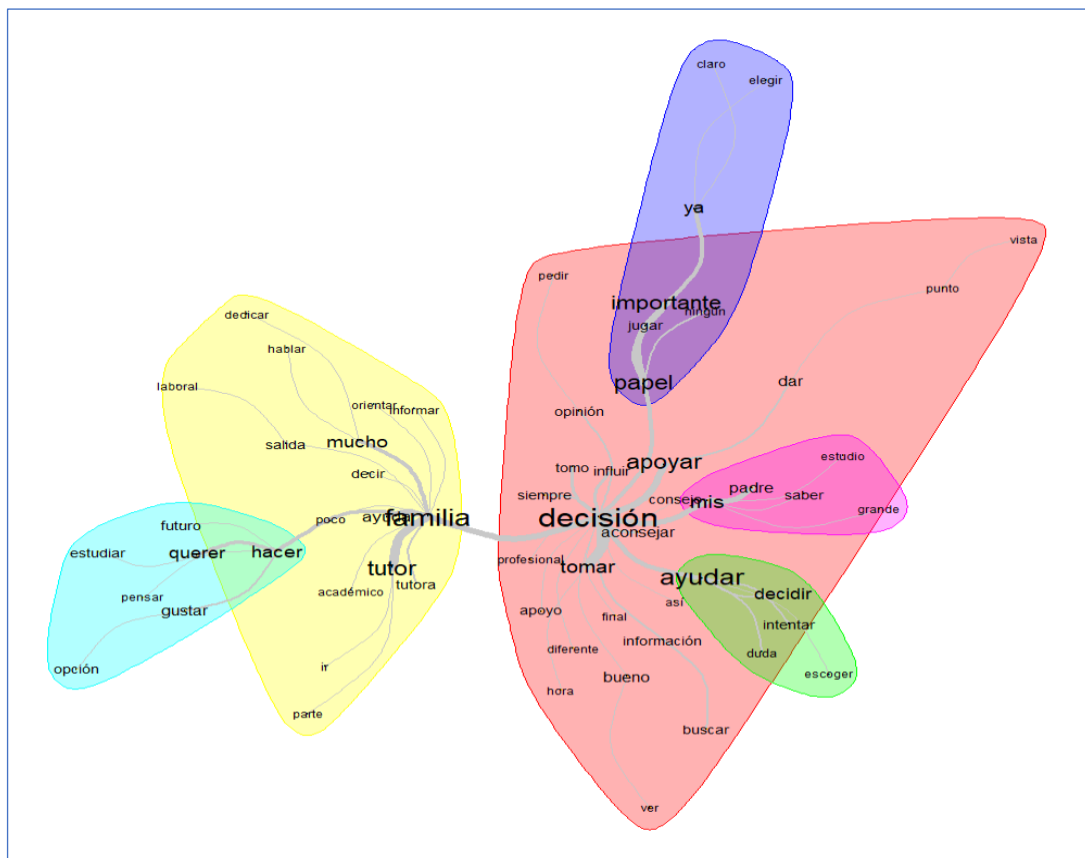
work prospects, etc. (relevant responses: “Finding out plenty of information about courses and careers, and then seeing if I like them and if they’re suitable to my abilities”). In short, they needed to seek advice and help from people with experience, family members, school counsellors and people close to them, leading to the additional requirement of having time available to do this (relevant responses: “Talk to experts and evaluate their experience”; “First I’d get information and then I’d ask for help from my teachers and my family”). In order to make the right choices, in addition to having information available they needed to know what they liked, have a desire to do it, be sure about it, feel safe, be relaxed, devote time to it, study, be in a good mood, have support from their family and talk

to the school counsellor (relevant responses: “Information about what I want to do and what I like”; “First think about what I’d like, then I’d look for information”). Also, it was necessary for students to perform well academically (relevant responses: “First get

the marks... Good marks, the final sixth-form marks”).

Figure 2 displays outcomes from analysis of the second question: *What roles do your tutor and family play in your educational and career decision-making?*

Figure 2. Similarity analysis of the question “What roles do your tutor and family have in your educational and career decision-making?”



This analysis produced six blocks of content which corresponded to the roles assumed by family and tutors in the decision-making process. Within students, family played a greater role than tutors, although family support alone was not deemed to be sufficient (relevant responses: “The tutor gives me information and my family give me advice”). Students were aware that both their families and their tutors could help them by devoting time to them, talking to them about job opportunities, guiding them and informing

them about their education (relevant responses: “My family tries to guide me, but I don’t feel that the school gives us enough of an incentive”). They were also aware that their families and tutors could help them to find out what they wanted to do, what they liked, possible courses and academic options, and perspectives of their future in general. However, this took a backseat as students acknowledged that the issue corresponded to a personal decision (relevant responses: “A secondary role, since my decisions about my

career are very personal”). Parents helped by giving advice, guidance and support and, on occasion, influenced their children’s decisions by sharing their own experience. This was particularly true in terms of work prospects (relevant responses: “My family supports the decisions I make, they show concern, they give me advice and they only want me to be sure of my own decisions”). Thus, it could be concluded that, as far as possible, families helped their children to make choices (relevant responses: “My family knows me best and knows what my qualities are, and what can make me happy”). The same could not be said about the tutor who scarcely supported decision-making (relevant responses: “My tutor is interested in helping me but doesn’t help me”). Family influence was greater than that of the tutor when it came to decision-making (relevant responses: “Tutors help and my parents influence my decision-making a lot”). Tutors did not usually talk about this topic (relevant responses: “We haven’t spent a single tutorial session on decision-making”), with their role instead being quite limited and, therefore, tacking a backseat.

Discussion and conclusions

With regards to the first objective of determining the influence of different variables that were characteristic of decision-making, a series of high-scoring variables could be seen to characterise the sample. Specifically, these corresponded to career decision-making styles, decision-making self-efficacy and academic self-esteem, with low scores being reported for the dimensions of decision-making, exploratory behaviour and perceived stress. These data suggest that decision-making style (rational, intuitive and dependent), decision-making self-efficacy and academic self-esteem are hugely important when it comes to decision-making within students undertaking 4th year ESO or 2nd year *baccalaureate*. These findings coincide with those reported by previously conducted studies (Santana, et al., 2009; Chiesa, et al.,

2016; Geisler y Allwood, 2018; Álvarez-Justel, 2019b; Palmiero, et al., 2020).

Turning our attention to the second objective of identifying student profiles with regards to a series of variables associated with decision-making:

- *Profiles according to school year.* Profile differences between the two examined years were explained by age and perceived stress. *Baccalaureate* students were more stressed when faced with decisions than those undertaking 4th year ESO. Further, *baccalaureate* students valued exploratory behaviour more highly and were more interested in it than those in ESO. Both levels gave much importance to the cognitive dimension of decision-making, specifically the quest for information.
- *Profiles according to school type.* *State-subsidised private schools* were found to have higher scores in relation to academic self-esteem, decision-making self-efficacy, rational decision-making style and emotional self-esteem, with moderately high scores also reported for career decision-making style, the social dimension of decision-making and social self-esteem. This group also had lower scores in relation to emotional self-esteem (*I do a lot of things badly*) and perceived stress. In *state schools*, the variables that scored most highly and, therefore, characterised the group were the social dimension of decision-making, self-esteem, perceived stress and rational career decision-making style. This group reported moderately high scores for decision-making style, decision-making self-efficacy and self-esteem, whilst they reported low scores for the social dimension of decision-making, academic self-esteem and perceived stress. Differences between the two examined

school types pertained to academic self-esteem. Specifically, high scores were reported by private school students but not by state school students. Perceived stress was higher at state schools than private schools, whereas overall decision-making score was higher at private schools. With regards to parents' educational background, the parents of private school students mainly had university education, whilst state school students' parents mostly had primary, high-school and sixth-form education or professional training. Both school types reported the same career decision-making style, this being rational, and self-esteem. Nonetheless, private school students stressed that their parents were too demanding, whilst state school students stressed their own good qualities.

With regards to the third objective, similarity analysis of the two open questions complemented the information gathered from the multivariate analysis. In summary, it can be concluded that information (seeking and receiving information) plays a crucial role in the decision-making process. This information should cover three areas: (a) information about oneself (competencies, skills and abilities, interests, expectations, self-confidence); (b) information on education (courses available); and (c) information on careers and occupations (professions and job prospects). In the present sample, information came from two main sources, namely, the students themselves (the students autonomously sought information) and the educational and social environment (students received information from tutors, counsellors and families). Students were aware of the important role played by their families and schools in the whole process and, in both *baccalaureate* and ESO, students perceived greater support to come from families than from tutors and school counsellors. Students were of the opinion that the help and advice

received was not sufficient and called for more help, advice and guidance from schools and families in order to provide them with the necessary information and conditions to engage in correct decision-making.

With regards to the limitations of the present study, it should be noted that the sample was not selected randomly but was instead obtained following the application of accessibility criteria. Outcomes are, therefore, not probabilistically generalisable. The bias inherent to data collection approaches via questionnaires (using scales) was partly compensated for by the use of open questions which enabled us to analyse written free-response data.

The present study provides statistically significant data which enabled the identification of decision-making profiles and characteristics according to a series of variables associated with this process. In future research, however, further influential variables should be included such as academic performance (Sillero, et al, 2020), vocational maturity (Álvarez-González, 2008; Abdinoor & Ibraim, 2019), career interests (Storme & Celik, 2018; Denault, et al, 2019), and school and family support (Fouad, et al., 2016; Xing & Rojewski, 2018). Despite the enormous weight and importance that academic and career decision-making has for secondary-school students, we found that schools did not prioritise this activity. In fact, some schools failed to deliver any type of specific programme working on decision-making. Students continue to be guided mainly by the advice of their families and their social setting and, to a lesser extent, their tutors. In order to improve this situation, we recommend that actions be developed which are aimed at improving decision-making through aspects such as self-exploration (strengths and weaknesses) and exploration of the educational and occupational environment. Further, factors such as academic record, enhanced academic self-esteem, management of stress and emotions, decision-making styles, improved decision-

making self-efficacy and planning a career project should not be ignored.

References

- Abdinoor, N. M., y Ibrahim, N. B. (2019). Evaluating self-concept, career decision-making self-efficacy and parental support as predictors career maturity of senior secondary students from low-income environment. *European Journal of Education Studies*, 6 (7), 480-490.
- Allen, B., y Waterman, H. (2019). *Stages of adolescences*. <https://www.healthychildren.org/English/age-s-stages/teen/Pages/Stages-of-Adolescence.aspx>.
- Álvarez-González, M. (2008). Career maturity: A priority for secondary education. *Journal of Research Educational Psychology*, 6 (3), 749-772.
- Álvarez-González, M., y Rodríguez Moreno, M. L. (2006). El proceso de la toma de decisiones en la educación secundaria. Un enfoque comprensivo. *Revista de orientación educacional*, 20 (36), 13-38.
- Álvarez Justel, J. (2017). La tutoría en secundaria. *Revista Educatio Siglo XXI*, 35(2), 65-89. <https://doi.org/10.6018/j/298521>
- Álvarez-Justel, J. (2018). La orientación y la tutoría. Una prioridad en la educación secundaria. En M. Álvarez González y R. Bisquerra (coords). *Manual de orientación y tutoría* (Versión electrónica). Wolters Kluwer Educación. <https://doi.org/10.6018/j/298521>
- Álvarez-Justel, J. (2019a). Escala de toma de decisiones de la Carrera en secundaria (ETDC-S). (versión experimental).
- Álvarez-Justel, J. (2019b). Las dimensiones cognitiva, emocional y social en la toma de decisiones de la carrera en el alumnado de 4º de ESO y 2º de Bachillerato. *Revista Española de Orientación y Psicopedagogía*, 30 (3), 140-153. <https://doi.org/10.5944/reop.vol.30.num.3.2019.26277>
- Álvarez-Justel, J. (2020). La autoestima y la toma de decisiones académica y profesional en secundaria. *Revista de Orientación Educativa*, 34(65), 37-54.
- Álvarez-Justel, J., y Pérez-Escoda, N. (2020). La dimensión emocional en el proceso de toma de decisiones. *Comunicación y Pedagogía*, 323-324, 50-56.
- Bisquerra, R., y Pérez Escoda, N. (2007). Las competencias emocionales. *Educación XXI*, 10, 61-82. <https://doi.org/10.5944/educxx1.1.10.297>
- Byrne, K. A., y Worthy, D. A. (2016). Toward a mechanistic account of gender differences in reward-based decision-making. *Journal of Neuroscience*, 9 (3-4), 157-168. <https://doi.org/10.1037/npe0000059>
- Carbonero, M. A., y Merino, E. (2003). La escala de autoeficacia vocacional: Desarrollo, análisis y aplicaciones del instrumento. *Revista de Psicodidáctica*, 14, 99-114.
- Chiesa, R., Massei, F., Guglielmi, D. (2016). Career decision-making self-efficacy change in Italian high school students, *Journal of Counseling & Development*, 94, 210-224. <https://doi.org/10.1002/jcad.12077>
- Cote-Rangel, L. P., y García-Becerra, A. M. (2016). Estrés como factor limitante en el proceso de toma de decisiones: Una revisión desde las diferencias de género. *Avances en Psicología Latinoamericana*, 34 (1), 19-28. <https://doi.org/10.12804/apl34.1.2016.02>
- Curseu, P. L., y Schrujijer, G. L. (2012). Decision styles and rationality: An analysis of the predictive validity of the general decision-making style inventory. *Educational and Psychological*, 72 (6), 1053-1062. <https://doi.org/10.1177/0013164412448066>
- Denault, A. S., Ratelle, C. F., Duchesne, S., y Guay, F. (2019). Extracurricular activities and career indecision: A look at the

- mediating role of vocational exploration. *Journal vocational Behavior*, 110, 43-53. <https://doi.org/10.1016/j.jvb.2018.11.006>
- Falco, L. D., y Summers, J. J. (2019). Improving career decision self-efficacy in high school girls: Evaluation of an intervention. *Journal of Career Development*, 46 (1), 62-76. <https://doi.org/10.1177/0894845317721651>
- Fernández-García, C. M., García-Pérez, O., y Rodríguez-Pérez, S. (2016). Los padres y madres ante la toma de decisiones académicas de los adolescentes en la educación secundaria. *Revista Mexicana de Investigación Educativa*, 21 (71), 1111-1133.
- Fouad, N. A., kim, S., Ghosh, A., Chang, W., y Figueiredo, C. (2016). Family Influence on Career Decision-Making: Validation in China and the United States. *Journal of Career Assessment*, 24 (1), 197-212. <https://doi.org/10.1177/1069072714565782>
- Geisler, M., y Allwood, C. M. (2018). Relating decision-making styles to social orientation an approach. *Journal of Behavioral Decision-Making*, 31 (3), 415-429. <https://doi.org/10.1002/bdm.2066>
- Gomes-Cordeiro, P. M. (2016). *Cognitive-Motivational Determinants of Career Decision-Making Processes: Validation of a Conceptual Model*. <https://reserachgate.net/publications/303661294>
- González-Benito, A., y Velaz de Medrano, C. (2014). *La acción tutorial en el Sistema escolar*. UNED.
- Keelin, T., Schoemaker, P., y Spetzler, C. (2019). *Fundamentos para realizar buenas decisiones*. Decision Education Foundation.
- Hamilton, K., Shih, S. L., y Mohammed, S. (2016). The development and validation of the rational and intuitive decision styles scale. *Journal of Personality Assessment*, 98 (5), 532-535. <https://doi.org/10.1080/00223891.2015.1132426>
- Lent, R. W., y Brown, S. D. (2017). Social cognitive career theory in a diverse world. *Journal of Career Assessment*, 25 (1), 173-180. <https://doi.org/10.1177/1069072716657811>
- Lent, R. W., y Brown, S. D. (2020). Career decision-making, fast and slow: Toward an integrative model of intervention for sustainable career choice. *Journal of Vocational Behavior*, 120. <http://doi.org/10.1016/j.jvb.2020.103448>
- Lerner, J. S., Li, Y., Valdesolo, P., y Kassm, K. (2014). Emotion and Decision-Making. *Annual Review of Psychology*, 66, 799-823. <https://doi.org/10.1146/annurev-psych-010213-115043>
- Lim, S. A., y You, S. (2019). Long-term effect of parents' support of adolescent career maturity. *Journal of Career Development*, 46 (1), 48-61. <https://doi.org/10.1177/0894845317731866>
- Lozano, S., y Repetto, E. (2007): "Las dificultades en el proceso de decisión vocacional en relación con: el género, el curso académico y los intereses profesionales". *Revista de Orientación y Psicopedagogía*, 18 (1), 5-16. <https://doi.org/10.5944/reop.vol.18.num.1.2007.11293>
- Montgomery, K. L., y Goldbach, J. T. (2010). Empirical and conceptual application of self-esteem: A review of the literature. *Perspectives on Social Work*, 9 (1), 30-37.
- Nelson, N., Malkoc, S. A., y Shiv, B. (2018). Emotions know best: The advantage of emotional versus cognitive responses to failure. *Journal of Behavioral Decision Making*, 31, 40-51. <https://doi.org/10.1002/bdm.2042>
- Oppenheimer, D. M., y Evan, K. (2015). Information processing as a paradigm for decision-making. *Annual Review of Psychology*, 66, 277-289. <https://doi.org/10.1146/annurev-psych-010814-015148>

- Palmiero, M., Nori, R., Piccardi, L., y D'Amico, S. (2020). Divergent thinking: The role of decision-making styles. *Creativity Research Journal*. <https://doi.org/10.1080/10400419.2020.1817700>.
- Park, K., Woo, S., Kyea, J., y Yang, E. (2017). The mediation effects of career exploration on the relationship between trait anxiety and career indecision. *Journal of Career Development*, 44 (5), 440-452. <https://doi.org/10.1177/0894845316662346>
- Pérez, D., Brian, A., Quispe, P., Miyahira, F., Aguilar, G., Albino, O., Cortés, C., y Candy, L. (2020). Transición secundaria-universidad y la adaptación a la vida universitaria. *Revista de Ciencias Sociales*, XXVI (3), 244-258.
- Remor, E., y Carrobbles, J. A. (2001). Versión española de la escala de estrés percibido (PSS-14): Estudio psicométrico en una muestra VIH+. *Ansiedad y Estrés*, 7, 195-201.
- Rivas, F., Rocabert, E., Ardit, I., Martínez, J, R, y Rius, J, M, (1989). *Sistema de autoayuda vocacional (SAV)*. Publicaciones Generalitat Valenciana.
- Rubio-Hurtado, M. J., Ruiz-Bueno, A., y Martínez Olmo, F. (2016). Percepción del alumnado sobre la utilidad de las actividades de aprendizaje para desarrollar competencias. *Revista de Investigación Educativa*, 34 (1), 221-240. <https://doi.org/10.6018/rie.34.1.225131>
- Ruiz-Bueno, A. (2017). *Trabajar con IRAMUTEQ: Pautas*. Universitat Autònoma de Barcelona. <http://diposit.ub.edu/dspace/handle/2445/113063>.
- Sánchez-García, M. F. (coord.) (2017). *Orientación para el desarrollo profesional*. UNED.
- Sánchez-Martí, A., y Ruiz-Bueno, A. (2018). Análisis de clasificación con variables criterio en SPAD. *REIRE Revista d'innovació i Reserca en Educació*, 11 (1), 41-53.
- Santana, L., Feliciano, L. A., y Jiménez, A. B. (2009). Autoconcepto académico y toma de decisiones en el alumnado de bachillerato. *Revista Española de Orientación y Psicopedagogía*, 20 (1), 61-75. <https://doi.org/10.5944/reop.vol.20.num.1.2009.11440>
- Santana, L., Feliciano, L. A., y Jiménez, A. B. (2012). Toma de decisiones y género en el bachillerato. *Revista de Educación*, 359, 357-387.
- Shafir, R., Guarino, T., Lee, I. A., y Sheppes, G. (2017). Emotion regulation choice in an evaluative context: the moderating role of self-esteem. *Cognition & Emotion*, 31 (8), 1725-1732. <https://doi.org/10.1080/02699931.2016.1252723>
- Sillero, S. C., Pascual, E., y Marínez de Morentin, J. I. (2020). Influencia de la autoestima y la atención en el rendimiento académico del alumnado de la ESO y FPB. *Revista de Psicodidáctica*, 25 (1), 50-67. <https://doi.org/10.1016/j.psicod.2019.06.001>
- Simonovic, B., Stuppel, E., Gale, M., y Sheffield, D. (2017). Stress and risky decision-making: Cognitive reflection, emotional learning or both. *Journal of Behavioral Decision-Making*, 30, 658-665. <https://doi.org/10.1002/bdm.1980>
- Song, Y, et al. (2019). Effects of incidental positive emotion and cognitive reappraisal on effective responses to negative stimuli. *Cognition & Emotion*, 33, 1155-1168. <https://doi.org/10.1080/02699931.2018.1541789>
- Storme, M., y Celik, P. (2018). Career exploration and Career decision-making difficulties: the moderating role of creative self-efficacy. *Journal of Career Assessment*, 26 (3), 445-466. <https://doi.org/10.1177/1069072717714540>
- Vázquez-Romero, I. M., y Blanco-Blanco, L. (2019). Factores sociocognitivos asociados a la elección de estudios científico-

matemáticos. Un análisis diferencial por sexo y curso en educación secundaria. *Revista de Investigación Educativa*, 37 (1), 269-286.
<https://doi.org/10.6018/rie.37.1.303531>


efficacy of Chinese secondary vocational students. *New Waves Educational Research and Development*, 21 (1), 48-67.
<https://files.eric.ed.gov/fulltext/Ej1211290.pdf>.

Xing, X., y Rojewski, J. W. (2018). Family influences on career decision-making self-

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