Exploring young people's perceptions about secondary school: Critical issues and improvements to prevent dropout risk in disadvantaged contexts

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Abstract

Through a mixed methods approach, this paper explores young people's perceptions about critical issues in secondary school and the improvements being made to prevent dropout risk. The empirical data were gathered from a representative sample of young people (14–24) in a socioeconomic disadvantaged region in the European Union. A principal component analysis assessed the most significant indicators that influence young people's scholastic experience and effectiveness of education. A content analysis was applied to identify the key critical issues and possible strategies to support young people's school satisfaction. The findings reveal a set of key indicators: interpersonal relationships; learning process; teacher role; school management; the impact of new technologies.

Commentato [AC1]: Effectiveness of??

See below
Effectiveness of education

Keywords

Secondary school education; mixed approach; young people's satisfaction; dropout

1.Introduction

In the literature on secondary school, early school dropout is one of the primary indicators of social exclusion. Furthermore, early school dropout may drive unemployment and income inequalities (Solga, 2002; Lee & Burkam, 2003; Lamote et al., 2013; Zaharieva, 2014). Eurostat and the European Commission define "early school leaving" as the quota of people aged 18 to 24 who attained a lower secondary education and are not engaged in education and training (Brunello & De Paola, 2014).

Commentato [AC2]: One sentence paragraph.

Thank you. We have expanded the paragraph to give some extra insight and a definition of school early dropout is provided.

The Europe 2030 strategy is setting up a 'knowledge economy' to promote employability and the development of human capital via lifelong learning and social equity (Lisbon Strategy, 2000; Eurydice, 2010; European Commission, 2010). The programme aims to reduce early dropout from school by 10%, but this target still needs to be met in several European Union (EU) countries

(Walheer, 2017). According to Eurostat (2019), while 17 of 28 countries ranked below the threshold of 10%, Spain (17.9%), Malta (17.5%), Romania (16.4%) and Italy (14.5%) remain well above the EU target.

School dropout and no further training can lead not only to fewer opportunities in the labour market but also to more difficulties in life and less access to the job market (Eurostat, 2018). The European Centre for the Development of Vocational Training (Cedefop, 2014) reports that as few as 8.7% of young Italians, aged 15–24 who attend only a minimum secondary education, have a job compared with the average of 19.7% in the EU. Among those who hold a secondary school degree and a bachelor's degree, only 24.8% (EU average of 42.7%) and 23.1%, respectively, have a job (EU average 54.6%). In March 2020, the unemployment rate among Italian young people (15-24) was still 28% (ISTAT, 2020) against 15.2 % in the EU (Eurostat, 2020).

Commentato [AC3]: Provide a sense of what this organisation is.

We have integrated the denomination of this organization. Thank you

Because of the economic recession, started in July 2007, the share of expenditure on education was reduced in many countries. In the Southern EU, countries expenditure decreased from 11.1% in 2002 to 10.2% in 2016 (Eurostat, 2018). However, the European statistics (Eurostat, 2018) showed a remarkable difference among EC Countries, such as Iceland and Sweden which spent 7% of GDP in education. While, Ireland, Bulgaria and Romania spent less than 4% of their annual GDP. In Italy, the margin of public expenditure on secondary schools is even lower (1.8% of GDP), because of the austerity measures started since 2010 (León & Pavolini, 2014).

Commentato [AC4]: Maybe a little context for the international reader. What great recession is being referred to here?

Thank you. We have reworded the sentence (the finance global economic recession started in July 2007). Besides, we have provided an international perspective, based also on the actual pandemic.

In the international panorama, the current pandemic poses further challenges for the economy. As of the 20th of May 2020, Covid-19 has had a significant impact on education, as 68.5% of total enrolled learners were not able to attend school or university (UNESCO, 2020). Yet, while technology and innovation helped to bridge the teaching and learning gap, lack of accessibility to e-learning widens inequalities within the most vulnerable clusters of population, especially, in the most disadvantaged contexts (WEF, 2020).

Previous studies have focused on three main lines of research on early school dropout. The first thread includes studies on students' personal characteristics (Belloc et al., 2011; Alivernini & Lucidi,

2011), personal wellbeing and the impact on students' performance (Aldridge & McChesney, 2018). A second strand of the literature has highlighted issues related to bullying and discrimination (Swearer et al., 2015) and, more in general, school environment (Aldridge & McChesney, 2018), as important risk factors. The third thread of the research relates to school facilities (Erdogu & Erdogu, 2015) and students' self-perception in connection with multiple school factors and dimensions (Batini & Bartolucci, 2016).

Overall, the literature on young people's perceptions of the critical issues in secondary school and improvements to prevent dropout risk is still rather limited (Basit, 2009; Strack et al., 2007; De Witte et al., 2013). This is especially true regarding research investigating young people in socioeconomic disadvantaged regions. Neglecting young people's opinions, feelings and perceptions about their secondary school learning path can lead to biased policy actions. Further research would benefit from studies at a micro level, which are more informative about individuals' attitude, perceptions and choice (Agasisti et al., 2014; Pastore, 2018; Ripamonti & Barberis, 2018).

The theoretical framework employed in the present research is based on four main domains that include the attitude and behaviour of young people, family background, community and school related factors. The relevant indicators are likely to influence school early dropout (De Witte et al., 2013). From a methodological perspective, mixed methods, as a combination of qualitative and quantitative tools, assess in a more informative manner which risk factors may drive early school dropout.

The research aims to better understand the attitudes and choices of young people about remaining in or leaving secondary education, in order to develop policy and practice based initiatives to aid pupil retention. The paper elicits relevant information from two segments of the young adult population: (i) those who still attend a secondary school (aged 14–18) whose experience is linked to their current schooling situation: (ii) former secondary school students (aged 19–24). Young individuals from the latter group are more likely to have experienced dropout or faced the risk factors of dropout. Besides,

Commentato [AC5]: Are these somehow linked? I am not sure of the relationship between the two. Critical issues in secondary school is a very broad term.

Thanks for this comment. We have analysed several critical and problematic issues that are mostly researched in the literature on dropout risk factors (see literature "Determinants of School Dropout", methodology and data analysis) and made and attempt to extract the main threads.

Commentato [AC6]: Exactly what do you mean. Longitudinal studies following a group of young people to explore the changes in their perception of critical issues??

Please note that ideally one would use longitudinal data, however, such database are gathered by research centres and/or national institute of statistics. Hence, based on your comment, we have rephrased the sentence. Thank you

such an age range comprises different segments, that is: secondary school students, university students, already employed and Neither in Employment nor in Education or Training (NEET). By gathering information from young people with different levels of awareness, about their secondary school path, the results will provide useful insights in terms of curriculum development and development of teachers' practice to prevent early school dropout within socioeconomic disadvantaged contexts.

Commentato [AC7]: Any capacity for your recommendations to influence policy makers – top down.

Following also the II reviewer's comments, we have further expanded these aims in terms of policy implications.

Please note that the novelty of the present paper is to provide guidance to the main school stakeholders and policy makers through an investigation of young people perspective, as a segment so far much neglected in the literature.

In the concluding remarks we have further emphasised possible top-down policies.

2. Determinants of School Dropout

The theoretical framework employed in the present research is based on four main domains, and a set of indicators, related to the attitudes and behaviour of young people, family background, community and school environment. A critical review of the literature on school dropout (De Witte et al., 2013) highlights the most relevant potential risk factors *domains* (from now on *D*) of early school leaving, as follows:

- *D1*. *Young-people-related factors* (e.g., academic abilities, student academic and professional expectations, personal attitudes and feeling; interpersonal relations and community building);
- *D2. Family-related factors* (e.g., demographic or background factors, sociocultural and economic vulnerability and discrimination);
- *D3. Community-related factors* (e.g., geographical location and opportunities);
- *D4. School-related factors* (e.g., schools' resources and management, programme or curriculum diversity, interpersonal relations).

Commentato [AC8]: One sentence paragraph.

Thank you for this opportunity to expand and underpin further our investigation to the theoretical framework. We have restructured this introduction paragraph and emphasised the most relevant domains of early school dropout, which are then further discussed in the following literature review. These domains, and relevant indicators, are also considered as the theoretical reference for our analysis.

2.1 Young-people-related factors

In the literature, several issues have been investigated to understand the correlation between dropout and factors such as gender (Marks, 2007), students' socioeconomic background (Ripamonti &

Barberis 2018; Thomson, 2018), grade retention (Jimerson et al., 2002), student mobility (South et al., 2007), low achievement in the first grade and student engagement (Ream & Rumberger, 2008). Self-commitment and student engagement are particularly important precursors of learning that can have a significant impact on students' performance (Van Uden et al., 2014). Previous studies have shown that student disengagement is related to early school dropout (Zimmer-Gembeck et al., 2006), and irregular school engagement is linked to dropout risk (Archambault et al., 2009). Another important protective factor is students' positive perceptions about the teacher's role and the social context, along with self-perception and self-regulation, because effective perceptions are positively correlated with school performance and student self-determination (Alivernini & Lucidi, 2011). As shown by Grouzet and Pelletier (2006), dropout intention in the transition to the first year of high school has a negative correlation with self-determined motivation and students' academic achievement (Hardre & Reeve, 2003).

Students' learning needs are another important factor that requires further attention. The literature highlights that specific groups of students with special learning needs can have more difficulties in managing the transition from primary to secondary school (Tobin et al., 2012). Recent research on school teaching strategies has demonstrated the positive impact of using creative methodologies such as photography, drama, drawing, dance and movement with students with special learning needs (Cancienne & Snowber, 2003).

Several studies have shown that creating positive relations among students can support and develop student engagement and performance (Serpieri & Vatrella, 2017). Student motivation and engagement can also help build more constructive relations with teachers compared with students who are less involved in school activities (Muller, 2001). Usually, students who are less engaged have more learning and socialisation difficulties and need extra care and support from well trained teachers who need (Lee & Burkam, 2003; Jennings & Greenberg, 2008; Ansong et al., 2017).

Commentato [AC9]: Reference

Thank you. Extra references are now included.

Teachers need to be trainers, learning facilitators and coaches and be able to consolidate and facilitate community building. Teachers need to involve students with learning needs and who are

less self-engagement (Pianta & Allen, 2008). To be part of a community and actively engaged in school activities to support community identity are important factors contributing to students' individual enhancement, self-awareness and interpersonal skills (Hebron, 2017).

In learning communities, students can develop tolerance, appreciate the value of social inclusion and embrace individual heterogeneity (Frederico & Whiteside, 2016). They can share expectations and norms with a positive impact on all the components of the school community; this has become even more pertinent in relation to valuing and guaranteeing quality and equity in educational opportunity (Agasisti & Longobardi, 2016; Tourón et al., 2019). Ream and Rumberger (2008) highlighted a further impact on student engagement exerted by community building: suburban schools had a dropout rate of less than 40% compared with suburban schools. This outcome was mainly because of an active facilitation of extracurricular activities that promoted interpersonal relations and skills development and inclusive of students belonging to minority groups (Orfield & Lee, 2007).

2.2 Family- and community-related factors

Previous studies have emphasised that family- and community-related factors are important predictive indicators, particularly parents' educational level and their aspirations, along with the overall emotional climate of the parent–child relationship (Duchesne et al., 2008). Rumberger (2004) observed the risk factors linked to a specific location residence (e.g., housing critical issues), and especially lack of playgrounds and green areas (De Witte et al., 2013). Although the present paper does not focus explicitly on these specific indicators, it is implemented within a socioeconomic disadvantaged context, where the risks of early dropout are much higher (Robert, 2010; Kim et al., 2013). In this respect, MIUR (2019) finds a positive correlation between poverty and early school dropout in Italy.

2.3 School-related factors

Commentato [AC10]: You have not really explained why you have chosen only to look at disadvantaged areas.

We have added extra insight on this issue. More in depth, disadvantaged areas show higher rates of early school dropout. In fact, sociodemographic, cultural and economic elements, that affect student performance (Cunha et al. 2006) and sociocultural disadvantages, can drive secondary school dropout (Ripamonti & Barberis, 2018).

Robert (2010), amongst others, analysed the relationships between social origin, school choice and student performance in 23 OECD countries, employing the PISA 2006 survey. The study showed that high-status families prefer more selective schools, as such schools have better student performance. Oyserman (2013), Kim et al. (2013) and DeBacker et al. (2017) showed that parental expectations and student self-perception are key factors in student achievement and school performance.

Because of the overall length of the paper, we have just quoted these papers.

A further thread of research explored the quality of education across and within schools and school management (Dronkers & Robert, 2008). Management duties (e.g. timetables, staff, budget), educational programmes, innovation and novel initiatives in teaching methods can exert a positive effect on student performance (Masci et al., 2018).

Commentato [AC11]: Can you provide an example.

We have added some examples

The literature has suggested that school management policies impact teacher job satisfaction and student retention (Stockard & Lehman, 2004). School management includes several functions/activities focusing on several areas, such as *planning*, *organising* staff duties and roles, *communication*, *monitoring* and *supervision evaluating* (Wanjala et al., 2014). According to Ramberg et al. (2019), school leadership helps implement or improve the structures for efficient collegial work, which ultimately enhances teachers' positive perceptions and effectiveness. According to Houtveen et al. (2004), school effectiveness is defined as the capability to achieve goals set in various education domains (e.g. teaching methods; improvements in students' attainments; coordination amongst stakeholders).

3. The Italian Context

Over the past 20 years, the Italian school system has experienced autonomy regarding education, management and finance. The first significant change in the Italian school system was introduced through the law of school autonomy (Act 59/1997, art. 21, and Presidential Decree 275/1999). This law (Act 59/1997, art. 21, and Presidential Decree 275/1999) required schools to be flexible, open and accessible to local communities, each with their own identity and being responsible for students' achievements (Berlinguer, 2001). This legislative change was intended to facilitate the role of school directors through mediation committees as a further level of decision makers. This new perspective and action provided schools with organisational and decisional autonomy, enabling them to adopt innovative technologies and be more effective at managing human and instrumental resources (Paletta & Bezzina, 2016).

The latest reform, 'Good School' (i.e., *Buona Scuola*, Act n. 107/2015), provided new and compulsory activities for secondary school students, such as placement activities: 200 hours in lyceums and 400 hours in technical and professional schools (Pastore, 2018). Within Italian society (Panichella & Trivento, 2014), there is a problem with social class and status. Students from the upper classes are likely to focus on an academic path, while students from the working class are more likely to attend vocational schools.

In addition, education reforms have not had a positive impact on reducing social discrimination, inequalities and dropout in secondary education. The research also has highlighted that school autonomy reform has increased overall teachers' stress because of management expectations to improve student performance and school autonomy, responsibility and accountability (Panichella & Trivento, 2014; Serpieri & Vatrella, 2017). Hence, the latest reform presents new challenges for school managers because there is an emphasis on autonomous resource management and budgeting (Fisher & Friedman, 2008).

4. Aims and methods

The present study explores young people's perceptions about their experiences during secondary school to identify key critical issues and possible school improvements. This aim is pursued through a mixed methods approach which offers a more informative framework. The following research questions (RQ) are addressed:

- RQ1. What critical issues do secondary schools face within socioeconomic disadvantaged contexts?
- RQ2. What are the main risk factors that may drive early school dropout?
- RQ3. What key priorities and strategies can be enhanced to support education effectiveness in secondary schools to reduce the risk of early dropout?

Commentato [AC12]: What do you mean here.

We have provided some insight on the mixed method approach in the introduction.
We have restructured the sentence.

Commentato [AC13]: These would seem to be two distinct questions.
We have disentangled the aims in three separate research questions.

Commentato [AC14]: What exactly do you mean by this? Student academic outcomes?
We have defined the concept of effectiveness in the section *2.3 School-related factors*

4.1 Measures and sampling

To this aim, through a mixed methods approach (Greene, 2006; Heyvaert et al., 2013), the risk factors that may drive early school dropout and future employability were explored through the opinions and experiences of young people 14–24 years old. A survey collected individuals' perceptions and stimulate the respondents' critical and self-reflective thinking to address issues and share solutions that can encourage a positive change in the system. The semi-structured interview comprised four open-ended questions focused on the following thematic areas: a) criticisms and problematic aspects of Italian secondary school; b) the role of the teacher in supporting student performance and wellbeing; c) teaching methodologies; d) improvements and suggestions (for full details, see Table A.1 in the Appendix).

This framework was operationalised by analysing the Italian secondary school system, which is characterised by heterogeneity among dropouts and across the country. The quota of early dropout is higher in the Southern regions and islands than in the centre-north (e.g., Veneto, 6.9%; Umbria, 6.7%; see Ripamonti & Barberis, 2018). Amongst the EU regions, the Italian region of Sardinia, with a population of 1.64 million, experiences not only an intrinsic socioeconomic disadvantage, because of its insularity, but also one of the highest rate of early dropout (21.2%, well above the target of 10%) and NEET (24.1% against 10.9% for the EU-28 average; CRENoS, 2019).

A survey targeting young people was conducted between February and June 2017. The target group was chosen based on the following criteria: aged between 14 and 24 years old and at least attending (or have attended) the first year of high school (ISTAT, 2016). Based on the actual population within this age segment, a statistically representative sample, identified upon a 95% confidence level and a 5% interval error, consisted of a minimum of 383 interviews. The semi-structured interview was based on a trial interview targeting the same age range (14–24). Approximately 40% of the sample was collected by a group of psychologists and sociologists within all the secondary schools in one of the main cities in the North of the region. They obtained

Commentato [AC15]: Consider the structuring of this paper. You are now looking at methods – perhaps delete the section of page 3 as it is confusing for the reader. Complete the entire literature review and then introduce the research questions followed by the methods. This would help to streamline the structure of the paper.

Thank you for this advice. We have organized the sections as suggested.

Commentato [AC16]: Can this be explained.
Based on the population within this demographic cluster, a statistically representative sample, identified upon a 95% confidence level and a 5% interval error, consisted of a minimum of 383 interviews.

We also provided further insight on the sampling technique that helped us to elicit detailed information and individual heterogeneity.

institutional review board and parental approval to administer face-to-face interviews. The students, within specific quotas based on gender and year of attendance, were randomly chosen.

The reminder sample was collected by trained and voluntary university interviewers on young individuals, per the above-mentioned quotas, focusing on the centre and north of the region, as more socio-economic disadvantageous areas. A snowball technique was used to attain a higher level of individual heterogeneity, less answer bias and a representative sample (Morgan, 2008). Seven segments of the population were identified: first year of secondary school through the fifth year of secondary school; university students; other occupations and NEET. In this manner, it is also possible to elicit implicit and explicit information on the *D2 and D3* domains, as addressed from the literature.

The interviews were directly transferred into an electronic equivalent format (see Table A.1, to reduce measurement errors and for use in the relevant software (SPSS and ATLAS.ti) A representative sample of 484 semi-structured interviews was collected.

4.2 Principal components analysis

A principal component analysis (PCA) was performed to explore student experience and perceptions about their secondary school path and achievement. All the relevant items are measured on a 5-point Likert scale ranging from one (complete disagreement) to five (complete agreement). An orthogonal varimax rotation was run to simplify the number of items. A general to specific approach was applied to retain only meaningful information; only factors with values greater than one were retained.

To establish the goodness of fit of each factor, three indices of reliability were considered (Al Osail et al. 2015). A Cronbach's alpha with a value higher than 0.70 indicates the reliability of the factor. The Spearman's correlation (*rho*) assesses the strength and direction of the bivariate relationship and, hence, the factor's internal consistency. The R^2 provides a measure of the factor internal consistency in terms of the proportional change in the dependent variable (i.e., the factor

Commentato [AC17]: Space

We think the space concerns the surname Al Osail, and removed the -

score as a continuous variable) compared with changes in the independent variables (i.e., the items included in the factor).

4.3 Qualitative method

Data were analysed using a qualitative content analysis. A content analysis is a family of systematic, rule-guided techniques for analysing the informational contents of textual data (Worthington & Whittaker, 2006). Sections 8 and 9 on the semi-structured interview were analysed by the qualitative tool (see Table A.1).

An interpretative approach was chosen to reconstruct the 'implicit theories' of the respondents (Ross 1989). The interpretation process was iterative and progressive because the researchers 'went back' to reflect on various conceptual issues to unveil new aspects. All the interviews were transcribed verbatim with written permission from the participants. Data gathered from the respondents' narratives were analysed using ATLAS.ti 7.0 (Muhr, 2004. The coding and analysis were carried out by two researchers, but throughout the coding process, there was continuous feedback from the whole research team (internal coding).

Furthermore, the data were analysed according to the criteria set out by Patton (2002), and the quality criteria guidelines proposed by Seale (1999) were applied (i.e. credibility; transferability; dependability; authenticity; confirmability; for further details, please view Table A.2 in the Appendix). Validation was set against five criteria, both during and after the analysis process in co-construction with the participants. A triangulation technique (Flick, 1992) was implemented to facilitate validation of the data through cross-verification from two or more sources (qualitative and quantitative and mixed data collection methods). Triangulation can identify the aspects of this

phenomenon more accurately by approaching it from different perspectives and by using different methods and techniques (Greene, 2006).

5. Findings and Discussion

5.1 Participants' characteristics

The interviewees' gender was rather balanced (50.1% male, the segment with the higher risk of dropout). The average age was 19 years (equal to the median). The highest age quota was between 14 and 18 (43.9%). More than half of the sample (54.8%) attended a grammar school rather than a vocational school. Almost a third of the sample had to repeat at least one secondary school year (25.9%), and 37.7% had to retake an exam at least in one subject during their secondary school. Socio demographic and background student can represent relevant risk factors coherently with previous mentioned domains extracted from the literature: "Young-people-related factors" and "Family and community-related factors".

Notably, almost 20% of the sample were not students (mostly within the range between 20 and 24 years of age), and among them, only 6.4% were in the job market (the most common job being unskilled workers). Almost 60% of the sample was attending secondary school, while 19.1% was attending university. Less than 20% of the sample would be very willing (5-point Likert scale) to suggest their high school to others and were very highly satisfied with their school. Notably, less than 10% felt that the teachers really motivated their students or made students interested in the subject (see Table A.3, in the Appendix).

6.2 Principal components analysis results

The first investigation was a PCA on secondary school experience (Table 1). Overall, more than half of the variance can be explained by "Teacher role" and "Interpersonal relationships" ~~by these two factors~~ (Escofier & Pages, 1988). The Kaiser–Meyer–Olkin measure of sampling adequacy test,

Commentato [AC18]: What two factors are you referring to?

We have mentioned them explicitly also in the text. Thank you

Besides, following the reviewers' previous comments and advice we made a better attempt to underpin the findings with the main domains extracted from the literature and the research aims.

which is equal to 0.79, indicates an acceptable level (Tabachnick & Fidel, 1989). Furthermore, Bartlett's test of sphericity was statistically significant at the 1% level.

TABLE 1 HERE

Teacher role explains most of the total variance (37.04%) and the Cronbach's alpha (0.80), the R^2-adjusted (0.98) and the Spearman's correlation (*rho*) with a statistically significance at the 1% level, indicating good reliability and internal consistency. It includes six items ordered with respect to their contribution from high to low (i.e., *motivating teachers*: the students feel that the teachers motivate their students; *satisfaction with subjects*: the students are satisfied with the subjects; *understanding teachers*: the students feel that their teachers are understanding; *patient teachers*: students feel that their teachers are patient; *teachers raise interest*: students feel that their teachers can raise their interest in the subject; *learning new things*: students feel that they have learned new things (Table 1). This extracted factor is coherent with the domains explored in the literature, that is D1 and D4. Yet, the mean of this factor is 3.17 (within a reference scale between 1 and 5). Overall, there is agreement, although rather marginal, that the teachers can raise students' interest and motivation. Martin (2008) remarked that 'motivation' and 'commitment' drives student engagement, learning, and achievement. Hence, learning motivation has a positive impact on students' interest and enjoyment in learning at school. Furthermore, 'learning motivation' has an important impact on students' performance (Ushioda, 2003). The role of teachers can positively and negatively influence student motivation and engagement (Ricard & Pelletier, 2016). Therefore, the personal and collective commitment of students to engage grows when students have a positive perception of their teachers as being supportive and motivating and promoting mutual respect in class (Ryan & Patrick, 2001).

The second factor, ***interpersonal relationships***, includes three items: *studying with classmates*, *doing specific research with classmates* and *spending evenings with other classmates* that relate to the extracted literature domains (i.e. D1 and D4). The Cronbach's alpha (0.76), the Spearman's correlation (*rho*) and the R^2-adjusted (0.94) indicate good reliability and internal consistency. The overall mean (2.99) indicates that students feel that the opportunities to develop relationships with

classmates through school-based and social activities are scarce. This factor has an intrinsic value given that group class cohesion and reciprocal classmate support is an important protective factor for dropout prevention and school discrimination. Furthermore, collective support and student cohesion impact team performance (Lent et al., 2006).

Table 2 shows the PCA findings related to the students' learning experiences. The cumulative value of the extracted three factors accounted for almost 70% of the total variance. The Kaiser–Meyer–Olkin measure of sampling adequacy test was equal to 0.60, indicating an acceptable level, and Bartlett's test of sphericity was statistically significant at the 1% level.

TABLE 2 HERE

Learning methods includes three items ranked by their contribution: *concept maps to study* – the students in their learning process use diagrams that present the suggested relationships between concepts and the organisation of knowledge; *I prepare the concept maps* – the student autonomously prepares the conceptual diagrams; *I use the concept maps for periodic assessment* – the teachers allow the students to use the concept maps during periodic, oral and/or written assessments. This factor underpins to the two main domains extracted from the literature, that is D1 and D4. *Learning methods* explains almost 30% of the total variance, and the mean of 2.58 suggests that using these learning tools is not a common practice. The literature shows that active teaching methods and tools, such as cognitive maps, games to stimulate cognitive processes (including problem solving and decision making) and the use of innovative technologies can support active learning (Ge & Land, 2003).

The second factor, ***own studying facilities***, includes two items: *at home*, *own space to study* and *at home*, *Internet connection*, which can be regarded as a proxy of the overall wealth of the family not only in terms of income but also regarding the importance given to education, which underpins the D2 and D3 domains. Interestingly, the factor mean is higher than 4 within the Likert scale of 1 to 5. In statistical terms, although a Cronbach's alpha with a value greater than 0.58 indicates a questionable reliability of the extracted factor, the Spearman's correlation (rho) and the R^2-adjusted (0.98) confirm the internal consistency. According to the literature, the availability of resources, such

as a personal working space and using an internet connection at home, impacts schooling performance (Woessmann & Thomas, 2004). Kuhlemeier and Hemker (2007) showed that students have better internet skills and more advantageous home computers than students in prevocational education, first-graders and minority students, respectively.

The last factor, ***self-commitment***, includes two items: *more time allocated to own studies* (the respondents felt that they had to allocate more time to study) and *learning difficulties* (the respondents felt they had learning difficulties during secondary school attendance), which links to the D1 domain. This factor, with a mean of 3.04, indicates that the respondents only marginally agreed with these propositions. In this case, the Cronbach's alpha is rather low (0.43), casting some doubt on the factor's reliability; however, once again, the Spearman's correlation (*rho*) and the R^2-adjusted (0.96) show the internal consistency of the extracted factor. Overall, the respondents show awareness that their scholastic performance is linked to their personal commitment and, in particular, to their time spent studying. Hence, this awareness about their learning difficulties can be linked to the students' self-efficacy (Zimmerman, 2000) and self-regulation (Boekaerts & Como, 2005).

6.3 Findings of qualitative content analysis

From the content analysis, 50 macro-codes and five families emerged. Every code in each network includes two numbers: the first number represents the frequency of a given code within primary documents (interviews) provided in the hermeneutic unit, while the latter refers to the number of direct associations with other codes. To examine and present the main findings, ATLAS.ti networks are presented. Specifically, four thematic areas were identified by the content analysis, as perceived by the respondents during their secondary school attendance:

- Critical issues about interpersonal relationships
- Satisfaction with school management and resources
- Satisfaction with the learning process and teacher role
- Learning impact of innovative technologies

6.3.1. Critical issues about interpersonal relationships

The respondents highlighted several problematic aspects (core code *problematic issues*, network 1) that negatively impact student life (Figure 1). They perceived that school staff, particularly teachers, were not empathic enough and did not provide enough attention to understand and listen to the students' personal needs. The respondents suggested extra support, especially for those students who have special learning needs, and to be shown more humanity (code *understanding students' problems*, 20, 2). Notably, teachers' empathy and their availability to create a constructive relationship with their students is considered an important aspect of the *students' learning contract* and has a direct effect on scholastic performance (Lémonie et al., 2016; see networks 1 and 2; extract 1).

In line with the literature (e.g., Lent et al., 2006; Swearer & Hymel, 2015), the respondents were sensitive about school 'discrimination', in particular to practices or attitudes/behaviour considered discriminatory, such as the presence of a crucifix in classrooms, architectural barriers to people with disabilities, bullying, lack of respect towards classmates and injustices by teachers in the evaluation system (code *discrimination*: 15, 3) (networks 1 and 2). Furthermore, considering the perception relating to discrimination, the participants wanted secondary schools to be more proactive in enforcing rules, norms and rights.

Here, promoting group cohesion and community building at school was seen as an important protective factor to reduce social discrimination (Lent et al., 2006). The respondents remarked the need for active participation from school staff to support students' rights and defend them from abuses perpetrated by teachers and other students (code *school rules and functions*, 12, 2). They suggested an increase in punishment, especially against those students who did not respect rules and norms, such as acts of vandalism, bullying and aggression against classmates (networks 1 and 2, extract 2). These aspects of discrimination were highlighted as important factors that negatively affect students' and teachers' wellbeing (see also Swearer & Hymel, 2015). Many respondents highlighted the need for teachers to pay more attention to student problems and requests, on the one hand, for example

Commentato [AC19]: Alphabetical order

We have changed the Authors' order in all citations

improving constructive discussion among students and teachers (extract 1) and while applying stricter rules, on the other hand, to prevent discriminations and bullying at schools (extract 2).

Extract 1

'If I were them [teachers], I'd try to listen to the students increasing discussion and confrontation'.

Extract 2

'Stricter penalties for those who have no respect for their classmates, raising awareness of the problem of bullying'.

Commentato [AC20]: Are these just stand alone comments…It would be useful to introduce them.

Thank you. We have moved all the figures after the extracts.
We have cited the extracts 1 and 2 above

FIGURE 1 HERE

6.3.2 Satisfaction with the learning process and teacher role

For the respondents, the teachers played a crucial role in the students' learning development and personal satisfaction (Figure 2). They asked for more dynamic explanations (code *provide better explanations*, 232, 2) by using alternative methods, such as outdoor lessons or group work and discussions (extract 3). The students suggested dividing the class into small work groups and using other interactive teaching strategies that can enable each student to have an active role in class, which is line with the recent literature (Gunstone et al., 2013; Van Uden et al., 2014). In addition, they suggested more support from teachers to complete daily homework. Students have numerous learning and emotional expectations regarding the teacher's role yet tend to be disillusioned with…. (code *needs and expectations*, 392, 1). The development of an empathic relationship between teacher and student consolidates reciprocal trust and enhances student engagement and commitment (Jennings & Greenberg 2008).

Network 2 also shows two codes: *change* (65, 3) and *no change* (74, 1), that is, respondents who would like to see changes in the school management or not. Most suggestions proposed in the 'changes'/'no changes' codes concerned personal perceptions regarding relations with the teacher and the quality of social relations in the school environment, including relationships among teachers.

As remarked by Serpieri and Vatrella (2017), students' wellbeing is influenced by the social context of the learning environment. Hence, developing students' self-regulation and resilience can help them manage personal and interpersonal stressful events (Boekarte & Como, 2005).

Students would prefer to be actively involved in the learning process. They suggest that their teacher should adopt active teaching methodologies in order to promote participatory and inclusive learning and prevent forms of discrimination. At the same time, teachers should develop an effective communication and an active and empathetic listening (extract 3). Students' academic abilities and needs, as well as expectations, personal attitudes and feeling, underpinned the D1 domain.

The respondents also highlighted that teachers should be more understanding and encourage students to work harder and be supportive with other students, especially with classmates with special educational needs (extract 4). Notably, despite the criticisms highlighted during the interviews, the respondents appreciated that several teachers were also very good learning facilitators. Furthermore, several respondents admitted that the cause of their poor secondary school performance was because of their own lack of self-commitment rather than because of the teachers.

Extract 3

'Make everyone part of the lesson, use a not boring tone of voice, give examples and use the slides and ask everyone their opinion'.

Extract 4

'Teachers should encourage me to study more, and they should not belittle me'.

FIGURE 2 HERE

6.3.3 Satisfaction with school management and suggested improvements

Network 3 '*school management*' refers to the improvements suggested by the respondents in regarding the overall organisation of the secondary school (Figure 3). The aspects of management highlighted as the most relevant were *school timetable* (28, 4); *break* (12, 1); and *extracurricular*

Commentato [AC21]: The ideas here need to be better linked. How does relationships with teachers relate to resilience?

We have added the sentences above as highlighted below

Commentato [AC22]: Again…link the comments to the discussion.

We have added the sentences above as highlighted

courses (73, 1) (extract 5). The students requested more flexibility in the school timetable, with breaks between lessons and small breaks during a lesson which would guarantee a higher level of concentration and enhance the quality of the learning process. The respondents also highlighted the need to enhance extracurricular activities and promote guided visits to museums and educational trips to further understand specific topics learned during the theoretical lessons and increase student involvement. These factors are in line with the D4 domain and highlight that school management is important not only for students' achievement (Masci et al., 2018; see Wanjala et al., 2014), but also for teacher satisfaction (Stockard & Lehman, 2004) and school effectiveness (Ramberg et al., 2019).

As a further argument, *transport* (7, 2) was perceived as problematic in relation to school timetable. The respondents suggested a better understanding of those students who commute every day using public transport. A better collaboration with public companies is needed to enhance transportation and transfers to and within the city. The students also highlighted the importance of improving school infrastructure (54, 2), particularly renovating facilities, improving laboratories and better overall maintenance. Some improvements focus on the 'staff' role (33, 2), which play a fundamental role in the overall organisation of individual institutions. Indeed, their availability and willingness to cooperate was considered as an important aspect of an effective institution.

Finally, the code *school-work* (12, 2) (extract 6) highlights the inadequate action given to the need to match school programmes to the job market and the university pathway. This is true both in terms of the overall educational offer, and lack of practical activities/extracurricular courses.

Extract 5

'I would suggest extracurricular courses to raise interest in students. Not necessarily these courses should deal with school subjects, but simply train and educate the student'.

Extract 6

'We need labour-market-oriented training'.

Commentato [AC23]: One sentence paragraph.

The sentence has been disentangled as requested. Thank you

Furthermore, we have moved all the figures after the extracts.
We have cited the extracts 1 and 2 above

FIGURE 3 HERE

6.3.4 Innovative technologies and learning impact

The allocation of a non-adequate level of resources to innovative technology was highlighted as a key problem area. School facilities (Erdogu & Erdogu, 2015) and access to information technology (ICT) impact the academic success of students. This aspect can create discrimination related to student opportunities, particularly when the student does not have any access to innovative technologies at home. Hence, factors such as limited family financial resources and overall socio-economic disadvantage in peripheral areas, can lead to educational inequalities (in line with D2 and D3). This is consistent with the findings that emerged from other European experiences (Meneses & Mominó, 2012; Gil-Flores et al., 2015), where ICT in education does not lead to a substantial revolution in established schooling practices.

Network 4 (Figure 4) refers to the improvements suggested by the respondents in terms of modernising schools, adopting innovative teaching methods and a frequent recourse to new technologies. *Innovation technology and teaching* (131, 2) and *teaching method* (215, 2) (extract 7) relate to the need to use new technologies during lessons to improve and deepen theoretical explanations. Many respondents suggested an increase in the use of multimedia interactive whiteboards (LIMs) because some teachers were not properly trained in using this technology.

The use of slides, videos and documentaries was regarded as an opportunity to enhance teaching methodologies and find alternative solutions to frontal theoretical lessons. Furthermore, students were restricted by not having access to the internet and Interactive Multimedia Whiteboard. The use of innovation technologies to design curricula by creating interactive and stimulating sessions can help teachers actively involve students in developing their subject knowledge. It could hence be useful for teachers to acquire a deeper understanding of the potential of incorporating technology within the secondary school curriculum (Gwyneth, 2015).

Regarding *improve the school infrastructure* (54, 2) and *management* (146, 2), the respondents highlighted that infrastructures are inadequate and obsolete, and facilities and equipment are not always available. They suggested the schools should utilise modern equipment and update technological tools.

Extract 7

'If I were them, I would try to get the attention of the students by exploiting the technological resources'.

It is worthwhile emphasising that the autonomous region of Sardinia assumed a priority and leadership role in pursuing more technology goals within the National Digital School Plan (Miur, 2016; RAS, 2011).

FIGURE 4 HERE

7. Conclusions

The current research built on four main domains extracted from the literature. A mixed method approach, Principle Components Analysis *(PCA)* and a *content analysis*, offered a more informative tool to elicit main causes of early dropout in secondary schools and assessed possible solutions to the education system. All these extracted factors denoted a relevant role in the content analysis, showing the overall robustness of the methodological and empirical framework.

The empirical setting is an Italian insular region characterised by a social and economic disadvantage, with remarkably high rates of early school dropout and NEET if compared to the EU average. The study gathered opinions of young people (aged 14–24) and explored their perceptions and suggestions about their actual and recent past secondary schooling experiences. The two sample subgroups (i.e., 14–18 and 19–24 years old) did not present noteworthy statistical differences, which encouraged exploring this cluster of the population, whose feelings and opinions are neglected within the literature (Nolkemper et al., 2019).

Commentato [AC24]: Can you think of a better word here

We have reworded the phrase. Thank you

Regarding RQ1, the respondents emphasized some critical issues that secondary schools face within disadvantaged contexts. As shown by Ramberg et al. (2019) and Ertesvåg and Roland (2015), the qualitative analysis raised critical issues concerning *school management* (e.g. timetables, staff, budget), obsolete *infrastructures* and the perpetration of *social discrimination* (e.g. bullying, social stereotypes).

As far as the RQ2 is concerned, the main risk factors that may drive early dropout relate to the *school identity* and *community-building* (student-teacher-family). Students' educational experience was negatively affected by ineffective *interpersonal relationships* with teachers and peers. In line with previous studies, from the PCA, *teacher role* (Ansong et al., 2017; Ramberg et al., 2019; Van Uden et al., 2014), *learning experience* (i.e., conceptual maps) and personal study *facilities and technology* (see Gwyneth, 2015), followed by *self-commitment* were found to all be key factors. These findings highlighted that teachers should be more empathic, and able to plan interactive and engaging lessons. They should adopt innovative technology and enhance students' education satisfaction (Aldridge & McChesney, 2018). Respondents also emphasized that schools should more effectively prevent discrimination amongst students.

Regarding the last research question, RQ3 (priorities and strategies to prevent early dropout, as perceived by young people), respondents suggested that teachers should allocate more time to students especially to those with learning needs. It is crucial that teachers support students' self-motivation, helping them to be more aware about their personal skills. Teachers should also support the learning process through active methodologies (Ge & Land, 2003). The use of complementary learning tools, such as conceptual maps, still need to be implemented and enhanced. Strengthening school identity and community building are crucial actions to support students' learning and education satisfaction (Lent et al., 2006).

Given the actual global pandemic, social discriminations and education inequalities are likely to rise worldwide. The lack of an adequate ICT infrastructure and tools poses at risk millions of learners, who may not be involved in e-learning. As shown in the present study, the lack of internet

connection and compensative tools, as well as social interactions and school involvement, may drive early school dropout. “Educational contexts have always been the battleground for political struggles between those who want to control others for their own benefit and those who want to liberate themselves and the oppressed” (Andrzejewski et al., 2009 in Veloira, 2020, p. 6-7). School agents can play a pivotal role promoting cultural integration and education engagement, towards local and global citizenry (Veloira et al., 2020). Policy makers should improve their education systems, and issue policies aimed at preventing ‘early school dropout’, especially, during deep economic recessions, to develop students’ wellbeing and shape future inclusive societies.

The paper also highlighted a set of key indicators that can be employed in further studies on specific public policies, such as choice modelling and structural equation modelling. Teacher and staff continuous training, new technology expertise, interactive learning, timetables and transport can be employed as the main domains for an exploration in eliciting individuals’ preferences and willingness to accept or willingness to pay. Overall, the current paper provided a guide for a bottom-up policy that may be more effective than a top-down strategy in preventing dropout. Best practices in other regions that experience a low level of youth unemployment and NEET (e.g., Germany and Austria) can also help in structuring better interactions between the education system and the local entrepreneurs, a need that emerged from the current analysis.

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Commentato [AC25]: Format for references – Hanging indent.
Also check format for titles….

We have made all amendments

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Table 1. Quality criteria guidelines

1) *Credibility:* member validation or validating findings with the participants to assess if they can relate to the researcher's construct of the phenomenon.
2) *Transferability:* the ability of the results to be transferred to situations with similar parameters, populations and characteristics, and require the audience to use data to assess the relevance of the findings to other situations.
3) *Dependability*: criteria of external validity that can be applied also through a careful description of the research context and of the research design.
4) *Authenticity*: participants can develop greater understanding of the phenomenon and can compare different perspectives.
5) *Confirmability*: or internal reliability if there is an agreement between the researchers who coded and interpreted the information; external reliability refers to the replicability of the study.

Table 2 Experience at high school: Principal Components Analysis and Reliability test

Experience	**Variable contribution**	**% Explained variance**	**% Cumulative Variance**	**Cronbach's alpha**	**Factor mean**
Teacher role		37.04	37.04	**Cronbach's Alpha:** 0.84 **Spearman rho**= *** **R-squared_adj**=0.98	3.17
Motivating teachers	.830				
Subjects satisfaction	.747				
Teachers understand students	.740				
Teachers are patient with students	.739				

Teachers raise interest	.735				
Learning new things	.618				
Interpersonal relationships		20.02	53.53	**Cronbach's Alpha:** 0.76 **Spearman rho**= *** **R-squared_adj**=0.94	2.99
Studying with other classmates	.885				
Doing specific research with classmates	.839				
Spending evenings with other classmates	.643				

*Notes: Kaiser-Meyer-Olkin Measure of Sampling Adequacy 0.79; Bartlett's Test of Sphericity chi-square(45)= 1812.643 (0.000). *** statistical significance at 1%*

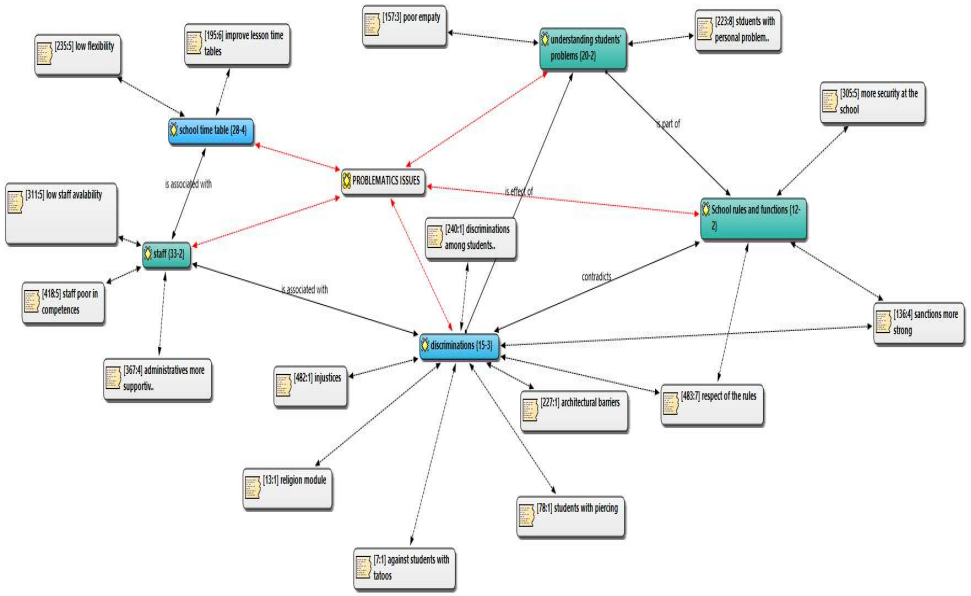
Table 3 Learning experience: Principal Components Analysis and Reliability test

Learning experience	Variable contribution	% Explained Variance	% Cumulative Variance	Cronbach's alpha	Factor mean
Learning methods		29.35	29.35	**Cronbach's Alpha:** 0.76 **Spearman rho**= *** **R-squared_adj**=0.99	2.58
Concept maps to study	.908				
I prepare the concept maps	.783				
I use the concept maps for periodic assessment	.779				
Own studying facilities		20.687	50.04	**Cronbach's Alpha:** 0.58 **Spearman rho**= ***	4.05

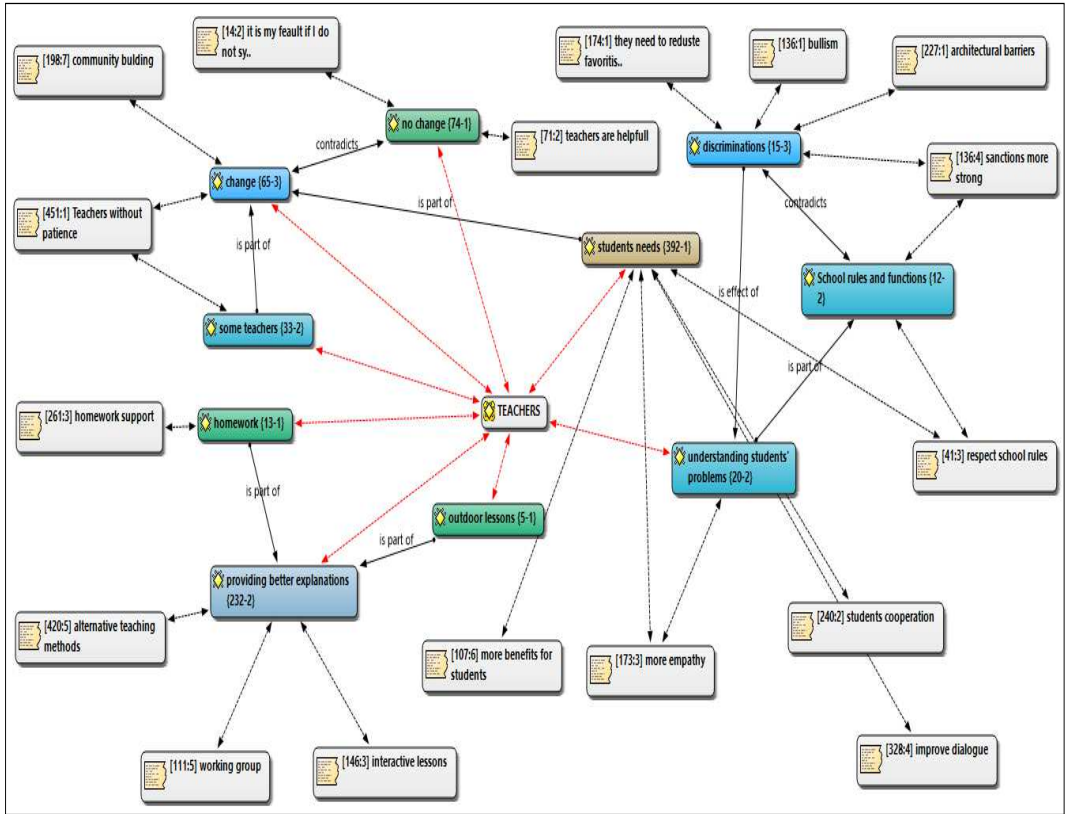
				R-squared_adj= 0.98	
At home, own space to study	.834				
At home, internet connection	.831				
Self-commitment		19.30	69.34	**Cronbach's Alpha:** 0.43 **Spearman rho**= *** **R-squared_adj**= 0.96	3.04
More time allocated to own studies	.784				
Learning difficulties	.782				

Notes: Kaiser-Meyer-Olkin Measure of Sampling Adequacy 0.60; Bartlett's Test of Sphericity chi-square(21)= 636.092 (0.000).

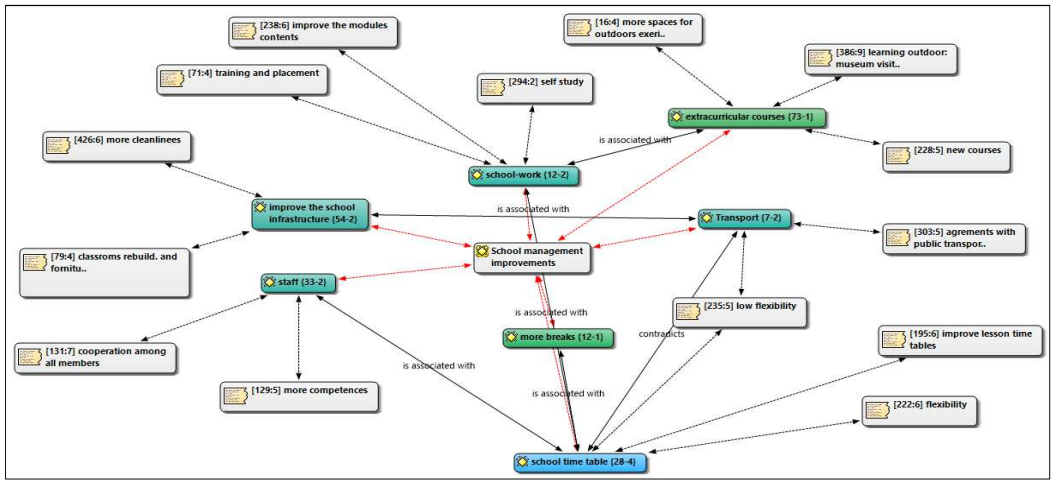
(Figure 1) Network 1: Critical issues perceived by respondents linked to interpersonal relationships during secondary school attendance.



(Figure 2) Network 2: Satisfaction on the learning process and teacher role



(Figure 3) Network 3: School management and suggested improvements



(Figure 4) Network 4: Learning impact of innovative technologies