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First-year seminars through the lens of Vincent Tinto's theories of student departure. A systematic review

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Introduction: Vincent Tinto is a towering figure in the study of dropout in higher education whose theory regarding student departure is a widely accepted contribution that explains how students become involved in the academic community and how their level of engagement impacts their decision to persist or to drop out. The aim of this study is to advance understanding of how Vincent Tinto's theories influence the current practices and support services offered by higher education institutions to freshman students through first-year seminars (FYS).

Methods: A systematic review was conducted based on peer-reviewed articles published between 2020 and 2022, selected through a multi-stage process. With reference to Tinto's contribution, this systematic review aims at providing answers to the following research questions: What are the methodological approaches identified in the studies under analysis? What knowledge can be identified in recent studies related to the categories of students attending FYS? What knowledge about students' personal and psychological characteristics with relevance for FYS can be found in recent studies? What knowledge about academic pedagogical and counseling factors with relevance for FYS can be found in recent studies? What knowledge about social and relational factors integration with relevance for FYS can be found in recent studies?

Results: The findings indicate three categories of studies that capitalize on Tinto's theories with regard to the design, conduct and evaluation of first-year seminars: a. studies that assess the role of students' personal and psychological variables, considered within FYS; b. studies that analyze the pedagogical and counseling interventions destined to students within FYS; c. studies that analyze the role of the social and relational dimension within FYS.

Discussion: The literature on the topic capitalizes on Vincent Tinto's contributions in relation to a student corpus which is extremely diverse in terms of age, socio-economic status, racial and cultural characteristics, attended specialization (a significant number of studies are destined to students who attend STEM specializations), generational characteristics (the example of first-generation students). Therefore, the interventions aimed at facilitating the integration of first-year students are carefully tailored and customized according to the needs of these categories of beneficiaries.

KEYWORDS

first-year seminars, Vincent Tinto, student departure, higher education, systematic review

Introduction

This systematic review aims at identifying the way in which Vincent Tinto's theoretical contributions are used to integrate students into the university environment and to prevent dropouts through the activities carried out during the first-year seminars (FYS). Vincent Tinto is an influential American sociologist, well-known for his work on student retention and dropout in higher education. Tinto's theories of student departure/interactive model of student departure represent a widely accepted contribution that explains how students become involved in the academic community and how their level of engagement impacts on their decision to persist or drop out (Tinto, 1975, 1987). Tinto's integrative theory of college student retention also addresses the issue of student attrition, or the process of students leaving or dropping out of college (Tinto, 1988). Tinto argues that student attrition is not a one-time event, but rather a process that begins with the student's decision to attend college and continues through their enrollment (Tinto, 1987).

According to Tinto (1975, 1982, 1987), students are more likely to persist in college and graduate if they are academically and socially integrated into the institution. Integration into the academic community refers to the extent to which a student feels connected to and supported by their peers and faculty, is engaged in the life of the institution, both inside and outside of the classroom (Tinto, 2005). Tinto (2017a,b) argues that there are three factors that conditions students' integration in their first academic year: the students' personal and psychological characteristics, academic factors (pedagogy and counseling-related) and social and relational factors. In Vincent Tinto's interactive model of student departure, the psychological and personal characteristics refer to the individual factors that influence a student's decision to persist or drop-out of college/university (Tinto, 1975, 1987). Academic integration, which includes factors such as academic counseling, the quality of instruction, and the relevance of coursework to the student's educational and career goals, is a pre-condition of students' academic success (Engle and Tinto, 2008). Tinto argues that institutions should provide appropriate levels of support, using pedagogical strategies in order to facilitate student transition. Social integration includes factors such as interaction with peers and faculty staff, as well as a sense of belonging to the institution, which can ensure the connection between that particular institution and its students.

Recent literature consistently builds on the author's theoretical framework in order to streamline the way these activities are organized, conducted and evaluated to facilitate students' transition into the university environment through FYS. The first academic year is fundamental, as this is the time when the students establish (or fail to establish) their self-efficacy and positive role models that will guide their behavior and learning habits. The concept of first-year seminars refers to the introductory courses organized by universities to facilitate the integration of first-year students and familiarize them with the main skills to be developed and with the supporting university community (faculty, administration, other students) (Aulck et al., 2021; Jenert and Brahm, 2021). Freshman seminar courses draw on broader educational retention theory and the impact social integration

has upon the persistence of students' academic trajectories (Tinto, 1987).

The rationale of the review in the context of existing literature is to advance understanding of how Vincent Tinto's theory of student departure influences the contemporary knowledge, practices and student support offered by higher education institutions to freshman students through FYS. A systematic review was conducted of 23 peer-reviewed studies published in the period between 2020 and 2022.

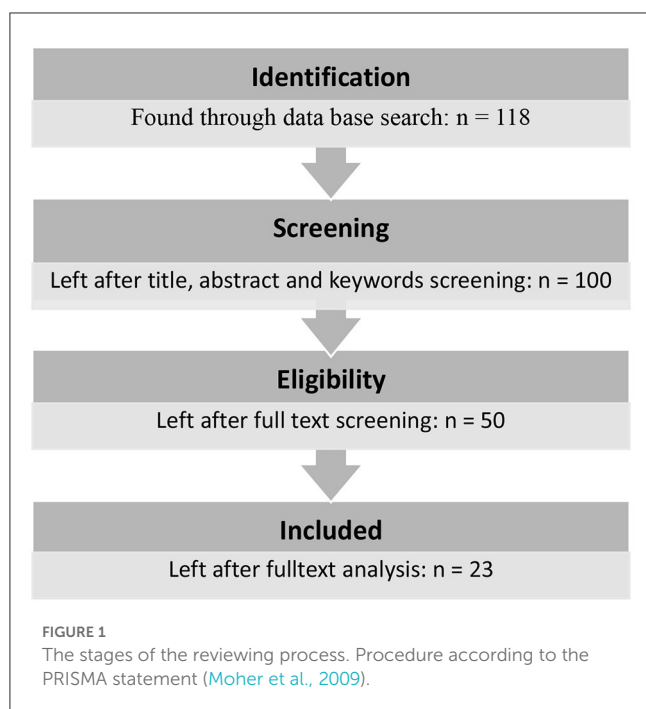
With reference to Tinto's contribution, this systematic review aims at providing answers to the following research questions (RQs):

- RQ1. What are the methodological approaches identified in the studies under analysis?
- RQ2. What knowledge can be identified in recent studies related to the categories of students attending FYS?
- RQ3. What knowledge about students' personal and psychological characteristics with relevance for FYS can be found in recent studies?
- RQ4. What knowledge about academic pedagogical and counseling factors with relevance for FYS can be found in recent studies?
- RQ5. What knowledge about social and relational factors integration with relevance for FYS can be found in recent studies?

Method

Search and selection

This section will outline the review process, which consisted of searches and selection strategies. Bibliographic information was collected from Scopus database and the investigation period was set from 2020 to 2022. It was decided to start the entire process in advanced search to circumscribe the object of study as precisely as possible. The articles that we selected met the following criteria: (a) they appeared in a peer-reviewed journal, (b) they were written in English, (c) they were published between 2020 and December 2022, and (d) they reported studies aimed at promoting students services through FYS by means of a practical intervention, starting from Vincent Tinto's theoretical contributions. In the initial screening, all articles were reviewed in terms of whether their titles, abstracts, and keywords matched our inclusion criteria. This particular search string created 118 hints. These articles were screened based on their titles, abstracts and keywords. During the screening, exclusion criteria were set to eliminate articles that did not match our research questions. The search aimed to identify the two terms, namely *first-year seminars* and *Vincent Tinto* at title, abstract and keyword level. Of the 118 articles that we identified, only 100 contained the phrase FYS in their title, abstract or keywords. As none of these reviewed articles explicitly contained Vincent Tinto's name, the search progressed and the full text of the studies was consulted. Thus, references to Tinto's contributions in the text of the article and in the references were identified, our subsequent aim, in



the discussion of the results, being to quantify and analyze these contributions and associate them with the research questions of this study. These more selective search criteria were applied by the two researchers so that, at the end of the verification stage, the database reached 50 articles. However, after reading the full texts, we concluded that only 23 of them met the eligibility criteria in line with the research questions. It should also be noted that, although the search criteria focused on texts written in English, one article written in Spanish (Calamet, 2020) was also identified, consulted and maintained in the list, as its content could be read and understood by the two reviewers. Furthermore, we kept on the list two other articles (Longwell-Grice and Longwell-Grice, 2007–2008; Neuville et al., 2007) that approach the issue of FYS starting from studies that either revisit or complete Vincent Tinto's theories.

Therefore, the full texts were read several times with a strict focus on a specific research question. With the help of the knowledge organization functions of the reference management software ZOTERO (tag function) we were able to collect answers to the research questions. The general review procedure was based on PRISMA statement of Moher et al. (2009). Also, we used PRISMA 2020 flow diagram for updated systematic reviews which included searches of databases only. Figure 1 illustrates the stages of the reviewing process.

Analytical strategy

The selected articles were distributed to the authors, each of the authors performing a preliminary analysis of the articles allocated to her. In this preliminary stage, the authors used a coding table that included the following categories: the nature of the study (assessment of the empirical nature of the study), Tinto's contribution (using bibliographical information), authors' geographical origin, goals of the FYS intervention (whether the

interventions target the paedagogical and counseling dimension, the social and relational dimension of the students' personal characteristics). For the final analysis of the selected articles ($n = 23$) we used the NVivo 12 analysis software. The articles were coded according to the categories defined in the preliminary analysis. This analysis stage took 8 days, and the outcome of the process was a more nuanced and trustworthy analysis, as the authors collaboratively coded the data by discussing their individual classifications and reached a shared understanding. It also resulted a list of 23 articles by Vincent Tinto (Appendix 2) consulted by the authors investigated during this review, plus two studies that review or complement Vincent Tinto's theories (Longwell-Grice and Longwell-Grice, 2007–2008; Neuville et al., 2007). The next section presents the results according to our research questions.

Results

The findings provide an overview of how Vincent Tinto's theoretical contributions to ensuring an effective university transition are being used in recent studies on the issue of support services offered to students during FYS. All 23 reviewed articles are listed in Appendix 1 and specific information about the objectives of the studies and the methodology adopted by the authors are identified in Table 1.

The results of this review will be presented according to the research questions. Following on from the thematic analysis the results of the review were broken down into the key themes outlined in the coding tables. This part of the article will explore the general evidence relating to these themes. Consequently, we'll explore the reviewed papers according to: the nature of the study, the categories of students approached by the authors, student's personal and psychological characteristics, the criterion of pedagogical and counseling interventions targeted within the FYS, and the criterion related to social and relational interventions targeted in FYS.

Analyses of review papers according to the nature of the study (empirical, theoretical or review study)

The results of an initial categorization of studies in empirical ($n = 20$), theoretical ($n = 2$) or review studies ($n = 1$) are detailed in Table 2.

Analysis of reviewed papers according to the categories of students approached by the authors

We have also identified a number of studies that analyze the profile of students participating in programmes delivered through FYS, aimed at delivering customized tailored services to various categories of students (Table 3). It should also be specified that some of these studies are not limited to the analysis of a single dimension, but instead treat these dimensions in interaction (Schulzetenberg

TABLE 1 Information about the studies included in the review.

References	Methodology	Objectives of the studies
Abushandi (2021)	Questionnaire	To identify student's success factors and assess how teaching methods motivate students to strive for goals.
Ajayi et al. (2021)	Theoretical framework analysis	To identify the interactive influence of both person and environment factors in shaping academic persistence and argue that college administrators, faculty, and student support staff can intervene and take specific steps to improve the academic experience of racially minoritized college students.
Alshuaybat (2021)	Survey	To investigate students' perception to understand the degree of satisfaction and awareness of college students with their academic advising services.
Andrade et al. (2020)	Survey	To determine the extent to which departments hosting large numbers of international English as a second language (ESL) students demonstrate awareness and planning to address these learners' needs.
Archbell and Coplan (2022)	Survey	To evaluate a conceptual model linking social anxiety, communication with peers and instructors, students' experiences (i.e., engagement, connectedness, and satisfaction), and indices of socioemotional functioning at university.
Aulck et al. (2021)	survey	To examine the impact of first-year interest groups (FIGs) on student graduation and retention.
Beasley et al. (2020)	Focus-groups	"Reclaim the W" is an academic recovery program at a medium-sized midwestern university that offers undergraduates who have been academically dismissed a chance to reenroll at the institution. In this article we describe the Reclaim the W program and its target population of academically at-risk undergraduates.
Calamet (2020)	Focus-groups	To identify and analyse the factors with the greatest impact on dropout in the three higher education centers which are affected by unfavorable socio-academic contexts.
Cooper (2021)	Survey and thematic analysis	To understand whether the PECS (purpose, expectations, connections, support)-based orientation sessions were successful in creating consistent and enjoyable orientation experiences that helped students to develop a sense of belonging at university.
Eichler and Gradwohl (2021)	Survey	To investigate factors concerning students' motivational, affective and cognitive characteristics as well as factors involved in engineering students' use of support measures in their first year of studies.
Gianoutsos et al. (2021)	Survey	To investigate student's academic success (retention, progression, completion, and grade point average) and learning support services (tutoring, academic success coaching, supplemental instruction, and bridge programs).
Jenert and Brahm (2021)	Survey	To investigate the interaction between personal and contextual diversity during the transition into HE, taking into account students' diversity in particular with regard to gender and individual characteristics, such as self-efficacy.
Leary et al. (2021)	Survey	To compare the impact of classroom design on social integration and retention among STEM first-time, full-time college freshmen in a first-year seminar course by comparing classroom sizes (large (LL) vs. small (SL) lecture), classroom formats.
Leary et al. (2020)	Survey	This study systematically examined if a targeted intervention in at-risk students within a science, technology, engineering, and mathematics (STEM) would elicit positive student perceptions and higher retention rates into the second year.
Lee et al. (2022)	Survey	This paper describes the development of the STEM student perspectives of support instrument (STEM-SPSI) and explores how perceptions of student support constructs vary across engineering students.
Nemtcán et al. (2020)	Survey	In the present study, we aim to investigate and facilitate the understanding of the factors that explain attrition intentions among students.
Qvortrup and Lykkegaard (2022)	Literature review	Based on Tinto's institutional departure model and a literature review of recent international articles on dropout in higher education, this article suggests a revised model for understanding dropout processes.
Santana et al. (2022)	Case-study	This paper highlights the Honors Living-Learning Community's (HLLC) efforts to engage students and community members through community-engaged courses and programs to address issues such as inequity. Furthermore, the authors offer a model that actively moves beyond theory to practice-based initiatives within an honor's academic context.
Schulzetenberg et al. (2020)	Archival data	To explore the impact of community-engaged employment on the academic outcomes of underrepresented students.
Shaaban and Reda (2022)	Questionnaire survey	To propose and evaluate a method to improve engineering students' understanding of their study plans and available resources at their college.
Stephen and Rockinson-Szapkiw (2021)	Quantitative, quasi-experimental research	To examine whether differences in self-regulation, self-direction, and online learning self-efficacy exist between students participating in an experimental high-impact First-Semester Seminar (FSS) class and a traditional FSS class while controlling for pre-existing factors.
Van Herpen et al. (2020)	Quasi-experimental study	This study measured the effects of a preacademic programme (i.e., before starting at university) on student faculty interactions, student-peer interactions, sense of belonging, and first-year academic performance.
Whittinghill et al. (2021)	Survey	To investigate how and why first-generation college students use music in terms of hours, tendency to consume while studying, or related effects on GPA

TABLE 2 Overview of the coding process of the initial categorization of studies in empirical, theoretical or review studies.

Empirical studies	Theoretical/conceptual studies	Review studies
Andrade et al. (2020), Beasley et al. (2020), Calamet (2020), Leary et al. (2020, 2021), Nemtcan et al. (2020), Van Herpen et al. (2020), Abushandi (2021), Aulck et al. (2021), Cooper (2021), Eichler and Gradwohl (2021), Gianoutsos et al. (2021), Jenert and Brahm (2021), Stephen and Rockinson-Szapkiw (2021), Whittinghill et al. (2021), Archbell and Coplan (2022), Lee et al. (2022), Santana et al. (2022) and Shaaban and Reda (2022)	Schulzetenberg et al., 2020; Ajayi et al., 2021	Qvortrup and Lykkegaard, 2022

TABLE 3 Overview of the coding process according to the criteria related to categories of students who benefit from support actions during the introductory seminars (not ranked).

Categories of students	References
Non-traditional students, people aged over 24 who do not live in the campus and who have professional responsibilities	Nemtcan et al., 2020; Lee et al., 2022
At-risk students within a science, technology, engineering, and mathematics (STEM) programme	Leary et al., 2020, 2021; Ajayi et al., 2021; Eichler and Gradwohl, 2021; Lee et al., 2022
Emerging adults	Ajayi et al., 2021
Under-represented students and racially minoritized (URM) college students	Beasley et al., 2020; Schulzetenberg et al., 2020; Ajayi et al., 2021; Whittinghill et al., 2021
First-Generation College Students	Beasley et al., 2020; Hauck et al., 2020; Schulzetenberg et al., 2020; Whittinghill et al., 2021
Students with low socio-economic status	Calamet, 2020
International English as a second language (ESL) students	Andrade et al., 2020
College students on academic probation or academically dismissed students	Beasley et al., 2020
At risk students who were not admitted into their major/college of choice primarily due to their test scores.	Gianoutsos et al., 2021

et al., 2020; Ajayi et al., 2021; Stephen and Rockinson-Szapkiw, 2021).

Analysis of reviewed paper according student’s personal and psychological charactersitics

In Vincent Tinto’s interactive model of student departure, the psychological and personal characteristics refer to the individual factors that influence a student’s decision to persist or drop out of college/university (Tinto, 1975, 1987). Among the psychological characteristics that may contribute to student departure we should mention: (1) Academic preparedness: students who struggle academically may be more likely to drop out if they do not feel capable of keeping up with the college-specific academic demands; (2) Motivation: students who are not motivated to succeed academically or who do not see the value in completing their degree may be more likely to drop out; (3) Commitment: students who are not committed to completing their degree may be more likely to drop out.

Starting from Tinto’s theories, we identified a series of studies that approach the following personal and psychological characteristics of students, from the perspective of easier access to FYS: students’ past and their previous learning experiences with a focus on their achievements in previous examinations (Van Herpen et al., 2020; Jenert and Brahm, 2021); affective, motivational and

cognitive variables (Calamet, 2020; Eichler and Gradwohl, 2021; Jenert and Brahm, 2021); anxieties caused by the transition into a new learning context, perceived as difficult and the students’ perceptions of their own training for this stage of study (Beasley et al., 2020; Van Herpen et al., 2020; Whittinghill et al., 2021; Archbell and Coplan, 2022); aspects related to the self-directed nature of learning, self-regulation, self-direction and self-efficacy of learning, goal commitment, study habits, and learning preferences (Stephen and Rockinson-Szapkiw, 2021); Psychological barriers to engagement (Beasley et al., 2020), such as help-seeking stigma and learned helplessness and to a sense of belonging (Van Herpen et al., 2020; Cooper, 2021). Relevant data is presented in Table 4.

Analysis of reviewed paper according to the criterion of pedagogical and counseling interventions targeted within the FYS

Tinto’s work has helped to shape our understanding of student retention and dropout in higher education, and his ideas have been widely adopted by educators and policy makers working to improve student success. In this regard, the role of the classroom and classroom practice in student retention/success is also explored. Variables such as the impact of pedagogy, the impact of assessment, the impact of counseling sessions (Tinto, 1997) should also be considered in relation to the ways in which classroom practice shapes student retention and success (Tinto, 2010).

TABLE 4 Overview of the coding process according to the criteria student's personal and psychological characteristics approached within FYS (not ranked).

Tinto's contribution	Student's personal and psychological characteristics	References
Tinto (1993, 2012b)	Students' past and their previous learning experiences	Van Herpen et al., 2020; Jenert and Brahm, 2021
Tinto (1987, 1993, 2000, 2001, 2017b)	Anxieties caused by the transition into a new learning context, perceived as difficult and Students' perceptions of their preparation for college	Beasley et al., 2020; Van Herpen et al., 2020; Eichler and Gradwohl, 2021; Whittinghill et al., 2021; Archbell and Coplan, 2022
Tinto (1987, 2017a,b)	Self-regulation, self-direction and self-efficacy of learning, goal commitment, study habits, and learning preferences	Calamet, 2020; Stephen and Rockinson-Szapkiw, 2021
Tinto (1987, 1993, 2001, 2012b, 2017b)	Psychological barriers to engagement and to a sense of belonging, such as help-seeking stigma and learned helplessness	Beasley et al., 2020; Van Herpen et al., 2020; Cooper, 2021; Eichler and Gradwohl, 2021

Building on Vincent Tinto's theories, studies analyzing pedagogical interventions address the following issues: the design and characteristics of learning spaces, the size of student groups, homogeneity and heterogeneity, respectively, in terms of students' preparation for university courses (Leary et al., 2021), remediation activities (Beasley et al., 2020) destined to students with low initial test scores (Eichler and Gradwohl, 2021); development of academic skills such as time management, use of adapted study strategies, use of resources to achieve academic tasks (Nemtcan et al., 2020); paedagogical methods and techniques (Abushandi, 2021); use of best practices (Cooper, 2021); preparing students for autonomous learning in the online environment with emphasis on the following skills: use of technology, time management, critical thinking and analysis, acquisition of study skills and habits (Leary et al., 2020; Stephen and Rockinson-Szapkiw, 2021); evaluation of students participating in FYS according to indicators targeting: academic skills such as study-related abilities and habits, time management, note-taking, as well as the quality of academic experiences (identification of campus resources, establishing friendships, sufficient sleeping time, resisting the pressure to use drugs or alcohol) (Leary et al., 2020); promoting an inclusive pedagogy and an anti-racist policy (Ajayi et al., 2021). Relevant data is presented in Table 5.

Studies that address student counseling activities with a role in ensuring student integration, retention and success include: counseling strategies for linguistic and cultural development (Andrade et al., 2020); peer group counseling, optimizing interactions between teaching staff and students; counseling offered at the level of student associations, counseling to successfully manage non-academic contexts (campuses, fraternities, local community, etc.) (Lee et al., 2022); Special training sessions for counselors working with first-year students (Alshuaybat, 2021); counseling students who passed the admission examinations with low average grades and were identified as having low motivation to study because they major in disciplines they are not interested in (Calamet, 2020); intrusive counseling sessions that refer to the fact that the counselors' tasks are not based on the idea of waiting for students to ask for help, but on identifying and addressing them as early as possible (Shaaban and Reda, 2022); counselors of First-Generation College Students (FGS) who value the influence of music on identifying and managing emotions of anxiety and insecurity generated by the transition into a new educational

environment (Whittinghill et al., 2021) and mentoring activities that address issues of respect for student diversity, along with an anti-racism policy that involves engaging students in both formal and campus-based activities (Ajayi et al., 2021); Table 6 summarizes these studies by considering the contributions of Vincent Tinto.

Analysis of reviewed paper according to the criterion related to social and relational interventions targeted in FYS

Tinto (2003, 2017a) argues that students' perceptions of their social integration into the institution represent an important factor in their persistence. This means that students who feel connected to their peers and feel satisfied with their educational experience tend to persist (Tinto, 2017a). Thus, students who feel isolated or unsupported by their peers and faculty, or who do not feel engaged in the life of the institution, are more likely to drop out. On large college campuses, freshmen often feel as though they do not have a personalized identity (i.e., they see themselves as another "face in the crowd") while feeling overwhelmed by the competitive higher education environment (Sullivan and Wulff, 1990). Consequently, social engagement helps students feel more connected to the campus community and more satisfied with the college experience overall while helping them feel less isolated as learners (Tinto, 2003).

Based on Vincent Tinto's theoretical contributions, we have identified in the corpus of studies we reviewed the following concerns of the authors related to the social and relational dimension in the organization and conduct of FYS: students' involvement in learning communities (Aulck et al., 2021) and in first-year students' interest groups (Santana et al., 2022); Involvement of under-represented and low socio-economic status students in short-term, part-time volunteering and employment on campus and in the local community (Schulzetenberg et al., 2020); students' participation in pre-academic programmes to familiarize them with various student-student/student-teacher interactions (Van Herpen et al., 2020). Tinto's (1997) theoretical contributions related to the role of learning communities in increasing student participation and engagement inside and outside the classroom are complemented by Freire (2000) contributions and used for the purpose of integrating marginalized groups in order to ensure

TABLE 5 Overview of the coding process according to the pedagogical dimension criterion targeted in FYS (not ranked).

Tinto's contribution	FYS key characteristics according to the <i>pedagogical</i> dimension	References
Tinto (2004)	FYS organized according to classroom design and size of student groups, homogeneity and heterogeneity of the group according to admission average grades.	Leary et al., 2021
Tinto (2001, 2004)	FYS destined to students with low initial test scores	Beasley et al., 2020; Eichler and Gradwohl, 2021; Leary et al., 2021
Tinto (1993)	FYS centered on inclusion-related best practices	Cooper, 2021
Tinto (2004), Tinto and Pusser (2006), and Tinto (2012c)	FYS using pedagogical methods and techniques (learning by solving, flipped classroom).	Abushandi, 2021; Leary et al., 2021
Tinto (1987, 2017a)	FYS with a role in preparing students for autonomous learning in the online environment with emphasis on the following skills: use of technology, time management, critical thinking and analysis, acquisition of study skills and habits.	Stephen and Rockinson-Szapkiw, 2021
Tinto (2004)	Evaluation of students participating in FYS according to indicators targeting: academic skills such as study-related abilities and habits, time management, taking notes, as well as the quality of academic experiences (identification of campus resources, establishing friendships, sufficient sleeping time, resisting the pressure to use drugs or alcohol).	Leary et al., 2020
Tinto (2006)	FYS promoting an anti-racist pedagogy and policy by decolonizing the curriculum and the classroom and eliminating historical and social perspectives that emphasize the systematic marginalization of certain social categories.	Ajayi et al., 2021

TABLE 6 Overview of the coding process according to the counseling dimension criterion targeted in FYS (not ranked).

Tinto's contribution	FYS key characteristics according to the <i>counseling</i> dimension	References
Tinto (2006)	FYS that emphasize mentoring opportunities provided by universities, incorporating elements of cultural diversity, including within STEM-focused majors.	Ajayi et al., 2021
Tinto (1993)	FYS combining a complex range of co-curricular support: academic counseling (information aimed at improving academic performance); peer group counseling, optimizing interactions between teachers and students; counseling provided through student associations, counseling to successfully manage non-academic contexts (campuses, fraternities, local community, etc.).	Lee et al., 2022
Tinto (2004)	Special training sessions for university counselors interacting with first-year students.	Alshuaybat, 2021
Tinto (1975, 1987, 1993, 2006, 2010)	FYS aimed at counseling students who passed the admission examinations with low average grades and were identified as having low motivation to study because they major in disciplines they are not interested in.	Calamet, 2020
Tinto (2009)	FYS based on intrusive counseling sessions that refer to the fact that the counselors' tasks are not based on the idea of waiting for students to ask for help, but on identifying and addressing them as early as possible.	Shaaban and Reda, 2022
Tinto (1975, 1993, 2017a).	FYS aimed at identifying intentions in the future behavior of students and at individualized counseling. Behavioral intentions are defined as representing mental states that anticipate a certain type of behavior, including the behavior specific to students' departure or dropout.	Nemtcan et al., 2020
Tinto (1987)	FYS aimed at counseling counselors of First-Generation College Students (FGS) who value the influence of music on identifying and managing emotions of anxiety and insecurity generated by the transition into a new educational environment.	Whittinghill et al., 2021
Tinto (1975)	FYS that approach counseling strategies for linguistic and cultural development	Andrade et al., 2020

social justice and inclusion of populations characterized by a culture of silence (Santana et al., 2022). There are also studies that focus on the interaction between factors related to the social and academic environment (Qvortrup and Lykkegaard, 2022) whereas some other authors target the interaction between the social and the personal factors—one such example is the PECS model (purpose, expectations, connections, support) proposed by Cooper (2021). Relevant data is presented in Table 7.

During the investigation of papers included in our systematic review we found that the studies we analyzed used a total of 23 articles authored and published by Vincent Tinto between 1975 and 2017 (Appendix 2).

Discussion

To advance understanding of how Vincent Tinto's theoretical contributions are used in integrating students in the higher education environment and in preventing student departure with the help of activities carried out during first-year seminars (FYS) we conducted a systematic review (Gough and Thomas, 2016) of 23 studies published between 2020 and December 2022. The main aim was to gain an understanding of the way in which certain dimensions of Tinto's theories (student personal and psychological characteristics; pedagogical and counseling; and social and relational) are approached in current research and to

TABLE 7 Overview of the coding process according to the social and relational dimension criterion targeted in FYS (not ranked).

Tinto's contribution	FYS key characteristics according to the <i>social and relational dimension</i>	References
Tinto (1987), Tinto and Goodsell (1993), Tinto et al. (1994), and Neuville et al. (2007)	FYS targeting the necessity of creating learning communities and first-year interest groups (FIGs)	Aulck et al., 2021; Santana et al., 2022
Tinto (1975, 1987, 1997, 2006, 2012a).	FYS considering the interaction of environment factors (social, academic and aspects of the teaching process)	Qvortrup and Lykkegaard, 2022
Tinto (1993)	FYS that use the PECS model of interaction between the social and the personal factors	Cooper, 2021
Longwell-Grice and Longwell-Grice (2007–2008)	FYS that familiarize under-represented and low socio-economic status students with short-term, part-time volunteering and employment on campus and in the local community.	Schulzetenberg et al., 2020
Tinto (1993, 2012b)	FYS conceived as a pre-academic programme aimed at emphasizing the diversity of students-students and students-teachers interactions.	Van Herpen et al., 2020

identify the specific elements that have an impact on the categories of students enrolled in FYS.

First of all, we clearly note that the literature on the topic capitalizes on Vincent Tinto's contributions in relation to a student corpus which is extremely diverse in terms of age, socio-economic status, racial and cultural characteristics, attended specialization (a significant number of studies are destined to students who attend STEM specializations), generational characteristics (the example of first-generation students). Therefore, the interventions aimed at facilitating the integration of first-year students are carefully tailored and customized according to the needs of these categories of beneficiaries. Furthermore, in relation to the students' characteristics analyzed in the studies we reviewed, we note that there are authors who argue that personalized interventions at the FYS level should benefit not only first-time students, but also those who have re-enrolled after a drop-out phase or those who have transferred to other specializations (Beasley et al., 2020).

Secondly, we noted that the three dimensions (personal, pedagogical and counseling, social and relational characteristics) proposed by Tinto to explain and enable the integration of students into the academic environment were analyzed and developed in all the studies that made the subject of our analysis. However, studies that emphasize the role of tailored counseling sessions in universities and campuses prevail. Of increased interest was to note the diversity of counseling sessions. Some authors distinguish between counseling sessions according to the place where these sessions are held (both the formal academic context and the non-formal context—student campuses or even the local community) (Schulzetenberg et al., 2020). Furthermore, there are authors who approach the counseling sessions in terms of their different contents (from sessions incorporating elements of cultural and linguistic diversity, to psychological counseling with a role in identifying the behavioral intentions that indicate the risk of drop-out, to counseling through music) (Andrade et al., 2020; Whittinghill et al., 2021). Other authors refer to the categories of people who initiate counseling (from counselors who receive specific training to interact with first-year students to counseling provided by students enrolled in student associations, fraternities, or alumni) (Alshuaybat, 2021; Lee et al., 2022). There are also authors who refer to the temporal dimension of counseling, distinguishing between initial counseling sessions

aimed at first-year students and intrusive sessions aimed at helping counselors identify first-year students in difficulty and address them as early as possible (Shaaban and Reda, 2022).

In terms of the pedagogical approaches suitable for FYS, the studies we analyzed revealed that the interventions pertain to issues such as: types of teaching methods, aspects related to the size of the student groups, classroom design, the manner in which interventions are adapted to the heterogeneity and homogeneity of the group, as well as students' awareness with regard to remedial activities provided by the university. As far as the pedagogical content is concerned, studies analyzing the importance of developing specific skills such as time management, formation of study habits and note-taking are predominant (Leary et al., 2020; Stephen and Rockinson-Szapkiw, 2021).

The social and relational dimension is analyzed by the authors of studies investigating the role of the diversity of interactions established by first-year students with faculty members, upper-year students, alumni and community members (Van Herpen et al., 2020; Aulck et al., 2021; Santana et al., 2022). Our findings highlight the affordances of peer-to-peer teaching and intergenerational approaches. The authors address issues related to the role of student engagement in learning communities both in academic contexts and on student campuses (Qvortrup and Lykkegaard, 2022). A series of studies argue that volunteer activities and even part-time community engagement for students with low socio-economic status remove the risk of dropping out in the first year of study (Schulzetenberg et al., 2020).

There are, however, certain limitations to our approach. The quality of the studies that we reviewed was not evaluated. Rather than being a critical review of the state of the research methodologies and results, the aim of our review was actually to describe and discuss the topics and approaches used in FYS that make use of Vincent Tinto's contributions. Although the number of studies is limited to 23, we consider that the results obtained are significant for the topic addressed due to the in-depth analysis that aimed at the full consultation of the articles, the identification of the answers to the research questions, and the theoretical contributions of Vincent Tinto embodied in the bibliographic references of the analyzed articles. Another limitation of the study is that we consulted only the Scopus database and consequently were unable to perform a comparative and critical

analysis of studies accessed through other databases. Yet another limitation is that in the ~2 months between the registration of the articles (December 2022) and the completion and submission of the text for review (February 2023) other contributions were published that were not included in this analysis. Furthermore, the final number of studies included in our analysis is quite limited. In this sense, it can be challenging to draw strong conclusions about the effectiveness of the topics and approaches used in FYS that make use of Vincent Tinto's contributions. Future research approaches might consider the need for additional studies to supplement the existing evidence base.

Conclusion

Interpreting Vincent Tinto's contributions in the light of current research, we are entitled to assert that they are intensively used and form the basis of numerous studies that particularize the role and nature of interventions provided by universities according to different types of beneficiaries; student personal and psychological characteristics; pedagogical and counseling; and social and relational.

Tinto's work has helped to shape our understanding of student retention and dropout in higher education, and his ideas have been widely adopted by educators and policy makers working to improve student success. There are a number of strategies that universities can use to help students feel more integrated, including: 1. Orientation and registration programs/FYS: These programs help students to become familiar with the campus and resources, and to meet other students and faculty (social and relational dimension); 2. Academic advising: Providing students with academic advising can help them to feel more connected to the institution and to develop a sense of purpose and direction in their studies (pedagogical and counseling dimension); 3. Social support: Providing students with access to social support, such as counseling services or peer mentorship programs, can help them to feel more connected to the institution and to build a sense of belonging (pedagogical and counseling dimension & social and relational dimension); 4. Involvement in academic and social activities: Encouraging students to get involved in academic and social activities on campus can help them to feel more connected to the institution and to build relationships with their peers (pedagogical and counseling dimension & social and relational dimension).

This literature review provided important and comprehensive information and can have practical implications for researchers, designers, and providers of services for freshman students through FYS in terms of aims, content, providers, recipients, and social and pedagogical approaches. Although, at the same time, Vincent Tinto's theoretical contributions may not account for the diversity of student experiences and backgrounds. Students from different socioeconomic, cultural, and ethnic backgrounds may face unique challenges that are not fully captured by the author. Tinto's theoretical contributions places too much emphasis on the student as individuality and his ability to integrate into the university environment, without fully considering the broader structural factors that may impact student success. For example, issues related to access to resources, institutional policies, and

societal inequalities may play a significant role in student success and retention. In conclusion, while Vincent Tinto's theoretical contributions have provided valuable insights into the factors that contribute to student success and retention, it has also been criticized for being too simplistic and failing to account for the complex and varied motivations that drive student behavior. It is important to consider a range of factors and perspectives when examining student retention and success in higher education. Though in need of further research, the practical implications of the current findings might be helpful in examining the factors underlying student retention and success in higher education also through the lenses of another variables, like the complex and varied motivations that drive student behavior.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

MES and TV designed the study and the theoretical framework and performed the systematic review and data analysis. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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