Reformulating the Student Retention Model in the Italian Academic Context: The Role of Communities Learning

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Abstract Moving from the student retention model developed by Tinto the present longitudinal study aimed at enlarging this paradigm and at investigating the model in the Italian academic context. 227 Freshmen University students participated to a longitudinal study that introduced a new variable in the model: the participation to non-curricular academic activities. Students attending psychology class were divided into two groups: an experimental and a control group, depending on the participation to a more traditional formal lesson or to a more active informal learning experience. Before and after the learning experience they were invited to fill in a semi-structured questionnaire encompassing the main variables investigated by Tinto and some others introduced by this study. Though a significant relationship between participation in community learning and academic and social integration and between participation in community learning and institutional and professional commitment were found, results showed significant differences with the original model. The main differences were discussed with reference to the different context in which Tinto's theory was validated: Italian universities are indeed very different from the American ones, with the non-residential component on top of the list. Practical implications in terms of vocational guidance programmes were also discussed in the paper.

Keywords: community learning, academic performance, academic integration, goal commitment

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1. Introduction

School-to-work transition is a very challenging moment for students. This moment strikes the passage from passive to self-directed and self-regulated learner. Actually, the academic context demands students not only to manage differently knowledge and learning, but also to develop coping skills useful to fast adapt to a set of new rules and challenges both at a formal and informal way.

Empirical evidences have shown that often the difficulties experienced in adapting to these new demands could be some of the reasons for students dropping out before graduation [1,2,3,4]. Indeed, the motivations beneath dropout could be different. Research in the field focused on the exploration of a theoretical framework that could provide a comprehensive approach to the phenomenon [1,2]. Therefore, within the last decades, student retention has gathered a growing attention both from the scientific point of view as well as from the academic perspective, thus contributing to develop concrete intervention programmes.

Tinto (see [1,2]) developed one of the most exhaustive and complex theoretical conceptualization about student's dropout intentions. According to the author, the decision to finalise one's own educational route is directly influenced by two commitment dimensions: institutional and goal commitment. The first is related to how much an individual is motivated to get a degree in a specific university. Nora and Cabrera [5] have demonstrated the importance of institutional commitment in reference to persistence intention [6]. Goal commitment, instead, refers to how much an individual is motivated to get a degree independently from a specific university.

Both institutional and goal commitment are influenced by external commitment and academic and social integration. [3,7,8].

Within this framework, the intention to quit with the academic career is a longitudinal process of integration within the new environment that includes a series of variables. The final decision to quit the university is due to an incomplete process of integration with the academic context that can be caused by previous experiences and skills, family and school background, initial commitments and academic success. Among these variables, Tinto argues that integration is a key aspect, mainly responsible for the development of student's dropout intentions. He distinguishes two kind of integration: academic and social integration. The first one relates to the student's involvement in informal groups of peers, to participation in extracurricular activities, to the perceived sense of integration with the faculty and administrative staff. This kind of integration

develops day by day and is reinforced by positive interactions with peers and teachers. Academic integration is, instead, students' perception about their university experience, which is useful for the actualisation of their cultural and intellectual potential [3]. It is indeed the result of the exchange of information, perspectives and values with the other members of the academic community. Satisfying and rewarding interactions within the academic context, both at a formal and at an informal level, lead to better integration and persistence [3]. Unsatisfactory or inadequate relations, instead, increase the probability that students will not accomplish their academic experience [2].

Despite similar previous theoretical speculations (see, for instance, reference 1), Tinto's model has provided a solid theoretical framework for several generation of researchers. Tinto's contribution aimed to understand the process of student persistence in looking across, searching the premises underlying the behaviour of dropout as well as the reasons for the retention [6].

Beyond its scientific fortune, Tinto's model is one of the few contributions to the understanding of the process of student retention. Its focal point, as argued earlier, is social and academic integration that are both significantly supported by students' participation to extracurricular activities. An example of these kind of activities is the participation to learning communities, that is to temporary and task oriented groups established for both academic and social aims co-working for the same goal that is learning and developing formal and informal academic skills. Learning communities have been proved as useful tool to increase retention and academic success through the development academic and social integration at a collegiate level [9].

Studies evaluating learning communities' effectiveness have suggested that they allow enhancing students' attainment of a wide range of academic and social outcomes, relevant for graduates to face new social, political, and economic challenges such as: the improvement of academic success, academic and social integration, commitment, retention and the definition of vocational identity [9,10,11]. Learning communities could be also considered as an early instrument of vocational guidance as they allow students to use skills and to perform activities useful within the future workplace context, but in a sort of "protect" environment as the classroom [9].

Despite its most relevant implications for both research and practice, this model has never been tested in the Italian academic context where as far as we know community learning programs have not been improved yet. Therefore, the main aim of this research was to investigate if and to what extent the model developed by Tinto could be effective also within the Italian academic context. This investigation could be precious to gain inputs as to design more effective retention intervention and to validate community the tool of community learning as a learning methodology to promote retention, academic success and vocational guidance.

2. Participants and Methodology

Participants to the study were 227 (194 females and 33 males) freshman students attending the psychology class at the Faculty of Education, University of Bari, Italy. The average age was 20 years old ($SD = 2.11$). Students were randomly divided into two sub-groups: the community learning group ($n = 111$) and the non community learning group ($n = 116$).

Learning communities were designed as suggested by the literature: a collaborative yet informative environment where there is not teacher but a facilitator who promotes participation through group activities and exercises [12,13,14].

Given the main aim of the study, that is to investigate the contribution of the participation to the community learning to the validation of student retention model, the latter was the control variable. Therefore, the study considered two conditions: a community learning group and a non-community learning group, where participation and group activities were inhibited. Both groups enjoyed the same learning contents for three months but in different classes and with different teachers. The non-community learning teacher was trained to be cold and non-participative and to act as she was an old fashioned academic teacher. Students didn't perceive this instruction as long as this is a common teaching method in most Italian universities. The contents of both learning contexts were the same: the development of academic skills such as taking notes, managing time, and study skills.

All students, though attending different kind of activities, were asked to answer to a questionnaire in three different times: at the beginning, at the end of the learning program and after six months after the end of the activities.

Questionnaires were designed in order to test both the efficacy of learning communities as methods and the validity of Tinto's model. However, measures of the actual academic success (number of exams passed and average of evaluation) and of the actual persistence (enrollment in the second course year) were also considered. These data were provided by the administrative office of the faculty.

3. Measures and Procedure

Data were collected from March 2010 to June 2010.

For the aim of the present study, it was designed a program of academic skills improvement focused on a wide range of academic skills dedicated to first year students [15].

The measures involved were extracted from Tinto's theory with some integrations that answered to our aims.

The original measures taken from the Tinto's model were:

- academic integration [16] consisted in 24 items ($\alpha = .7$) on a five point Likert scale from 5 = agree strongly to 1= disagree strongly. An example item is: *The relationships I have developed this past year have been personally satisfying*;
- social integration (16) consisted in 9 items ($\alpha = .8$) on a five point Likert scale from 1 = never to 5 = always. An example item is: *Approximately how often, did you spend in organized extra-curricular activities*;
- academic skills (15); consisted in 32 items ($\alpha = .85$) on a five point Likert scale from 1= not own to

4= very own. An example item is: *To study on your terms*;

- institutional commitment (5); consisted in 8 items (α = .79) on a five point Likert scale from 1 = strongly disagree; 2 = disagree; 3 = average agreement; 4 = very agree; 5 = strongly agree An example item is: *My closest friends consider this faculty a right quality choice*;
- goal commitment (16) consisted in 14 items (α = .83) on a five point Likert scale from 1 = strongly disagree; 2 = disagree; 3 = average agreement; 4 = very agree; 5 = strongly agree. An example item is: *It is important for me to graduate from college*;
- persistence intentions (17) consisted in 5 items (α = .74) on a five point Likert scale from 1 = minimum probability to 5 = maximum probability. An example item is: *It is likely that I will attend this university in near future*.

The measures added by the present study were:

- professional commitment (18) consisted in 18 items (α = .6) on a seven point Likert scale from 1 = strongly disagree; 2 = very disagree; 3 = little disagree; 4 = neither agree neither disagree; 5 = little agree; 6 = very agree; 7 = strongly agree. An example item is: *I would be very happy to spend the rest of my career in the professional field that I'm studying*;
- community learning participation (2) consisted in 11 items (α = .86) on a four point Likert scale from 1 = very little 2 = some 3 = quite a bit 4 = very much. An example item is: *Participating in a community learning has improved my study method?*

Finally, objective measures of academic performance and persistence were involved as well: grade point average (GPA), the number of exams passed during the academic year and the actual enrolment in the second year of the course (persistence).

The research focused on the validation of Tinto's model in the Italian context, testing causal links between the variables. A principal component factor analysis (Varimax, Eigenvalue > .50) was run followed by a second level factor analysis (Oblimin; eigenvalue > .50; Table 1). The obtained factors were tested for Tinto's model of student retention with a regression analysis backward method.

Table 1. Overview of the factors and their abbreviations after Principal Components Factor Analysis

Variables	Code
Pre-entry attributes:	
Family background: Father's education	F1
Family background: Mother's education	F2
Skills and abilities: Team work	AS1
Skills and abilities: Information seeking	AS2
Skills and abilities: Writing skills	AS3
Prior schooling: Diploma grade	S1
Commitments initial	
Professional commitment time 1: affective	PC1
Professional commitment time 1: continuance	PC2
Institutional commitment time 1	IC1
Goal commitment time 1	GC1
Institutional experience	
Academic performance 1: grade point average	AP1
Academic performance 2: number of passed exams in the academic year	AP2
Community learning	CL
academic integration time 1	AI1
academic integration: social time 2	AI2
Social integration time 2	SI
Commitments subsequent:	
Professional commitment time 2: continuance	PC3
Professional commitment time 2: affective	PC4
Institutional commitment time 2	IC2
Goal commitment time 2	GC2
Outcomes	
Persistence	P1
Intention of persistence	P2

4. Objectives and Hypothesis

The main hypotheses developed by the study were the following:

- H1: Family background predicts initial commitments (professional, goal and institutional)
- H2: Family background is causally related with academic skills
- H3: Prior academic skills causally related with the final high school grade
- H4: Prior academic skills predict initial commitments (professional, goal and institutional)
- H5: Final high school grade predicts initial commitments (professional, goal and institutional)
- H6: Initial commitments (professional, goal and institutional) predict academic performance (GPA and number of passed exams during the academic year)
- H7: Academic performance predicts academic integration
- H8: Learning communities predict academic integration
- H9: Learning communities predict social integration
- H10: Learning communities predict academic performance
- H11: Learning communities have a causal effect on subsequent commitments (professional, goal and institutional)
- H12: Learning communities have a causal effect on persistence (intentions of persistence and actual persistence)
- H13: Academic integration predicts subsequent commitments (professional, goal and institutional)
- H14: Social integration predicts subsequent commitment (professional, goal and institutional).

4.1. Regression Analysis

Causal effect between variables were tested to validate Tinto's model of student retention. Analysis was run with a regression backward method.

Table 2. Linear regression model backward method

IV*	DV**	β	F	df	P	adj. R^2
Pre-entry attributes						
F1	AS3	.22	3.24	2	.041	.04
AS2	S1	.26	13.09	1	.000	.07
Pre-entry attributes and Initial Commitment						
F2	PC1	.3	16.82	1	.000	.08
F2	PC2	.3	4.72	2	.010	.04
F2	IC1	.27	13.3	1	.000	.07
AS2	IC1	.18	6.34	1	.013	.03
S1	GC1	.18	13.09	1	.000	.07
Pre-entry attributes and Subsequent Commitment						
AS1	IC2	.28	13.7	1	.000	.07
Initial Commitment and Subsequent commitment						
PC1	PC3	.67	131.21	1	.000	.44
PC3	IC2	.69	147.06	1	.000	.47
GC1	AP1	.2	3.18	1	.044	.03
GC1	AP2	.2	7.92	1	.008	.04
GC1	GC2	.59	89.66	1	.000	.35
Academic performance and Persistence and Institutional Commitment						
AP1	P1	.25	$X^2 = 4.08*$	1	.045	.06
AP1	IC2	.19	5.83	1	017	.06
Community Learning participation and Subsequent Commitment						
CL	PC3	.16	4.74	1	.031	.02
CL	IC2	.17	3.41	1	.022	.02
Community Learning participation and Academic Performance						
CL	AP1	.21	7.91	1	.005	.04
Academic Integration and Subsequent Commitment						
AI1	PC3	.18	6.03	1	.015	.03
AI1	IC2	.17	5.89	1	.016	.03
AI1	IC2	.18	16.39	3	.000	.2
AI2	IC2	.2	16.39	3	.006	.2
SI	IC2	.16	16.39	3	.030	.2
Subsequent Commitment and Persistence						
IC2	P2	.24	53.45	2	.000	.36
GC2	P2	.48	53.45	2	.000	.36

* Independent variable; ** Dependent variable; *** logistic regression.

Results showed that Tinto's model appeared to be mainly confirmed: pre-entry attributes had causal effects on initial commitment: mother's education predicts professional commitment in its two dimensions: affective and continuance, and with the institutional commitment as confirmed by literature. Academic skills such as information seeking had a causal relation with initial goal commitment.

Initial goal commitment predicted academic performance in both measures: GPA and number of passed exams in the academic year.

As confirmed by most studies in the field [9,13,14,19,20,21,22] learning communities confirmed their causal effect on academic performance (GPA). They also predicted affective professional commitment and institutional commitment.

It is very interesting to notice that the GPA was the only variable influencing the actual persistence. Instead, institutional and goal commitment predicted persistence intentions. Professional commitment was related to community learning participation but had no effect on both persistence dimensions. Adding professional commitment variable into the model didn't affect the overall model validity.

As for academic integration, it was causally related with goal, professional and institutional commitment; social integration only with institutional commitment.

The absence of causal relationships between academic performance, community learning participation, and integration both academic and social, showed that the effects somehow "jump" the integration to go directly to the subsequent commitments and persistence intentions. In particular, learning communities were the only variable having an indirect influence on actual persistence through the higher GPA.

5. Discussion and Conclusion

Although some decades have passed since Tinto developed his model of students' retention, it is still considered an authoritative point of reference in the field because it allows gathering very meaningful insights for both research and practice.

Born in the U.S. context, this model was applied mainly in the American universities and colleges and its validation was confirmed by numerous studies and reviews [9,13,14,19,20,21,22].

Most recently, also European universities adopted this model to develop dropout prevention programmes (see for instance [23,24,25,26]).

The present study tested the model by inserting a new variable or rather by specifying the contribution of the participation to extra-curricular activities for student academic success and persistence.

Therefore, Tinto's theory was applied in a context never assessed before. Results showed interesting findings obviously related with the national specificity of the research but that can rise up interesting issues such as the model validity in a non-residential context and the actual role of the integration dimensions. This research pointed out that integration was not necessarily a mediator between the academic experience and commitment, even though it had an effect on commitments themselves.

Italian universities owe a set of specific features that should be carefully taken into account by future research. One of these could be, for instance, the large number of students who delay in passing their exams for many different motivations, both intrinsic and extrinsic. The problem for these students is their future job: spending too much time at the university means being older when entering the labour market or worse becoming part of the NEETs' group (Young people Not in Employment, Education or Training). In 2012 the percentage of NEETs in Italy was of 21.9% with a EU percentage of 15.6%, increased in 2013 with a 23.9% (see [27]) and most of them were late post-graduates.

Enhancing persistence and finishing the study on time should be one the goals of universities. The model showed by the results of the present study highlighted that actual persistence was caused only by academic performance (GPA, AP1 in Figure 3). Moreover, the variable that mostly showed to affect academic performance was community learning participation.

In the end, the study partially confirmed the model developed by Tinto. The relationships between integration, commitments and intentions of persistence were confirmed. Mostly, the positive effect of community learning participation was confirmed in relation with persistence. On the other hand, contrary to our hypothesis integration was not related neither to community learning participation nor with commitment or persistence.

It was also confirmed the relationship between academic performance and academic integration and consequently the direct and causal relationship between participation in community learning and academic and social integration. Interaction effects were present, "jumping" the integration and showing directly an effect into commitment. More specifically, academic integration was causally related to all three kind of commitments: professional, institutional and goal. Social integration instead was causally related only to the institutional commitment. Social integration, however, led to institutional and goal commitment, as if to demonstrate how to be more socially integrated could lead students to wish to accomplish their study at the university.

The inclusion of the variable of professional commitment, even if during the first year of the course where students did not have a clear idea of the profession they were studying for, could be nevertheless a useful result as it showed causal connections with community learning participation and with academic integration.

Compared to academic performance, only initial goal commitment was causally related.

As for the intentions of persistence, Tinto's theory was fully confirmed by the causal relationship exhibited by goal and institutional commitment with the persistence intentions.

With regard to the direct effects of community learning participation, the relationship with the academic and social integration was not confirmed, but we observed a causal relationship between community learning participation and affective dimension of professional commitment and institutional commitment.

In this case, the effect of community learning participation was to increase students' involvement for the profession and the intention to continue their studies at the university. It is a kind of increased confidence and attachment to the university and to their future profession.

Again, as in the Tinto's theory results confirmed the relationship between initial commitments and the consequential commitments in each of the three dimensions: professional, institutional and goal. Tinto's theory appeared, therefore, partially confirmed for the relationship between integration, commitment and intentions of persistence. It is still unclear, however, the role of the professional commitment which seems to be affected by community learning participation but doesn't show any relationship with the persistence as the others commitments do.

It is interesting, however, to highlight that community learning participation had a positive influence on professional commitment.

As for the additional direct effects of community learning participation, the initial hypotheses were partially confirmed, as long as there was not a direct relation with integration, but only with commitment. It should be noted, however, that goal commitment was also causally related to the intentions of persistence. In this case, the community learning participation effect fell directly on goal commitment and indirectly on the intentions of persistence.

Finally, as for academic skills, there were two interesting results: self assessment of one's own ability to work in a team was causally related with institutional commitment and one's own ability to seek for and managing information was causally related to initial goal commitment. These findings should be an occasion to pay more attention to the design of academic courses and communities learning experiences, creating activities useful to encourage students in the development of their academic skills.

As for future perspectives, it will be interesting to explore the dimensions of academic and social integration and their actual importance in persistence and community learning participation.

More attention in terms of researches and studies should be cast on the national variability of the model application and the role of academic integration in a different context where, for instance, the residential dimension is not as strong as in the American context.

These results could be an encouragement for further experimentation with the community learning methodology as an intervention that could follow students during their whole academic career, and not only during the first year, because an irregular intervention couldn't be sufficient to achieve commitment, integration and persistence.

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