Academic Engagement and Intention to Drop Out: Levers for Sustainability in Higher Education

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Abstract: The present paper analyses the relevance of academic engagement in the process of students dropping out of school. Previous studies have consistently shown strong associations between engagement and students' achievement outcomes. The increased attention given to academic engagement in recent years is also visible in the efforts of stakeholders in higher education to increase engagement and, consequently, to reduce dropout. The relationships between engagement and dropout rates are somewhat fuzzier, vigor, dedication, and absorption vary inconsistently in students at risk. Using a correlation research design, we tested several dimensions of academic engagement as predictors of early dropout intentions on a sample of first-year students (N = 1063). The results showed that psychological academic engagement of students is a significant predictor of early dropout intentions. Differences in academic engagement given by family background and academic context were also tested. The implications of the results are discussed in the light of possible interventions for increasing academic engagement of university students. Also, suggestions for including employers in academic engagement and dropout interventions are given.

Keywords: academic dropout; academic engagement; sustainable education; students at risk; students' satisfaction; academic context

1. Introduction

As an inextricable part of the larger and more complex discussion regarding sustainable development and the holistic efforts to meet its goals, the education designed and implemented according to its principles plays a key role in effectively achieving well-being of students; this could be considered an ultimate end [1] in sustainable education. In this regard, higher education institutions are not seldom perceived as main contributors and power engines when it comes to regional sustainability, taking on responsibility ranging from creating enticing environments for student population growth, engaging in partnerships with other regional stakeholders in order to develop employment opportunities, to positioning themselves in the center of a knowledge-based community [2] ready to face the challenges of change through learning and innovation. As stated in the UNESCO 2030 Agenda for Sustainable Development, one important goal for attaining sustainable development is to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" (Incheon Declaration and Framework for Action) [3] (p. 20). Therefore, one of many and arduous challenges for the stakeholders will be to design and implement better policies that provide the means to ensure educational opportunities for all, as part of the common effort to reduce poverty and combat social inequity. As suggested by previous studies [2,4,5], universities can and do become active forces in reducing social gaps and thus supporting sustainability goals, by

promoting sustainable practices, designing curricula that emphasize critical thinking as a main focus for students and teachers, and managing lucrative partnerships with other social and economic actors that will benefit students and the community alike. Thus, the higher education institutions' actions to attract and retain students from diverse social backgrounds and to coordinate programs ensuring a wider access to competence-based, quality education will prove to be pivotal in the attempt to provide pertinent, consistent, experience-valuing learning opportunities for sustainable development—which is connected, engaged, and relevant from social, economic, and environmental points of view—first at a community level and second at a global level. Moreover, universities can increase their capital for sustainable development by the right combination of operation and management, education, research, and engagement [3].

In doing their part as promoters of sustainable development, higher education institutions are confronted with the challenge of preventing and managing students' dropout. The problem of dropping out of school is not one solely concerning higher education institutions. It becomes a legitimate and costly concern when students not only lack the interest for school experience, displaying disruptive behaviors or indifference in classrooms, but also do not attend classes anymore. So, where adolescents and young adults are concerned, the retention process involves a complex stake, one of a more provocative nature for the educational institution.

2. Academic Dropout and Academic Engagement

In this study, we focus on one university's attempt to address early academic dropout of its students. In an effort to bring more clarity with regard to the variety of dropout behaviors amongst college students, Tinto [6] distinguishes between academic dismissal and voluntary withdrawal, referring to the individual's educational goal commitment (related to the student's educational expectations) and the individual's institutional commitment (pertaining to the student's resource allocation—financial, dispositional, and time) as being two major predictors of a student's experiences and persistence in the higher education setting. Tinto's model of integration [6] suggests that a person's decision of dropping out from college comes at the end of a longitudinal process, based on premises regarding one's family background, individual attributes, and pre-college experiences, arguing that "it is the individual's integration into the academic and social systems of the college that most directly relates to his continuance in that college" [6] (p. 96). Thus, a student's persistence in a higher education institution must be tackled with respect to the student's level and intensity of social and academic integration into the complex college environment.

As stated earlier, students quitting school is hardly a unilaterally motivated process, and a student's decision to drop out is influenced not only by factors pertaining to the academic environment, but also by the contextual factors outside school, such as peer interactions and family support [7]. Tinto [6] synthesizes research findings indicating that family status and educational background (parents' level of education), the quality of relationships within the family, parental expectations, interest, and habitual approaches to communication and decision making (e.g., an open, democratic, and supportive family climate) tend to be associated to student's persistence in college.

On the matter of persistence, Astin's theory of student involvement [8] builds on a longitudinal study [9] diligently showing that "the factors that contributed to the student's remaining in college suggested involvement, whereas those that contributed to the student's dropping out implied a lack of involvement" [9] (p. 523). The construct of involvement is considered by the author as having a more behavioral nature (thus benefiting research more because of its observable, measurable, and operational qualities) than the concept of motivation. Astin's stance unequivocally indicates that factors related to student's involvement—factors such as student's residence, namely living on campus, holding a part-time job in campus, being a part of a social fraternity or sorority, participating in extracurricular activities, academic involvement, frequent interaction with faculty, and athletic involvement—positively influence persistence in college [8]. However, when it comes to academic performance—which is seen as a source of satisfaction for involved students—Spady argues that it does

not entail a loyal attitude and commitment toward the educational institution, meaning that students' retention must imply more by "providing them with experiences that affect the intrinsically, meaningful spheres of their lives as human beings (as opposite to just students) rather by just attempting to modify the academic reward structure itself" [10] (p. 70).

As it seems, the theory of student involvement developed by Astin could prove to be of great benefit for student retention by encouraging "the instructor to focus less on content and teaching techniques and more on what students are actually doing—how motivated they are and how much time and energy they are devoting to the learning process" [8] (p. 526).

Starting from Tinto's theory of integration and building upon Astin's theory of involvement—defined as being the manifested "investment of psychological and physical energy, which occurs along a continuum, with different students investing different amounts of energy" [11] (p. 410), at both social and educational levels of the academic experience—the construct of engagement represents the core element of a project called National Survey of Student Engagement (NSSE) established in 2009 by George Kuh. Student engagement embodies two essential factors that converge into crafting the student's educational experience: the time and effort resources the student deploys in his/her study and other school-related activities and the educational institution's contribution (resource allocation, organization of learning opportunities, and services provided encouraging students' participation) [11]. Engagement has been found to be a highly relevant factor associated with the process of dropping out [6], in the sense that "high levels of student engagement are necessary for, and contribute to, collegiate success" [11,12], cit.in [11] (p. 413).

Schaufelli et al. define engagement as "positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" [13] (p. 74), stating that it can be seen as a "more persistent and pervasive affective-cognitive state". As for its dimensions, the Schaufelli [13] model describes vigor in terms of high levels of activation, energy, and persistence in work-related activities, resilience when faced with difficulties; dedication pertains to a high level of identification, going beyond a simple sense of involvement, towards a sense of significance, enthusiasm, inspiration, pride, and challenge" [13] (p. 74); absorption refers to one's capacity to be fully present in work activities and completely connected to the task at hand, displaying high focus and concentration, experiencing difficulties detaching from the activity. The three-dimensional structure of academic engagement discussed by the cited authors has metrical implications that translated into a self-report scale (Schaufelli et al.'s Engagement Scale Students Version [13]) that we used in the present study.

Appleton [14] describes engagement as a being a multidimensional construct of a more processual nature, and identifies indicators of academic engagement from a multilateral perspective, as follows

- from a behavioral stand point: "time on task, credits earned toward graduation, and homework completion, while attendance, suspensions, voluntary classroom participation, and extracurricular participation" [14] (p. 372);
- from a cognitive stand point: "self-regulation, relevance of schoolwork to future endeavors, value of learning, and personal goals and autonomy (for cognitive engagement)" [14] (p. 372);
- from an affective stand point: "feelings of identification or belonging, and relationships with teachers and peers (for psychological engagement)" [14] (p. 372).

Engagement is seen as strongly linked to school retention because it encompasses persistence, "responsiveness to teachers' and schools' practices, allowing the possibility of improving achievement and attainment for those students experiencing difficulties along the way" [7] (p. 99).

However, Johnson and Stage [8] have shown that practices labeled as "high-impact practices" in higher education, such as participation in first-year seminars, being part of a learning community or service learning, may not be enough to positively predict graduation rates, although a first-year seminar "may have longer-term impacts that are more difficult to measure than grades or retention" [8] (p. 4). Among other contributing factors, relationships with adults (parents and teachers), family's expectations, support and involvement, peer support, alongside socioeconomic status, have proven

to be relevant predictors of engagement, persistence in school, and degree attainment [14–20], thus stressing the importance of outside-institution [20–24], contextual factors for student retention.

Thus, considering universities' responsibility to address the issue of dropout as an important component in their efforts for ensuring competence-based and equitable quality education that contributes to sustainable development, this paper analyses the relevance of academic engagement as a main factor of students' decision to drop out of school. More specifically, on the basis of previous research, the following research questions were formulated.

Does academic engagement of students predict their early intentions for dropping out from school?

Does satisfaction with academic context correlates with students' academic engagement?

Are there any differences in terms of academic engagement between students with different family background (such as educations of parents)?

We assume that academic engagement of students, satisfaction with academic environment, and several variables related to family background play a significant role in predicting early dropout intention of first-year students.

3. Materials and Methods

3.1. Participants and Procedure

The participants in this study were 1063 first-year students, with a mean age of 19.22 (*SD* = 1.40, min = 18, max = 30), 42.2% male and 57.8% female. All participants were recruited from a middle-size comprehensive university in Romania. Concerning the tuition cost, 33.7% of participants paid tuition fee for their studies, while 66.3% were non-fee students. Distribution of participants by fields of study and gender is presented in Table 1.

Table 1. Distribution of participants by fields of study (*N* = 1063).

Fields of Study	*N*	N_{masc}	$\%_{masc}$	N_{fem}	$\%_{fem}$
Mathematics and Informatics	146	92	63.0	54	37.0
Materials science	39	26	66.7	13	33.3
Silviculture	98	81	82.7	17	17.3
Industrial engineering	122	58	47.5	64	52.5
Food and tourism	100	35	35.4	64	64.6
Law	97	28	28.9	69	71.1
Economics	158	54	34.2	104	65.8
Sociology and communication	128	27	21.1	101	78.9
Psychology and education sciences	108	8	7.4	100	92.6
Sports	67	39	59.1	27	40.9

3.2. Design

We used a correlational design. The study was cross-sectional with a single measurement. Participants were asked to fill in a set of questionnaires measuring their academic engagement, academic satisfaction, intention to dropout in the very near future, and several aspects regarding their personal characteristics. The data were collected from participants during the second half of their first semester in university. Informed consent was obtained from all participants. Participation was voluntary, participants did not receive extra credits or any other benefits.

3.3. Measures

Academic engagement was measured with Schaufeli, Salanova, González-romá, and Bakker 's Engagement Scale Students Version [13]. The items of the scale reflect three underlying dimensions: Vigor (e.g., 'When I get up in the morning, I feel like going to class'), Dedication (e.g., 'I'm enthusiastic about my study'), and Absorption (e.g., 'When I'm studying, I forget everything around me'). In two

different samples, Schaufeli et al. reported good internal consistency for all three subscales (with alpha Cronbach coefficients ranging from 0.63 to 0.91) [13]. In the current sample, α-values were $\alpha = 0.82$ for Vigor, $\alpha = 0.83$ for Dedication, and $\alpha = 0.81$ for Absorption.

Satisfaction with various aspects of academia, namely satisfaction with quality of teaching, satisfaction with tuition fees and costs, relationships with colleagues or teachers, and satisfaction with facilities and equipment, were measures with five items on a five-point Likert scale (e.g., 'Considering your experiences in the university until now, how satisfied are you with the facilities and equipment in classrooms and laboratories?'). In the current sample, α-value for the satisfaction scale was acceptable ($\alpha = 0.64$).

Intention to drop out from school was computed using two indicators. The first one was measured with one item on a five-point Likert scale (e.g., 'I'm thinking on dropping out from this faculty'). The second indicator was measured with a three-item scale assessing beliefs about the usefulness of study (e.g., 'I believe that I will really use in the future what I study in the university'). The α coefficient for the dropout intention scale was 0.76.

A factual data questionnaire was also administered to obtain data about age, gender, type of tuition, family background (education of parents, occupation of parents, number of family members, and level of income), and special situations (such as, being a student with disabilities or students coming from foster homes). We also collected data regarding the admission grade at the university ($X = 8.13$, $SD = 0.98$, min = 5.98, max = 10.00) and the attendance frequency at courses. Most participants were admitted in the university based on their baccalaureate grade without an admission exam. Only students in Economics took an admission exam that count for 50% of their admission grade. In Romania, attendances in classes is not mandatory, it is the rational for considering attendance frequency a relevant indicator for our study.

Distance from home county was measures on the basis of the distance in kilometers from home town to the town of the current study, with a mean distance of 99.40 km ($SD = 99.4$, min = 1, max = 419).

4. Results

The descriptive analysis computed for all the numerical variables showed that the normality assumptions were met, except for the distribution of scores on dropout intention scale which was slightly asymmetrical (Table 2).

Table 2. Descriptive statistics ($N = 1063$).

Variable	Min	Max	X	SD	Skewness	Kurtosis
Vigor	0.00	6.00	3.28	1.29	−0.45	−0.32
Dedication	0.00	6.00	4.11	1.26	−0.56	−0.07
Absorption	0.00	6.00	3.08	1.33	−0.17	−0.57
Engagement	0.00	6.00	3.45	1.14	−0.44	−0.07
Academic satisfaction	1.00	5.00	3.75	0.56	−0.35	0.43
Dropout intention (scale)	1.00	5.00	1.87	0.66	1.11	1.57

Bivariate correlations were conducted in order to explore the pattern of the relationships between the variables (Table 3). The results showed that dropout intention significantly and negatively correlated with all three dimensions of academic engagement and with the total score on academic engagement, and with academic satisfaction. Admission grade did not correlate with any of the engagement or satisfaction variables, but correlated with education of parents.

Table 3. Pearson correlation coefficients between academic engagement, academic satisfaction, admission grade, education of parents, and drop out intention

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Vigor (1)								
Dedication (2)	0.69 **							
Absorption (3)	0.65 **	0.63 **						
Engagement (4)	0.89 **	0.86 **	0.88 **					
Academic satisfaction (5)	0.37 **	0.45 **	0.27 **	0.41 **				
Admission grade (6)	0.06 *	0.03	0.14 **	0.09 **	0.01			
Education of mother (7)	−0.02	−0.04	−0.06	−0.04	0.01	0.14 **		
Education of father (8)	−0.09	−0.04	−0.01	−0.01	0.03	0.11 **	0.56 **	
Dropout intention (9)	−0.57 **	−0.63 **	−0.42 **	−0.60 **	−0.57 **	−0.02	−0.01	−0.02

Notes. $N = 1063$, * $p < 0.05$, ** $p < 0.01$.

Regression analysis (simple hierarchical regression) was used to test the relationships between dimensions of academic engagement and dropout intention (Table 4, Model 1). Two additionally regression models were computed, including academic satisfaction (Model 2) and academic satisfaction and attendance frequency (Model 3) as predictors. All three models are significant. Adding one predictor in Model 2 generated an incremental increase of 0.08, while adding the fifth predictor in the model did not change the predicted proportion of variability in dropout intention.

Table 4. Results of regression analysis

Variables	Model 1	Model 2	Model 3
Constant			
Vigor	−0.05 **	−0.02	−0.02
Dedication	−0.34 **	−0.27 **	−0.27 **
Absorption	0.02	0.01	0.01
Academic satisfaction		−0.38 **	−0.38
Attendance frequency [a]			0.08 *
F	311.45 **	323.92 **	258.99 **
R^2	0.47	0.55	0.55
ΔR^2		0.08	0.002

Notes. $N = 1063$, * $p < 0.05$, ** $p < 0.01$. [a] Attendance frequency ("1" on more than 80% of classes, "2" on more than 50% of classes, "3" on less than 50% of classes).

As noted, the dedication dimension of engagement was the only dimension of engagement that significantly related to dropout intention in all models (in Model 2, β = −0.27, SE = 0.01, $p < 0.001$), while absorption did not relate with dropout intention in any model. Academic satisfaction negatively predicted dropout intention in Model 2 (β = −0.38, SE = 0.02, $p < 0.001$).

To better understand the dynamic of academic engagement, we computed analyses of variance to test the differences in vigor, dedication, and absorption given by family background (education of parents and level of income) and financial status of students (namely, type of study financing).

Results showed that education of mother and education of father (measured on a six-point scale from "1"—primary education level to "6"—postdoc level) introduced significant differences in the level of engagement. There are significant differences in absorption ($F(5,1028) = 3.03$, $p = 0.01$) and engagement of students ($F(5,1029) = 2.29$, $p = 0.05$). Post hoc comparisons using Tukey's HSD test indicated that the mean score of absorption for the gymnasium level of education of mother ($X = 3.37$, $SD = 1.25$) was significantly different that for the post high school level ($X = 1.50$, $SD = 0.57$). The mean score of academic engagement for students with mothers having the gymnasium level of education ($X = 3.71$, $SD = 0.98$) was significantly different that for the post high school level ($X = 2.12$, $SD = 0.89$). Regarding the level of education of father, significant differences were found for vigor ($F(5,1000) = 2.55$, $p = 0.02$), absorption ($F(5,999) = 2.56$, $p = 0.02$), and engagement ($F(5,1000) = 3.02$, $p = 0.04$). The post hoc

comparisons using Tukey HSD test showed the same pattern with vigor, absorption, and engagement mean scores higher for gymnasium and vocational level of education of father than for the post high school level. It is to be mentioned that in Romania the post-high school level of education meant two supplementary years of studying after high school for a obtaining a higher qualification, but lower that a higher education diploma. This level of education does no longer exist.

Level of income did not introduce significant differences in academic engagement and its dimensions, but significant differences were found for dropout intention ($F(2,1025) = 3.44$, $p = 0.05$), students coming from low income families had significantly higher dropout intention mean score ($X = 1.94$, $SD = 0.68$) than students from medium income families ($X = 1.84$, $SD = 0.62$).

Regarding the financial status in the university (with tuition fee and without tuition fee), there were significant differences for dedication ($F(1,1053) = 7.49$, $p = 0.01$), absorption ($F(1,1053) = 3.63$, $p = 0.05$), and total academic engagement ($F(1,1054) = 4.11$, $p = 0.02$). Students with tuition fees had higher scores than those without tuition fees ($X = 4.26$, $SD = 1.26/X = 4.03$, $SD = 1.25$ for dedication, $X = 3.19$, $SD = 1.38/X = 3.02$, $SD = 1.30$ for absorption, $X = 3.54$, $SD = 1.15/X = 3.39$, and $SD = 1.13$ for academic engagement).

5. Discussion

The present study aimed to investigate the relationships between academic engagement of first-year students and early dropout intention, as measured in the first semester of university studies. First, we tested the three dimensions of academic engagement, namely vigor, dedication and absorption, as predictors of dropout intention. Then, we tested whether other variables such as academic satisfaction and frequency of classes attendance increase the predicted proportion of variability in dropout intention. Lastly, we examined the variation of academic engagement dimensions by several background or demographic variables.

The regression analysis results showed that the dedication dimension of academic engagement is a strong negative predictor of dropout intention, in all tested models. Students with strong involvement in their studies, who experience enthusiasm, pride, challenges, and inspiration in school, are less likely to intend to drop out. The results are consistent with Astin's theory of student involvement [9] and with previous research. Harper, for example [25], showed that disengagement was strongly linked to student attrition. Also, the results are supported by Tinto's perspective on individual's educational goal commitment as predictor of student disengagement. Other authors suggest that first year of study is critical both for engaging students with their learning community [26] and for risk of dropping out [21].

Although previous studies have consistently showed all three dimensions of academic engagement as predictors of dropout, in our study vigor and absorption correlated, but were not significant predictors of dropout intentions. One possible explanation for this result may lay in the fact that we measured early dropout intentions, in the first semester of study. As Schaufeli and collaborators [13] state, vigor, and absorption are more pervasive and persistent affective-cognitive states characterized by high levels of energy and mental resilience while learning, and also being fully concentrated and deeply engrossed in one's learning. In the Romanian higher education system, the summative evaluation for each subject takes place at the end of each semester. At the time we collected data, none of the participants in the study had taken any exam or any form of summative evaluation. The sense of significance first—year students give to their studies is relevant at the beginning of university studies, those who low dedication and meaningfulness are more likely to drop out early from school. Vigor and absorption seem to be more relevant on long term, as longitudinal studies [27] have shown.

Academic satisfaction at the beginning of studies was also a significant predictor of dropout intention. In this study, we used a composite score for satisfaction, having satisfaction with quality of teaching, satisfaction with tuition fees and costs, relationships with colleagues or teachers, and satisfaction with facilities and equipment in the university as indicators. The reliability analysis

showed that satisfaction with quantum of fees and taxes did not correlate with the other items, so we deleted that item from further analysis. The concept of academic satisfaction clearly requires more in-depth focus for several reasons. Firstly, in our study, satisfaction correlates with both engagement and dropout intention. It would be interesting to test a mediation model, with satisfaction of students as a mediator between engagement and dropout intention. Secondly, we measured satisfaction as mainly satisfaction with conditions and relations in academia. A more in-depth analysis should take into consideration the satisfaction with the learning process and the differences between satisfaction and dedication. For example, a study conducted by Shea and collaborators [28] showed that students who participated in cohorts with other colleagues and received detailed feedback from faculties and experienced frequent interaction with them reported a high level of satisfaction with their learning experiences. Therefore, several other dimensions of academia could contribute to students' satisfaction.

The third contribution of our study refers to the variation of academic engagement by demographic variables. Previous studies have focused on individual characteristics as predictors of engagement (such as perfectionism [29]) or on teachers' behaviors [30–32]. In our sample, education of parents introduced significant differences in students' engagement. Somewhat unexpectedly, students coming from families with low education levels reported higher levels of academic engagement. The result is consistent with Tinto's research findings [6] that family status and educational background are associated with students' persistence in school. Those participants from our study who paid tuition fee were more engaged in their studies than those who were financed by government. From a different perspective, these results might suggest students are more at risk to disengage and to drop out early from school, and those are students with parents that have a rich educational background. To further investigate this aspect, motivation for studying in higher education and perception on professional alternatives in long term should be taken into consideration.

Despite the rich and consistent research in the areas of academic engagement [6,9,10,33,34] and academic dropout, our study aimed to highlight a less investigated aspect, that is early dropout intention. Intervention in reducing dropout rates are more successful if implemented early and before students take the decision to drop out.

6. Conclusions

The present study has several limitations. First, the generalization of our findings is restricted to higher education institutions, as all participants came from the same university. Studies on multiple samples from different universities could lead to a more in-depth understanding of the effect of academic engagement on dropout intentions. Second, this study was a cross-sectional study, measuring the relevant variables only in one moment, that is, the first semester of study. Considering these limitations, a longitudinal study with repeated measures of academic engagement and students' dropout intention on multiple samples could highlight the dynamic relationships between intentions to drop out, academic engagement, academic context, and individual characteristics. Since academic dropout is a complex and gradual phenomenon, longitudinal studies could better identify individual and academic resources for preventing and reducing it. Third, in our study we left out variables related to academic performance or to retention in school. Therefore, inclusion of these variables seems of great interest not only for prediction of individual performance but also for prediction of graduation rate at university level.

Nonetheless, we consider our results to have significant implications, especially for higher education institutions from a similar social and economic context to the one we investigated. We will further discuss some of the implications referring to the role of higher education institutions in ensuring equal educational opportunities for all and in preventing dropout as key component of sustainable education.

In the light of previous research and Astin's theory of student involvement, one possible line of action for higher education institutions could be a stronger focus on allocation of time resources for students [8]. To actively and continuously involve in their own learning, students need time to allocate

to this process, perhaps nowadays more so than in the past. Higher education institutions can intervene in students time resources by carefully planning and scheduling all academic and extracurricular activities, taking into account aspects such as requirements regarding attendance in classes, physical distances between different learning spaces, flexible schedules for learning and flexible working hours for university spaces, and staff. The correlations obtained in our study between satisfaction with learning context and academic engagement and dropout support the relevance of the above-mentioned aspects. A responsible management of student time should be a goal for universities in their efforts to consume resources with responsibility when preparing students capable of facing the challenges of change through learning, in line with the principles of sustainability [3].

As UN Economic and Social Council's Strategy for Education for Sustainable Development recommends [34], the role of universities to strengthens the capacity of individuals, groups, communities and organizations to make judgments and choices in favor of sustainable development can be incorporated into teaching practices. A first practice that can contribute to sustainable education is to shift the focus from the teaching process to student's learning process. Teachers and administrators need to concentrate more on what drives a student to willingly participate in academic activities, what triggers his/her interest in the subject that is being taught, on the means to facilitate his or her engagement in the academic experience. A second practice in this direction would be to place attention on sustainable key competencies. Although there is no general consensus on the selection of key sustainable competencies (many authors emphasize the social competencies, systems-thinking, and complex planning competencies, or decision-making competencies, to name a few), each competency is itself a learning outcome that students find considerable valuable both as students and citizens [35]. Developing key competencies adds significant value to the learning process and, thus, increases student engagement and retention. Also, developing key sustainable skills can be seen as a tool to increase student and university competitiveness. Initiatives addressing student engagement is another option higher education institutions could focus on for preventing early dropout. Engagement initiative and plans can directly and indirectly involve all the relevant factors of education in general and student retention, in particular. The success of such initiative is possible by shared responsibility of internal stakeholders (students, academic and administrative employees) and external stakeholders (alumni, business). Higher education institutions could facilitate the contact between companies and students quite early, in the first year of study. This might me an opportunity for students to familiarize with the corporate mission and an opportunity for company to build a long-term in student learning [36–40]. The role of external stakeholders in the process of preventing academic dropout should be further explored. Common initiatives for student engagement and retention is a valuable action in building regional sustainability. By integrating a process of engagement at all levels and with all actors of the educational process, universities will be able to equip their students with the knowledge, competencies, and understanding needed to produce more sustainable products, which are of a higher value to society and environmental well-being [35,41].

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