RESEARCH/INVESTIGACIÓN

ANALYSIS OF THE PREDICTIVE FACTORS ABOUT EARLY SCHOOL DROPOUT

Análisis de los factores predictivos del abandono escolar temprano

🆔 ⃝ **Iratxe Suberviola Ovejas:** University of La Rioja. Spain.
iratxe.suberviola@unirioja.es

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ABSTRACT

At the end of 2020, Spain has an Early School Dropout rate of 16%. This percentage is far from the 10% proposed by the *Europe 2020* Strategy for the countries of the European Union. The bibliography determines that fact of early school dropout must be approached from a multidimensional analysis because it involves personal, educational, social, economic factors, etc. With this in mind, we are an exhaustive bibliographic analysis is carried about the factors involved, selecting a total of 89 studies. From this, we propose a global model for the analysis of the aspects about influence students to leave their studies prematurely. To do this, we adapt the UTAUT (Unified Theory of Acceptance and Technology) model, to adapt it to our research problem. The main objective is to determine those predictive factors that produce early school dropout to carry out a preventive socio-educational intervention and reduce this rate.

KEYWORDS: Early School Dropout – UTAUT – Premature School Dropout – Europe 2020 Strategy – Unified Theory of Acceptance and Technology.

RESUMEN

Finalizado el año 2020, España sitúa su tasa de Abandono Escolar Temprano en el 16%, lejos del indicador propuesto por la Unión Europea en el plan *Estrategia Europa 2020* que fijaba un 10% de media en los países de la Unión Europea. La bibliografía determina que el fenómeno del Abandono Escolar Temprano debe ser abordado desde un análisis multidimensional puesto que en él están implicados factores personales,

familiares, educativos, sociales y económicos. Partiendo de esta premisa, se realiza un exhaustivo análisis bibliográfico sobre los factores de incidencia del mismo, seleccionando un total de 89 estudios. A partir de este marco, se plantea un modelo de análisis profundo y global de los aspectos que influyen en la intención del alumnado de abandonar la formación reglada de forma prematura Para ello, se realiza una adaptación del modelo UTAUT (Unified Theory of Acceptance and Technology), teniendo en cuenta las características propias de nuestro objeto de estudio. El objetivo último es dotar de un modelo de análisis para determinar aquellos factores predictivos que pueden desembocar en el Abandono Escolar Temprano, que por un lado, constituya el germen de futuras investigaciones sobre esta temática y, por otro lado, posibilite realizar una intervención socio-educativa preventiva que haga descender dicha tasa.

PALABRAS CLAVE: Abandono Escolar Temprano – UTAUT – Deserción escolar – Estrategia Europa 2020 – Teoría Unificada de Aceptación Tecnológica.

ANÁLISE DOS FATORES PREDITIVOS DO ABANDONO ESCOLAR PRECOCE

RESUMO

Finalizado o ano de 2020, a Espanha situa sua taxa de abandono escolar precoce em 15%, longe do indicador proposto pela União Europeia no plano: Estratégia *Europa 2020* que fixava em 10% de média nos países da União Europeia.

A bibliografia determina que o fenômeno de abandono escolar precoce deve ser abordado desde uma análise multidimensional, devido a que estão implicados fatores pessoais, familiares, educativos, sociais e econômicos. Partindo desta premissa, se fez uma exaustiva análise bibliográfica sobre os fatores de incidência do mesmo, selecionando um total de 89 estudos. A partir deste marco, se levanta um modelo de análise aprofundado e global de aspectos que influenciam na intenção dos alunos de abandonar a graduação de forma precoce, para isto se realiza uma adaptação do modelo UTAUT(Unified Theory of acceptance and technology), tendo em conta as características próprias do nosso objeto de estudo. O objetivo final é proporcionar um modelo de análise para determinar os fatores preditivos que possam evoluir em abandono escolar precoce, que por um lado, constitua o início de futuras pesquisas sobre esta temática e pelo outro lado, possibilita realizar uma intervenção sócio-educativa preventiva que faça com que diminua a taxa.

PALAVRAS CHAVE: Abandono Escolar Precoce – UTAUT – Deserção escolar – Estratégia Europa 2020 – Teoria Unificada de Aceitação Tecnológica.

Translation by **Paula González** (Universidad Católica Andrés Bello, Venezuela)

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1. INTRODUCTION

With the data from the Active Population Survey (hereinafter APS) published in January 2021, it has been known that the Early School Dropout Rate (hereinafter ESD) in Spain stands at 16% (INE, 2020), exceeding the rating set by the European Union in the *Europe 2020* Strategy that stipulated for Spain a maximum of 15% and 10% as the average of the member countries (European Commission, 2020). The ESD rate, in the Spanish case, is specified in a statistical indicator that follows the indications and calculation methodology of Eurostat. Furthermore, in our country, this indicator is part of the state system of education indicators of the National Institute of Educational Evaluation (INEE by its acronym in Spanish), a body under the Ministry of Education, Culture, and Sports (MECD by its acronym in Spanish), in charge of evaluating the Spanish educational system, as well as the monitoring of the progress of the objectives of the *Education and Training 2020* strategic framework. As far as the indicator is concerned, it is defined as the proportion of people between 18 and 24 years of age who present a maximum level of education of first-stage Secondary Education and who declare not having received any type of education or training in the four weeks before the APS (Carrasco, et al., 2015; INE, 2020).

The ultimate objective of structural reforms is to change or modify, totally or in part, the foundations or essential bases of the system in the economic, social, and institutional scopes. Within structural reforms, such as the *Europe 2020 Strategy*, educational policies make up a basic pillar, since they have a direct impact on the socio-economic development of countries and the social integration of their citizens. For this reason, a commission called *Educational and training 2020* is created as a framework instrument for European cooperation in education and training that provides common strategic objectives for the member countries of the EU, including a set of principles to achieve these objectives, as well as common work methods and monitoring indicators (European Commission, 2020), among which are preferentially the reduction of the ESD rate.

Understanding the ESD problem entails approaching this problem from a broad and global framework of analysis since it includes dimensions of the social, economic, educational, personal, and family fields (Choi de Mendizabal and Calero, 2013; Marchesi, 2003; Nevala and Hawley, 2011; Rizo and Hernández, 2011). High training can generate a whole series of positive results related to employment, higher salaries, better health, lower crime, greater social cohesion, lower public and social spending, and higher productivity and growth. On the contrary, an inadequate educational level, a result of the ESD, has high costs for the individual, for society, and the economy (Psacharopoulos, 2007; Belfield, 2008; Nevala and Hawley, 2011). Alleviating this situation through the decrease in the ESD rate is necessary for the social and economic development of any country. For this reason, it is of utmost importance that the educational field is aware of the underlying factors for a certain student to decide to abandon their studies prematurely since prophylactic actions can be adopted from the paradigm of compensatory education that minimizes the effect produced by risk factors avoiding a future ESD (Montes and Parcerisa, 2016).

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Based on the guidelines set by the Europe 2020 project around the need to reduce the ESD Rate as a priority objective, we propose a model for the analysis of its determining factors. For this, an exhaustive bibliographic analysis is carried out that allows us to determine the dimensions that are located in the back room of the ESD (Alemany et al., 2013; Camacho, 2018; Cerdá, et al., 2020; Choi de Mendizabal and Calero, 2013; Constante-Amores, et al., 2021; González-Pienda, 2003; González-Rodríguez, et al., 2016; Marchesi, 2003; Mena et al., 2010; Rizo and Hernández, 2019; Rodríguez Pienda and Zamora, 2021; Romero and Hernández, 2018; Sánchez-Alhambra, 2017; Subirant, 2006, among others). From this, a categorization of these dimensions is carried out; personal dimension, family context dimension, social dimension, and educational system dimension.

Our analysis proposal is based on the idea that the ESD is an action that is situated within the set of conducts and behaviors of people, for which a tour is made through the different explanatory models of it, determining that the UTAUT model (Ventastekt, et al., 2003) constitutes a good basis for the multidimensional analysis of the ESD since it is an explanatory theory of behavior, oriented towards a certain action that has been widely contrasted and used as an explanatory model of certain human conducts and behaviors (Bing, 2013; Oye, et al., 2014; Raza et al., 2020; Salloum and Shaalan, 2019). Starting from the base structure of this model, it is adapted to accommodate those aspects collected in the bibliographic analysis, which will lead to a global and multidimensional explanatory model of the ESD with an integrative approach.

The analysis approach of the risk factors of ESD that is presented below is part of a larger study in which an ad-hoc questionnaire is developed for the collection and subsequent analysis of data.

2. THEORETICAL FRAMEWORK. PREDICTIVE FACTORS OF EARLY SCHOOL DROPOUT

The high level of ESD has been a matter of growing and permanent concern for several decades, being one of the main problems that the Spanish educational system has to face. To reduce this rate, it is essential to determine the underlying factors that converge behind it, since this would allow the education system to deploy preventive action strategies that reduce the intention of students to abandon formal education before the age of 18. Currently, no established or systematic protocol in education centers establishes the interventions to be developed in the fight against Early School Dropout (Sánchez-Alhambra, 2017).

In the bibliography we can find a large number of scholars who analyze the factors that determine ESD (Alemany et al., 2013; Camacho, 2018; Cerdá, et al., 2020; Choi de Mendizabal and Calero, 2013; Constante-Amores, et al., 2021; González-Pienda, 2003; González-Rodríguez, et al., 2016; Marchesi, 2003; Mena et al., 2010; Rizo and Hernández, 2019; Rodríguez Pineda and Zamora, 2021; Romero and Hernández, 2018;

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Sánchez-Alhambra, 2017; Subirant, 2006). After carrying out an exhaustive analysis of them, it can be determined that the phenomenon of ESD presents a multidimensional nature, with interrelated factors. From this conception, the predictive factors can be categorized into four large dimensions that we can observe in the following table.

Figure 1. *Dimensions of early school dropout*

Personal dimension	Biopsychosocial factors of the individual	Gender, cognitive ability, perceived competence, self-esteem, motivation, self-concept, anxiety, perseverance, learning styles, tolerance to frustration, immediate satisfaction, substance abuse, video game abuse, lack of sleep.
	Factors referring to the individual-educational environment relationship	Academic performance, school history, absenteeism, study techniques and habits, grade repetition, curricular gap, bullying.
Family context dimension	Family psychosocial factors	Social class, educational level of the parents, economic resources, incorporation into the labor market, native language, country of origin.
	Factors referring to the family-educational environment relationship	The family climate in learning activities, family participation in school, communication, expectations.
Social dimension	Contextual factors	Area or neighborhood, civil society networks, rural-urban, unemployment, social pressure, Autonomous Community.
	Peer group	Friendships with low educational level, problematic, absentee. Lack of interpersonal relationships, social rejection.
Educational system dimension	Educational Administration factors	Public spending, classroom ratio, the rigidity of the educational system, teacher training.
	Factors of Education Centers	Ownership, attention to diversity, grouping, methodologies, coexistence plan, evaluation method, tutoring action plan, family-school coordination.

Source: Self-made

2.1. Personal dimension

Within this dimension, two subgroups of factors can be distinguished. On the one hand, there will be factors related to biopsychosocial aspects of the individual and, on the other, aspects that relate the individual to the educational environment.

2.1.1. Biopsychosocial factors of the individual

All the authors analyzed mention the *gender* of the student as a factor to be taken into account within the ESD analysis. In our country, males have higher dropout rates

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than females (Choi de Mendizabal and Calero, 2013; Rizo and Hernández, 2019; Rodríguez-Pineda and Zamora, 2021), specifically 8.4% higher (INE, 2020).

Most of the existing literature on the psychometry of intelligence finds inverse correlations between the student's cognitive ability and ESD, as is the case with the student's different competencies (Hernández, 2019; Subirant, 2006). In a study carried out by Hernández-Prados and Alcaraz (2018), the weight of this variable reaches a level of 63.4%. However, although the intelligence of the student indeed has an important weight in the continuity of their studies, it is no less true that the perception that the student has about their skills and cognitive ability is also important (Constante-Amores et al., 2021). Students who consider themselves intellectually incapable of reaching the required level have a higher risk of dropping out, so perceived self-efficacy is considered a key influence on the intention to drop out of school (Cerdá-Navarro, et al., 2020; Mena et al., 2010).

Several aspects related to the student's personality constitute weighty variables in their decision to abandon or continue their studies in formal education. Studies such as those of (Aramendi and Vega, 2013; Cerdá-Navarro, 2020; Mena et al., 2010, Rizo and Hernández, 2019, Subirant, 2006, among others) highlight the relationship between aspects such as *self-esteem*, *motivation* towards the academic environment, and *self-concept*, with ESD. Concerning this, Martínez-Otero (2006) postulates the importance of *achievement motivation*, related to the level of the student's aspirations in making decisions to continue in the educational system, since this variable has maximum influence on the orientation of behavior towards success. This same author also affirms that *perseverance* improves performance, which is a protective factor against ESD, however, *anxiety* is positioned as a factor of negative influence on school achievement, increasing the risk of dropping out. Also included within this dimension are variables referring to *learning style* (González- Pienda, 2003) and aspects such as *tolerance to frustration* and *immediate satisfaction* (Alemany et al., 2013).

Another factor that is related to both school performance and Early School Dropout is the *attributional locus* of the student. Subjects who attribute their school success to internal and stable factors over time, (ability), and/or internal unstable factors, (effort) produce in the subject feelings of self-confidence, self-esteem, positive assessment, and satisfaction that serve as a prophylactic for school dropout (Barca et al., 2000).

Regarding the *habits and lifestyles* of students, some studies show that school performance can be affected by the consumption of different electronic communication media (television, video games, and the Internet), which are part of the daily activity of young people in their socialization. In this way, it has been observed that the continued use of electronic media leads to less dedication to study, having an impact on academic performance and, therefore, increasing the risk of ESD (López-Becerra, 2011; Sauquillo and Bellver, 2008). This problem, in turn, leads to the reduction of hours of sleep, which affects poor school performance due to the alteration of certain executive functions such as concentration and memorization

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(Davila, 2010), which together with the increase in school absenteeism, form a perfect breeding ground for dropping out of school.

2.1.2. Factors referring to the individual-educational environment relationship

Linked to the above is school absenteeism in secondary school, which frequently leads to ESD, it is one of the factors most clearly associated with *addictive substances abuse* (Navalón and Ruiz-Callado, 2012). There is a clear relationship between the student's *academic performance* and ESD (Constante-Amores, et al., 2021; Rizo and Hernández, 2019), so the person's *school history* is a factor to take into account in the analysis of the construct. One of the research works that corroborates this, is the one carried out by Mena et al., (2010) where it is stated that students who leave their studies early, present a disengagement with the usual educational practice and low participation in the classroom in the first years of high school. These students stop taking the qualifying tests of many of the subjects, therefore, one of the variables that best predict ESD is *absenteeism* to the assessment tests of the subjects. In Middle-Grade Professional Training, dropout mainly occurs due to failure to pass a significant number of subjects in the first year.

The lack of *study habits and techniques* of the student has a great predictive power of academic performance, associated on many occasions with subsequent abandonment, the planning of the study regarding the organization and the making of a realistic schedule being one of the main predictive factors (Constante-Amores, 2021; Martínez-Otero, 2009). Together with this, another aspect that foresees school dropout is the *repetition of school courses*, both in primary and secondary school, so that students who have repeated a grade at some point during compulsory education are more likely to drop out of the educational system (Cerdá-Navarro, 2020; Choi and Mendizabal, 2013; Mena et al., 2010, among others). Both absenteeism and the lack of study habits create a gap between the student's knowledge and *competence level* and that of the reference group, which is a determining factor in ESD. If there is too much curricular gap, there is a great demotivation and a feeling of lack of ability and frustration in the student that can have an impact on the student's intentionality when considering continuing with their studies (Camacho, 2018).

2.2. Family context dimension

The family has been considered as one of the predictive indicators of ESD, both concerning psychosocial aspects and its involvement with the school environment.

2.2.1. Psychosocial factors of the family

Several studies show how the *social class* and the *educational levels* of the father and/or mother play an important predictive role in the ESD of the descendants. In this sense, students whose parents have higher education are more protected in terms of the risk of dropping out prematurely (Constante-Amores, 2021; Martínez-Otero, 2009;

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Rizo and Hernández, 2019). The scarcity of *economic resources* in families can slow down the educational process of their children (Martínez-Otero, 2009). A low level of family income can make it impossible for the student to attend extracurricular activities, it can also make it difficult to acquire certain school supplies such as reference books or computers (Mora, 2010). Coupled with the above, in families with limited economic resources, the need for their children to *enter the labor market* as soon as possible increases (Camacho, 2018; Hernández-Prados and Alcaraz, 2018; Subirant, 2006).

Another factor that affects ESD is the *possibility of employability* in the family environment with low qualifications. The fact of not needing to have a degree to enter the labor market causes the motivation to continue studying to decrease and, therefore, the intention to drop out increases (Camacho, 2018; Subirant, 2006).

To the aforementioned aspects, the *country of origin* of the families must be added, since an increased risk of abandonment has been verified in foreign families (Rizo and Hernández, 2019), especially when the native language is not Spanish (González - Rodriguez et al., 2010).

The *ethnicity* to which the student belongs is one of the predictive factors. In Spain, being a gypsy represents an added risk in school dropout (Choi de Mendizabal and Calero, 2013). These same authors also affirm that *family disruption* constitutes one of the incidence factors, especially in aggressive environments or families at risk of social exclusion (Choi de Mendizabal and Calero, 2013; Mena et al., 2010).

2.2.2. Factors referring to the family-educational environment relationship.

Besides the socio-demographic characteristics of the families, the *family climate*, concerning the children's school environment, has a fundamental importance in that the descendants continue their studies after completing compulsory education. The appreciation of the parents about the usefulness of the education will affect the perception of the children about this fact, which reduces the intention to abandon (Camacho, 2018). When families frequently talk with their children about school, they contribute to improving their involvement in schoolwork and increasing the perception of the usefulness of education (Cerdá et al., 2020; Alemany et al., 2013). Linked to this are aspects such as *supervision in carrying out learning activities* at home. Pérez-Díaz, et al., (2009) confirm the existence of a direct association between the number of failed subjects and the parental frequency of help in schoolwork, showing that, the higher the involvement, the lower the number of failures and, therefore, less risk of future dropout, since as we have pointed out previously, a poor school history or with repetitions of courses affects school dropout (Camacho, 2018).

Family-center communication is another factor that we find in the literature as a potential predictor of ESD. Those families that speak frequently with their children's teaching team, either in person or through telematic means, reduce their children's intention to abandon education (Hernández-Prados and Álvarez, 2006). This same

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trend occurs with the use of center applications, social media, and community resources (Camacho, 2018).

It is necessary to highlight as a protective factor against abandonment, the *expectations* that parents have regarding the ability of their children so that if the expectations are realistic, they increase the student's self-esteem and the feeling of being able to continue with formal education (González-Rodríguez, 2016; Martínez-Otero, 2009).

2.3. Social dimension

Along with the family, which acts as a socializing and educational agent and, as it has a special weight within the decisions and behavior of the children, we have considered it a dimension of its own, other social aspects also influence the intentionality of the students in the continuation of their studies. This dimension is made up of two factors: On the one hand, there will be aspects related to contextual factors regarding the place of residence and, on the other hand, aspects related to the peer group.

2.3.1. Contextual factors

Living in a marginal *area* or *neighborhood* or a depressed area such as very small towns in rural areas has a negative impact on students abandoning their studies prematurely (Camacho, 2018; Mena et al., 2010). Within the zoning, we find associated factors related to *civil society networks* such as associations, cultural facilities, and leisure spaces that have a positive impact on the culturization of residents and, in turn, on the decrease in the dropout rate (Subirant, 2006). In turn, related to the socio-cultural level of the area, the influence that society exerts for the individual to continue with their studies is located, so that in more cultured contexts a *social pressure* is perceived to continue in formal education and obtain a post-compulsory degree (Hernández-García, 2011).

Within the set of variables that describe the characteristics of the environment, the estimates show a positive effect between residing in an area with a youth *unemployment rate* higher than the national average and the probability of continuing the studies. This fact can be interpreted by the lower opportunity cost that their decision to extend their academic life entails, thus understanding higher youth unemployment as an incentive for individuals to remain in the educational system (Casquero and Navarro, 2010; Subirant, 2006).

2.3.2. Peer group

Friendships with a *low academic level*, a group of *problematic friends* that hinder school progress, acquaintances with a high level of absenteeism, usually exert a great influence in teens to assume the same behavior and increase the risk of dropping out (Sánchez-Alhambra, 2016). In a qualitative study conducted by Mena et al. (2010), with

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a sample of students who have already abandoned education, it is determined that the key is the *pressure to not stand out*, to try to not be different from the rest of the group, so that personal expectations are adjusted to the majority in the scope of relationships of each student.

On the other hand, the *lack of interpersonal relationships* and poor relationships with the group-classroom directly affect dropout (Sánchez-Alhambra, 2016). The feeling of *social rejection*, not having good social skills, or low participation, increase school absenteeism and subsequent abandonment of the classrooms (Ekstrand, 2015; Esch et al., 2014). However, a good relationship with peers can have a motivating effect to attend school and increase the connection of students with learning and education, serving as a prophylactic for dropping out (Cerdá-Navarro et al., 2021).

2.4. Educational system dimension

Within this dimension, there are two groups of factors: higher education administrations, that is, state and regional bodies, and factors related to the education center.

2.4.1. Educational Administration factors

Within this factor, *public spending* on education is one of the most studied aspects when explaining the performance of the education system, since it shows the investment effort that governments make in education. However, in the literature, there is a notable divergence of results and interpretations. In this sense, numerous studies conclude that the variables referring to public spending on education are not decisive when explaining neither educational results nor the ESD rate (Marchesi, 2003; Calero et al., 2010). In this regard, Hanushek (2006) highlights the erroneous approach proposed by different governments, which take a quantitative approach as the basis for their educational policies, in which they ignore other variables, such as incentives or the institutional structure of the educational system. However, in contrast to this statement, the study by Holmlund et al. (2010) shows that the increase in spending on education per student significantly increases the results of the students' competency tests. In our country, the study carried out by Pérez-Esparrells and Morales (2012) reveals that the level of education spending in secondary education maintains a negative relationship with educational results, such as the percentage of individuals who fail to obtain an Obligatory Secondary Education (ESO by its acronym in Spanish) degree.

Another of the most controversial variables, since there is also no agreement between researchers, is the *ratio of classrooms*. Studies such as that of Calero et al. (2010) do not detect a significant relationship between the ratios that represent the size of the classroom and the educational results in general. On the contrary, other studies show that the existence of smaller classrooms has beneficial effects on educational results (Krueger and Whitmore, 2001; Finn et al., 2005), pointing out that the reduction of the classroom is a fundamental aspect to guarantee the reduction of failure and ESD,

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especially in the case of educational contexts with low-performance students (Dale, 2010).

One aspect to take into account is the *rigidity of the educational system*. UNESCO (2012) published a report that concluded this curricular rigidity as one of the main problems in education, and it is that secondary education systems seem to be designed more to exclude than to include (Benchimol, et al., 2011; Recio and De la Cruz, 2011). According to Pérez-Gómez (2012), one of the characteristics of current schools is the transmission of academic knowledge that is not adapted to the needs of today's society nor favors the personal development of future citizens, which affects the demotivation of students and increases the risk of dropping out. Martín and Luna (2016) point out the existence of personalized and flexible learning plans as one of the pillars that would avoid ESD.

Within this dimension, we find *teacher training*, regarding initial and continued training. In this sense, it should be taken into account that the countries that have lower ESD figures, implement important innovations in the initial and permanent training models, also in the one that concerns the first years of professional life, a very important stage in the process of learning to teach (Vaillant and Marcelo, 2015). Countries such as England, Northern Ireland, Scotland, France, Switzerland, Israel, Australia, New Zealand, Japan, and the United States, all of them with lower dropout rates than our country, have launched various insertion programs for novel teachers.

2.4.2. Factors of the education centers

The education centers constitute the second level of concretion where the curriculum is contextualized. Therefore, it is the competence of the center, the elaboration of the Curricular Project of the Center (PCC by its acronym in Spanish) within the Educational Project of the Center (PEC by its acronym in Spanish). The essential elements that have to emerge from this second level of the concretion are: general objectives, content sequencing, methodological strategies, organization of space and time, and determining the resources and general evaluation criteria.

There is also a wide debate on the incidence of the *ownership of the education center* on educational results. In this sense, various research works have pointed out that privately-owned education centers, both those with a concert and non-concerted private ones, present notably better results than the public ones in the PISA study (West and Woessmann, 2010; Alegre and Subirats, 2013). However, other studies reveal that this effect loses its significance when the variables that have to do with the socioeconomic and cultural status of the students are controlled (Calero and Escardíbul, 2007; Mancebón et al., 2012). The weight that the education center has concerning ESD, regardless of the ownership, is materialized in different variables. Montes and Parcerisa (2016) emphasize that *attention to diversity*, the type of *groupings of students*, and the disciplinary mechanisms included in the *coexistence plan* used with students with behavioral problems, entails the loss of expectations about the academic future and encourages educational disengagement increasing the risk of dropout. In

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this sense, the *methodology* is a compensating element of ESD, being more motivating for the students the active methodologies, the more creative methods, and the practical and participatory classes, while the more traditional methodology is more arduous and as a consequence produces the withdrawal of the students from the classrooms (Holgueras, 2016).

One of the aspects that most clearly influence ESD is the *evaluation and promotion criteria*. The Montessori Canela International organization presents the results of its study on the effects of the numerical grade evaluation system where it is revealed that 90% of the education personnel surveyed relate ESD to an evaluation system that is too strict. The report shows that the current evaluation system has negative consequences on students, generating the false idea that the important thing is to pass and not learn, besides creating stress and demotivation among students (Ecoaula, 2021).

One aspect included in the recommendations related to the reduction of ESD is the development of a good *tutoring action plan*, which includes individualized guidance and monitoring of students (Carrasco, et al., 2015). The role of teachers and bodies such as the center's guidance department is key for students at risk of dropping out of school, promoting their integration into the center and facilitating their reconciliation with their abilities (Clemente, 2010).

Another variable within the dimension we are dealing with is the *cooperation between families and the education center*. Cooperative experiences are highly positive for preventing ESD, influencing academic performance, student self-esteem, reducing absenteeism, and improving study habits (Álvarez, 2012; Moreno, 2010), all of them, as we have seen in previous paragraphs, variables involved in the prevention of the risk of ESD.

As we have been able to observe throughout this section, we are faced with a complex phenomenon in which personal, family, social, political, economic, and educational factors intervene. Precisely for this reason, it is extremely important to detect the aspects that influence dropout so that socio-educational agents can prematurely identify students at potential risk and intervene as soon as possible to solve this fact to develop compensatory actions aimed at developing an equitable education.

Below, a comprehensive analytical approach to analyze the determinants factors of ESD is shown.

3. METHODOLOGY

As previously mentioned, the work presented in this document constitutes the first part of a broader study, in which, based on the method of analysis of the determining factors of ESD that we present below, an ad hoc questionnaire is developed where the exposed dimensions are integrated. This data collection instrument will be applied to

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4th-year ESO students, both in the academic and applied modes, students of Programs for the Improvement of Learning and Performance 2 (PMAR2), Basic Professional Training (FPB), 1st of Medium Grade Format Cycle, therapeutic-educational classrooms, and socio-educational insertion classrooms.

The first step was to carry out an exhaustive bibliographic review of different research works concerning ESD, through 10 databases: Dialnet, Scopus, ERIC, Education Database, Web of Science, TESEO, GRAÓ e-premium, E-journal, and Google academic. Every one of them allows us access to the different documentary sources in English and Spanish: journal articles, book chapters, conference proceedings, doctoral theses, monographs, etc. To carry out the bibliographic search, the platform of the University of La Rioja and Google Scholar were used as a priority. After the selection, the references were organized through the Mendeley bibliographic manager, allowing duplicate references to be eliminated. Finally, the result of our selection using the criterion of affinity of the titles of the references with our subject under study was 89.

The research questions from which we start are: What reasons lead students to drop out of school before obtaining an official post-secondary certificate? What are the dimensions that make it possible to explain ESD? This concern is specified in a general objective that would be: to create an effective and contrasted analysis model that serves as a tool to determine risk factors and enable the design of intervention strategies for those students who are determined to be potentially at risk.

4. RESULT

Our proposed research model for the analysis of the dimensions that influence the intention of ESD is anchored in two fundamental premises.

On the one hand, the analysis of the literature on the factors of incidence in the intention of ESD shows the influence of variables of different nature that can be categorized into 4 dimensions (see figure 2).

On the other hand, a tour has been made through different explanatory models of human behavior from different theoretical lines such as:
- Models with an attitudinal perspective, in which the weight of carrying out a behavior falls on the attitudes of the individual.
- Theories of human motivation as the main aspect that determines behavior.
- Models linked to social aspects.

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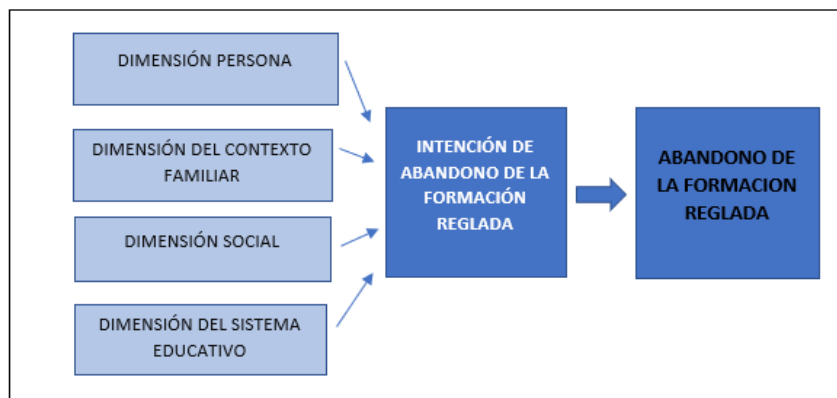
Figure 2. *Dimensions of influences on Early School Dropout*
Source: Self-made

After the analysis of these models, it is determined that the UTAUT model (Venkatest et al., 2003) (see figure 2) has been widely used as an explanatory theory of intentionality oriented towards a certain action, that is, as a contrasted model that enables the explanation of certain human conducts and behaviors. Being aware that the prevalence of studies that use this model are focused on recognizing the factors that explain to a greater extent people's behavior towards technology, some authors seem to prove the validity of the model in the specific framework of educational action (Bing, 2013; Oye, et al., 2014; Raza, et al., 2020; Salloun and Shaalan, 2019). Based on these results, our analysis proposal deals with the underlying dimensions that lie behind the students' intention to abandon the educational system early.
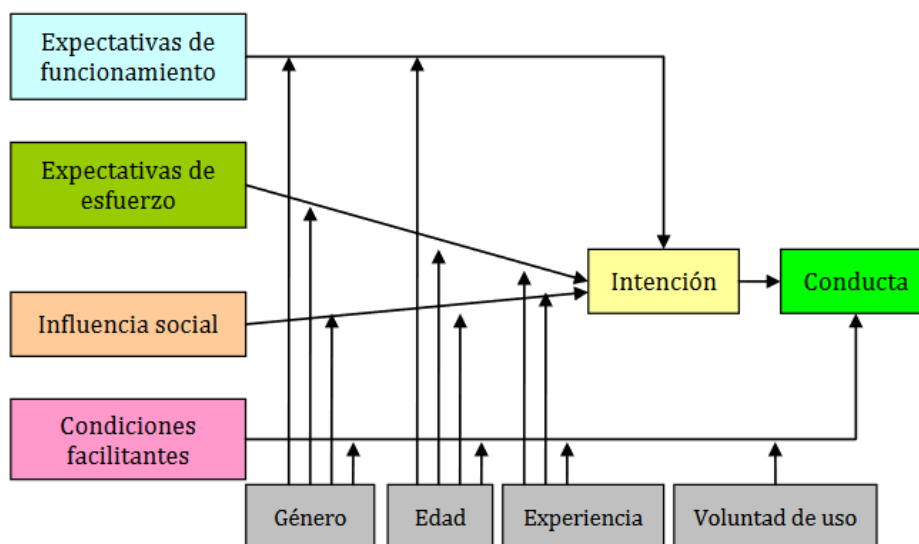
Figure 3. *Scheme of the Unified Theory of Acceptance and Use of Technology*
Source: Self-made based on Venkatesh et al., 2003

Our approach is part of the group of studies that extend and adapt the UTAUT model to analyze different intentions. The proposed model takes as a reference the

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base dimensions of the UTAUT, adapting them based on the literature related to the problem under study.

4.1. Dimension. Expectations of Operation

In line with the model proposed by Ventakesh (2000), this dimension refers to the value of homework and the expectation that its success is under their control, an aspect conditioned in turn by perceived self-efficacy. In the case of ESD, the student's value judgments about themselves and homework, are positioned as the main agents for the achievement of the ultimate objective, in short, obtaining an official title after compulsory education.

This dimension mainly includes the *personal dimension*, both the biopsychosocial factors of the individual, as well as their relationship with the educational field, analyzed in section 2. It is made up of the following factors:

4.1.1. Perceived usefulness

In our field of study, we would be talking about the perception that a student has about the profitability of official degrees after Compulsory Secondary Education. To what level does the student consider that obtaining a degree through the formal system will provide improvements in personal aspects, social prosperity, or obtaining a quality job. In short, the student's appreciation of whether obtaining a degree will bring them personal improvement and socio-labor evolution, compared to not obtaining it.

Some of the variables that this factor analyzes are the usefulness expectations of training and culture, the evaluation of official titles (Mena, et al., 2010), and the requirements for access to the labor market (Alemany, et al., 2013), among others.

4.1.2. Perceived self-efficacy

It is a factor that falls as a priority on the ideas of the student and that consists of the hope or perceived possibility that the individual has of obtaining an official degree higher than the compulsory studies.

Within this factor, variables such as the student's perception of their cognitive capacity, their organizational competence, their tolerance to frustration, their capacity for perseverance, their self-esteem and self-concept, among others, will be analyzed (González-Pienda, 2003; González- Rodríguez, et al., 2016; Hernández-Prados and Alcaraz, 2018).

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4.2. Dimension. Expectations of effort

In the context related to ESD, this dimension would be collated as the perception that the student has about the level of effort that must be made to obtain an official degree in the years after obtaining the ESO degree.

This dimension would be linked to both the dimension referring to the educational system and the personal dimension, analyzed in section 2. It is broken down into two factors:

4.2.1. Ease of global use

In the case of ESD, this factor would be defined as the appreciation of the magnitude and intensity of effort that the student must make to obtain a post-compulsory degree through the formal educational system. In short, it is the perception that the student presents about how much effort they have to make to obtain this title. The level of ease-difficulty perceived in the successful use of formal education.

This factor is independent of the student's perception of the usefulness and advantages that obtaining a degree can bring. It is a global perception of the difficulty of achieving this, independent of the *perceived usefulness* factor (see point 4.1.1).

4.2.2. Ease of relative use

This factor is closely related to the previous one insofar as it measures the student's perception of the effort to be made, however, it is far from the *ease of global use* factor in that the appreciated effort is relative to the student's perception of the advantages, possibilities, and personal and socio-labor improvements that obtaining a post-compulsory degree will bring them. In short, the perception of effort is mediated by the appreciation that it presents of the *perceived usefulness* factor.

4.3. Dimension. Social-educational influence

In our field, this dimension refers to the level to which influential people and groups for the individual consider that the individual should continue education after compulsory education through the formal school system. In the casuistry that concerns us, we would speak of *socio-educational influence* due to the potential influence of educational agents. In turn, some contextual factors are related to educational aspects, such as the educational level of the family and the school history of the peer group.

This dimension is directly related to the *family context dimension* and the *social dimension* analyzed in section 2. It is made up of two factors:

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4.3.1. Subjective norm

This variable is defined in a global way as an individual's perception of whether the people important to them approve or disapprove of their behavior (Taylor and Todd, 1995; Chen and Dhillon, 2003). It represents the influence exerted by society in general, and the people that the individual considers important to them in particular when it comes to conditioning their behavior. This influence is generally weighted by the weight that the individual attributes to each person or social group (Hernández-García, 2011).

Delimiting it to our field, it would suppose the level of influence that the society in general and the people or groups significant for the student in particular, would have so that they continue or abandon their studies. Definitely, insofar as the influence of social norms and the opinion of the subjects appreciated as valuable to the student, will mediate their intention on the abandonment of formal studies after the compulsory ones.

Within this variable are aspects such as family support and climate in subjects related to studies (Sánchez-Alhambra, 2017), perception of the peer group and their educational level (Choi de Mendizabal and Calero, 2013), perception of social prestige with obtaining a degree, the social image of education (Hernández-Prados and Alcaraz, 2018), expectations of teachers (Alemany, et al., 2013), among other aspects.

4.3.2. Contextual factor

The context is defined as the set of circumstances that surround a situation and without which it cannot be understood correctly. In the construct of school dropout under study, the contextual variables would be defined as the environment, physical or symbolic, in which the student has developed and/or is at the moment of making the decision. They refer to a set of phenomena, situations, and circumstances, not comparable to others, that surround or condition the intention of continuing with formal studies, or on the contrary, abandoning school early.

Some of these would be the socio-educational level and the educational climate of the family (Choi and Mendizabal, 2016; Rizo and Hernández, 2019), characteristics of the community to which they belong (Bienes, 2019), neighborhood or area of residence (Mena et al., 2010), family composition and typology (González-Pienda, 2003; Subirant, 2006), and possibilities of joining the labor market (Hernández-Prados and Alcaraz, 2018; Subirant, 2006), among others.

4.4. Dimension. Facilitating conditions

This dimension can be defined as the level to which the individual believes that there is a technical and organizational infrastructure that supports the system (López-Hernández and Silva, 2016).

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In the case of school dropout, this dimension would be related in a prioritized way to the educational factors analyzed in chapter 3 and is broken down into three:

4.4.1. Functional resources

Within this factor would be framed the variables that indicate the guidelines and regulate educational actions, those that provide the ideal framework of work such as: The collegiate bodies and governing bodies, the climate, the schedules, the evaluation system and method, the proposal of extracurricular activities, coordination with external entities, complementary services, and planning, among others. (Alemany et al., 2013; Camacho, 2018; Choi de Mendizabal and Calero, 2013; Constance-Amores et al., 2021; González-Pienda, 2003; Hernández-Prados and Alcaraz, 2018; Marchesi, 2006; Mena, et al., 2010; Rizo and Hernández, 2019; Sánchez-Alhambra, 2017, and Subirant, 2006).

4.4.2. Material resources

Within this factor are the material elements referred to in the structure of the components present in the educational organization. They are the basic supports on which the others are based, within which we essentially find the space, the movable resources, and the material for didactic use. (Choi de Mendizabal and Calero, 2013; González-Pienda, 2003; Hernández-Prados and Alcaraz, 2018; Rizo and Hernández, 2019; Sánchez-Alhambra, 2017).

4.4.3. Human resources.

Integrated into this factor are the personal elements to which the disposition of the actors present in the educational organization refers, definitely, to the human capital that the school system has. Mainly, it would be made up of students, teachers, the administration team, guidance teams, other educational agents, families, and administration and services personnel (Alemany et al., 2013; Choi de Mendizabal and Calero, 2013; González-Pienda, 2003; González-Rodríguez, et al., 2016; Hernández-Prados and Alcaraz, 2018; Mena, et al, 2010; Rizo and Hernández, 2019; Sánchez-Alhambra, 2017, and Subirant, 2006).

4.5. Moderating aspects

Ventaketh et al., (2003) establish 4 moderating factors within the UTAUT model, such as gender, age, previous experience of the individual regarding the use of similar systems, and the will to use in reference to whether the use of the system is voluntary or imposed. (Michel, et al., 2012). Reproducing this structure, starting from the study of the dimensions that influence ESD, (section 2) in our analysis model, we propose the following moderating factors:

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4.5.1. Identity

This factor includes variables related to the demographic aspects of the student, in reference to gender, age, real cognitive ability, native language, and ethnicity, among others. (Choi de Mendizabal and Calero, 2013; Constance-Amores et al., 2021; González-Pienda, 2003; Hernández-Prados and Alcaraz, 2018; Mena, et al., 2010; Rizo and Hernández, 2019; Sánchez-Alhambra, 2017; Subirant, 2006).

4.5.2. School history

The analysis of the literature on the components of influence of school dropout indicates that the academic history of the student directly intervenes in the resignation of formal training towards obtaining an official degree. Within this factor we find variables such as repetition of school years, need for educational support, schooling schedules, expulsions from the center due to disruptive attitudes, the gap between the student's level of competence compared to the group, school absenteeism, etc. (Camacho, 2018; Choi de Mendizabal and Calero, 2013; Ministry of Education of Castilla León, 2015; González-Pienda, 2003; González-Rodríguez, et al., 2016; Rizo and Hernández, 2019; Sánchez-Alhambra, 2017).

4.5.3. Personal traits

Several authors assure the influence of the emotional aspects of the student in the decision to abandon school prematurely. According to the classification presented by Gladys, (2002), the potentially influential personal traits can be grouped into two: On the one hand, it would be those related to emotional aspects such as internalization disorders, among which we find variables such as: overcontrol, anxiety, withdrawal, shyness, depression, fear, or the feeling of ridicule. On the other hand, we find externalization disorders, that is, the habits of the student which include variables such as: infra-control, disobedience, and the consumption of addictive substances, etc. (Alemany, et al., 2013; Cerdá, Sureda, and Salvá, 2020; González-Rodríguez, et al., 2016; Rizo and Hernández, 2019).

The following figure outlines our integrative approach for the analysis of the determinant factors of ESD.

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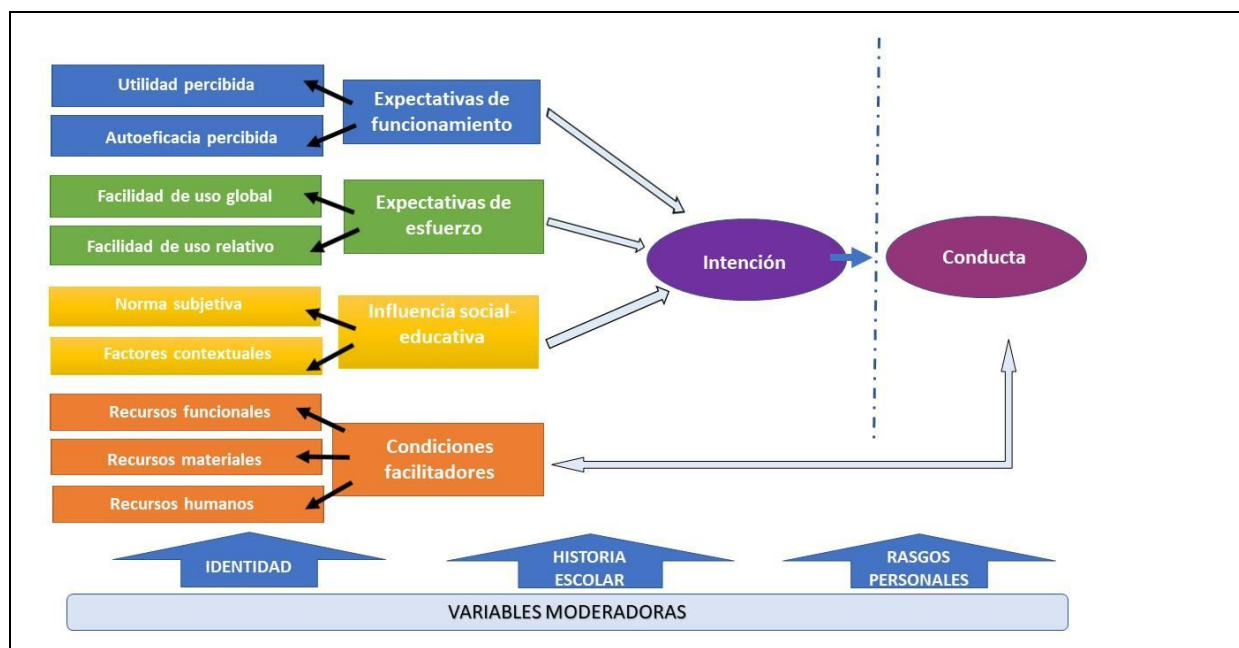
Figure 4. *Adaptation of the UTAUT model for the analysis of the dimensions of ESD*
Source: Self-made

5. DISCUSSION

This study is the first part of broader research in which, through an ad-hoc questionnaire developed from the analysis model of the determinant factors of premature abandonment exposed in this study, data are extracted for subsequent analysis.

From our aim of developing an integrative model for the analysis of the globality of incidence factors in ESD, an exhaustive bibliographic review has been carried out, categorizing the different aspects in four large dimensions. The first of them would be the *personal dimension* (Choi de Mendizabal and Calero, 2013; Rizo and Hernández, 2019; Rodríguez-Pineda and Zamora, 2021), in which the factors referring to the biopsychosocial aspects of the individual are present, such as motivation, self-concept, tolerance to frustration, anxiety, and/or learning styles. Within this dimension, the different research works refer to factors related to the individual and their relationship with academic aspects, such as school history, curricular gap, and/or absenteeism (Cerdá-Navarro, 2020; Constante-Amores, 2021; Martínez-Otero, 2009).

The second context of analysis refers to the *family dimension*, which in turn, would be divided into its psychosocial factors, where aspects such as the educational level of the family or its economic resources are integrated (Camacho, 2018; Hernández-Prados and Alcaraz, 2018; Subirant, 2006). Another aspect within this dimension is the relationship that the family establishes with the educational environment, with factors such as supervision in carrying out the children's learning activities and/or

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participation in the school (Alemany et al., 2013; Cerdá et al., 2020; González-Rodríguez, 2018).

The third would be the social dimension, in which the contextual factors of the student's environment are analyzed, in terms of characteristics, resources, and possibilities (Casquero and Navarro, 2010; Hernández-García, 2011; Mena et al., 2010), to which it is added the influence of the peer group, group habits, and their academic training (Esch, et al., 2015; Sánchez-Alhambra, 2016).

Finally, there would be the *educational system dimension*, linked to the factors of educational administration such as public spending for education or the ratio in classrooms (Calero, et al., 2010; Dale, 2010; Pérez-Esparrells and Morales, 2012), together with the factors inherent to education centers such as ownership, attention to diversity, or the type of grouping of students (Calero and Escardíbul, 2007; Mancebón et al., 2012; Montes and Parcerisa, 2016).

Although the above dimensions are indeed the starting point for the analysis of the factors that affect ESD, we must not lose sight of the fact that dropping out of the educational system is personal conduct, preceded in most cases by intentionality. From this perspective, a tour of the different explanatory models of behavior has been carried out, determining that the UTAUT model can constitute a good basis for adapting it to adapt it to the analysis of the factors found in the back room of the intention of the students to abandon their studies early.

The result of combining the four dimensions of influence in ESD with the UTAUT behavior analysis model has resulted in a global and integrative analysis model that collects all the aspects involved in ESD, together with their moderating variables.

6. CONCLUSIONS

As it has been explained throughout this text, the educational level of the population is a factor of high incidence in the economic and social development of different societies, as stated in the Europe 2020 Strategy, therefore, ESD is detrimental to the growth of a country.

Being aware of the high rate of ESD in Spain, we have developed an integrative model in which the different dimensions, factors, and variables included in them are combined, potentially predictive in the decision-making of a student regarding the abandonment of the formal system for the achievement of a post-compulsory degree. Having a complete and integrative analysis model of the determining factors that combines, on the one hand, the main dimensions that scholars consider as potential risk variables for students to abandon their studies prematurely and, on the other hand, that it is based on a highly contrasted human behavior analysis model, is an important anchoring tool for educational agents and researchers on the subject.

This model aims to be, on the one hand, the origin of future research that, based on this model, leads to the creation of data collection tools such as guided interviews,

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questionnaires, or surveys, that facilitate the detection of students at risk of dropping out. This will make it possible to develop preventive actions in a personalized way.

On the other hand, it aims to instruct teachers and educational institutions on the underlying aspects of ESD with the aim that said the problem can be addressed from different educational plans and programs proposed by educational organizations, integrating palliative actions in the educational projects of the center to reduce the risk of abandonment.

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AUTHOR:

Iratxe Suberviola Ovejas
Graduate in Psychopedagogy, and *Diploma of Advanced Studies in Didactics and School Organization*. Master in e-learning and educational technology. Interim professor at the University of La Rioja in the Department of Education, area of didactics and school organization. She belongs to the research group *Equality and gender* of the University of La Rioja and is a researcher at the Institute of Rioja Studies. Trainer of the Ministry of Education of the Community of La Rioja to teachers of Primary Education and Secondary Education.
Orcid ID: https://orcid.org/0000-0001-6368-3732
Google Scholar: https://scholar.google.es/citations?user=b4EeVfsAAAAJ&hl=es

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