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Published

2021

Journal Title

International Journal of Educational Research

Version

Accepted Manuscript (AM)

DOI

[10.1016/j.ijer.2021.101793](https://doi.org/10.1016/j.ijer.2021.101793)

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Applying boundary management theory to university students: a scoping review

The aim of this scoping review was to map the existing literature to determine the extent to which boundary management approaches have been used to explain how university students manage the boundaries between their various roles. Using a systematic process, nine databases and grey literature were reviewed for potentially relevant studies. After applying the inclusion criteria, a total of 12 studies were identified. The results from these indicated that boundary management was related to important student outcomes such as well-being, academic performance, role overload, role conflict, and role balance. These findings provide universities and institutions with evidence that can assist them with understanding how students manage their multiple roles while at university. Areas for future research are highlighted.

Keywords: boundary management; scoping review; working students; role-conflict; border theory; role management

1. Introduction

Attending university is increasingly the norm for young adults in developed countries (OECD, 2012). More than 1.3 million students are enrolled at a university in Australia (Dept Education & Training, 2019) and between 16 and 19 million are enrolled in the USA and EU (NCES, 2019; UOE, 2018), with projections that these numbers will continue to increase (NCES, 2019). However, only 74% of initial enrolments in Australia reach graduation, with dropping-out being costly for the tertiary institutions involved (Hare, 2010; Ross, 2018). In the USA, only 41% of first-time university students complete their bachelor degree in the recommended timeframe for full-time study (NCES, 2017). In addition to the losses incurred by tertiary institutions, there are lifetime income losses for students who drop-out and costs to the community due to unrealised skill development and application (Schneider & Yin, 2011).

As a result, research has focused on examining why students find it difficult to complete their degree (Willcoxson, 2010), with researchers exploring a range of

contributing factors, including student resilience (Brewer et al., 2019), stress (Barry et al., 2018), feelings of alienation (Hernandez-Martinez, 2016), and level of support (Morosanu et al., 2010). An emerging factor is the role conflict that students experience due to juggling multiple responsibilities while at university (Choo et al., 2019). This has been exacerbated in recent years as more students are compelled or choose to work while studying to meet their financial commitments (Moreau & Leathwood, 2006). For many, this is the first time they have left home and been responsible for funding at least some of their living and academic cost (Morosanu et al., 2010). Thus, university students are faced with the challenge of managing the competing priorities of their various responsibilities, including work, study, and other life roles.

To understand how students navigate the pressures of juggling university life and other responsibilities, researchers have adopted frameworks from the work-family literature and applied them to this population. One notable framework is boundary management theory, which takes a sociological and identity-based perspective. This theory focuses on how individuals differentiate among their life roles, and proposes that different life roles are separated by physical, cognitive, and behavioural boundaries (Ashforth et al., 2000; Nippert-Eng, 1996). Individuals place boundaries around their different roles in accordance with how they view and value each role, with some individuals preferring strict boundaries between roles and others preferring more flexible and permeable boundaries. This theory has been used to explain the complexities associated with both work-family conflict (e.g., family impinging on work; Bulger et al., 2007; Greenhaus & Beutell, 1985) and enrichment (e.g., work activities enriching family life; Greenhaus & Powell, 2006; Paustian-Underdahl et al., 2016).

Although previous reviews have examined boundary management in working adults (Allen et al., 2014), to date, no review to our knowledge has been undertaken to examine the boundary management literature as it relates to university students. University students, similar to employees, need to manage different life roles and managing these roles can affect well-being (Choo et al., 2019), stress levels (Oviatt et

al., 2017), and academic success (McNall & Michel, 2017). Thus, this scoping review sought to describe how boundary management theory had been applied to university students by appraising the utilised boundary management definitions, identifying the measures and constructs that have been tested, examining the associated student outcomes, and highlighting areas for future research.

2. Method

Due to the evolving research on boundary management in university students and the diversity of approaches used to examine boundary management, a scoping review methodology was employed to identify and synthesise the potentially diverse body of knowledge in this area. Scoping reviews are used to provide an overview of key concepts, sources, and available evidence in a broad research area, while summarising key findings and identifying gaps in the existing literature (Arksey & O'Malley, 2005). Similar to systematic literature reviews, scoping reviews aim to be systematic, transparent, and replicable (Grant & Booth, 2009). To ensure the reliability and reproducibility of this scoping review, we followed the recommended 5-stage methodological framework outlined by Arksey and O'Malley (2005) and Levac et al. (2010). The five stages of the framework are:

1. Identifying the research questions
2. Identifying relevant studies
3. Selecting the literature
4. Charting the data, and
5. Summarising and reporting the findings.

2.1. Identifying the research question.

The initial step of the scoping review was to develop the broad aim of the study and identify the research questions to be addressed (Arksey & O'Malley, 2005). The

broad aim was to examine how boundary management has been applied to university students by addressing three research questions: (a) what boundary management definitions and concepts have been used with the university student population, (b) what boundary management constructs have been tested using university student samples, and (c) what are the outcomes associated with university students based on boundary management theory?

2.2. *Identifying the relevant studies.*

To answer the defined research questions, a scoping review needs to be as comprehensive as possible when identifying primary studies, both published and contained in the grey literature (Arksey & O'Malley, 2005). Therefore, a systematic and reproducible search strategy was designed by the four authors and an academic librarian to identify the relevant literature. The search query was tested initially and refined in the Scopus database, using keywords, their synonyms, and subject headings (where appropriate) for “university students” and “boundary management” (Table 1).

Table 1.
Summary of search query and keywords.

Search Query	Keywords
#1	Student* OR graduate* OR college OR university OR school
#2	boundary management OR boundary management theory OR border theory OR preference OR boundary transition* OR boundary strength OR boundary strategy* OR boundary tactic* OR boundary practice* OR boundary permeability OR boundary flexibility OR boundary congruence OR boundary placement
#3	#1 and #2

As border theory and boundary management theory are closely related, and many of the constructs employed are similar in nature (Allen et al., 2014), “border theory” also was included as a synonym. Due to boundary management spanning several disciplines, the search strategy examined nine databases that covered psychology and education: CINAHL, EMBASE, ERIC, Informat, MEDLINE, Proquest,

PsycINFO, Scopus, and Web of Science. The search was conducted in late 2019/early 2020, and the search queries were saved in the databases to ensure that the authors were alerted to additional literature published that met the search criteria. In addition, reference lists were searched and an Internet browser search (Google Scholar) was conducted to capture any grey literature and additional publications.

2.3. Selecting the literature.

The literature identified from the searches was imported into Endnote® and duplicates were removed. All literature was screened by title and then assessed against the inclusion criteria, which, stipulated that the literature theorised, discussed, or applied boundary management approaches to university students. As recommended by Arksey and O'Malley (2005), a wide range of literature was included in this scoping review, including quantitative, qualitative, and mixed-method studies, theses, editorials, and opinion pieces, written in any language. Literature on boundary management was excluded if it focused on other areas of a student's life, such as privacy issues (i.e., how students regulated their interpersonal privacy and information sharing). Last, the searches were not limited to any date range.

The first two authors trialled the inclusion criteria independently on the first 50 hits from the Scopus database. Each author identified the literature that should be included. Their results were then compared, and discrepancies were discussed. Difference of opinions were resolved, which contributed to refining the inclusion criteria.

The Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA; Moher et al., 2009) flow diagram was used to report the selection process (Figure 1). The search strategy yielded an initial 3,412 records. After removing the duplicates, the first two authors independently reviewed the titles, abstracts, and key

words against the inclusion criteria. This resulted in a total of 36 pieces of literature being identified. Of these, 23 were removed as their focus was on boundaries relating to constructs other than the management of different roles. A full-text review was then performed on the remaining 13 studies. In addition, the reference lists of these papers were reviewed, and an additional 17 possible studies were identified. After reviewing all 30 studies, 19 were excluded based on the inclusion criteria. The final list confirmed for inclusion consisted of 11 sources. However, one source was a dissertation, which included two studies on boundary management. Therefore, each study in the dissertation was deemed a separate study, which meant the total number of studies included in the scoping review was 12.

2.4. Charting the data.

To address the research questions, the first two authors independently extracted a broad range of information from the included literature and recorded this in Microsoft Excel® (v.16). Initially, three studies were charted, and discrepancies were discussed and resolved. Following this step, and as recommended by Arksey and O'Malley (2005), the data categories were formalised and additional studies were charted. Once the authors were confident that they were extracting the data consistently, they charted all remaining studies. The authors extracted the following information: bibliometric information (e.g., study title, year of publication, type of study), study details (e.g., research questions/aims, key recommendations, methodology), and data categories (e.g., definition of key concepts and associated terms, outcome measures, main results).

2.5. Summarising and reporting the findings.

The fifth stage of the framework required the extracted data to be summarised. After the data were charted in Excel®, the authors reviewed it to identify patterns and to

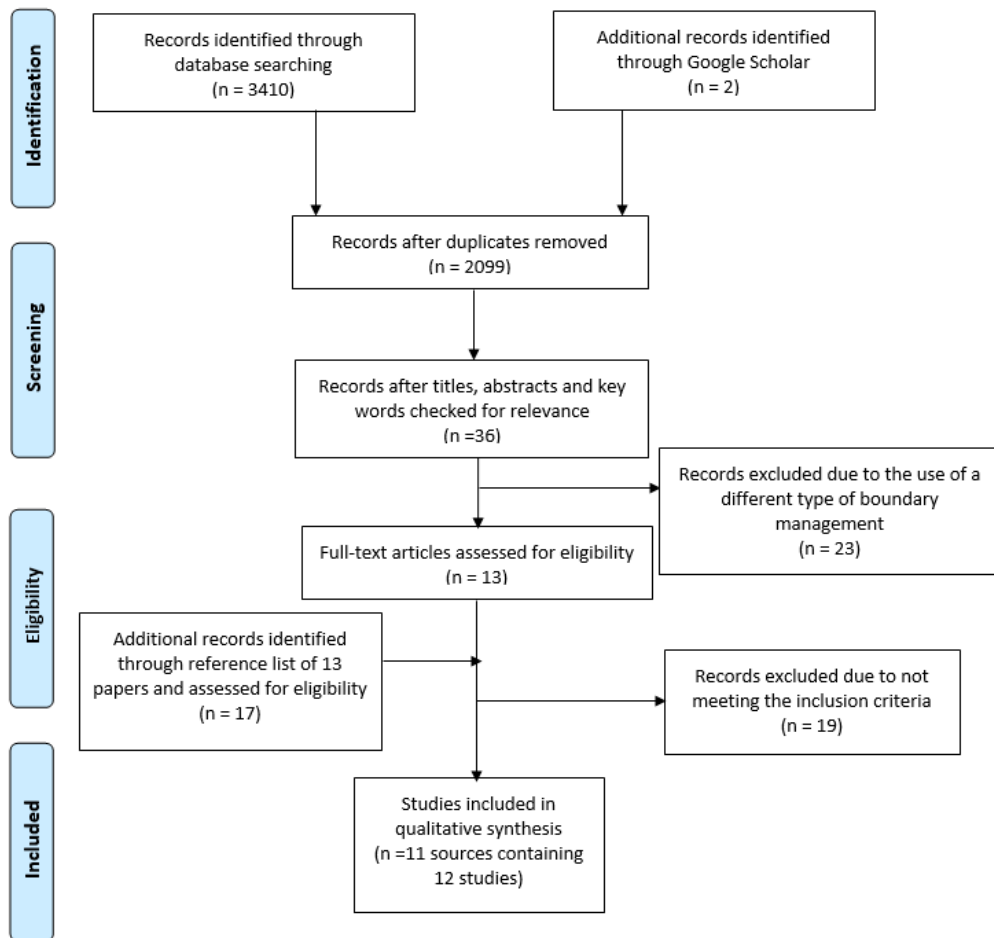


Figure 1. PRISMA flow diagram of study selection process.

determine the key findings. Specifically, the charted data were analysed to answer the research questions of the scoping review. Following the thematic analysis process outlined by Braun and Clarke (2006), the first two authors familiarised themselves with the data, specifically examining the definitions and areas of boundary management that were described and explored in each study. Next, based on their prior reading of the boundary management literature, they independently coded the first three articles to extract the various boundary management definitions, concepts, and associated outcomes. This process was completed in Microsoft Excel®, as it is a suitable software

for the organisation of data and for coding (Tay et al., 2020). Any differences in coding were discussed and consensus gained. Then the remaining data were coded.

Once the coding was completed the first two authors discussed and agreed on the themes that had emerged from the coding. The final themes were also reviewed by the other two authors, who have prior knowledge and expertise in the boundary management literature. In addition, the measures used in the quantitative studies were recorded based on their study of origin and psychometric properties. The principal author then prepared a summary of the findings that addressed each of the research questions. Once all authors had agreed on the summary of findings, they discussed the gaps in the literature and the areas for future research.

3. Results

3.1. Study characteristics.

The analysis for this scoping review was based on the results of 12 studies, which are summarised in Table 2. There were seven peer-reviewed journal articles and four unpublished dissertations/theses. One half of the studies (6) was based on USA samples. Other samples were drawn from Australia (2), the Netherlands (1), Ireland (1), and Brazil (1). Samples consisted of undergraduate students (5), postgraduate students (4), and both (3). A range of methodologies was used, including quantitative (7), qualitative (3), and mixed methods (2). The studies examined several different life roles, but most frequently focused on a combination of managing study, work, and/or other life roles.

3.2. Boundary management definitions, constructs, measures used.

Since boundary management theory has only recently been applied to the university student population, a necessary aim of this scoping review was to synthesis

Table 2.

Summary of studies.

Reference	Aims relevant to scoping review	Country	Method	Findings of Interest
Chu et al. (2019)	Tested antecedents and outcomes of work-study congruence.	AUS	Quantitative Survey	Work-study boundary congruence was related to family and job support, proactivity, academic performance, and perceived employability.
Rotch (2019)	Investigated the role of boundary segmentation.	USA	Quantitative Survey	Boundary segmentation of work related negatively to school-work conflict and positively to school-work enrichment.
Chu et al. (2018)	Developed and validated a Work-Study Congruence Scale.	AUS	Quantitative Survey	The new measure was a reliable and valid measure of work-study congruence.
van Steenbergen et al. (2018)	Examined which strategy (integration or segmentation) worked best for students.	NLD	Quantitative Survey + diary study	Separating school and home life roles (segmentation) was the optimal strategy for students.
Dunagan (2012)	Examined student strategies for managing work, home, and school roles.	USA	Quantitative Survey + open question	Both integrators and segmentors used behavioural, temporal, and physical tactics. Segmentors “set” stricter expectations of others and confronted violators more.
Dumas (2003) Study 1	Tested relationships among role identification, conflict, and boundary management, and assessed strategies.	USA	Quantitative Survey	Students should assess how personally meaningful their extracurricular activities are, and then find ways to either segment or integrate them to reduce role conflict.
Dumas (2003) Study 2	Examined effects of role identification and boundary management on conflict relative to task level.	USA	Quantitative Written essay	Relative identification and role boundary management had interactive effects on performance.
O'Mahony & Leske (2019)	Examined strategies of international students when interacting with their families.	IRL	Qualitative Interviews	Most tried to integrate the different demands, but strategy depended on workload, and thus did not display consistent segmentation or integration preferences.
Lim et al. (2017)	Investigated life boundaries of undergraduate students and the strategies they used to manage them.	USA	Qualitative Interviews	Boundaries were mostly flexible (high role integration), and systems might need to support more “segmenting” practices.
Eller et al. (2016)	Described tactics that non-traditional students use to manage their boundaries between work, home, and study.	BRA	Qualitative Interviews	Tactics were classified into Kreiner et al.'s (2009) four dimensions (behavioural, physical, communicative, temporal); students preferred to integrate their domains.
Hoover (2012)	Examined time demands of student athletes, the integration/ prioritisation of role demands, and strategies used.	USA	Mixed Interview, observations, website analysis	Student athletes integrated their roles but reevaluated daily how time was spent. Priorities shifted over their college career.
Winter et al. (2010)	Examined how student learning was affected by competing demands, such as work and study.	D/K	Mixed Survey, interviews	While students expressed a preference for strong conceptual boundaries between learning and non-learning activities, few were able to compartmentalise competing tasks for extended periods.

the current definitions, constructs, and measures that have been applied. This assists not only with the future development of the theory for university students but also provides clarity as to the areas within boundary management that have been examined.

Nippert-Eng's (1996) definition of boundary management and Ashforth et al.'s (2000) extension of this definition formed the theoretical basis for most of the studies (9). In Nippert-Eng and Ashforth et al.'s seminal works, boundary management was defined broadly as the creation, maintenance, and transitioning between different life roles. Nine studies were based on this conceptualisation, although some tailored their definition and approach to apply to the particular boundary management area of interest. Two studies used border theory in conjunction with boundary theory. Closely related to boundary management theory, border theory shares similar definitions and constructs. Hoover (2012) and O'Mahony and Leske (2019) differentiated the theories by stating that boundary management theory focused on the meaning and importance people assigned to their role, while border theory focused on the transitions between roles.

However, boundary management theory also encompasses the transitions that individuals make between roles (Ashforth et al., 2000), so distinguishing between the two theories in this way might have been a personal choice by authors. As suggested by Allen et al. (2014), border theory and boundary management theory are not distinct theories, but rather two articulations and extensions of the same basic underlying principles. The results identified by this scoping review support this notion, as all studies used a broad definition that encompassed both approaches, although each focused on, and applied, different aspects of the theories, such as the segmentation/integration continuum, boundary work, boundary permeability, and role identity.

3.2.1. Segmentation/Integration Continuum.

As summarised in Table 3, several studies focused on how students either

segmented or integrated their different life domains and examined the associated constructs, such as boundary preference, boundary strength, boundary enactment, and boundary congruence. Consistent with Nippert-Eng (1996) and Ashforth et al.'s (2000) approaches, the studies suggested that students both segmented and integrated their various roles.

Table 3.
Summary of boundary management measures

Study	Measure	Boundary Management Measures Referenced/Applied
Chu et al. (2019)	Scale	Work-study congruence (Chu et al., 2018)
Rotch (2019)	Adapted scale	Boundary strength (Hecht & Allen, 2009)
Chu et al. (2018)	Adapted scale	Boundary management preference (Kreiner, 2006) Work-study congruence (Kreiner et al., 2009)
Van Steenbergen et al. (2018)	Adapted scale	Segmentation/integration preference (Desrochers et al., 2005; Kreiner, 2006)
Dunagan (2012)	Adapted scale	Boundary segmentation preference (Ashforth et al., 2000; Greenhaus & Beutell, 1995; Kreiner et al., 2009; Schieman et al., 2009) Boundary integration preference (Ashforth et al., 2000; Kreiner et al., 2009) Boundary management tactics (Ashforth et al., 2000; Darrah, 2007; Kelliher & Anderson, 2010; Kreiner et al. (2009); Milliken & Dunn-Jensen, 2005; Polson, 2003; Rau & Hyland, 2002)
Dumas (2003) Study 1 and 2	Adapted Scale	Boundary management strategies (integration/segmentation) (Phillips et al., 2002)
O'Mahony & Leske (2019)	Interview	Segmentation/integration preferences (Derks et al., 2016; Kreiner et al., 2006)
Lim et al. (2017)	Interview	Boundary management strategies (Ashforth et al., 2000) Boundary permeability (Piszczek & Berg, 2014) Boundary flexibility (Piszczek & Berg, 2014)
Eller et al. (2016)	Interview	Boundary work tactics (Kreiner et al., 2009) Segmentation/Integration preference (Ashford et al., 2000; Nippert-Eng, 1996)
Hoover (2012)	Interview	Boundary integration (Ashford et al., 2000; Clark, 2000)

The integration of roles occurred when roles were blurred and there were no clear distinctions between or among them (Hoover, 2012; Lim et al., 2017), and segmentation occurred when roles were structured to be distinct and not to overlap, with activities and responsibilities of one role not allowed to encroach upon the other role (Rotch, 2016; Van Steenbergen et al., 2018). Where an individual falls on this continuum is based on their preferences, and thus, boundary preference was defined as an individual's preference for how much overlap was wanted between roles (O'Mahony

& Leske, 2019; Van Steenbergen et al., 2018). Four studies examined the segmentation or integration of roles as a preference (Chu et al., 2018; Dunagan, 2012; O'Mahony & Leske, 2019; Van Steenbergen et al., 2018) and measured this using adapted versions of various scales. The more widely used scale was the 4-item Segmentation Preferences Scale devised by Kreiner (2006). However, a limitation of this scale is that it assesses a preference for segmentation only and does not directly evaluate a preference for integration. In addition, since each study adapted the scale, there was a lack of consistency around the questions asked.

Rotch (2016) adopted a different approach by proposing that an individual's preference refers to the strength of their boundaries and measured this using the Boundary Strength Scale (Hecht & Allen, 2009). Additionally, Rotch defined boundary strength as segmentation and boundary weakness as integration. Therefore, although each study measured boundary preference, the variety of measures used made it difficult to compare the scales and ultimately the results of the studies. Thus, more research is needed to either develop student focused boundary preference scales or to confirm the validity and reliability of existing scales on that population.

Other studies in the review defined integration/segmentation as strategies rather than preferences and used Ashforth et al. (2000) and Phillips et al.'s (2002) work as a guide for their questions (Dumas, 2003; Lim et al., 2017). Previous research has suggested that although an individual will have a boundary preference, environmental or situational factors can hinder their ability to implement their preference (Kreiner et al., 2009). Thus, boundary enactment captures what individuals are able to do to organise and separate/integrate role demands and expectation (Van Steenbergen et al., 2018).

Chu et al. (2018) combined both preference and enactment constructs to

investigate boundary management congruence, which they defined as the desired outcome “when individuals are able to structure their boundaries to meet their own preferences and the preferences of people around them” (p.261). Chu et al.’s (2018) rationale behind measuring self-perceived congruence between work and study roles was that it was more useful to understand how well role boundaries matched preferences (i.e., how well preferences could be enacted within an environment), irrespective of the student’s level of preferred integration/segmentation. Although Chu et al.’s (2018) congruence scale was the only one developed for use with students, it is not yet widely used, which hinders the ability to confirm the outcomes.

3.2.2. *Boundary work and boundary permeability.*

Nippert-Eng (1996) first proposed the idea of boundary work and suggested it was through this that individuals organised and managed their life activities and conceptualisations of the self. The studies in this review operationalised boundary work as the actions or tactics taken to create, maintain, reduce, or change boundaries (Eller et al., 2016; O'Mahony & Leske, 2019; Winter et al., 2010). Eller et al. (2016) examined the tactics used by students, aligning their definition with that proposed by Kreiner et al. (2009), where tactics were viewed as the day-to-day activities that people used to negotiate the boundaries between different domains. Both Eller et al. (2016) and Dunagan (2012) based their questions on Kreiner et al.’s (2009) approach, while Lim et al. (2017) used Ashforth et al. (2000) to guide interview questions regarding boundary management strategies.

Eller et al. (2016) and Dunagan (2012) found students used similar types of tactics to those identified by Kreiner et al. (2009), namely, behavioural, temporal, physical, and communication tactics. However, both of these studies examined postgraduate students; thus, little is known about the tactics that undergraduate students

use, and whether these tactics align with the tactics outlined by Kreiner et al. Since a large number of university dropouts occur during the undergraduate phase of university (Hernandez-Martinez, 2016), it is critical to understand more about the tactics associated with this population of students.

Hoover (2012) and Winter et al. (2010) also investigated strategies used to manage roles, and devised their own questions independent of specific measures. Hoover (2012) focused on the time demands placed on elite athletes; whereas, Winter et al. (2010) differentiated between e-learning and non-learning activities while online. O'Mahony and Leske (2019), who examined strategies used by international students away from their family, also did not specify an approach. These authors focused on strategies that students might use to manage the permeability of boundaries. Lim et al. (2017) also explored boundary permeability, examining the influence of technology by using Hecht and Allen's (2009) measure of boundary segmentation as a reference for their interview questions. Lim et al. referred to boundary permeability as the extent to which individuals might be psychologically and/or behaviourally engaged in one domain while physically located in another (e.g., worrying about study while at work).

In summary, there was little consistency across the studies regarding the approach to the assessment of boundary work and the associated construct of boundary permeability, meaning that additional research is necessary to confirm these results. In addition, the majority of studies that assessed boundary work had small sample sizes and were qualitative in design, with the exception of Dunagan (2012). Dunagan (2012) created survey questions based on Kreiner's (2009) interview questions. Therefore, to add validity to the use of those questions, further studies need to be conducted.

3.2.3. Role identity.

Two studies examined factors that influenced a student's decision on how to

structure their roles (Dumas, 2003; Hoover, 2012). Similar to the work-family literature, many of the studies in this review assessed boundary preferences but did not explore the factors that led to their development. Role identity was assessed by Dumas (2003) and Hoover (2012) as a way to explain why students chose to structure their boundaries and roles in the way that they did. Using the theory of role and identity salience (Stryker & Serpe, 1994), both of these studies investigated the importance or obligation students attached to their various roles. They suggested that role value and identity determined how much students would integrate or segment their roles.

These two studies used different measures of role identity, with Dumas (2003) adapting a scale by Mussweiler et al. (2000), and Hoover (2012) using Clark (2000) and Jones and McEwen's (2000) scales to guide the interview questions. Although the results have limited generalisability due to the small sample sizes and differences in measures and research designs, they have shown identity to be related to boundary management. Their results also align with recent work-family literature that found that role salience is related to the development of boundaries in employees (Capitano et al., 2017; Cinamon, 2018). How a student's identity affects the boundaries around their roles is a promising area of research that could help explain why some students complete their degree and others do not.

3.3. Boundary management outcomes.

The studies in this review sought to understand how university students managed their different roles by examining different boundary management constructs and how those related to important outcomes, such as school performance (Van Steenbergen et al., 2018), role conflict (Dumas, 2003; Rotch, 2016; Van Steenbergen et al., 2018), role overload (Lim et al., 2017), role balance (Dunagan, 2012), and role enrichment (Rotch, 2016). The main relationship assessed was whether integrating or

segmenting roles enabled students to manage their life and roles more effectively.

Dunagan (2012) and Lim et al. (2017) reported that students had a tendency to integrate their roles, but that their roles were often blurred. According to Lim et al. (2017), this overlapping of roles resulted in the majority of students reporting role overload. Dunagan (2012) found that students who identified as segmentors were better at communicating boundary expectation to others and were more likely than integrators to confront violators. Thus, both studies suggested that students should be encouraged to strive towards segmenting their roles wherever possible. Similarly, Van Steenbergen et al. (2018) found that students who integrated their school and home life experienced more role conflict, and that those who preferred segmentation reported higher school performance than those who preferred integration. This led Van Steenbergen et al. (2018) to recommend also that students be encouraged to segment their roles. Consistent with these studies, Rotch (2016) reported that students who segmented their school and work roles experienced less school-work conflict and more school-work enrichment.

However, O'Mahony and Leske (2019) found that students varied as to how they integrated or segmented their roles depending on other events in their lives. Thus, segmentation or integration preferences might not be constant over time, but rather be a strategy that depends on the student's current situation. In addition, these authors found that setting priorities was a key strategy that enabled students to change their schedules to manage their various roles. Similarly, Hoover (2012), Dumas (2003), and Dunagan (2012) found that a student's role priorities influenced how they structured their boundaries. Eller et al. (2016) echoed these results by finding that students preferred their roles to be integrated, which meant they relied on behavioural, communicative, physical, and temporal boundary management tactics to effectively manage their work,

study, and home roles. Winter et al. (2010) also found that strategies were an important factor in students' ability to manage the boundary between their academic and social roles.

Thus, regardless of a student's preference for segmentation or integration, the evidence suggests that the ability to manage or structure roles effectively is largely beneficial, as this was found to be associated positively with academic performance (Chu et al., 2019), well-being (Chu et al., 2019; Hoover, 2012), role enrichment (Rotch, 2016), and role balance (Hoover, 2012), and associated negatively with role conflict (Dumas, 2003; Lim et al., 2017; Van Steenbergen et al., 2018). Nevertheless, while the studies in this scoping review reported that positive outcomes were associated with boundary management, more research is required to confirm these associations and expand the range of correlates being assessed.

4. Discussion

The aim of this scoping review was to examine how students managed their multiple roles by investigating how boundary management theory had been applied to university students. This scoping review identified and synthesised the results of 12 studies and found boundary management theory was a promising area of research that could assist in understanding how students manage their various roles while at university. Although, most studies used Nippert-Eng (1996) and Ashforth et al.'s (2000) definitions of boundary management as the theoretical foundation, several different conceptualisations were used. The studies examined different aspects of boundary management theory and defined the associated constructs in various ways. In addition, the research designs were not homogenous, and a variety of scales, as well as the adaptation of scales, were used in the studies. This lack of consistency in measures and methodologies made it difficult to compare and generalise the findings.

The aim of most studies was to understand how boundary management was related to student outcomes. Academic performance (Chu et al., 2019), role enrichment (Rotch, 2016), role overload (Lim et al., 2017), role conflict (Dumas, 2003; Lim et al., 2017; Van Steenbergen et al., 2018), role balance (Hoover, 2012), and well-being (Chu et al., 2019; Hoover, 2012) were all assessed as student outcomes and were found to be related to boundary management constructs. These student outcomes are important influences on a student's ability to thrive at university and ultimately complete their studies (Choo et al., 2019).

Consequently, this review concluded that additional research is necessary to expand the literature on boundary management theory in university students with the aim of assisting students during this important transitional phase of their lives. While the studies in this review examined several boundary management concepts, more research is required to add depth to the concepts, to assess which concepts are most relevant to student outcomes, and to understand the factors that influence a student to manage their roles in a particular way. Thus, this review recommends that to extend boundary management theory to university students and to help provide guidance to educational providers and students, future research needs to examine boundary management by using confirmed measures that are student focused, examine the strategies that students implement to manage their roles, and investigate how a student's identity influences their boundary decisions.

An important weakness evident in this cluster of studies is that they were all cross-sectional. Thus, it was not possible to make strong statements as to the causal direction of the relationships. For example, it might be that improved academic performance or better well-being leads to better boundary management, or that there are reciprocal relationships over time, rather than the causal directions assumed in the

studies cited in this review. Future research needs to be longitudinal in design and follow students throughout their years of study, ideally starting with their first year of study, to test the temporal precedence of these correlates. In addition, we discovered little about the boundary conditions (i.e., moderating variables) that might influence these relationships, or whether there are intervening variables (i.e., mediators) that might explain the relationships between boundary management and student outcomes, and these third variables need to be tested. For example, do young women manage their boundaries differently to young men, do non-traditional students organise their boundaries the same as traditional students, does boundary management lead to better academic outcomes by freeing up time to study or by fostering personal agency, or does support from either family or the university assist boundary management?

4.1. Consistency of measures with a student focus.

As with any emerging area of research, a wide range of constructs are examined and different measures are used at first, which can lead to lack of clarity regarding terminology and substantive distinctiveness (Yadav, 2018). This scoping review confirmed this to be the current state of the boundary management literature regarding university students, as there was a lack of consistency in measures and how constructs were operationalised. Consensus needs to be gained on the definitions and measures used in this area. For example, the main focus of many of the studies was on the implications of students segmenting or integrating their roles; yet different measures were used. Most used an adaptation of the 4-item Segmentation Preferences Scale (Kreiner, 2006), but used different adaptations, hindering comparisons of outcomes (Chu et al., 2018; Dunagan, 2012; O'Mahony & Leske, 2019; Van Steenbergen et al., 2018). More research is necessary to confirm a version of Kreiner's (2006) scale or to devise a scale specifically validated for use with university students.

Additionally, students typically are juggling more than two roles and measures are needed to capture these multiple roles. Students work, study, and manage leisure and personal relationships, and understanding the complexities generated from these is important to shed light on student success at university. Measures also need to be clear in differentiating between a student's preference for integration or segmentation and their actual enactment of those preferences. Allen et al. (2014) have called for measures that more precisely capture and distinguish the physical, behavioural, and psychological aspects of segmentation/integration. Providing consistency and adequate construct coverage in measures used to assess segmentation/integration will allow results to be compared, which will strengthen the body of evidence in this area.

4.2. Measuring what students actually do.

This review found that there was no consensus on whether the integration or segmentation of roles was more beneficial for students. Some studies concluded that students should segment their roles (Dunagan, 2012; Lim et al., 2017; Rotch, 2016; Van Steenberghe et al., 2018), while others found that students tended to integrate their roles (Eller et al., 2016; Hoover, 2012) and that the preference for integration or segmentation was not consistent over time (O'Mahony & Leske, 2019). Thus, managing roles might be more reliant on the context and the day-to-day tactics used to navigate the various roles (Dunagan, 2012; Eller et al., 2016).

Consistent with Allen et al. (2014), we also suggest that more research is required to identify the strategies that students use to manage the different aspects of their various roles, including which strategies are the more beneficial, by whom, and under what circumstances. Only two studies, Eller et al. (2016) and Dunagan (2012), assessed daily tactics, but their measures were based on tactics formulated in the work-family context and might not account for the approaches used by students. For example,

students often contend with multiple role transitions throughout the day (e.g., moving from work to university to home) and thus might use different tactics, such as practicing mindfulness or listening to music, to assist with the psychological detachment from one role and mental preparation to move into their next role. Also, due to students managing multiple roles throughout the day, they might use additional time management tactics, such as a daily or monthly planner/calendar to organise their schedule to meet deadlines of each role, and to align with their boundary preferences. In addition, it is important to understand if there are differences in the strategies used by different groups of students, such as different year levels, gender, and ability. This would assist universities to be better equipped to support students through this transitional phase of life.

Future studies need also examine the strategies that students use to manage boundary violations or interruptions, as these tend to be sporadic in nature and might be harder to predict and deal with. Identifying key strategies here could inform interventions as to how to manage them more effectively and could assist with reducing conflict between roles. Recently, Amez and Baert (2020), using a literature review methodology, identified a negative association between smartphone use and academic performance in tertiary students, and Lim et al. (2017) and Winter et al. (2010) found that students struggled with boundary interruptions from technology and required strategies to negate them. Due to the current COVID-19 pandemic, there have been major changes to the delivery of higher education with more courses being moved to online or blended learning mode. Thus, with more students studying online, it will be important to understand the strategies that assist them to manage these distractions.

4.3. How student identity relates to boundary management.

Another area for future research is understanding how identity relates to the way that students structure their roles and influences their daily strategies. In the work-

family literature, Capitano et al. (2017) found that role salience influenced how employees structure their life roles, and Cinamon (2010) found that role salience was related to work-family conflict in young adults. Two studies in this scoping review focused on role identity (Dumas, 2003; Hoover, 2012), finding that role identity interacted with boundary management to affect students' role conflict. Dumas (2003) found that unequal role identification can affect students' performance and, adding complexity, Hoover (2012) found that students' identity changed while at university.

Further research is required to examine the wider implications of identity on boundary management. Students will hold multiple identities, and how they view themselves potentially will influence where they place their time and energy. For example, some students view themselves as "students-who-work", while others classify themselves as "employees-who-study", and these differences in identification could influence how they structure their roles and the implementation of boundaries. By understanding how a student's identity influences their development and progress at university, educators will be better equipped to assist them with this phase of identity development. Madjar and Cohen-Malayev (2013) found that practices, such as discussing future plans and engaging in thinking about self-identity, promoted identity exploration and formation processes in students. Unlike employees, students are in a transitional phase of their life as they are working towards gaining a degree for a future reward (e.g., a career in their chosen field) and meeting personal goals (e.g., finding a partner). Future research could investigate how student future self-identity influences their boundary management decisions and what sense of identity assists students to complete their studies.

4.4. Strengths and limitations.

This scoping review provided evidence that boundary management theory is a relevant framework for understanding how students manage their competing roles while at university and confirmed that future research in this area is warranted. While the authors used a systematic and comprehensive search strategy (Arksey & O'Malley, 2005) that covered nine databases, it is possible that relevant studies were missed. In addition, we did not assess the methodological quality of the studies included in this review (cf. Daudt et al., 2013), as the samples were small, and all used either cross-sectional survey or interview based designs. Quality assessment does not form part of the standard scoping study remit (Arksey & O'Malley, 2005), but future reviews, if they contain more studies, would benefit from this.

5. Conclusion

The main outcome of this scoping review was to confirm that boundary management is related to important student outcomes, such as academic performance and well-being, which relate to a student's ability to complete their degree and thrive at university (Choo et al., 2019). Thus, while confirming that boundary management in students warrants further research, more work is needed to advance our understanding in this area. Concept and theory development related to student boundaries needs to continue, and new or existing scales need to be validated for research in this area to progress. By understanding how students manage their role boundaries, universities and education providers will be better equipped to assist them.

Disclosure statement

There are no potential conflicts of interest

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