Agency and responsibility in adolescent students: A challenge for the societies of tomorrow

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Background. The literature in educational psychology converges on the idea that students should take an active and accountable position in their learning processes. Nevertheless, there is still a lack of research that has systematically put the constructs of agency and responsibility at the core of their interests.

Aims. In this study, we explore whether good experiences at school – here conceptualized as the general level of basic needs fulfilment and interpersonal justice – impact on student agency and responsibility, which in turn are considered as possible mediators between a good educational experience and two outcome measures, that is, academic achievement and career decision-making self-efficacy.

Participants. The study was held on a sample of 911 high school students equally distributed between males and females.

Method. Data were collected through the use of a questionnaire comprising six measures assessing students' basic psychological need fulfilment, interpersonal justice, agentic engagement, responsibility for learning, academic achievement, and career decision-making self-efficacy.

Results and conclusions. Structural equation modelling indicated that basic needs fulfilment positively predicts agency, responsibility, academic achievement, and career decision-making self-efficacy. Interpersonal justice positively predicts responsibility. The indirect effect from basic psychological needs on career decision-making self-efficacy through the mediating effects of student agentic engagement and student responsibility was significant. The indirect effect from interpersonal justice on career decision-making self-efficacy through the mediating effect of student responsibility for learning was significant. These results are commented at the light of their implications for teacher practices, as they emphasize the importance of good experiences at school for promoting in students an active civic sense and a greater accountability.

Over the last 15 years, scientific and professional debates in educational psychology have emphasized the importance of creating favourable conditions in the classrooms for students to feel active in, and co-responsible for, their educational pathways (Carpenter & Pease, 2013; Fisher & Frey, 2008; Helker & Wosnitza, 2016; Savery, 2006).

Notwithstanding the large consensus on the idea that students should take an active and accountable position in their learning processes, there is still a lack of research that

has systematically put the constructs of agency and responsibility at the core of their interests. In this study, we focus on the role of student agentic engagement and responsibility for learning as possible mediators between good experiences at school – conceptualized here as basic psychological needs fulfilment and interpersonal justice – and two outcomes that might be affected by the student's active role, that is, academic achievement and career decision-making self-efficacy.

Agency and responsibility

In the educational psychology literature, the concepts of agency and responsibility are considered as two distinct yet related aspects of students' active roles in their lives. Generally speaking, agency reflects the people's will and skill to act upon activities and circumstances in their lives (Lipponen & Kumpulainen, 2011). In classrooms, students are considered to act agentically when they intervene on and transform situated educational practices with their actions or words (Mäkitalo, 2016).

Although the dimension of agency has become increasingly central in international debates on education, the construct maintains a character of elusiveness that makes the question of how to investigate and measure it a relevant one. Most studies conducted on student agency have been based on descriptive and qualitative methods, such as classroom observations and discourse analysis (Mameli & Molinari, 2014; Martin, 2016; Siry, Wilmes, & Haus, 2016), while quantitative research using self-report instruments is more limited and basically constrained within the field of student engagement research.

The definition and measurement of student agentic engagement are due to the work of Reeve and Tseng (2011), who added this aspect to the three well-known dimensions of student engagement, that is, the affective, behavioural and cognitive ones (Fredricks, Blumenfeld, & Paris, 2004; Lam *et al.*, 2014; Wang & Fredricks, 2014). While endorsing the existence and strength of the three dimensions of engagement, Reeve (2012; Reeve & Tseng, 2011) pointed out that they have the limit of capturing only the way students react to the flow of instructional activities from the teacher to the student, while they fail to grasp the learner's active and transformative contributions. In this direction, Reeve (2012, p. 161) suggested adding a fourth component to the engagement construct, namely the agentic one, which he defined as 'the process in which students proactively try to create, enhance, and personalize the conditions and circumstances under which they learn'. Reeve (2013; Reeve & Tseng, 2011) also developed the 5-item Agentic Engagement Scale, which was used in several studies showing good psychometric properties.

The adoption of an agentic role in educational processes and paths may be considered as complementary to, albeit distinct from, the taking of responsibility for one's own learning (Carpenter & Pease, 2013; Rajala, Martin, & Kumpulainen, 2016). Over a decade ago, student responsibility, defined as 'a sense of internal obligation and commitment to produce or prevent designated outcomes' (Lauermann & Karabenick, 2011, p. 135), was proposed by the American Psychological Association as one of the main goals for education in the 21st century (Sternberg, 2002). The same position was updated in the CASE report on *Key Competences in Europe*, in stating that 'individuals need to be able to take responsibility for managing their own lives, situate their lives in the broader social context and act autonomously' (Gordon *et al.*, 2009, p. 40).

The issue of student responsibility has drawn scholars' attention from the beginning of the 20th century, when Dewey (1900) emphasized that students should take co-

responsibility for their learning. More recently, several authors (Carpenter & Pease, 2013; Fisher & Frey, 2008; Helker & Wosnitza, 2016; Savery, 2006; Zimmerman & Kitsantas, 2005) have highlighted that students are not only the target of responsible actions taken by adults, but should be encouraged to take on a responsible role in self-regulating learning paths. Nevertheless, most of the existing research on educational responsibility focused on teachers (Lauermann & Karabenick, 2011) while students' perceptions are still scarcely explored (Helker & Wosnitza, 2016). The results of the few studies in this direction, however, appear promising. Students' sense of responsibility was associated with the perception of control over their learning and knowledge-building (Fishman, 2014), as well as with students' inner motivation and self-regulation (Higgins, Roney, Crowe, & Hymes, 1994). Moreover, Zimmerman and Kitsantas (2005) showed that students engaging in self-regulatory learning processes ascribed more responsibility to themselves as learners than to the teachers. However, this result is counterbalanced by others, showing that students often perceive teachers as the central figures in control of school practices and consequently tend to assign to them the largest responsibility for their learning (Chan, Spratt, & Humphreys, 2002; Üstünlüoğlu, 2017).

In sum, agency and responsibility have very much in common, as they both underline the individual's active role in one's own learning and life. However, they also have peculiar features that express the two sides of a same coin. While agency reveals the attitude to transform situated practices through words and actions, responsibility outlines the subjective feeling of self-regulation and internal commitment. In this study, agency and responsibility are thus conceived and measured as two distinct constructs.

Good experience at school: The fulfilment of basic psychological needs and interpersonal justice

Basic psychological needs have mainly been studied within the framework of Self-Determination Theory (SDT; Deci & Ryan, 2002; Vansteenkiste, Niemiec, & Soenens, 2010), which refers to the importance, for individual development and well-being, of engaging in activities based on personal values and goals (Niemiec & Ryan, 2009; Sheldon & Gunz, 2009). According to the SDT, school contexts may encourage students' self-determination via the fulfilment of three basic psychological needs (Reeve, 2012; Ryan & Deci, 2000; Skinner, Furrer, Marchand, & Kindermann, 2008; Vansteenkiste *et al.*, 2010), namely the need for autonomy, competence, and relatedness.

Numerous studies have consistently shown that students' perceptions that their teachers fulfil their basic needs – that is, they feel encouraged to act freely and independently (Jang, Reeves, & Deci, 2010; Levesque, Zuehlke, Stanek, & Ryan, 2004), they feel competent and engage in successful experiences (Nie & Lau, 2009), they feel connected in a warm and supportive relational climate (Daly, Shin, Thakral, Selders, & Vera, 2009; Murray, 2009) – have a positive impact on students' intrinsic motivation, engagement, and academic achievement. The robustness of these findings was even stronger when authors considered the three needs as a unique dimension indicating the general level of need satisfaction on the part of the teacher (Klem & Connell, 2004; Lam, Cheng, & Ma, 2009; Stroet, Opdenakker, & Minnaert, 2013). Among the many results in this direction, we should also mention the relation found between general needs satisfaction and the accomplishment of decision-making tasks in adolescence (Guay, Senécal, Gauthier, & Fernet, 2003). Other studies have shown the positive effects of school programme interventions based on SDT in promoting career exploration and career decision-making (Chiesa, Massei, & Guglielmi, 2016;

Kerner, Fitzpatrick, Rozworska, & Hutman, 2012; Perry, Wallace, & McCormick, 2016). By and large, these studies underline that the fulfilment of the three basic needs on the part of the teacher corresponds for students to the perception of good experiences at school.

However, there is yet another crucial dimension of school experience that we believe ought to be taken into consideration. This regards the student's feeling to be treated fairly by one's own teachers. This justice feeling permeates all social processes and interpersonal relationships in school, and as such, it is a crucial element for making the classroom a positive learning environment (e.g., Resh & Sabbagh, 2016).

Research has shown that the perception of classroom justice may qualify the interactions between students and teachers (Chory-Assad, Horan, Carton, & Houser, 2014; Peter, Kloeckner, Dalbert, & Radant, 2012), and it impacts learners' adjustment and well-being (Chory-Assad, 2002; Dalbert & Stoeber, 2005; Oluwatayo, Aderonmu, & Aduwo, 2015). Moreover, several studies have provided interesting results concerning the relation between justice and several outcomes. For instance, the impact of interpersonal justice on student motivation and achievement has been confirmed by several studies (Berti, Molinari, & Speltini, 2010; Kazemi, 2016; Resh, 2009; Walls & Little, 2005). In addition, Tas (2016) has shown that teacher justice, investigated here in terms of equity, positively predicted cognitive, behavioural, emotional, but also agentic aspects of engagement in middle school students. A limited number of studies in the social and economic sciences have also explored the links between the perception of justice and career decision-making tasks. Elaborating on Parsons (1909) model, Hartung and Blustein (2002) argued that social (in)justice affects decisional career processes because differences in one's access to social and economic opportunities contribute to shaping career choices.

There is no research, to our knowledge, that has explored the association between interpersonal justice and basic psychological needs. Only very recently, Molinari and Mameli (2017) have advanced the argument that in school, as in other organizational contexts (Cropanzano, Byrne, Bobocel, & Rupp, 2001), justice should be considered as a *condition sine qua non* for the needs of autonomy, competence, and relatedness to be satisfied. From our point of view, the main question researchers should address in future investigations is a theoretical one: Can students perceive that their basic needs are fully recognized in teacher–student relationships that are not connoted by a fair interpersonal treatment? The answer to this question lies beyond the empirical aim of our study. However, we will put forward an argument about this by considering the associations between basic needs and interpersonal justice, and by treating both constructs as indicators of a good experience at school.

Student achievement and career decision-making self-efficacy

Academic achievement not only reflects the ability to repeat an 'already known knowledge', but also the students' capacity to actively participate in everyday academic activities by accepting accountability for their learning (Carpenter & Pease, 2013; Rajala *et al.*, 2016). Conceived as a measure of the students' learning level in the different subjects they are taught, academic achievement in Italian schools is measured as the average mark students get half-way through and at the end of the school year. As previously discussed, several studies have confirmed that students achieve higher academic results when their basic psychological needs are perceived as being satisfied

(e.g., Stroet *et al.*, 2013; Taylor *et al.*, 2014) and when they feel to be treated fairly by their teachers (Berti *et al.*, 2010; Dalbert & Stoeber, 2006; Resh, 2009).

Another interesting outcome of school trajectories concerns the students' development of the capacity to make decisions concerning their own future. The adolescents' ability to envisage a career may affect their life paths in positive or negative terms (e.g., Siry *et al.*, 2016). In addition, the perception of self-efficacy in fulfilling this arduous task is crucially important (Chiesa *et al.*, 2016; Lo Presti *et al.*, 2013). Based on Bandura's social cognitive theory (1977), career decision-making self-efficacy was originally defined as one's confidence in being capable of engaging in educational or occupational planning and decision-making (Taylor & Betz, 1983). Within the theoretical framework of SDT, previous studies have revealed that self-efficacy in career decision-making is positively affected by the socio-contextual fulfilment of basic psychological needs (Chiesa *et al.*, 2016; Kerner *et al.*, 2012; Perry *et al.*, 2016), which in turn facilitates the processes of self-motivation and healthy psychological functioning. In our view, career paths should not be separated from one's agency and responsibility. In fact, 'career choice capability is a problem of individual agency' (Galliott & Graham, 2015, p. 181), which involves a proactive attitude towards exploring various options, as well as the capacity to take responsibility for the choice made and its pursuit.

Research aim and hypotheses

As reported above, prior research has provided many insights into the role played by basic psychological needs fulfilment in both academic achievement and career decision-making self-efficacy. However, only a few studies (Reeve, 2012; Reeve & Tseng, 2011), mainly conducted in non-European countries, corroborated the positive association between basic psychological needs and academic achievement considering the mediation of student agentic engagement. Moreover, the mediation role of student agency on career decision-making self-efficacy remains unexplored and no studies, to our knowledge, have taken into account the combined mediation value of student agentic engagement and student responsibility for learning with regard to both academic achievement and career decision-making self-efficacy. Finally, although a number of scholars have highlighted the role of interpersonal justice for student paths (Kazemi, 2016; Molinari, Speltini, & Passini, 2013; Peter *et al.*, 2012; Resh & Sabbagh, 2016), its impact in relation to student agentic engagement, responsibility for learning and career decision-making self-efficacy is still underinvestigated.

In the light of these premises, the aim of the present work was to explore whether good experiences at school – namely the general level of basic needs fulfilment and interpersonal justice – affect student agency and responsibility, which in turn are considered as possible mediators between a good educational experience and the considered outcome measures, that is, academic achievement and career decision-making self-efficacy. Specifically, we predict the following: The general level of basic needs fulfilment and interpersonal justice will positively predict student agentic engagement and responsibility for learning (hypothesis 1); student agentic engagement and responsibility for learning will fully or partially mediate positive relationships between the general level of basic needs fulfilment and interpersonal justice, and, respectively, academic achievement (hypothesis 2) and career decision-making self-efficacy (hypothesis 3).

Method

Participants and procedure

The study was held in January 2016 on a convenience sample of 911 high school students (51.7% males, 48.3% females) from five urban middle-class schools situated in Northern Italy. Participants, aged 14–19 (mean age 16.22), were enrolled in 10th (38.1%), 11th (29.7%), and 12th (32.2%) grades.

Prior to the data collection, the minors' parents were asked to complete an informed consent form with no family refusing. All the students were asked to participate voluntarily in the study, and they were assured about confidentiality and anonymity of data handling. The researcher administered the self-report instrument to students in their classrooms during school hours. For each class, the filling in of the questionnaire was preceded by a short illustration of the research and its general goals. The research was conducted in agreement with the ethical norms laid down by the Italian National Psychological Association.

Instruments

Basic psychological needs fulfilment

We made use of the Italian translation (Molinari & Mameli, 2017) of the Activity Feeling State (AFS; Reeve & Sickenius, 1994; Reeve & Tseng, 2011), a 10-item self-report measure of perceived psychological need fulfilment. The instrument, starting with the stem 'During class I feel. . .', asks students to refer to their general perception of their own school experience. It included three subscales assessing the degree of psychological need satisfaction in regard to autonomy (four items; e.g., 'I'm doing what I want to be doing'), competence (three items; e.g., 'Capable'), and relatedness (three items; e.g., 'Emotionally close to the people around me'). Participants answered on a 7-point Likert scale ranging from 1 (*I strongly disagree*) to 7 (*I strongly agree*). In line with Reeve (2013), we opted for a one-dimension solution of the latent construct 'Psychological need satisfaction'. Overall, the scale showed good reliability (Cronbach $\alpha = .81$).

Interpersonal justice

The Italian version (Berti, Mameli, Speltini, & Molinari, 2016) of the Teacher Justice Scale (Dalbert & Stoeber, 2006) was used to evaluate the extent to which students perceived that the treatment they received from their teachers was fair. This 10-item scale (range from 1 = *I strongly disagree* to 7 = *I strongly agree*; e.g., 'I feel my teachers generally treat me fairly') showed good reliability (Cronbach $\alpha = .83$).

Agentic engagement

An Agentic Engagement Scale was used to measure the degree to which students constructively contribute to the flow of the instruction they receive. For the purposes of this study, we relied on the 10-item Agentic Engagement Scale (Mameli & Passini, 2018) developed and validated in Italy by building on the 5-item scale by Reeve and Tseng (2011). Students answered on a 7-point Likert scale of agreement (range from 1 = *I strongly disagree* to 7 = *I strongly agree*). Sample items are 'I let my teacher know what I need and want' and 'I defend my opinions even if they are different from those of my peers'. For this study, the scale reliability was good (Cronbach $\alpha = .85$).

Responsibility for learning

Perceived responsibility for learning was assessed with a 16-item instrument (Zimmerman & Kitsantas, 2005). The original scale was designed to evaluate whether learners perceived the student or the teacher as being more responsible for various learning tasks or outcomes, such as student motivation or learning processes and activities. For the purposes of this study, students were simply asked to indicate on a Likert scale ranging from 0 (Not responsible at all) to 3 (Completely responsible) to what extent they felt responsible in regard to learning tasks. The scale was preceded by the stem 'How much responsibility the student has when. . .'. Sample items are 'S/he is not motivated to learn in school' and 'S/he does not take notes in class'. As the perceived responsibility for learning scale had never before been used in Italy, a back-translation procedure was adopted. Cronbach α for this study was .85.

Academic achievement

Academic achievement was evaluated with a single item (Molinari *et al.*, 2013) asking students to indicate, in a scale ranging from 1 to 10, the final average mark they received in all subjects in their last report card. The decision to rely on a self-report index was due to Italian administrative regulations and school privacy issues that do not allow researchers to access students' official records. Although we are conscious that a measure of achievement based on self-report may be limited, this is currently the most commonly accepted measure of school success used in the Italian school context (Cavalli & Argentin, 2007). Even elsewhere, this measure is considered as quite reliable by some authors (Cassady, 2001; Kuncel, Credé, & Thomas, 2005), who argued that students' self-reported marks reproduce their actual marks fairly accurately.

Career decision-making self-efficacy

Career decision-making self-efficacy was evaluated with a 12-item self-report instrument adapted from the short form of the Career Decision-Making Self-Efficacy Scale (CDMSE-SF; Betz, Klein, & Taylor, 1996) in its validated Italian version (Lo Presti *et al.*, 2013). The scale assessed individuals' levels of confidence in successfully completing various tasks to make significant career decisions. The scale was preceded by the stem 'How much confidence do you have that you could. . .', and students responded on a 7-point Likert scale of confidence (range from 1 = not confident at all to 7 = absolutely confident). Sample items are 'Find information about occupations you are interested in', 'Choose a career that will fit your preferred lifestyle'. As the original scale has been widely used as a one-dimensional measure (Chiesa *et al.*, 2016; Miguel, Silva, & Prieto, 2013), we opted for this solution to assess students' total decision-making self-efficacy. Cronbach α for this study was .87.

For all the measures considered, values for skewness (range from −.641 to .069) and kurtosis (range from −.275 to .839) were lower than |1|, which suggests that the distribution of the variables was adequate for the analyses.

Data analysis

We used structural equation modelling (SEM) to test our hypothesis. The SEM was estimated via maximum likelihood using the Mplus 8 software program (Muthén & Muthén, 1998–2010) and was conducted with latent variable modelling, which allowed

us to evaluate measurement invariance as well, and control for school belonging. For the evaluation of the model fit, we relied on the following indexes: the comparative fit index (CFI), the standardized root-mean-square residual (SRMR), and the root-mean-square error of approximation (RMSEA). Consistent with the recommendations of Hu and Bentler (1999) and Kline (2016), goodness-of-fit criteria were used to quantify acceptable (CFI > 0.90, SRMR < 0.10, RMSEA < 0.08), and excellent fit (CFI > 0.95, SRMR < 0.08, RMSEA < 0.06).

Results

Prior to testing our hypotheses, we calculated descriptive statistics and intercorrelations among the variables (see Table 1). As far as the mean values are concerned, in general students gave high scores to basic psychological needs fulfilment and CDMSE-SF, and they gave scores over the mid-point of the scale to interpersonal justice scale and student responsibility for learning. As regards student agentic engagement, it was on the mid-point of the scale. Finally, the mean school mark indicated that students' academic achievement was above satisfactory.[1]

As far as the intercorrelations are concerned, no associations were found between interpersonal justice and student agentic engagement and between agency and, respectively, student responsibility for learning and academic achievement. All other variables correlated positively and significantly with each other and the strength of these correlations was high.

In the next series of analyses, we tested our three hypotheses. We first of all examined the saturated model and then trimmed non-statistically significant paths (Kline, 2016). The final SEM with latent variables acceptably fits the model (see Figure 1): χ^2 (1,243) = 2995.97, CFI = 0.89, RMSEA = 0.04, SRMR = 0.06. All items loaded on the intended latent variable with significant factor loadings ($p < .001$).[2]

Table 1. Descriptive statistics for and intercorrelations among all the measures

Variables	1	2	3	4	5	6
1. Basic psychological needs fulfilment	–	.43***	.25***	.20***	.23***	.40***
2. Interpersonal justice		–	.03	.32***	.20***	.17***
3. Student agentic engagement			–	–.02	.04	.29***
4. Student responsibility for learning				–	.11***	.15***
5. Academic achievement					–	.23***
6. Career decision-making self-efficacy						–
Range	1–7	1–7	1–7	0–3	1–10	1–7
M	5.06	4.57	4.04	2.23	7.03	5.09
SD	0.83	1.22	1.10	0.69	0.82	0.90

Note. ***$p < .001$.

[1] *In Italy, school marks theoretically range from 1 to 10. However, teachers typically use a range from 4 to 9, and the passing grade, which almost all students are supposed to achieve, corresponds to 6.*

[2] *Measurement invariance was tested on each latent variable considering the three grades as distinct groups. All the models fitted the data with acceptable values (CFI > 0.91; RMSEA < 0.08; SRMR < 0.06).*

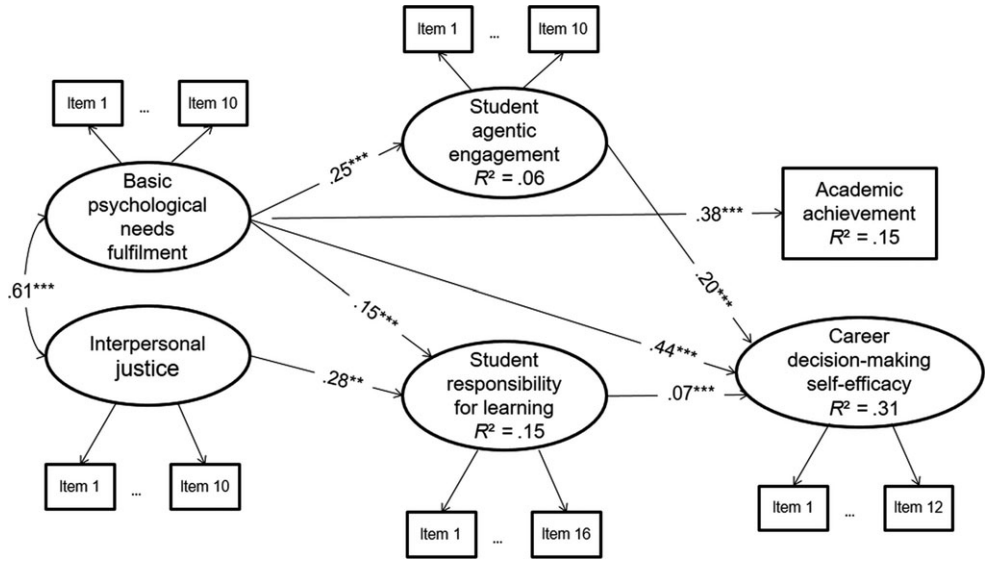

Figure 1. Final path model.
Note. $^{**}p < .01$; $^{***}p < .001$.

Path coefficients revealed that student agentic engagement was positively predicted by basic psychological needs fulfilment (β = .25, $p < .001$), with a variance explained of 6%. Student responsibility for learning was positively predicted by both basic psychological needs fulfilment (β = .15, $p < .001$) and interpersonal justice (β = .28, $p < .01$), with a 15% of a total variance explained. Academic achievement was predicted solely by basic psychological needs (β = .38, $p < .001$), with a variance explained of 15%. Finally, career decision-making self-efficacy was positively predicted by basic psychological needs (β = .44, $p < .001$), student agentic engagement (β = .20, $p < .001$), and students' responsibility for learning (β = .07, $p < .001$), with a variance explained of 31%.

Finally, the significance of indirect effects was evaluated with Mplus (Delta Method; Taylor, MacKinnon, & Tein, 2008). The indirect effect from basic psychological needs on career decision-making self-efficacy through the mediating effects of student agentic engagement (β = .05; $p < .001$) and student responsibility for learning (β = .01; $p < .001$) was significant. The indirect effect from interpersonal justice on career decision-making self-efficacy through the mediating effect of student responsibility for learning (β = .02; $p < .05$) was significant.

Discussion

The main purpose of this study was to investigate whether the general level of basic needs fulfilment and interpersonal justice, considered as indicators of a good experience at school, affected student agency and responsibility for learning, which in turn were considered as possible mediators between school experience and two outcomes, that is, academic achievement and career decision-making self-efficacy. Key findings and educational implications are discussed in the following sections.

Good experiences at school as predictors of student agency and responsibility for learning

In line with other studies (Reeve, 2013; Reeve & Tseng, 2011), we found that basic needs fulfilment positively predicts student agency. Moreover, basic needs also impacted student responsibility. This is a very interesting result that confirms our first hypothesis based on the idea that a relational context able to sustain students' inner motivation can energize proactive and intentional behaviours, as well as self-regulation and learning accountability. Furthermore, this finding contributes to a literature advance as the impact of basic needs on responsibility had never been tested before. Unlike basic psychological needs, interpersonal justice only impacted student responsibility for learning.

Two sorts of consideration can be advanced by drawing on these results. Firstly, our findings seem to suggest that the fulfilment of basic psychological needs plays a role in fostering a positive student attitude, that of being actors and protagonists of their own learning environment and processes. This result is particularly important as it offers hints about the means and the processes by which teachers can create the conditions for schools to face the challenge to form the citizens of tomorrow's societies. Secondly, we should comment on the result that it is interpersonal justice, more than the basic needs fulfilment, that possibly promotes a responsible attitude towards school and learning (Sabbagh & Resh, 2016). In these terms, interpersonal justice appears as a social process of particular importance in the classrooms. When students can count on the fact that their evaluation, rewards, or punishments and, in general, their interpersonal treatment reflect what they deserve (Lerner, 1980; Sutton & Winnard, 2007), they probably feel encouraged to be accountable for their actions.

Without claiming to offer a clear-cut answer to the theoretical question we advanced in the introduction, that is, whether interpersonal justice can be considered as a basic need, we offer here some comments based on our results. The correlation between basic psychological needs and interpersonal justice was significant, but the values were not so high as to suspect that there might be an overlap between the two variables. Moreover, both measures impacted responsibility, while only basic psychological needs predicted agency. For sure, more research is needed to draw strong conclusions on this point. However, and with the need due caution, we can tentatively put forward a positive answer. Basic psychological needs and interpersonal justice seem to covary and to represent a consistent picture of social processes in school that are beneficial for students. In fact, they both have positive effects, even though they present peculiar features that should not be overlooked.

Agentic engagement and responsibility for learning as mediators between good school experiences and academic achievement

The second hypothesis of our work was disconfirmed. In line with previous research, academic achievement was positively and directly influenced by basic needs (Stroet *et al.*, 2013; Taylor *et al.*, 2014) while no mediation effect was found. This result not only contradicts our prediction, but it raises questions as to the way Italian teachers evaluate students and their learning. In the face of a scientific debate that increasingly supports the role of the students' responsibility and active engagement (Carpenter & Pease, 2013; Fisher & Frey, 2008; Helker & Wosnitza, 2016; Savery, 2006), our results suggest that these factors do not contribute to the final mark. This raises a sort of

educational paradox. On the one hand, scholars and political agendas highly encourage and sustain educational lines that consider agency and responsibility as fundamental aspects for the construction of an ethical and civic sense. On the other hand, this vision and school mission do not seem to contribute to academic achievement, at least insofar as our data are concerned.

The role of student agentic engagement and responsibility for learning as mediators between good school experience and career decision-making self-efficacy

In line with previous research (Chiesa *et al.*, 2016; Perry *et al.*, 2016), we found a direct and positive association between basic psychological needs and career decision-making self-efficacy. Nevertheless, more interesting for our purposes are the mediational effects concerning agency and responsibility. We found that basic needs fulfilment affected career decision-making self-efficacy via both agency and responsibility with positive partial mediations. It is plausible that an interpersonal learning environment supporting basic needs does not only directly sustain students' self-efficacy, but it contributes to fostering the learners' perception of themselves as responsible individuals with an active and transformative role in their educational paths. This, in turn, seems to have a positive effect on students' confidence to be able to shape and control their own academic or working future career.

Moreover, a full (although moderate) and positive mediation between interpersonal justice and career decision-making self-efficacy via responsibility was found. Again, the feeling of receiving a fair treatment from teachers seems to emerge as a key factor for adolescents' positive adjustment, as it not only significantly impacted learning responsibility, but also the perception of being able to choose one's educational path or future employment. This is an innovative finding, casting light on the importance that teacher's fairness possibly plays in the development of a sense of confidence and mastery for adolescents' future lives (Resh, 2009).

Limits and conclusions

We must acknowledge some limitations to this study, which are mainly of a methodological kind. Firstly, the results are limited with respect to the sample size and the socio-cultural context related to the school settings where the survey was conducted. Further studies are needed to verify the results of our work in other contexts and countries. Secondly, our study relies on self-reported data, which always show critical issues in terms of accuracy. This causes some concerns particularly with regard to the measurement of academic achievement. Indeed, albeit previous studies found a satisfactory relationship between actual and self-report grades, such an association is evidently imperfect (Kuncel *et al.*, 2005). Consequently, the results concerning this variable ought to be interpreted with due caution and should be verified in future investigations based on actual grades.

Another important cause of concern is the tool used to assess students' responsibility for learning. In fact, the items of this scale inquired as to students' responsibility in general. The same is true as far as the agentic engagement measure is concerned, as we asked students to generically refer to their school experience. We do not overlook that both agency and responsibility may be teacher-specific. However, a more specific measure would not be without limitations, as we are studying the effect of good experiences at school in general rather than specific terms. Even though it has certain limits, our choice

was to privilege general perceptions of the learning environment, with the conviction that they reflect well-being and commitment more accurately as compared with perceptions concerning one specific teacher.

Furthermore, this study addresses only two dimensions of the classroom learning environment: basic psychological needs and interpersonal justice. However, we are aware there might to be other learning environment variables that are related to agency and responsibility, as well as to student achievement and career decision-making self-efficacy. Last but not least, this is a single informant, correlational and cross-sectional study trying to understand processes which in schools operate over time. Therefore, longitudinal data and multiple sources are needed to confirm directions of effects.

Notwithstanding these limitations, this study provides insights into practice and policy frameworks. First of all, by taking a step forward compared to the numerous studies showing the importance of justice for students' adjustment (Oluwatayo *et al.*, 2015; Resh & Sabbagh, 2016), our work contributed to casting light on the role that this dimension has also in impacting learners' responsibility. This has several implications for teacher practices, as it underlines the importance of building fair relationships to promote the development of a greater accountability in students. Further, our study raises questions vis-à-vis school evaluation systems, at least as far as the Italian context is concerned. The finding that neither agency nor responsibility affects academic achievement might be considered as a signal that the dimensions at the heart of citizenship skills (Gordon *et al.*, 2009) probably warrant more attention in school culture. A positive result is instead that these same dimensions – too often overlooked and underestimated in schools that should instead help young people to move into the world by actively participating in community life – play a fundamental role in one of the life's most meaningful tasks, namely the confidence to be able to choose and pursue an academic or professional career freely. This result carries an optimistic view about the actual possibility for schools to meet the challenge of forming citizens for the societies of tomorrow.

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