

The relationship between teacher's autonomy support and students' autonomy and vitality

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What makes a student feel vital and energetic? Using the self-determination framework, we analyzed how the behavior and feelings of students depend on social factors such as the teachers' attitudes. The goal of the study was to test an integrated sequence over a semester in which teacher's autonomy support acts as a predictor of autonomy, which, in turn, predicts changes in vitality. Data were collected at three time points from 216 university students who completed the instruments during a semester. Using structural equation modeling, we obtained evidence for the hypothesized model. Implications and future perspectives are discussed. This study suggests that if teachers promote choice, minimize pressure to perform tasks in a certain way, and encourage initiative, in contrast to a controlling environment, characterized by deadlines, external rewards, or potential punishments, they will provide students with interesting experiences that are full of excitement and positive energy.

Keywords: autonomy; motivation; self-determination; structural equation model; teaching; vitality

1. Introduction

What makes a student feel vital and energetic? Reeve (2009), using the self-determination theory (SDT; Deci & Ryan, 1985, 2000), has explained how the behavior and feelings of students depends on social factors such as the attitudes of teachers. The environment that a teacher generates in class is an essential element in explaining the motivation and emotions of students. Therefore, it is necessary to highlight the teacher's role to understand the behavior of students. SDT is a macro-theory of personality, human motivation, and optimal functioning that has been established as a theoretical framework to explain these issues.

1.1. *Autonomy support*

The cognitive evaluation theory (CET; Deci, 1975) is a mini-theory within SDT which highlights the environmental factors that enhance intrinsic motivation. CET underscores the critical role played by autonomy support in fostering intrinsic motivation in various life contexts. Deci and Ryan (1985, 1991) argue that autonomy support is to promote choice, minimize pressure to perform tasks in a certain way,

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and encourage initiative, in contrast to a controlling environment, characterized by deadlines, external rewards, or potential punishments (Deci, Connell, & Ryan, 1989; Deci & Ryan, 1991). Autonomy support is the interpersonal behavior teachers provide during instruction to identify, nurture, and build students' inner motivational resources (Deci & Ryan, 1985; Reeve, Deci, & Ryan, 2004). Thus, autonomy support concerns an atmosphere where students are not pressured to behave in a specific way, and where they are instead endorsed to be themselves (Ryan & Deci, 2004). The opposite of autonomy support is controlling-ness. Controlling-ness is the interpersonal behavior teachers enact during instruction to gain students' compliance with a teacher-prescribed way of thinking, feeling, or behaving. Controlling teachers motivate students by using extrinsic incentives and pressuring language to the point that students' classroom participation is regulated by external contingencies and pressuring language, not by their inner motivational resources.

SDT has shown that autonomy supportive climates lead to optimal development because they promote basic psychological need satisfaction. In an academic context, some of the characteristics that define an autonomy supportive environment are that the teachers understand and accept the decisions of their students, suggest alternative solutions to problems, and offer choices between different activities, nurture inner motivational resources, provide no controlling feedback and explanatory rationales, as well as acknowledge and accept expressions of negative effect (Reeve, 2009; Su & Reeve, 2010). It should be noted that it is important for the teacher to adopt an autonomy supportive style as students perceive that their teacher encourages their autonomy (Hagger et al., 2007). Scientific literature has shown that perceived autonomy support is associated with greater well-being in academic context (Black & Deci, 2000), better performance (Boggiano, Flink, Shields, Seelbach, & Barret, 1993; Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004), greater engagement (Reeve, Nix, & Hamm, 2003), higher intrinsic motivation (Reeve & Jang, 2006), and, finally, better time management and concentration (Vansteenkiste, Zhou, Lens, & Soenens, 2005). Taylor and Ntoumanis (2007) showed that the effect of perceived autonomy support on well-being was mediated by students' autonomy. In short, autonomy supportive teaching is related to educational benefits (Reeve, Ryan, Deci, & Jang, 2007).

1.2. *The need for autonomy*

The basic psychological needs theory (BPNT) is another mini-theory that states that psychological well-being is a consequence of the fulfillment of the three basic psychological needs. Therefore, environments that support these needs (instead of thwarting them) will have a positive effect on well-being. These needs are innate, universal, and essential for growth, well-being, and personal and social development (Ryan & Deci, 2000), regardless of gender, social class, or cultural context (Vansteenkiste, Niemiec, & Soenens, 2010). The need for autonomy refers to the experience of will and psychological freedom, and is determined by the level of external pressure when performing an action (deCharms, 1968; Deci & Ryan, 1985). If we feel autonomous, we feel that we choose our behavior, and we perceive this behavior as something born of ourselves, which agrees with our own values and interests. The need for competence implies that individuals want to interact effectively with their environment in order to feel competent to produce desired outcomes and prevent undesired ones (Connell & Wellborn, 1991). Finally, the need for relatedness pertains to the desire to feel connected with, and mutually

supportive of, significant others. BPNT posits that need satisfaction predicts individual differences in health and wellness across time. The three basic psychological needs provide the basis for predicting whether the social environment will promote positive consequences (Deci & Vansteenkiste, 2004). More precisely, SDT suggests that well-being should be enhanced when basic psychological needs for autonomy, competence, and relatedness are satisfied in one's social environment. Filak and Sheldon (2008) found good support for a model in which teacher autonomy support directly affects student need satisfaction. Of these three needs, autonomy plays the most important role in the SDT (Deci & Ryan, 2000) and has received more attention from SDT researchers. When people engage in activities that make them feel autonomous or self-driven, they will be led to an enhanced well-being, that is, to an optimal psychological functioning and positive experiences.

1.3. *Vitality*

Well-being reflects a sense of vitality and inner wellness that characterizes the fully functioning organism (Ryan & Deci, 2001). Several indicators of well-being have been considered, such as self-esteem, life satisfaction, and subjective vitality. The latter is defined as a state of high positive energy emanating from the self, and as the enthusiasm that characterizes some people (Ryan & Frederick, 1997). Due to the health and wellness consequences, vitality is an important focus of research (Ryan & Deci, 2008). Sheldon, Ryan, and Reis (1996) found that when people fulfilled the need for autonomy and competence, they reported more feelings of vitality and less negative physical symptoms. In line with this, Reis, Sheldon, Gable, Roscoe, and Ryan (2000) demonstrated that higher levels of autonomy and competence were associated with more favorable outcomes in well-being indicators, vitality among them. In the educational context, it was observed that the satisfaction of the needs for autonomy, competence, and relatedness were positively associated with self-esteem, positive emotions, and vitality, and negatively associated with negative emotions (Patrick, Knee, Canevello, & Lonsbary, 2007). Filak and Sheldon (2003, 2008) revealed that all three needs positively predicted teacher and/or course evaluations.

2. The present study

In a prospective study, Sheldon and Elliot (1999) assessed well-being (mood and life satisfaction) and the three basic psychological needs at the beginning of a semester, and subjective well-being at the end of the semester. They also asked, at three different times during the semester, how autonomous, competent, and connected the students felt during some activities. They demonstrated that basic psychological needs at time 1 predicted subjective well-being at the same time point, and this had an effect on subjective well-being at time 2, which was mediated by the composite of the students' feelings of autonomy, competence, and relatedness during the semester. Sheldon and Krieger (2007), in another prospective analysis, examined how the difference in the three needs across a three-year period affected the difference in subjective well-being (positive and negative emotions, life satisfaction, and depression). They observed that each need had a positive and significant effect on well-being.

The knowledge about the essential elements that promote students' well-being acquires a relevant meaning for education professionals. In this sense, the presence of an autonomy supportive vs. a controlling environment will lead the teachers to

detect a lack of commitment, provide personal achievement, and improve students' well-being (Ryan & Deci, 2000). Considering that the three needs are essential, due to the prominent role played by autonomy (Deci & Ryan, 2000), we will more specifically focus on the function of this need. Many researchers have studied the relationships between autonomy support, basic psychological need of autonomy, and subjective vitality as an indicator of psychological well-being viewed from the perspective of SDT, but we feel the need to examine whether the relationship between these variables hold in a prospective study. The goal of this research is to analyze, over a semester, the effect of the students' perception of the autonomy support provided by their teachers on the basic psychological need for autonomy and this, in turn, on subject vitality. We tested the following hypotheses: H_1 : Autonomy support at T_1 (beginning of the semester) will have an effect on autonomy at T_2 (one month later), and H_2 : Autonomy at T_2 will have an effect on subject vitality at T_3 (two months after T_2).

3. Method

3.1. Participants

A total of 422 students (60 male and 362 female) took part in this study. The mean age was 21.57 years ($SD=4.97$). Of the 422 participants that filled in the instruments at Time 1 (designated as T_1), 293 students (35 male and 258 female, $M=21.55$, $SD=4.73$) completed the questionnaires at Time 2 (designated as T_2) one month later and 216 students (29 male and 187 female, $M=21.57$, $SD=4.97$) completed the questionnaires at Time 3 (designated as T_3) two months after T_2 .

3.2. Procedure

As part of a larger study, participants were recruited from seven degrees taught at the University of Las Palmas de Gran Canaria. Once the classrooms were selected, we contacted the Dean of the Faculty to request permission and explain the research's aims. In the classroom, we explained to the students the reasons for the study and informed them that participation was voluntary and confidential, to avoid the possible effect of social desirability. At the same time, we urged them to complete the questionnaires as honestly as possible and to think of a particular instructor and classroom environment when indicating perceived autonomy support. One of the team researchers was present when the instruments were administered, and provided students with the necessary support to successfully complete the questionnaires. Items were administered by the same person at all testing sessions to standardize the procedure and help ensure consistency. The time needed by the participants to complete the instruments was approximately 15 min.

3.3. Research instruments

3.3.1. Autonomy support

To measure this construct we used the short version (Núñez, León, Grijalvo, & Martín-Albo, 2012) of the learning climate questionnaire (LCQ; Williams & Deci, 1996). The questionnaire consists of five items (e.g. My teacher offers me options

and lets me choose) answered on a 7-point Likert scale from strongly disagree (1) to strongly agree (7).

3.3.2. *Autonomy*

To measure the basic psychological need of autonomy, we used the subscale autonomy from the satisfaction scale psychological needs in education (León, Domínguez, Núñez, Pérez, & Martín-Albo, 2011). It consists of five items (e.g. I feel free in my decisions). Responses were evaluated according to a 7-point Likert scale from strongly disagree (1) to strongly agree (7).

3.3.3. *Subjective vitality*

To assess subjective vitality, we used the Spanish version (Balaguer, Castillo, García-Merita, & Mars, 2005) of the Subject Vitality Scale (Ryan & Frederick, 1997). It consists of seven items, six positively worded and one negatively worded (e.g. I feel full of energy). The items were evaluated according to a 7-point Likert scale from strongly disagree (1) to strongly agree (7). To avoid acquiescence, the item that had been initially drafted negatively was modified and worded in a positive way.

3.4. *Data analyses*

We performed a descriptive analysis for each observed variable used in the study by calculating the mean, standard deviation, and polychoric correlations between all the items used. To analyze the evidence of reliability, we used ordinal α instead of Cronbach's α , as the latter requires that the weight factor be the same for all items (Yang & Green, 2010) and that the nature of the data be continuous (Elosua & Zumbo, 2008). As the items were answered on a Likert scale, we worked with ordered categorical variables (Flora & Curran, 2004). We also considered the effects of sample attrition. Confirmatory factor analyses (CFA) were carried out to test the instruments' factor structure. The indicators of the latent variables in the structural equation model (SEM) were all the items of the scales. To estimate the value of the parameters and fit indices in both CFA and SEM, we employed the weighted least squares mean and variance adjusted (WLSMV) estimation method, as recommended by Finney and DiStefano (2006) when working with ordinal data. To test the fit of the model to the sample data, we used the χ^2 test, the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the weighted root mean square residual (WRMR). Because the fact that students were grouped in classes violates the assumption of independence of observations, and this may inflate the χ^2 and underestimate standard errors (Stapleton, 2006), we computed the χ^2 test and standard errors taking into account the non-independence of observations due to cluster sampling; that is, parameters were estimated by maximizing a weighted log-likelihood function and standard error by using a sandwich estimator (Muthén & Muthén, 2011).

With regard to missing data, we had less than .5%. To perform the CFA and SEM analysis, we used statistical software Mplus 6.11 (Muthén & Muthén, 2011) and the Rcmdr package of R 2.14 (R Development Core Team, 2011) for the descriptive statistics.

Table 1. Descriptive statistics and polychorics correlations among the items.

Item	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1. T ₁ AS1	5.78	1.26																	
2. T ₁ AS2	5.04	1.51	.74 (.03)																
3. T ₁ AS3	5.35	1.40	.64 (.04)	.74 (.03)															
4. T ₁ AS4	5.67	1.42	.81 (.03)	.78 (.02)	.74 (.03)														
5. T ₁ AS5	5.43	1.37	.71 (.03)	.73 (.03)	.70 (.03)	.76 (.03)													
6. T ₂ AUT1	5.43	1.33	.39 (.05)	.34 (.06)	.29 (.07)	.41 (.06)	.40 (.06)												
7. T ₂ AUT2	5.36	1.18	.24 (.07)	.27 (.06)	.35 (.07)	.31 (.07)	.27 (.06)	.45 (.05)											
8. T ₂ AUT3	4.94	1.20	.31 (.06)	.34 (.05)	.34 (.06)	.35 (.06)	.35 (.05)	.47 (.05)	.66 (.03)										
9. T ₂ AUT4	4.44	1.26	.41 (.05)	.36 (.05)	.36 (.06)	.45 (.05)	.44 (.05)	.64 (.03)	.48 (.05)	.41 (.05)									
10. T ₂ AUT5	4.67	1.39	.28 (.06)	.27 (.06)	.29 (.07)	.30 (.06)	.38 (.07)	.52 (.04)	.48 (.04)	.49 (.04)	.57 (.04)								
11. T ₃ VS1	5.46	1.25	.34 (.07)	.18 (.07)	.15 (.08)	.27 (.07)	.17 (.07)	.28 (.06)	.32 (.06)	.32 (.05)	.33 (.06)	.31 (.06)							
12. T ₃ VS2	5.14	1.34	.23 (.07)	.12 (.07)	.08 (.08)	.20 (.07)	.07 (.07)	.28 (.06)	.31 (.06)	.28 (.05)	.29 (.06)	.30 (.06)	.93 (.01)						
13. T ₃ VS3	4.18	1.71	.21 (.08)	.21 (.06)	.20 (.07)	.19 (.06)	.16 (.08)	.10 (.06)	.27 (.06)	.30 (.06)	.22 (.06)	.28 (.06)	.66 (.03)	.70 (.02)					
14. T ₃ VS4	5.07	1.31	.21 (.07)	.10 (.07)	.04 (.08)	.19 (.08)	.10 (.07)	.25 (.06)	.35 (.06)	.29 (.05)	.31 (.06)	.30 (.06)	.88 (.02)	.91 (.01)	.70 (.02)				
15. T ₃ VS5	4.80	1.37	.18 (.07)	.10 (.07)	.11 (.07)	.14 (.07)	.09 (.07)	.16 (.06)	.29 (.06)	.30 (.06)	.23 (.06)	.23 (.06)	.76 (.03)	.76 (.02)	.73 (.02)	.79 (.02)			
16. T ₃ VS6	4.76	1.33	.17 (.07)	.09 (.07)	.12 (.08)	.13 (.07)	.10 (.07)	.27 (.06)	.30 (.06)	.25 (.06)	.24 (.06)	.25 (.06)	.68 (.03)	.73 (.03)	.64 (.03)	.75 (.02)	.79 (.02)		
17. T ₃ VS7	4.89	1.41	.29 (.07)	.11 (.07)	.06 (.07)	.21 (.07)	.12 (.07)	.29 (.06)	.34 (.06)	.29 (.06)	.28 (.06)	.29 (.06)	.85 (.02)	.90 (.01)	.70 (.02)	.91 (.01)	.82 (.01)	.83 (.01)	

Note: AS = Autonomy support, AU = Autonomy, VS = Subjective vitality. The standard error of each polychoric correlation is in parentheses.

4. Results

4.1. Descriptive analyses and polychoric correlations among the items and ordinal α

Table 1 displays means and standard deviation of items of all scales used and polychoric correlations among the items. As shown, autonomy support items (T_1) were positively associated with autonomy items (T_2), with values ranging from .27 to .45. A similar pattern emerged for autonomy items (T_2) and the subject vitality item (T_3), with values ranging from .10 to .35. The ordinal α values were .93 for autonomy support, .85 for autonomy, and .96 for subject vitality. This indicates evidence of the scales' reliability.

4.2. Attrition

We analyzed the effects of attrition because only about 50% of the original sample took part in the three stages of the study. Participants with and without complete data were compared using t test. The subjects who dropped out ($n = 206$) scored less in all autonomy support items and significantly in item 3, $M = 5.35$ vs. 4.90, $t(418) = 3.31$, $p < .01$, and item 5, $M = 5.43$ vs. 5.08, $t(418) = 2.58$, $p < .01$.

4.3. CFA analysis

The CFAs were conducted to check the adequacy of the expected factor structure. We used the items as factor indicators. Unifactor structure of the LCQ short version fit the data adequately: $\chi^2(216, 5) = 11.48$ ($p = .04$), CFI = .99, TLI = .99, and WRMR = .29. All standardized loadings were above .82 and significant ($p < .001$). Unifactor structure of the subscale autonomy had a satisfactory fit: $\chi^2(216, 5) = 68.16$ ($p = .00$), CFI = .95 and TLI = .91 and WRMR = 1.22. All standardized loadings were above .60 and significant ($p < .001$). The unifactorial model of the subjective vitality scale fit the data adequately: $\chi^2(216, 14) = 93.74$ ($p = .00$), CFI = .99, TLI = .99, and WRMR = .91. All standardized loadings were above .76 and significant ($p < .001$).

4.4. Structural equation modeling

Subsequently, we tested two alternative models. First, we evaluated the hypothesized model, in which autonomy support acts as a determinant of basic psychological need of autonomy, which, in turn, predicts subject vitality. Figure 1 displays parameter estimates. As can be seen, autonomy support had a positive effect on autonomy .53 [.45, .62], and this, in turn, had a positive effect on subject vitality .42 [.33, .50]. The proportion of explained variance for autonomy was .29 and for subjective vitality it was .17. The hypothesized paths were significant, and the model revealed an acceptable fit to the data: $\chi^2(216, 115) = 180.73$ ($p < .001$), CFI = .99, TLI = .99, and WRMR = 1.03.

Second, we tested a model in which the total effect of autonomy support on subject vitality is divided into a direct effect and an indirect effect via autonomy. The effect of autonomy support on autonomy was .56 [.50, .61] and on subject vitality it was $-.04$ [$-.17$, .08]. Autonomy had a positive effect on subject vitality .45 [.36, .54]. The proportion of explained variance for autonomy was .31 and for subjective

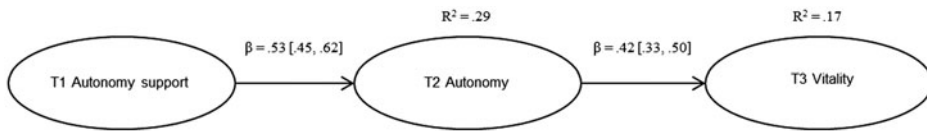


Figure 1. Model hypothesized.

Note: All parameters were significant ($p < .001$).

vitality it was .18. The χ^2 test and fit indexes were: $\chi^2(216, 116) = 196.20$ ($p < .001$), CFI = .99, TLI = .99, and WRMR = 1.03. A χ^2 difference test with 1 degree of freedom established that the alternative model did not fit significantly better than the hypothesized model ($\chi^2 = .308$, $p > .05$).

5. Discussion

According to SDT, well-being increases when basic psychological needs are satisfied. The satisfaction of these needs represents a necessary condition for students' optimal learning. This is because need satisfaction yields an energizing effect, which enables learners to get more fully immersed in the learning process (Sierens, Vansteenkiste, Goossens, Soenens, & Dochy, 2009). The goal of this study was to examine the relationship between autonomy support, autonomy, and subjective vitality in a prospective study. Few studies devoted to the examination of these relationships over a semester in the academic context have been reported within the SDT framework. We proposed two hypotheses: H₁: Autonomy support at T₁ (beginning of semester) will have an effect on autonomy at T₂ (one month after), and H₂: Autonomy at T₂ will have an effect on subject vitality at T₃ (two months after T₂).

In previous research within the SDT framework, investigators have examined the consequences associated with an autonomy-supportive environment. In line with hypothesis H₁ (Autonomy support at T₁ will have an effect on autonomy at T₂), we found that autonomy support is a significant predictor of the basic psychological need of autonomy. These results are in line with SDT postulates, where autonomy supportive climates endorse the satisfaction of the basic psychological needs. Specifically, in an academic context, findings are congruent with the statements by Reeve et al. (2007), in which autonomy supportive teaching allows for the satisfaction of autonomy, and with the study by Taylor and Ntoumanis (2007), where they found a link between autonomy support climate and the need for autonomy. Similarly, Sheldon and Krieger (2007) reported that perceived autonomy support also predicted greater autonomy need satisfaction over time in a combined sample of students in two different institutional contexts. Furthermore, this result confirms one of the routes proposed by Filak and Sheldon (2008) to satisfy basic psychological needs (i.e. via the autonomy supportiveness of the social context). Thus, if students perceive that their teachers understand and accept their decisions and negative feelings, provide meaningful rationales, suggest alternative solutions, and offer choices between different tasks in the classroom, this will produce changes in students' autonomy over time.

Regarding hypothesis H₂ (Autonomy at T₂ will have an effect on subject vitality at T₃), we observed that autonomy predicts changes in subject vitality. These findings are in line with BPNT postulates, according to which basic psychological need

satisfaction predicts changes in psychological well-being over time, and with Deci and Ryan (2000), who state that an individual feeling autonomous will lead to enhanced well-being. Sheldon and Krieger (2007) also observed that each need had a positive effect on well-being, although the basic psychological need for autonomy had the highest effect. In this sense, when university students feel self-driven, perceive that they can choose what to do, and do not feel under pressure, they will have a higher sense of energy and vitality. If students accumulate experiences of this kind for several weeks, this will produce a change in their perception of their mood and emotional state.

We should also emphasize that, given that the partially mediated model did not fit better than the fully mediated one, and that the path coefficient of autonomy support on subject vitality was non-significant, we suggest that this direct effect is not necessary to represent the data. Therefore, the hypothesized model appears to be the most appropriate and reasonable. This is in line with other studies that have observed that autonomy mediates the effect of autonomy support on well-being (Sheldon & Krieger, 2007; Taylor & Ntoumanis, 2007). That is, the autonomy support provided by the teacher will predict students' autonomy, and this, in turn, vitality. In this case, we can only achieve beneficial effects on students' vitality via the fulfillment of the basic psychological need for autonomy.

It is sufficiently demonstrated in scientific literature that SDT provides an adequate framework to get a good educational experience. In addition, the climate generated by teachers in classrooms may support students' autonomy. This is important because it helps students develop intrinsic motivation. This autonomous type of motivation is very desirable due to its efficacy and resistance to drop out, as well as because it allows a more enjoyable experience in the classroom, and leads to more positive consequences. This study suggests that if teachers allow students to learn in their own way, they will provide students with interesting experiences that are full of excitement and positive energy. Autonomy is a sort of positive experience that conveys feelings of well-being. *The implications of these results:* a target for intervention may be to provide teachers or instructors with abilities to control the content and tenor of the courses they are teaching. To be more precise, it should be advisable to introduce contents in the teachers training, so that they specifically learn strategies to promote students' autonomy and, consequently, their well-being. As reported by Reeve, Jang, Carrell, Soohyun, and Barch (2004), autonomy support is beneficial for both teachers and students.

5.1. Limitations and future perspectives

First of all, although other researchers have used a similar time interval to assess the constructs (Sheldon & Elliot, 1999), we believe that a longer time interval would reduce the effects between variables, while shorter time intervals would increase these effects; this could be explored in future studies. Second, the constructs in this research were all measured using self-reported instruments; other researches could study the effect of vitality on hours of studying or academic performance. Third, it would be interesting to include a measure of students' intrinsic motivation to discover the effects of a supportive autonomy environment over time, and demonstrate the positive effects of the uncontrolling environment on autonomous motivation. According to SDT, the development of positive motivation is importantly promoted or inhibited by the characteristics of the social environment. A fourth limitation that

we should highlight is the sample size; we believe that a bigger sample size might be closer to true population values. In particular, the university students in the chosen degrees were mainly females. *Next*, only university students were sampled and, in this sense, it would be interesting to study the relationships between these variables in secondary education, for whom the feelings of autonomy and well-being represent aspects of special relevance at this educational stage. Finally, in this research we have used only quantitative methods, it could be contemplated to deepen the results of this research by introducing qualitative techniques such as semi-structured interviews or focus groups that allow to obtain first-hand opinions of those involved (teachers and students) about how to promote autonomy support in the classroom and what are the aspects that students actually consider generating well-being.

6. Conclusions

Despite these limitations, we believe that this study can be useful because it addresses a dimension such as time, which has received little attention in the educational context. Most studies have not specified sequential relationships measured variables over time. Results indicated the fact that when an autonomy-supportive environment is perceived by the university students in the classroom at the beginning of the semester it produces changes in their sense of vitality and positive energy at the end of the semester via the fulfillment of the basic psychological need for autonomy. This result may help improve the learning process in the classroom.

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