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Transformational leadership in higher education lecturing

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Transformational Leadership in Higher Education Lecturing



Lauren Mawn

**Thesis submitted to Bangor University in fulfilment of the
requirements for the degree of Doctor of Philosophy at the School of
Sport, Health and Exercise Sciences, Bangor University**

2012

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Projects undertaken during the PhD

Research Accomplishments

Full papers

- Bell, J., Mawn, L., Poynor, R., (in review) Haste makes waste, but not for all: The speed-accuracy trade-off does not apply to neurotics. Submitted to *Journal of Sport and Exercise Psychology*. Impact factor 2.8
- Law, R.J., Breslin, A., Oliver, E.J., Mawn, L. Markland, D. A., Maddsion, P., & Thom, J. (2010). Patient perceptions of the effects of exercise on joint health in rheumatoid arthritis. *Rheumatology*, 49, 2444-2451. doi: 10.1093/rheumatology/keq299. Impact Factor 4.17. Cited by 7

Published abstracts

- Mawn, L., Callow, N., Hardy, J., Arthur, C.A. (2012). Transformational Leadership in Higher Education: Developing a measure. *International Journal of Psychology*, 47 (Suppl 1), 698-743. doi:10.1080/00207594.2012.709103
- Mawn, L., Arthur, C.A., Roberts, S. (2012). Transformational leadership and exercise attendance: the mediating role of basic psychological needs. *International Journal of Psychology*, 47(Suppl 1), 366-370. doi:10.1080/00207594.2012.709103
- Law, R.J., Breslin, A., Oliver, E.J., Mawn, L. Markland, D. A., Maddsion, P., & Thom, J. (2010) 'Exercise and Rheumatoid Arthritis; What's in it for us?'. *British Society of Rheumatology Annual conference, Rheumatology*, vol. 49 (Suppl 1): i139-i143. doi: 10.1093/rheumatology/keq731.

Other Publications

- Loughhead, T.M., Mawn, L., Hardy, J.T., & Chandler, K. (in press) Athlete Leadership. In A.G. Papaioannou & D. Hackfort (eds.) *Fundamental Concepts in Sport and Exercise Psychology*. Taylor & Francis.
- Woodman, T., Mawn, L., & Martin, C. (in press). Models of emotion-performance in Sport. In R.Eklund & G. Tenenbaum (eds.) *Encyclopaedia of Sport and Exercise Psychology*. SAGE
- Mawn, L. (2012). Qualifications in Sport and Exercise Psychology: Reflections on the BPS qualification information day. *Sport and Exercise Psychology Review*, 8(1), 64-65.

- Mawn, L., Callow, N., Hardy, J.T., & Arthur, C.A. (2011) Development and assessment of a transformational leadership inventory in higher education: Project Report. Higher Education Academy Network for Hospitality, Leisure, Sport and Tourism Pedagogic Research and Development Fund.

Invited Presentations

- Mawn, L. (2012) Leadership for enhancing volunteer motivation: A supervisors workshop. Childline Cymru, Wales
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Conference Presentations

Oral Lectures/Symposia

- Mawn, L., Callow, N., Hardy, J., Arthur, C.A. (2012). Transformational Leadership in Higher Education: Developing a measure. Presented at the 30TH International Congress of Psychology Conference: Cape Town, South Africa.
- Mawn, L., Arthur, C.A., Roberts, S. (2012). Transformational leadership and exercise attendance: the mediating role of basic psychological needs. Presented at the 30TH International Congress of Psychology Conference: Cape Town, South Africa.
- Mawn, L., Hardy, J.T., Callow, N., Arthur, C.A. (2011). Transformational leadership in higher education lecturing: A qualitative analysis. Presented at the Annual PSYPAG Conference: Bangor, UK

Poster Presentations

- Mawn, L. (2011). Transformational Leadership in Higher Education: Measurement development and psychometric testing. Emerging Scholars of International Leadership Association Annual Conference: London, U.K.
- Law, R., Breslin, A., Oliver, E.J., Mawn, L., Markland, D., Maddison, P., & Thom, J. (2010). Exercise and rheumatoid arthritis: What’s in it for us? Poster presented at the American College of Sport and Medicine Conference, Baltimore, Maryland.
- Mawn, L, Callow, N., Marcora, S. (2009). The effects of reward on autonomously regulated behaviour in endurance performance and RPE. Presented at the Association of Applied Sport Psychology Conference: Salt Lake City, Utah.

MSc Research Supervision

- Rodriguez, D., Hardy, J., & Mawn, L. (2012). The negative impact of high group cohesion: A vignette study. To be submitted as part of MSc requirements SSHES Department, Bangor University.
- McLaughlin, E., Arthur, C.A. , & Mawn, L. (2012). Parenting styles, attachment types, trust and transformational leadership: A mediated moderation analysis. To be submitted as part of MSc requirements SSHES Department, Bangor University.
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2011/2012	JXH4003: Research Methods (Qualitative). MSc postgraduate	4.3
2011/2012	Academic Leader	
2011/2012	Personal Tutor	
2010/2011	JXH3025: Group Dynamics 3 rd year undergraduate (Module Leader/Coordinator)	4.3
2010/2011	JXH4008 Supervised Experience. MSc postgraduate	
2010/2011	JXH2021: Professional Development. Presentation skills for 2 nd and 3 rd year undergraduate	
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2009-2011	Peer Reviewer	Journal of Applied Sport Psychology
2009-2011	PhD Representative	SSHES, Bangor, Wales

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Grant Capture

2010-2011	Higher Education Academy Grant: Callow, N., Mawn, L., Hardy, J., & Arthur, C. A. Development and assessment of a transformational leadership inventory in higher education. Hospitality, Leisure, Sport and Tourism Pedagogic Research and Development Fund (2010 - 2011) £2972.00
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Voluntary and Applied Work

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2010-2012	Sport Psychology Support	Private Consultancy
2011	Coach and Motivation Educational Workshop	British Gymnastics
2011	High Performance Coach Education Workshop	British Gymnastics
2010	Sport Psychology Educational Workshop	West Cheshire and England Athletics
2009-2010	Sport Psychology Educational Workshop	GB Telemark Ski Team

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2011	Mentoring for developing counsellors	Childline Cymru/Wales: UK
2011	Difficult presentations in counselling	Childline Cymru/Wales: UK
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	Looked After Children workshop	Childline Cymru/Wales: UK
2010	Latent Variable Modelling: An introduction to CFA and SEM	Dr David Markland, Bangor: UK

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Thesis Abstract

This thesis applied transformational leadership to the context of higher education, with a focus on lecturing behaviours and student outcomes such as psychological need satisfaction, internalisation, effort, engagement, efficacy, satisfaction and performance.

Chapter 1 reviewed the literature on transformational leadership and education and centered on the conceptualisation and measurement of transformational leadership, the theoretical approaches to transformational leadership (i.e., global versus differentiated approaches to leadership behaviours), and the contextual nature of leadership, with specific reference to higher education. Taken together, the literature reveals that little is known about what constitutes transformational leadership in higher education lecturing and how to measure transformational leadership in this context. Moreover, it remains unclear whether developing lecturers' transformational leadership can positively impact on lecturing and student outcomes.

Chapter 2 detailed a two-phase examination of student and lecturer perceptions of lecturing behaviours in higher education. In Phase 1, a purposive sample of 29 students participated in focus groups examining their perceptions of transformational higher education lecturing. In Phase 2, semi-structured interviews were conducted with 6 lecturers nominated by students in Phase 1 as being 'transformational'. Results indicated that six behaviours from the differentiated model of transformational leadership (Hardy et al., 2010) can be employed to conceptualise lecturing behaviours (i.e., inspirational motivation, individual consideration, intellectual stimulation, high

performance expectations, appropriate role modelling, and contingent reward). The behaviour of fostering acceptance of group goals did not emerge as a contextually relevant transformational behaviour. Furthermore, ‘sense of humour’ and ‘self-belief’ emerged as contextually relevant behaviours that have not been previously conceptualised as transformational leadership behaviours in the literature.

Chapter 3 described three studies detailing the development and validation of a differentiated transformational leadership inventory for higher education (DTLI-E). Developing questionnaire items from the qualitative results in Chapter 2, Study 1 (n=349) used confirmatory factor analysis to assess the structure of the inventory, resulting in a 30-item, eight factor model. In Study 2, with a different sample, (n=241) the factor structure of the inventory was re-confirmed. Finally, Study 3 employed a longitudinal design with the participants from Study 1 and examined the concurrent and predictive validity of the inventory. Results revealed that the eight factors were correlated with established measures of learning climate and transformational teaching. In addition, the leadership behaviours predicted psychological need satisfaction, behavioural regulation, student engagement, leader inspired extra effort, academic efficacy, student satisfaction, and academic performance.

In Chapter 4, an experimental design was employed to examine the effectiveness of a transformational leadership intervention. A total of 5 lecturers and 127 students participated in this study. A mixed method approach combining qualitative and quantitative methods was employed to evaluate the intervention. After controlling for baseline variables, students of lecturers in the intervention group rated their lecturers as displaying significantly higher levels of transformational leadership than the control

group. In addition, students of lecturers in the intervention group reported significantly greater levels of psychological need satisfaction, intrinsic motivation, academic engagement, academic efficacy and student satisfaction than the control group.

Chapter 5 discusses the findings emanating from this thesis, the strengths and limitations of the thesis and provides suggestions for future research.

Chapter 1

General Introduction

Introduction

Leadership is a universal phenomenon in humans (Bass, 1985) and has been of interest to a great number of scholars for decades, with researchers proposing that effective leadership is pivotal for the functioning and success of organizations and society as a whole (e.g., Antonakis, Cianciolo, & Sternberg, 2004). While multiple definitions of leadership exist, for the purpose of this thesis leadership is conceived in line with Barrow's definition, that is "*the behavioural process of influencing individuals and groups towards set goals*" (1977p.232).

Although thousands of empirical investigations related to leadership have been conducted, no clear and unequivocal understanding exists as to what distinguishes leaders from non-leaders and effective leaders from ineffective leaders (Vroom & Jago, 1982). Having said this, multiple interpretations of leadership phenomena do exist; as such leadership has been studied from a number of perspectives (e.g., trait approaches, behavioural approaches, contingency approaches) with each providing some insight to the function of leadership, but each remaining insufficient as complete explanation of the complexity of leadership. Indeed, within politics, business, education, sport, and organisational psychology there exists a myriad of models and theories of effective leadership and a considerable amount of research on leadership and its effects. Each model and theory has emerged as a response to a unique set of organisational and sometimes broader social issues (cf., Leithwood & Duke, 1999). However, one theory of leadership that has been shown to offer potential as a framework for effective leadership across contexts is that of transformational leadership (Bass, 1985).

The origins of transformational leadership have widely been attributed to Burns (1978) who built on the work of theorists such as Weber (1947), Berlew (1974), and House (1977), combined with case studies of highly regarded public leaders (e.g., John F. Kennedy). Burns, focusing on the emotional component of leadership, argued that leadership is a dynamic relationship that, at its best, finds leaders engaged in a process of raising the consciousness of followers or at a minimum, engages both leaders and followers in a common enterprise. According to Burns exceptional leaders do not base their influence on exchange relationships such as that of transactional leaders, whereby influence is achieved through the manipulation of extrinsic rewards and punishment. Instead, exceptional leaders appeal emotionally to the personal goals and values of followers working to elevate and transform those goals and values in the collective interest. As such Burns formulated the concept of transformational leadership, which he suggests occurs when one or more persons engage with each other in such a way that “leaders and followers raise one another to higher levels of motivation and morality” (p.20).

Bernard Bass, attracted by the transformational approach, began developing a theory of transformational leadership and conducted a series of empirical studies exploring its nature and effects, which were eventually published in ‘Leadership and Performance Beyond Expectations’ (Bass, 1985). Bass described transformational leadership in terms of how the leader affects followers, who are intended to trust, admire and respect the leader. According to Bass transformational leaders influence followers by: increasing their awareness of task importance and value; focusing followers on team or organizational goals rather than their own interests, and; activating higher order

needs. This influence accumulates in increased effort, satisfaction, and performance beyond expectations by the followers.. Using a variety of methods (e.g., factor analyses, observations, interviews, and descriptions of a follower's ideal leader), Bass and colleagues sought to identify the components of transformational leadership (Bass & Avolio, 1995). Their theorizing and empirical work identified four distinct components of transformational leadership consisting of: idealized influence; inspirational motivation; intellectual stimulation, and; individualized consideration, which they referred to as a higher order construct of transformational leadership.

Other leadership researchers in a variety of contexts quickly adopted what Bryman (1992) called this new approach to leadership, and began to empirically explore it's nature (Yammarino et al., 1993), causes (e.g., Druskat, 1994) and consequences (e.g., Kahai, Sosik, & Avolio, 2003). Indeed, research examining transformational leadership has been conducted in a variety of contexts for example, the military (Bass, Avolio, Jung, & Berson, 2003; Dvir, Eden, Avolio, & Shamir, 2002; Hardy, Arthur, Jones, Munnock, Isaacs, & Allsopp, 2010), sport (Callow, Smith, Hardy, Arthur, & Hardy, 2009; Charbonneau, Barling, & Kelloway, 2001;), business (Barling, Weber, & Kelloway, 1996; Howell & Avolio, 1993; Jung, Chow, & Wu, 2003; Podsakoff, Mackenzie, Moorman & Fetter, 1990), public sector (Rafferty & Griffin, 2004), and education (Beauchamp, Barling, Li, Morton, Keith, & Zumbo, 2010; Beauchamp, Barling & Morton, 2011; Koh, Steers, & Terborg, 1995; Mourton, Keith, & Beauchamp, 2010).

Transformational leadership theory now assumes a central position in how theorists and researchers frame successful leadership and research examining

transformational leadership continues to grow. However, there has been little consensus among researchers regarding what constitutes the specific behaviours of a transformational leader and how these behaviours are conceptualised and measured, and transformational leadership has rarely been examined in higher education.

Consequently, this chapter aims to develop an understanding of previous research on:

(a) conceptualisation and measurement; (b) differentiation and globalisation; (c) the influence of context and higher education as a context. This understanding will provide a foundation for the thesis. The subsequent chapters will address further areas in transformational leadership that need elucidating. Broadly, the empirical chapters will: examine the perception of transformational leadership in the context of higher education; develop a contextually relevant measure of transformational leadership; explore the relationship between contextually relevant differentiated transformational leadership behaviours and follower outcomes; examine the modifiable nature of transformational leadership behaviours; and examine the impact of modifying leadership behaviours on follower outcomes.

Conceptualisation and measurement

Multifactor Leadership Questionnaire

The most widely used measure of transformational leadership is the Multifactor Leadership Questionnaire (MLQ) and its variants (e.g., Bass & Avolio, 1995; 2000; Avolio, Bass, & Jung, 1995). The first version of the MLQ (Bass, 1985) measures three behaviours: *charismatic leadership*, leadership that instils pride, faith, and respect, shows a special gift for seeing what is really important, and shows a sense of mission; *intellectual stimulation*, leadership that provide ideas which result in a rethinking of

issues that had never been questioned before and that enables subordinates to think about old problems in new ways; and *individualized consideration*, leadership that delegates assignments to provide learning opportunities, gives personal attention to neglected members, and treats each subordinate as an individual. In response to criticisms of the MLQ, Bass and his colleagues further developed the measure resulting in the MLQ-5X (Bass & Avolio, 1995; 2000). The transformational leader behaviours included in the refined version (Bass & Avolio, 1995) are: *inspirational motivation*, refers to the ways in which the leader energises his/her followers by viewing the future with optimism, stressing ambitious goals, projecting an idealized vision, and communicating to followers that the vision is achievable; *idealized influence (attributed)*, refers to the socialised charisma of the leader, whether the leader is perceived as being confident and powerful, and whether the leader is focussed on higher order ideals and ethics; *idealized influence*, refers to charismatic actions of the leader that are centred on values, beliefs, and a sense of mission; *individualized consideration*, focuses on understanding the needs of each follower and works continuously to get them to develop to their full potential; and *intellectual stimulation*, gets followers to question the tried and tested ways of solving problems, encourages them to question the methods they use to improve upon them. The MLQ also includes transactional behaviours: *contingent reward*, the degree to which a leader provides reinforcement in return for appropriate follower behaviour; *passive management by exception*, the leader waits for deviances and errors to occur and then takes corrective action; and *active management by exception*, the extent to which subordinates hear from the leader only when failures

occur, the leader arranges to actively monitor deviances from standards mistakes, errors, and in follower's assignments and takes corrective action.

The MLQ and its variants have been criticised for a number of reasons such as issues pertaining to its validity and scale ambiguity, the conceptualisation of the behaviours included, and omitting important transformational leader behaviours from being assessed. Regarding the first of these issues, Bryman (1992) and Yukl (1999) have identified ambiguity concerning the differentiation of the transformational leadership behaviours, demonstrated by a lack of support for the hypothesised factor structure of the transformational leadership model and for discriminant validity of the components of the model with each other (e.g. Avolio, Bass, & Jung, 1999; Bycio, Hackett, & Allen, 1995; Carless, 1998). The partially overlapping content and the high inter-factor correlations found among the transformational behaviours raise doubts about their discriminant and convergent validity. Indeed Bono and Anderson (2005) supported this claim, purporting that the correlations between the separate behaviours were very high leading them to collapse the separate behaviours into one higher order factor representing transformational leadership. As a result, authors have argued that the higher-order factors of transformational leadership and transactional leadership should be examined rather than the individual components of the model. This specific aspect is discussed in more detail later in this chapter in relation to global versus differential conceptualisations.

The second issue relevant to the scale relates to the conceptualisation of certain behaviours. For instance, the subscale of *individualised consideration* includes both supporting and developing which are distinct behaviours with different effects on

subordinates (Bradford & Cohen, 1984; Kim & Yukl, 1996; Yukl & Nemeroff, 1978; Yukl, Wall, & Lepsinger, 1990; Yukl, 1999). *Intellectual stimulation* which is defined as causing a subordinate to question traditional beliefs, to look at a problem in a different way, and to find innovative solutions for problems contains diverse and ambiguous content, with no clear description of what the leader actually says or does to influence the cognitive processes or behaviour of subordinates (Yulk, 1999). Another criticism is that some parts of intellectual stimulation appear to overlap with aspects of individualised consideration and inspirational motivation (Yukl, 1999). For example, the intellectual stimulation item '*seeks differing perspectives when solving problems*' is similar to the individual consideration item of '*treats me as an individual rather than just as a member of a group*'. From a conceptual basis, Bass and Avolio (1995) suggests that inspirational motivation contains '*communication of high expectations to followers*'; however, this is not explicitly measured in the MLQ5-X. For example, in the MLQ5-X items for inspirational motivation are: (a) talks optimistically about the future; (b) talks enthusiastically about what needs to be accomplished; (c) articulates a compelling vision of the future; and (d) expresses confidence that goals will be achieved. Consequently, whilst Bass and colleagues conceptualise high expectations as being a critical component of transformational leadership, it is not measured in the MLQ.

Finally, researchers (e.g., Yukl, 1999) have also suggested that certain aspects theorised as being part of transformational leadership are not measured by any of the subscales. For example, the core leadership behaviours should include inspiring (infusing the work with meaning), developing (enhancing follower skills and self

confidence), and empowering (providing a significant voice and discretion to followers); however, these aspects of transformational leadership are not assessed in the measure. In an attempt to rectify the outlined criticisms associated with the MLQ other authors have designed different transformational leadership measures. Outlined below is an overview of these measures, namely; the Transformational Leadership Inventory (Podsakoff, et al., 1990), the Transformational Leadership Questionnaire (Alimo-Metcalfe & Alban-Metcalfe, 2001), the Transformational Leadership Scale (Rafferty & Griffin, 2004), the Differentiated Transformational Leadership Inventory (Hardy et al., 2010), and the Transformational Teaching Questionnaire (Beauchamp et al., 2010).

Transformational Leadership Inventory

The Transformational Leadership Inventory (TLI:Podsakoff, et al., 1990) was developed to try and alleviate both the validity (Bycio et al., 1995; Carless, 1998; Tepper & Percy, 1994; Tjeda, Scandura, & Pillai, 2001) and conceptual problems (c.f. House & Podsakoff, 1994; Podsakoff et al., 1990; Yukl, 1998) associated with the MLQ. Transformational leader behaviours included in the TLI are: *identifying and articulating a vision*, behaviour on the part of the leader aimed at identifying new opportunities for his or her unit / division / company, and developing, articulating, and inspiring others with his or her vision of the future; *provides an appropriate role model*, behaviour on the part of the leader that sets an example for employees to follow that is consistent with the values espoused by the leader; *high performance expectations*, behaviour that demonstrates the leaders' expectations for excellence, quality, and / or high performance on the part of the follower; *fostering acceptance of group goals*, behaviour on the part of the leader aimed at promoting cooperation among employees and getting them to work together for the same goal; *intellectual stimulation*, behaviour

on the part of the that leader challenges followers to re-examine some of their assumptions about their work and rethink how it can be performed; and *providing individualized support*, behaviour on the part of the leader that indicates that he / she respects followers and is concerned about their personal feelings and needs. The TLI also included the transactional behaviour of *contingent reward*, behaviour on the part of the leader that praises followers for appropriate follower behaviour.

The TLI has received relatively little attention in the research literature. One criticism of the TLI is that despite all the behaviours in the inventory demonstrating adequate discriminant validity, with the correlations between factors high but significantly less than one, Podsakoff et al. (1990) combined three of the scales (articulating a vision, providing an appropriate role model and fostering acceptance of group goals) to make what they termed a “core” transformational scale. As such Rafferty and Griffin (2004) have suggested that Podsakoff et al.’s model development lacked a theoretically driven approach for evaluating the distinct behaviours of transformational leadership.

Other criticisms levied at the TLI pertain to specific conceptualisations of the constructs. Hardy et al. (2010) suggested that the vision construct was influenced by contextual relevancies in that it assumes that the leader can alter the content of the vision from an organizational perspective, which may not be implicit within a leader’s role in certain organizations and contexts.

Moreover, the individual support behaviour relating to the leader demonstrating consideration of the individual needs and feelings of followers is also narrowly defined in the TLI. While the behaviour captures an important aspect of transformational

leadership it misses the component of subordinate development. Bass' (1985) conceptualisation of individualized consideration posits that it includes leader behaviours that relate to follower development, however this development component has not been included in the TLI. While Yukl (1999) has criticised Bass' conceptualisation, which contained both support and development, it could be argued that in certain contexts both of these are relevant dimensions to capture as part of transformational leadership. Despite these criticisms of the TLI, Posdaskoff et al.'s (1990) conceptualisation and theorising have influenced many of the more recent conceptualisations of transformational leadership, in particular those that adopt and advocate a differentiated approach to transformational leadership measurement.

Transformational Leadership Questionnaire

Using a grounded theory approach, the transformational leadership questionnaire (TLQ) was developed by Alimo-Metcalfe and Alban-Metcalfe (2001), to address concerns pertaining to the generalisability of a US model of transformational leadership to UK organisations. Furthermore, following criticisms that previous measures of leadership failed to distinguish between nearby (i.e., immediate manager/supervisor) and distant (i.e., managers/supervisors at top level) leadership, Alimo-Metcalfe and Alban-Metcalfe designed the TLQ to assess the transformational leadership of nearby leaders. The TLQ assessed nine factors: *genuine concern for others*, where a leader takes genuine interest in followers as individuals and develops their strengths; *political sensitivity and skills*, behaviour by the leader demonstrating they are sensitive to the political pressures that elected members face, understanding of the political dynamics of the leading group, and can work with elected members to achieve results; *decisiveness*,

determination and self confidence, refers to leaders who are decisive when required, prepared to take difficult decisions, self-confident, and resilient to set backs; *integrity, trustworthy, honest and open*, refers to when leaders make it easy for followers to admit to mistakes, are trustworthy, and take decisions based on morale and ethical principles; *empowers, and develops potential*, refers to behaviour where the leaders trust followers to take decision/ initiatives on important issues, delegates effectively, and enables followers to use their potential; *inspirational networker and promoter*, refers to when a leader has a wide network of links to external environment, effectively promotes the work/achievements of the department/organization to the outside world, and is able to communicate effectively the vision of the authority/department to the public community; *accessible/ approachable*, is when the leader is accessible to staff at all levels, and keeps in touch using face-to-face communication; *clarifies boundaries, and involves others in decisions*, refers to when the leader defines boundaries of responsibility, involves staff when making decisions, and keeps people informed of what is going on; *encourages critical and strategic thinking*, refers to behaviour by the leader that encourages the questioning of traditional approaches to the job, encourages people to think of wholly new approaches/solutions to problems, and encourages strategic rather than short term thinking.

The factors emerging in the TLQ are based on managers' descriptions of behaviour that they attribute to leadership and therefore are specific to management context. In addition, one of the fundamental aspects of leadership is that leader behaviours, to be effective, must be perceived by followers rather than existing solely in the perception that leaders form regarding their own behaviours. Thus a potential

weakness of the Alimo-Metcalfe and Alban-Metcalfe (2001) conceptualization is that only managers at different levels of the organization were interviewed in the development of the questionnaire. No interviews were conducted with those who directly received their leadership, that is, the workers/ followers and consequently follower's perception of leader behaviour was not captured. This is particularly relevant given that one of the stated purposes for developing the questionnaire was to discriminate between near and distant leadership. Shamir (1995) argued that the characteristics attributed to near and distant leaders differed greatly. Nearby leaders were admired for their consideration, openness, sociability, humour and dynamic presence, whereas distant leaders were characterised as displaying an ideological mission communicated through their rhetorical skills and being courageous in their persistence and determination. Shamir highlights that there is a considerable differences in the behaviours/characteristics attributed to leaders by followers who perceived their leader to be near or distant. Considering that the followers were the key to this differential attribution rather than the attribution by leaders this highlights a weakness in the questionnaire in that only leaders were interviewed. A consequence of this is that it limits the scale's ability to tap the intricacies of near and distant leadership.

Further limitations associated with the TLQ relate to its conceptualisation of different sub-scales. First some of the scales are contextually specific, for example, *Scale 2 – political sensitivity and skills* comprises items that are unique to a local government context and which limits the generalizability of the TLQ. Second, there seems to be an overlap in the definitions of certain scales in that they tap the similar constructs. Indeed, generally the scale headings are problematic due to their diverse and

ambiguous nature. For example, the definition of *genuine concern for others* scale contains a developmental aspect with the ‘developed my strengths’ construct, but the scale *empowers and develops potential* also contains a developmental aspect resulting in conceptual overlap between the scales. Third, it could be rationalised from the definitions that there is a lack of clarity between behaviours, characteristics, outcomes and attributes within the definitions of the different subscales of the TLQ. To illustrate, *integrity, trustworthy, honest and open, accessible/ approachable, decisiveness, determination and self confidence* are attributes rather than behaviours in that they are qualities that you regard somebody as having rather than things that a leader does, says or ways in which they behave. Furthermore, *inspirational networker and promoter* and *empowers* could be classified as outcomes of leader behaviour.

While the criticisms outlined above highlight certain limits of the scale, the TLQ helps to rectify criticisms of preceding measures of transformational leadership. To illustrate, in the TLQ both supportive and developmental elements emanated from the interviews highlighting the importance of capturing both these components. This perhaps goes some way to resolve the criticisms of the MLQ, which fail to distinguish these as separate constructs, and the TLI, which does not measure these behaviours.

Transformational Leadership Scale

Rafferty and Griffin (2004) developed the transformational leadership scale (TLS), which was based on the work of Bass (1985), House (1998) and Podsakoff et al. (1990). Rafferty and Griffin developed a more focussed measure of transformational leadership consisting of: *vision*, the expression of an idealized picture of the future based around organizational values; *inspirational communication*, the expression of positive

and encouraging messages about the organization, and statements that build motivation and confidence; *intellectual communication*, enhancing employees' interest in and awareness of problems, and increasing their ability to think about problems in new ways; *supportive leadership*, expressing concern for followers and taking account of their individual needs; and *personal recognition*, the provision of rewards such as praise and acknowledgement of effort for achievement of specified goals.

The Rafferty and Griffin (2004) measure demonstrated good psychometric properties, discriminant and predictive validity, however it has relatively narrow operationalization of transformational leadership missing out key behaviours such as, expressing belief in followers, role modelling, fostering acceptance of group goals (Arthur, 2008). Furthermore, both Bass and Avolio (1995) and Podsakoff et al. (1990) identified the importance of having high expectations. Although these authors differ on the conceptualisation of these expectations, with Bass linking them to inspirational motivation and Podsakoff et al. conceptualising them as a distinct and separate behaviour called high performance expectations, they both identify it as an important aspect in transformational leadership. Combining this with literature on the Pygmalion effect (Rosenthal & Jacobson, 1968), a type of self fulfilling prophecy, which demonstrates that raising leader expectations regarding subordinate performance boosts subordinate performance (Eden, 1992), suggests that high performance expectations is an important component of transformational leadership which the Rafferty and Griffin model does not include.

Furthermore, the measure fails to take into consideration developmental leadership. Based on this, Rafferty and Griffin (2006) refined the individual

consideration dimension to include both supportive and developmental aspects arguing that developmental leadership is likely to be a core transformational behaviour because it enhances followers' skills and self-efficacy and, therefore, has 'transformational effects'. Indeed the researchers provided evidence that supportive and developmental leadership were distinct from each other and have differential effects on subordinates (Rafferty & Griffin, 2006). The developmental aspect of leadership pertains to career orientated function of leaders, which encompasses the behaviours of sponsorship, exposure and visibility, coaching, protection, and providing challenging assignments. The supportive aspect of individual consideration is defined as when leaders express concern for and take account of, followers' needs and preferences when making decisions.

Differentiated Transformational Leadership Inventory

Hardy et al. (2010) also developed the differentiated transformational leadership inventory based on the work of Bass and Avolio (1995) and Podsakoff et al. (1990). The dimensions of transformational leadership that comprised the differentiated transformational leadership inventory (DTLI) are: *inspirational motivation* (Bass & Avolio, 1995), developing and articulating a positive vision of the future, inspiring others to achieve that vision, and expressing belief that followers could achieve the vision; *provides an appropriate role model* (Podsakoff et al.), behaviour by the leader that sets an example for others to follow which is consistent with the values that the leader/organization espouses; *fosters acceptance of group goals and team work* (Podsakoff et al.), behaviour by the leader aimed at promoting cooperation among followers, getting them to work together towards a common goal, and developing

teamwork; *high performance expectations* (Podsakoff et al.), behaviour by the leader that demonstrates his or her expectations for excellence in followers; *intellectual stimulation* (Podsakoff et al.), behaviour by the leader that challenges followers to re-examine old problems in new ways; *individual consideration* (Bass & Avolio), behaviour by the leader that recognizes individual differences and demonstrates concern for the development of followers; and *contingent reward* (Podsakoff et al.), provision of positive reinforcement to followers in return for appropriate follower behaviour.

The conceptualization of transformational leadership in the DTLI integrated the Bass and Avolio (1995) model with the Podsakoff et al. (1990) model. However, integration of these models may result in a lack of conceptual clarity. First, considering Podsakoff and colleagues arguments that high performance expectations should be conceptualised as a separate behaviour that is meaningfully and empirically distinct from inspirational motivation, the authors inclusion of Podsakoff et al.'s high performance expectation behaviour in conjunction with Bass and Avolio's inspirational motivation results in some conceptual overlap. To illustrate, on inspection of the items of inspirational motivation, it could be contended that the item '*sets high standards*' would more appropriately tap aspects of high performance expectations than inspirational motivation. Thus there is overlap in the operationalization of the behaviours and what they measure owing to the integration of Bass and Avolio and Podsakoff et al. conceptualisations. That said, the issue of overlap between inspirational motivation and high performance expectations was rectified by the authors in a revised version of their measure developed for sport (DTLI-S; Callow et al., 2009). Second, although Hardy et al. (2010) use Bass and Avolio's conceptualisation of individual

consideration and Podsakoff et al.'s conceptualisation of fostering acceptance of group goals, inspection of items reveals that the certain items within the fostering acceptance of group goals behaviour taps aspects pertaining to individual consideration. For example, the item '*believes each individual is crucial to the success of the section*' could be interpreted as behaviour by the leader that recognises individual differences which is inherent within individual consideration.

One assertion of transformational leadership literature is that a transformational leader is theorised to infuse work/tasks with meaning (Yulk 1999). Despite the agreement that this is an essential part in the way in which a transformational leader behaves, relatively few measurements have items that assess this aspect of transformational leadership. Indeed, Hardy et al. (2010) measurement of inspirational motivation contains the items, *high standard, talks optimistically, expresses confidence, and talks enthusiastically*, however the meaning that the leader infuses in tasks is not directly assessed. With the exception of Bass and Avolio's (1995) operationalization of the *Idealized Influence* construct; this criticism, that is the failure to measure the core aspect of infusing tasks with meaning, could also be levied at most of the transformational leadership questionnaires (i.e., TLI, TLQ, TLS).

Further, within Hardy et al.'s (2010) conceptualization the authors argued that the vision construct was chosen because it cannot be assumed that a leader can always alter the content of the vision at an organizational perspective. However, it could be proposed that a leader can always alter the vision at the individual level, which was the level of measurement in the Hardy et al., study. Despite these criticisms, collectively the studies carried out by these researchers (i.e., Callow et al., 2009; Hardy et al., 2010;

Arthur, Woodman, Ong, Hardy, & Ntoumanis 2011)) provided some preliminary evidence for the factor structure, predictive validity and discriminant validity of the DTLI measures. Their studies advocate that global measures of transformational leadership are quite blunt instruments, thus lending support to the recommendation of Antonakis, Avolio, and Sivasubramaniam (2003) that authors retain a fuller factor structure when utilizing transformational leadership as the basis for an evaluation of key leadership behaviors. In addition, results from these studies support the notion that different transformational leadership behaviors might be important in different contexts providing a strong justification for research to examine a differentiated transformational leadership perspective that takes into consideration contextual influences.

Transformational Teaching Questionnaire

Beauchamp et al. (2010) applied transformational leadership to the context of education. In doing so these researchers developed the Transformational Teaching Questionnaire (TTQ) to address two main issues in this context: (a) the lack of a reliable and valid measure of leadership in education; and (b) the lack of a transformational leadership measure for adolescent respondents. Utilising instrument development procedures involving teachers, students, and experts in transformational leadership combined with multilevel confirmatory factor analytic procedures, Beauchamp et al. developed a four-factor model of transformational teaching. The four factors measured in the TTQ, as defined by Bass and Riggio (2006), are: *idealized influence*, when leaders foster trust and respect among those that they lead, and model ethically desirable behaviours through the demonstration of personally held beliefs; *inspirational motivation*, behaviour which involves the communication of high expectations to

followers, whereby leaders inspire and energize others to achieve their goals; *intellectual stimulation*, involves encouraging people to see issues from multiple perspectives, and question their own and others' commonly held assumptions; and *individualized consideration*, is when leaders recognize and act on the personal and psychological needs of others, display a genuine sense of care and concern and celebrate the successes of others.

Several aspects of the critiques outlined previously at transformational leadership measures in this chapter can also be applied to the TTQ. To illustrate, factors on the TTQ were highly correlated ($.86 < r < .96$) and, consequently, specified as contributing towards one higher order construct of transformational teaching. Second, components related to follower development are not captured within the scale. Third, despite conceptualizing high expectations as a critical component of transformational leadership, it is not explicitly tapped by the items in the scale of inspirational motivation. Fourth, Yukl's (1999) criticism that certain aspects theorised as being part of transformational leadership are not measured (e.g., infusing tasks with meaning) can also be applied. While these appraisals are applicable to other transformational leadership measures in this review, one additional aspect pertaining to the TTQ is that a measure of contingent reward is not included.

Contingent reward has typically been conceptualized as a transactional behavior within transformational leadership literature (e.g., Bass et al., 2003). However, certain researchers have demonstrated that contingent reward is related to outcomes theorised to originate from transformational leadership. For example, Lowe et al. (1996) found contingent reward was correlated positively with satisfaction and performance although

the results were weaker and less consistent than for transformational behaviours. Further, Barling, Loughlin, and Kelloway (2002) included contingent reward in their measure of safety orientated transformational leadership because it consistently loads together with the four transformational leadership components (e.g., Bycio et al., 1995; Carless, 1998) and correlates very highly with the dimensions of transformational leadership (Avolio et al., 1999). Furthermore, Bass, et al. (2003) suggested that transactional leadership that deals more with intrinsic motivators and recognition of followers may overlap more with transformational leadership and, as such, may be more closely aligned to transformational leadership, especially where recognition is more individualized. Considering the value of teachers recognizing student efforts it may be of importance for future education based scales to assess contingent as a component of transformational teaching.

Nevertheless Beauchamp et al. (2010) made significant advances in applying transformational leadership to the education context. Within the transformational leadership literature few researchers have combined multilevel factor analysis, context specific measure development, and respondent specific items when developing a single measure. As such, these researchers have highlighted the importance of considering context when designing measures of transformational leadership.

In conclusion, there exist criticisms in the literature pertaining to the conceptualisation and measurement of transformational leadership. Indeed, some measures are often criticised for being diverse and ambiguous, while others are criticised for being narrow. It seems that researchers are unlikely to agree on the best way to conceptualise and measure transformational leadership. Certain criticisms levied

at transformational measures could relate to the context within which the measure is developed. For example, Alimo-Metcalfe and Alban-Metcalfe (2001) assess political sensitivity which is contextually specific to the local government context, Hardy et al. (2010) purport that within a military context the vision construct in the TLI is not the most relevant as it assumes that the leader cannot alter the content of the vision from an organizational perspective, however, in other context this could be possible. Thus, it could be argued that conceptualisation and measurement of transformational leadership is subject to contextual nuances, and, as such varies depending on the context of study. Interestingly, Liden and Antonakis (2009) asserted that as contexts vary; such variation must be modelled when attempting to explain and investigate aspects of the leadership puzzle. As a result scholars must consider context in leadership research and examine the way context influences the variability that may emerge in leadership behaviours.

Differentiation and globalisation

An important consideration in relation to measurement is the level (i.e., global construct, reduced factor structure or fully differentiated) at which transformational leadership should be conceptualised. As outlined above a number of different tools have been developed to measure leadership behaviours. Research has not provided convincing evidence in support of the latent structure of the transformational leadership model as measured by the MLQ (Bycio et al., 1995; Tepper & Percy, 1994). Indeed, evidence regarding the factor structure has reported strong relationships between factors (Avolio et al., 1999; Carless, 1998; Tejada et al., 2001). As a result researchers have adopted three different approaches to the measurement of transformational leadership. The first, and the most predominant approach was proposed by Carless (1998) who

suggested that the MLQ-5X does not assess separate transformational leadership behaviours, but measures a single, global hierarchical construct of transformational leadership. This has led some researchers to adopt a global measure of transformational and transactional leadership as opposed to examining the individual behaviours (e.g., Dvir et al., 2002; Jung et al., 2003; Pillai, Schriesheim, & Williams, 1999). The second approach is to employ a reduced set of factors to measure transformational leadership (e.g., Barling et al., 1996; Charbonneau et al., 2001; Tejeda et al., 2001). This strategy has been largely driven by empirical results and has not been accompanied by a strong theoretical rationale to explain the allocation of items to factors. Finally, authors such as Antonakis et al. (2003), Hardy et al. (2010) and Podsakoff et al. (1990) have developed their own differentiated measures of transformational and transactional leadership. Although some researchers do not support a differentiated approach to transformational leadership due to the high inter factor correlations (e.g., Judge & Bono, 2000), some researchers have called for the differentiated approach to be adopted to allow for a more detailed examination of behaviours and their effects on outcomes (Antonakis et al., 2003; Hardy et al., 2010). Evidence to support such a differentiated approach is building. For example, Podsakoff et al. (1990) found that intellectual stimulation was negatively related to trust and satisfaction. A further study by Podsakoff, MacKenzie, and Bommer (1996) revealed that intellectual stimulation and high performance expectations were positively related to role conflict, however high performance expectations was negatively related to satisfaction. Callow et al. (2009) found that high performance expectation, inspirational motivation and appropriate role model significantly discriminated between high and low performance but contingent reward,

individual consideration, intellectual stimulation and fostering acceptance of group goals did not. Whereas, in Hardy et al. (2010), high performance expectation did not significantly discriminate between pass and fail, but contingent reward, inspirational motivation, appropriate role modelling, individual consideration and fostering acceptance of group goals did. In another example, Arthur et al. (2011) demonstrated that individual consideration, appropriate role modeling, and intellectual stimulation significantly predicted leader inspired extra effort, however inspirational motivation did not. In a review of transformational leadership studies that used the MLQ, Lowe et al. (1996) revealed that the magnitude of the relationship between transformational leadership behaviours and outcomes was often different and varied widely across studies. Collectively, these results suggest that collapsing transformational leadership behaviours into one global dimension might obscure some of the more subtle relationships that exist (Hardy et al., 2010).

While existent empirical evidence presents a case for the differentiation of leadership behaviours, it is also important to consider theoretical aspects that might support this approach. First, employing a global construct assumes that all leader behaviours have similar effects on outcomes. As evidenced from the research above, this is not the case. From a theoretical perspective, it is difficult to justify why in reality individual consideration would have the same effect as high performance expectations considering they serve differing functions. Individual consideration is a behaviour that is likely to make a follower feel attended to, important and satisfied because the leader takes into account the followers' individual feelings and needs. In contrast, high performance expectations could be considered a challenging behaviour that could result

in increased levels of stress. Second, we do know that it is possible to change both leader behaviour and follower outcomes from previous experimental studies (e.g., Barling, et al., 1996; Dvir, et al., 2002; Hardy et al., 2010). However, as Antonakis et al. (2003) suggests a global construct of leadership is too ‘blunt’ and will be of limited use for leadership development. To illustrate, Bass (1990) initially described a method of transformational leadership training whereby follower ratings of a leaders transformational leadership style are collected and presented to the leader in an individual counselling session. Interventions that provide this information to leaders in terms of a global rating of transformational leadership could be less effective than interventions that provide fuller and more detailed information about each individual behaviour and its development. While to the best of the current authors knowledge no experimental study has compared the effectiveness of a global approach in comparison to a differentiated approach, from a theoretical viewpoint of leadership development employing a differentiated framework, which allows interventions to be fine-tuned, has obvious appeal.

In conclusion, while further research is needed to compare the pros and cons of global and differentiated approaches to transformational leadership, it is apparent that focusing on global or reduced factor models of transformational leadership inhibits the full examination of its underlying behaviours, the individual effects of these behaviours and the importance of these behaviours for development programmes. This highlights the importance for transformational leadership research to utilise a differentiated approach to elucidate these aspects.

Context of transformational leadership

According to Liden and Antonakis (2009) the context of leadership is the milieu, the physical and social environment, in which leadership is observed. Notable in first bringing context to organisational research is the work of Kurt Lewin who observed that behaviour is a function of the person in an environment (Lewin 1947). As such, he provided the stimulus for subsequent research advocating that behaviour cannot be fully understood without taking account of the context in which people are embedded. Despite context being acknowledged as salient to leadership for decades, House and Aditya (1997) highlight the lack of consideration of context within leadership research stating that, “It is almost as though leadership scholars . . . have believed that leader–follower relationships exist in a vacuum” (p. 445). It is only in the last two decades that researchers have begun to attend to it empirically (e.g., Antonakis et al., 2003), and it is only within the last five years that researchers have begun to take context into consideration in transformational leadership measurement (e.g., Beauchamp et al., 2010; Callow et al., 2009; Hardy et al., 2010). Subsequently, the contextual influences of transformational leadership have received relatively little attention in the literature.

Typically in psychology one expects an instrument to be universally valid if it can be demonstrated to be stable using respondents that are from different contexts and heterogeneous (Antonakis, et al., 2003). However, paradoxically, ratings of leadership may be contextually sensitive in that the context in which ratings are collected can affect the structural properties of the survey (Antonakis, et al, 2003). It has been proposed that the context in which leadership is observed can constrain the types of behaviours that may be effective (Lord, Brown, Harvey, & Hall, 2001). For example, the degree of

conformity expected of individuals, that is, situational strength, may play a role in leadership behaviour (Kenrick & Funder, 1988; Mischel, 1977). According to Mischel (1977) and Antonakis et al. (2003), contexts where there are strong behavioural norms, like the military, represent contexts where leader individual differences may not make a big difference in behaviour because individuals are restricted in the ways they can behave. However, in dynamic contexts, which represent weak situations with weak behavioural norms (e.g., private business firms, education), individual differences should be more evident because leaders are less restricted by the way they can behave in those contexts. Thus, the same behaviours may be seen as more or less effective depending upon the context in which they are observed and measured.

In examining the contextual nature of leadership Antonakis et al. (2003) found that when taking different contexts into consideration full factorial invariance tests indicated that a nine factor model of transformational leadership was not the best representation of the data. However, after grouping studies into contextually similar conditions the fit improved substantially and the nine-factor model consistently represented the data better in each contextual condition offering evidence for the consideration of context in theoretical conceptualisations and validation studies. In view of this finding it could be argued that the conceptualisation of behaviours may themselves change because of the characteristics of the context within which they are presented. Indeed Johns (2001) stated “Context often operates in such a way as to provide constraints on or opportunities for behaviour and attitudes in organizational settings” (p. 32). Lord and Emrich (2001) argued there are different expectations for leaders depending on the context. To illustrate, in high risk contexts (e.g., the military),

the behaviour of high performance expectations may contain a challenge orientated expectation of 'the best' from each follower based on the rationale that if followers do not perform to their best, lives are at risk. Conversely, giving the supportive and developmental nature of other contexts such as education high performance may be less challenging in nature to facilitate a more developmental interpretation. The issues and empirical evidence highlighted above combined with calls to consider contextual variables in leadership research (Lowe & Gardner, 2000) emphasises the importance of considering the context in transformational leadership research. As such the next section considers education as a context for transformational leadership research.

Education Context

Certain researchers have applied transformational leadership to the context of education (e.g., Beauchamp et al., 2010; Koh et al., 1995; Letihwood & Jantizi, 1999) from which three points are of note. First, transformational leadership has predominantly been examined in schools and secondary level education settings, rather than higher education (i.e., education post age 18). Although relatively modest in size, the small body of empirical evidence about the effects of transformational leadership in school contexts attests to its suitability in education. For example, Marks and Printy (2003) report transformational leadership on the part of the principal's contributions to effective teacher instruction; Leitwood and Jantzi (1999) found that transformational school leadership practices explained a small but significant amount of variation on students' engagement in school; and Geijsel, Slegers, Leithwood and Jantizi (2003) reported effects on teachers' levels of effort and commitment.

Second, the research has for the most part been applied at the level of principal leadership. However, influence associated with transformational leadership is not necessarily allocated to those occupying formal administrative leadership positions, although much of the literature adopts this perspective. Rather, leadership is attributed by followers to whoever is able to inspire their collective aspirations, and their desire for personal and collective mastery and development (Leithwood & Jantzi, 2005). Thus, by only examining principals' transformational leadership and not teachers' and lecturers' limits our understanding of this paradigm to this context. Interestingly, recent endeavours have been made by Beauchamp and colleagues to rectify this focus on higher-level leadership by examining the transformational leadership of physical education teachers. This research represents a move towards the examination of the influence of all people in various leadership roles.

Third, researchers applying transformational leadership to the educational context have for the most part employed Bass' conceptualisation of transformational leadership (e.g., Koh et al., 1995). Interestingly, Beauchamp et al. (2010) noted that despite the potential for transformational leadership to inform education, one potential reason for the lack of application in this context could relate to the fact that there is no reliable and valid measure of transformational teaching. While these researchers developed an inventory to alleviate this problem, the researchers also reduced the behaviours to a global conceptualisation. As outlined above, the use of global versus differentiated approaches to leadership measurement limits our ability to understand and develop leadership more effectively.

In summary, transformational leadership paradigm has yet to be systematically applied to higher education contexts taking into consideration the lecturer as a leader. As such, very little is known about what constitutes transformational leadership in higher education lecturing, how to measure transformational leadership in higher education, and whether transformational leadership development can positively impact on lecturing and student outcomes.

Overview of Thesis and Research Programme

In summarising the transformational leadership literature several areas for research have been highlighted. Consequently, the current thesis will endeavour to examine the following aspects: the perception of transformational leadership in the context of higher education; the conceptualisation and measurement of differentiated transformational leadership in higher education; explore the relationship between contextually relevant differentiated transformational leadership behaviours and follower outcomes; the modifiable nature of transformational leadership behaviours; and the impact of modifying leadership behaviours on follower outcomes.

The thesis consists of five chapters. The present chapter provided an overview of the development of transformational leadership, the main part of the thesis consists of three chapters, and the final chapter presents a general discussion. The main part of the thesis is written as a collection of three separate research papers, which are currently being prepared for publication. This will inevitably mean that there is overlap and repetition in places. The first research chapter (Chapter 2) assess students' and lecturers' perceptions of transformational leadership in higher education lecturing. Focus group and semi-structured interviews were employed to identify the behaviours important for lecturing. Chapter 2 provides a unique contribution to the literature because it is the first study to qualitatively investigate perceptions of transformational leadership in higher education. The methods implemented in Chapter 2 are particularly valuable given that leadership is assessed from both a leader and follower perspective.

The second research chapter (Chapter 3) is a large 3-study chapter. Study 1 uses the eight behaviour model conceptualisation of transformational leadership evolving

from Chapter 2 to develop a contextually relevant measure. In addition, Study 1 uses confirmatory factor analyses to assess the factorial validity of the eight behaviour model of transformational leadership. Study 2 then assesses the structural validity of the measure in a different sample drawn from UK institutions seeking to confirm the model. Following this, Study 3 employs a longitudinal correlational design to assess the concurrent and predictive validity of the measure. Chapter 3 provides a unique contribution to the literature because it is the first study to develop a differentiated measure of transformational leadership for the context of education.

Chapter 4, the final research chapter, used an experimental design to assess the effectiveness of an intervention underpinned by transformational leadership theory on both lecturing behaviours and student outcomes. A multi-method approach was used to evaluate the effectiveness of the intervention, which included students' ratings of their lecturer' behaviours, student ratings of outcomes and qualitative interviews with lecturers who took part in the intervention. Once more, Chapter 4 made use of information from Chapter 2 and Chapter 3. Specifically, the intervention focused on the behaviours that were the better predictors of student outcomes in Chapter 3. A self-study booklet (see Appendices) was developed based on the data collected in Chapter 2 and provided to lecturers in the intervention condition. Finally, student and lecturer examples of the transformational leadership behaviours from Chapter 2 were employed as part of the manipulation check. Chapter 5 discusses the main findings of the research chapters, identifies limitations of the thesis and presents suggestions for future research and good practice.

Chapter 2

Contemporary lecturing behaviours in higher education: A transformational leadership perspective.¹

¹ This chapter was accepted for a verbal presentation as;
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education lecturing: A qualitative analysis. Presented at the Annual PSYPAG Conference: Bangor,
UK

Abstract

The differentiated model of transformational leadership (Hardy, Arthur, Jones, Munnock, Isaacs, & Allsopp, 2010) consists of six transformational behaviours: inspirational motivation, individual consideration, intellectual stimulation, high performance expectations, appropriate role modelling, and fostering acceptance of group goals, and one transactional behaviour, contingent reward. Employing this differentiated model of transformational leadership, the present research examined student and lecturer perceptions of transformational lecturing in the context of higher education. In Phase 1, a purposive sample of 29 students participated in focus groups examining their perceptions of transformational higher education lecturing. In Phase 2, semi-structured interviews were conducted with 6 lecturers nominated by students in Phase 1 as being ‘transformational’. Results highlight that from a student perspective, Hardy et al.’s differentiated model of transformational leadership can be employed to understand lecturing behaviours. However, the behaviour of fostering acceptance of group goals did not emerge as a contextually relevant transformational behaviour. Furthermore, ‘sense of humour’ and ‘self-confidence’ emerged as behaviours that are not previously conceptualised as transformational leadership behaviours in the literature. Findings from the lecturer perspective further corroborated these results with ‘interpersonal interactions’ emerging as an additional theme. Results are discussed in relation to the application of the differentiated transformational leadership model to the context of HE lecturing.

Contemporary lecturing behaviours in Higher Education: A transformational leadership perspective.

Transformational leadership is one of the most prevalent leadership theories in organisational psychology. Transformational leadership involves the building of relationships with followers based on personal, emotional, and inspirational exchanges with the aim of achieving superior results. Transformational leadership research has been examined extensively in a variety of contexts, for example, the military (e.g., Bass, Avolio, Jung & Berson, 2003), sport (e.g., Charbonneau, Barling, & Kelloway, 2001), business (e.g., Barling, Weber, & Kelloway, 1996), education (e.g., Beauchamp, Barling, Li, Morton, Keith, & Zumbo, 2010), and the public sector (e.g., Rafferty & Griffin, 2004). However, recently there have been concerns raised about the impact of contextual influences on the validity of the theories surrounding transformational leadership. Indeed, Antonakis, Avolio, and Sivasubramaniam (2003) tested a nine-factor model of transformational leadership and found it was stable (i.e., fully invariant) only within homogenous contexts; these results highlight that the factor structure of the transformational leadership measure may vary across different settings or when used with different leaders and respondents, with the implication that leaders may enact their behaviours differently depending on context. Accordingly, certain authors (e.g., Callow, Smith, Hardy, Arthur, & Hardy, 2009; Hardy et al., 2010) have called for a more thorough exploration of contextual influences on transformational leadership.

Despite the considerable volume of research on transformational leadership, only a few studies have applied it to the context of higher (e.g., Beauchamp et al., 2010; Dussault, Valois, & Frenette, 2007; Harvey, Royal, & Stout, 2003; Wolf, Hayden, &

Bradle, 2004). Furthermore, this research has tended to concentrate on higher level leadership (e.g., principal leadership, departmental leadership and university level leadership), with the transformational leadership provided by departmental heads having a positive influence on staff and departmental functioning which indirectly impacted students (e.g., Koh, Steers, & Terborg, 1995; Leitwood & Jantzi, 1999). A notable exception does exist, specifically Beauchamp et al. (2010) focused on the transformational teaching of physical activity teachers in secondary level education (i.e., pupils 11-18 years old). These researchers reported positive relationships between transformational teaching and adolescent self-determined motivation and positive affect. However, the researchers employed a global conceptualisation of transformational leadership and as such were unable to identify behaviours that are particular importance in a teaching and learning context.

Certain authors (e.g., Hardy et al., 2010; Podsakoff, Mackenzie, Moorman, & Fetter, 1990) advocate employing a differentiated approach to transformational leadership to delineate the different effects of different behaviours. Thus to examine contextual variations in transformational leadership, a differential approach is likely to highlight the behavioural distinctions that vary from one context to another. Consequently, in the present study the differentiated conceptualisation of transformational leadership developed by Hardy et al. (2010) was employed as a framework for understanding transformational leadership in the context of higher education. This conceptualisation of transformational leadership includes six transformational behaviours: inspirational motivation, individual consideration, intellectual stimulation, high performance expectations, appropriate role modelling

fostering acceptance of group goals, and, one transactional behaviour; contingent reward.

Both Laurillard (2002) and Ramsden (2003) argue that the main role of university teachers is to make student learning possible. Traditionally, the activity of teaching at university level has been viewed as a function performed by experts in fields of research who were deemed qualified to pass on their knowledge. However in a context of massification, teaching has become a more complex activity directed at a diverse body of students within a range of flexible learning environments (Streeting, 2008).

In light of the changing higher education climate with massification and the introduction of student fees, the higher education sector is developing like a service. In literature examining higher education from a service perspective, where students are the customers and lecturers are the service providers/employees, Pieters, Baumgartner, and Allen (1998) suggested that the extent to which customers attain their goals depends partly on the behaviour of service employees. Furthermore, Voss and Gruber (2006) suggested that for students, the qualities and behaviours of lecturers have a significant impact on perceptions of service quality, a proposition that is extensively supported in the service literature. To illustrate, Hartline and Ferrell (1996) believe that it is the behaviours and attitudes of customer contact employees (i.e., lecturers) that primarily determine the customers' perceptions of service quality. Highlighting the important role of lecturers in the higher education context, Chebat and Kollias (2000) indicated that the human interaction element is essential to determine whether service delivery will be

deemed satisfactory. Thus the lecturer performs a fundamental role in relation to student experience and satisfaction.

Researchers in the field of higher education have identified behavioural and attitudinal characteristics of university lecturers and instructors that constitute ideal, effective and superior teaching (e.g., Crawford & Bradshaw, 1968; Feldman, 1976, 1988; French, 1957; Gadzella, 1968; Musella & Rusch, 1968; Smith, 1944).

Interestingly, behavioural characteristics stemming from these studies appear to be consistent with transformational leader behaviours. For instance Downie (1952) found 'motivating students to do their best' as a characteristic considered by students as most important for effective teaching. This behaviour is similar to the transformational behaviour of *inspirational motivation*; where leaders develop, articulate and inspire followers. In light of recent student dissatisfaction with the lack of individual personal contact time with staff (Attwood, 2009) it would be reasonable to suggest that the transformational behaviour of *individual consideration*, where leaders show their respect for followers and concern for their personal feelings and needs, may be particularly relevant in the higher education context. Equally, Musella and Rusch (1968) found instructor's 'ability to encourage thought' as an important behaviour; additionally Smith (1944) highlighted the 'ability to stimulate intellectual imagination' as an important lecturing behaviour. Both of these identified characteristics appear comparable to the transformational behaviour *intellectual stimulation*, where leaders challenge followers to re-examine their assumptions about their work and re-think how it can be performed. Further Rosenthal (1991) demonstrated the importance of teacher expectations in studies examining self-fulfilling prophecy known as the Pygmalion Effect in classroom

situations. Such expectations can be aligned to the transformational leadership behaviour of *high performance expectations*, where leaders express expectations for excellence, quality, and/or high performance on the part of followers. In addition, Slavin (1990) proposed that through cooperative learning, whereby students working in dyads or small groups with some incentive or reward for the group's accomplishments, students are motivated to help one another master skills or learn the material (Slavin, 1990). Indeed, such cooperative learning could be aligned to the transformational leadership behaviour of *fostering acceptance of group goals*, where leaders promote cooperation among followers getting them to work together for the same goal. Moreover, behaviours that have not previously been conceptualised within transformational leadership research may emerge in the context of education due to the specific nuances of this context.

Considering that the behaviours emanating from the literature can be closely aligned with transformational leadership behaviours, the identification of salient transformational leadership behaviours in a novel context of higher education may be a worthwhile endeavour as a way of applying a theoretical framework to the examination of effective lecturing. Previous conceptualisations of components of transformational leadership have been criticised for the mixing of attributes and behaviours, with certain researchers arguing that there is often no clear description of what a leader actually says or does to influence followers (e.g., Yukl, 1999). To illustrate, Bass and Avolio (1995) describe inspirational motivation as where a leader energises his/her followers by viewing the future with optimism, stressing ambitious goals, and projecting an idealized vision. Within this conceptualisation it is challenging to delineate specific behavioural

components that constitute this inspirational motivation. To tackle this issue, the aim of the present research was to examine students' and lecturers' perceptions of the transformational leadership in higher education from a behavioural perspective.

Method

Two phases of data collection were conducted with two different samples. The first phase involved focus group interviews with university students and the second phase employed semi-structured interviews with lecturers who had been nominated in the student focus groups. To maximize clarity the procedures utilised in the different methods of data collection will be outlined separately.

Phase 1

Participants

Following ethical approval purposive sampling was conducted with the aim of gaining a fully representative student sample. When sampling, variation in demographic factors such as gender; degree type (BA, BSc); ethnic origin, socio economic background (high, medium and low socioeconomic status); discipline of study; and year of study were sought. Demographics are presented in Appendix A. Twenty nine undergraduate and postgraduate taught masters students ($N=29$; $Mage = 22.83$; $SD = 5.57$), comprising of 12 males and 17 females, were recruited. All participants were paid £5 for participation.

Procedure

Data were obtained through focus group interviews guided by an experienced moderator and assistant moderator (Morgan & Krueger, 1998) with between four and nine participants in each focus group (seven groups in total). Focus group interviews

lasted approximately two hours each. During the focus group interviews, participants were asked to discuss their perceptions of lecturer behaviours. The moderator followed an interview guide, based on Morgan and Kreuger's recommendations for interview structure. Specifically, the interview was divided into six main areas: opening questions, introductory questions, transition questions, key questions, ending questions, and summary questions. Prompts were used to expand on the explanation and understanding of each question. The questions followed a sequence of general to specific, which allowed the participants to gradually move deeper into the topic of discussion. Fact based opening questions were designed to make participants feel comfortable. Opening questions asked participants to detail their name, subject of study and their current year of study. Next, to encourage conversation and interaction among the participants, introductory questions asked participants why they chose to come to university and what they wanted to achieve by doing so. These questions were not critical to the analysis but maintained the flow of conversation in the group. Following this participants were asked to think of the best lecturer they have had, and what made the lecturer the best. Instruction was given asking participants to focus on the behaviours that the lecturer displayed that made them good. These transitions questions were designed to help the participants broaden their understanding and to make a connection between the participant and the topic of investigation. Following this, three key questions were developed for the present investigation, that is: (a) transformational leaders motivate their followers to do more than they originally intended and often more than they thought possible, how do you see this in lecturing?; (b) there are certain behaviours associated with transformational leadership. These behaviours are intellectual

stimulation, inspirational motivation, individual consideration, acceptance of group goals, contingent reward, high performance expectations, and appropriate role modelling (definitions of these behaviours were provided on a flip chart). Which of these behaviours do you think are relevant to higher education lecturing?; and (c) transformational leadership can be described as providing followers with vision, support and challenge. Do you think there are any behaviours that are missed out by the seven behaviours outlined?

The interview guide and the conceptualisations utilised pertaining to transformational leadership were derived from a variety of sources in the literature on transformational leadership. Specifically, Hardy et al.'s differentiated conceptualisation of transformational leadership, which integrates conceptualisations by both Bass and Avolio (1995) and Podsakoff et al.'s (1990), was employed allowing for a more thorough discussion of lecturing behaviours. Next, ending questions were designed to bring the discussion to a close. Participants were asked if they had anything more to contribute that had not previously been discussed. Finally, as a method of member checking, the assistant moderator concluded with a closing summary, providing an opportunity for additional points to be made and misinterpretations to be clarified. Prior to the summary participants were actively encouraged to correct any misinterpretations and to feel free to interrupt to add information at any point. Before departing, students were given an option to nominate lectures they felt had been their 'ideal', 'best' or 'transformational'. The sessions were digitally audio-recorded.

Phase 2

Participants

From student nominations a total of 37 male and 8 female lecturers were identified as being transformational leaders. Based on gender six lecturers were randomly selected from the nominees. Specifically, as the ratio of male to female lecturers nominated was 4.6:1, this ratio was maintained for the interviews and five males and one female were interviewed. Lecturers were recruited through a formal invitation letter to participate in the research project. All lecturers approached agreed to take part in the research and provided consent to participate prior to the commencement of the interview.

Procedure

The moderator from the focus groups conducted the semi-structured interviews, lasting approximately one hour, with each participant. The interview guide was based on the student interview guide with some notable changes. First, opening questions asked the participants to ‘please introduce yourself, state what your role is within the university and give me a brief background of your pathway to your current position.’ Second, the introductory questions were used to assess why lecturers believed students attended university. Third, in the transition questions lecturers were asked to think of the best lecturer they ever had and what was it that made him/her the best, and then they were asked to discuss what they consider the most ideal behaviours for a lecturer to exhibit whilst lecturing. The key questions and ending questions were not changed from the student focus groups.

Data analysis

The analysis proceeded through two phases. First, student focus group were analysed where content analysis of text was coded, progressing through five levels of

abstraction. In order to isolate a framework of transformational leadership in higher education, the second phase involved analysis of lecturer interviews, following a constant comparative analysis to the results emanating from the first phase.

Phase 1

Content analysis was conducted, in the first instance, by the author. The first step in the process for coding the content analysis involved verbatim transcription of the focus group recordings. The document was first hand coded, to familiarise the analyst with participants' communication. To this end, the document from each focus group was read, reread and meaning units identified (cf., Tesch 1990), resulting in a total of 1308 meaning units. The second step in the content analysis progressed to coding using NVivo (QSR International, 2010) software. All meaning units were grouped and developed into nodes. The analyst chose the names of the nodes as being logically related to the data they represented. This process resulted in 123 nodes. The third step utilised an epistemological framework based both on a deductive qualitative enquiry and general inductive analytic approach (Patton, 2002). First, specifically, in search for themes a deductive approach was employed to the nodes utilising the explicit theoretical perspective of transformational leadership. Second, remaining nodes were subject to inductive analysis, a systematic procedure for assessing qualitative data that allow key themes and patterns to emerge from the data rather than imposing them prior to data analysis (Creswell, 2002; Patton, 2002; Tesch 1990). It is relevant to note here that, this deductive/inductive dual approach was reflected in the interview guide, where certain questions focused specifically on transformational leadership theory, whereas others remained open. This method has been recognised as a legitimate and important approach

to confirming, developing and enhancing apriori theoretical frameworks in qualitative research (Patton, 2002). Transformational leadership related nodes were then assigned to higher order themes that utilised names associated with transformational leadership (e.g., support, respect). All other nodes were grouped into naturally occurring families of nodes that dealt with the same topics or themes (e.g., teaching approaches). Finally, themes were deductively coded into transformational leadership categories (e.g., inspirational motivation) resulting in six categories. Additional themes, which did not fit with these categories, were compared and combined to form new emergent categories, resulting in six additional categories.

To ensure the trustworthiness or accuracy of the data analysis a number of measures were implemented including introducing a second researcher to analyse the data and two additional experts as devils advocates. Given that we were trying to assess the behaviours that are important in transformational lecturing a behaviouristic approach was adopted to the analysis. To this end, and to enhance scientific rigor, the fourth step involved a second researcher for code and theme analysis. Both researchers had previous experience in the philosophy and techniques associated with qualitative research as recommended by Lincoln and Guba (1985). Working collaboratively, both researchers classified the previously established meaning units and nodes as behaviours (e.g., asks questions), attributes (e.g., pushes you to think) or outcomes (e.g., s/he gets you thinking). Outcomes were deleted from the analysis. The analysis of behaviours and attributes were conducted separately, with the analysis of attributes replicating that used with behaviours. Focus at this stage of the analysis pertained to: a) having clearly defined categories and themes; b) eliminating nodes with too few meaning units; and c)

restructuring nodes and themes that could be combined. Both researchers discussed each node and its placement at a theme until consensus agreement was reached.

Finally, in the fifth step, to control against bias that may have arose in the first four steps, two additional researchers, one with expertise in transformational leadership and the other with expertise in teaching and learning were invited to act as “devil’s advocate” by critically questioning the analysis (Marshall & Rossman, 1995). This process involved: (a) challenging the researchers position and perspective on the themes, nodes and meaning unit placement within them; (b) challenging the inclusion of certain themes or nodes; (c) outlining any potential misfit in the model; (d) actively searching and describing negative instances that contradict the categories outlined; and (e) provide arguments against and challenge placement of both deductive themes and emerging themes.

Phase 2

Phase 2 involved analysis of individual lecturer interviews. First, as in Phase 1, coding for the content analysis involved transcription of the interviews, which was then hand coded and meaning units identified. Utilising the existing student model as a framework, the first researcher categorised the meaning units into nodes. Given the use of a conceptualised model and the experiences of analysing similar data the same two researchers involved in developing the themes in Phase 1 deductively placed each of the nodes into themes reflecting the student data analysis. Themes were then developed into transformational leadership categories. This part of the analysis was conducted separately, followed by a discussion and recoding of the nodes until consensus was reached. A concerted effort was made to remain open to unexpected themes and to

constantly refine and validate emerging insights by considering any counter examples ('negative case analysis') and using theoretical perspectives. Again, two experts in transformational leadership and teaching and learning acted as devil's advocate of the resulting model. This analysis resulted in nine categories, eight that mirrored the student analysis and an additional category of interpersonal interactions.

Results and Discussion

Eight categories emerged from both the student focus groups and the lecturer interviews that reflected transformational leadership behaviours in higher education. Specifically, students and lecturers discussed inspirational motivation, individual consideration, intellectual stimulation, high performance expectations, appropriate role modelling, contingent reward, sense of humour and self-belief. Lecturers discussed one additional attribute pertaining to interpersonal interactions. It is important to note that researchers have criticised conceptualisations of transformational leadership on the basis that there is no clear description of what a leader actually says or does (i.e., how they behave) to influence subordinates (e.g., Yukl, 1999). Thus, there is a need to differentiate between behaviours and attributed characteristics when forming conceptualisations of transformational leadership. To tackle this criticism, despite analysing both behaviours and attributes, leader behaviours are focused upon in the following section. Attributes are presented only where they offer new insight into transformational leadership in higher education (i.e. self belief and sense of humour). In the majority of cases attributes corresponded to behaviours and these attributes are presented in Appendix B.

Inspirational Motivation

With regard to inspirational motivation there were differences in what students and lecturers attributed as inspirational motivation and how they viewed inspirational motivation in terms of lecturing behaviours. In the behavioural analysis (Table 1) the category of inspirational motivation contained only three themes: meaningful context, vision, and engaging. Whereas, from the attributed analysis (see Appendix B) the category of inspirational motivation contained five themes: inspiration, expresses belief, meaningful context, vision, and engaging. One reason for the discrepancy between the behavioural results and the attributed results for this leadership dimension could relate to participants finding it particularly difficult to overtly describe specific behaviours. As such, attributed characteristics are more accessible to description. Indeed, Bass and Avolio (1995) describe inspirational motivation as where a leader energises his/her followers by viewing the future with optimism, stressing ambitious goals, and projecting an idealized vision. Within, this conceptualisation it is challenging to delineate specific behavioural components of this leadership behaviour. This issue may be magnified with inspirational motivation where it is often about how a lecturer may make students feel, as such, the participants may have difficulty describing what a lecturer says or does explicitly to make them feel inspired.

There are at least two noteworthy findings concerning the current analysis of inspirational motivation. First, Yulk (1999) criticised previous conceptualisations of transformational leadership on the basis that the core behaviours ought to include infusing followers' work with meaning and enhancing follower self-confidence. While both Hardy et al. (2010) and Bass and Avolio (1995) conceptualise inspirational motivation as containing an expression of belief that followers can achieve the leader's

vision; their conceptualisations have not included ‘infusing of work with meaning’. In the current study, expression of belief also emerged as an attribute of inspirational motivation and interestingly the theme of ‘meaningful context’, which contains ‘infusing work with meaning’, emerged at both behavioural and attributed levels. Accordingly both students and lecturers recognised the importance of being provided with meaning through examples, real world experiences, telling stories and providing rationale for mundane work (e.g., cleaning lab equipment).

Second, there is much debate in the literature regarding the vision aspect of the inspirational motivation. For example, Hardy et al. (2010) argue that in particular contexts the leader cannot change the vision of a particular organisation. While it is recognised that this may be true at an organisational level, it could be argued that at an individual level a leader can influence a vision. In the current data students and lecturers viewed vision relating to both the future and also to lecture goals. This demonstrates that in the context of education the vision component of inspirational motivation is salient and malleable, indicating contextual influences that may not be pertinent in other settings such as the military and business sectors.

Within the education literature, in a study of 16,000 students, Downie (1952) found ‘motivating students to do their best’ as a characteristic considered most important for effective teaching. The present findings pertaining to inspirational motivation reinforce the importance of motivating students in the context of a contemporary education. As such, education orientated inspirational motivation should be viewed as ‘behaviour by the leader that develops and articulates a positive vision of

the future, inspires others to achieve that vision, expresses belief that the vision is achievable and infuses meaning into the work of followers’.

Table 1: Inspirational Motivation Behaviour

Behaviour	Theme	Node	Quote
Inspirational Motivation	Meaningful Context	Examples	“he illustrated what he was doing and what we were suppose to be learning with a specific example”
		Telling Stories	“sharing life experiences, personal and professional life experiences” “If I can possibly do it, even if I have to make it up, I think about something that has happened to me in my life that I can link to [the topic]”
		Real World Relevance	“talking about what happens beyond university education. I always try to show them that they should use a real life example to understand the concepts and to draw from daily lives”
		Providing a Rationale	“I say this is really dull but you have to understand this and you have to go through the dull bits and explaining what importance this was for them”
	Vision	Future Vision	“I try to describe that university knowledge and academia is the best way to travel” “its about giving the glimpse of something better still and telling them that it is within their reach if they believe in themselves”
		Lecture Goals	“telling students about the exciting things that we are going to cover next week”
	Engaging	Enthusiasm	“using a lot of language that sounds enthusiastic and demonstrating your own enthusiasm”
		Interaction	“ looking for debate, perhaps disagreement” or “I will often try to include little games that will try to get students up”

Individual Consideration

This category contains two themes that reflects behaviour by the leader that is ‘*supportive and helpful*’ for students taking into ‘*consideration student’s needs and preferences*’. The theme of *supportive and helpful* is further divided into seven nodes where participants reported that lecturers are supportive and helpful by providing students with self-esteem support, tangible support, being available to students,

listening, respecting students, encouraging students, and showing concern for students.

The theme of *consideration of the needs and preferences* was further broken into three nodes: being on same level, accounting for differences, and engaging students.

Examples of the categories, themes, nodes and quotes are presented in Table 2.

Interestingly, contrary to previous research, in the emerging conceptualisation in the current higher education context follower development did not transpire from the analysis.

Specifically, in previous research, the Differentiated Transformational

Leadership Inventory (DTLI: Hardy et al., 2010) employed Bass' conceptualization of

individual consideration arguing that the conceptualization of individual support in the

Transformational Leadership Inventory (TLI: Podsakoff et al., 1990) was relatively

narrow pertaining only to showing consideration of individual's feelings and needs.

However, the measurement of individual consideration in the MLQ 5-X (Bass & Avolio,

1995) and subsequently the DTLI consists of two distinct broad areas: 1) consideration

of individual needs; and 2) behaviours which are focused on follower development.

Rafferty and Griffin (2006) further strengthened the argument for a two-part

conceptualisation of individual consideration (i.e., consideration of needs and follower development) with empirical evidence of differential effects of both these constructs.

Moreover, Yukl (1999) suggests that both supporting behaviours and development

behaviours are distinct with different effects on subordinates (Bradford & Cohen, 1984;

Kim & Yukl, 1996; Yukl & Nemeroff, 1978; Yukl, Wall, & Lepsinger, 1990). However,

Yukl (1999) also suggests that developing behaviours (e.g., coaching and mentoring),

are more of a core transformational behaviour, because it enhances subordinate skills

and self-efficacy, while supporting behaviours (e.g., being friendly, helpful, considerate

etc), although related to increased satisfaction, should not be conceptualised as a core transformational behaviour considering they have only a weak effect on subordinate motivation or performance (e.g., Bass, 1990; Yukl, 1998). The emerging conceptualisation in the current higher education context appears to be incongruent with Yukl's (1999) theorizing with only supporting behaviours emerging. While both support and follower development are likely to be important in the higher education context, arguably student development is more implicitly related to the purpose of education as opposed to lecturer behaviours. Given that by its very nature higher education is developmental, it is likely that students and lecturers did not see this as a pertinent leadership behaviour. Thus the conceptualisation of individual consideration in the context of higher education is more closely aligned to that of Podsakoff et al. (1990) whereby individual consideration is viewed as behaviour by the leader that provides support and help for followers and showing consideration for followers' feelings and needs rather than being developmental.

Table 2: Individual Consideration Behaviour

Individual Consideration	Help and Support	Self Esteem Support	“if he [the lecturer] asked you a question and even if you got it so completely wrong, he will try to twist your argument the right way around so that it seems as though you’re right”	
		Tangible support	“appropriate and leading feedback rather than just descriptive feedback” “they’ll change your goal to suit your individual needs”. “they’ll lend you books from their personal library”	
		Being available	“will just quite happily make meetings for you outside consultation times or lectures” “certain lecturers don’t ever seem to be around, you can’t contact them, you can get through to them on email and then you go to their office and they are not there”	
		Listening.	“take on board what the student said” “some people are just looking for the lecturer to listen to them”	
		Respect	“a lecturer who’s confident enough to say when he doesn’t know” “receptive to the view points of the students”	
		Encouraging	“you need that encouragement from your lecturer to go and do it [work]” “encourage you to express your own ideas”.	
		Showing concern	“I suppose for assignment extensions, showing concern [for students] would come into it a little bit”	
		Being on the same level	“ they don’t go straight into the really fancy language that washes over you” and they “provide an environment where it is like a conversation between you and the lecturer”.	
		Understanding and aware of individual differences	Accounting for differences	“how to get there, some people need to be left to their own devices and some need to be encouraged” “you can’t expect people with dyslexia or dyspraxia or stuff like that to be able to write as fast or to pick up ideas as fast” “take into consideration different ways of learning”
			Knows Students	“calling their names out or whether I know so and so sits at the back”

Intellectual Stimulation

Based on the data this category reflects behaviour by the leader that challenges followers, gets them to think about their work and how it is performed. For the most part the behavioural (Table 3) and attributed results (Appendix B) were similar. However, one minor difference between the behavioural and attributed results emerged; the theme *thinking* included the node 'challenges' in the attributed analysis but not in the behavioural analysis. Nevertheless, the node 'asks questions', which could be considered as a behavioural manifestation of challenge did emerge on the behavioural model.

With regard intellectual stimulation in educational research, the instructor's 'ability to encourage thought' (Musella & Rusch 1968) and the 'ability to stimulate intellectual imagination' (Smith 1944) have been previously identified as important behaviours. Yukl (1999) has criticized Bass and Avolio's (1995) conceptualisation of intellectual stimulation for containing diverse and ambiguous content. However, the current findings are consistent with Hardy et al.'s (2010) and Podsakoff et al.'s (1990) viewpoint that intellectual stimulation is not particularly diverse and focuses on challenging followers to think about how their work can be performed effectively. One contextual nuance of the behaviour is that it includes behaviours by the leader that are less of a challenging nature as exemplified in other contexts. To illustrate, both students and lecturers felt that a pivotal part of being intellectually stimulating was the breaking down of information so students could think about it, as exemplified by the node 'breaks it down'. This illustrates a more considerate component to intellectual stimulation rather than a behaviour solely geared towards challenging the followers. Thus in the context

of higher education, lecturing intellectual stimulation is conceptualised as behaviour by the leader that helps a follower think about their work, stimulates ideas, examine assumptions about work and re-think how it can be performed.

Table 3: Intellectual Stimulation Behaviour

Behaviour	Theme	Node	Quote
Intellectual Stimulation	Thinking	Asks Questions	“regularly ask the students questions in class”
		Breaks it down	“giving the basics first and then moving up to the more complicated things” “breaking it up and always building it up piece by piece”
		Thought stimulation	“is say if you are going to disagree then brilliant, just makes sure you have grounds to disagree” “I point out where the huge gaps in knowledge are”

High Performance Expectations

This category, presented in Table 4, reflects behaviour by the leader where leaders challenge students, have expectations of students and express expectations of quality and high performance. High performance expectations have repeatedly been demonstrated as important in the education context where the Pygmalion effect in regard to teacher expectations has been examined (cf., Rosenthal, 1991). In contrast to Hardy et al. (2010) and Podsakoff et al. (1990), students and lecturers discussed high performance expectations in the lecturing context as having much less of a challenge orientated emphasis than has been proposed in contexts such as the military. This is evident whereby transformational lecturers exhibit general behavioural expectations (e.g., expecting students to be on time) of followers in addition to high performance expectations (e.g., expecting students to get high grades). A potential explanation for the emergence of general behavioural expectations and not just high performance

expectations as has been previously conceptualised (e.g. Hardy et al., 2010) lies in the nature of the context. Considering that education context is more of a nurturing environment in comparison to the military, it is unsurprising that the less challenging and more supportive nodes emerged (see for example the expectation node in Table 4). In the context of education high performance expectations is viewed as behaviour by the leader that demonstrates his/her expectations of followers encompassing both general expectations and expectations for excellence and quality.

Table 4: High Performance Expectations Behaviour

Behaviour	Theme	Node	Quote
High Performance Expectations		Challenge	“challenge students to go and find something, you lay down the gauntlet and said I couldn’t do this, how about you guys”
		High Expectations	“tell students that there is no problem with everyone getting 2:1’s and firsts”
		Expectations	“saying what you want from students and what they should be producing” “expecting students to be on time and know what they are doing”

Appropriate Role Modelling

In respect to appropriate role modelling (see Table 5), many researchers in transformational leadership have recurrently emphasized the role model as an important behaviour (Podsakoff et al., 1990; Hardy et al., 2010). In the context of education, lecturers and students discussed appropriate role modelling as an important leadership behaviour highlighting that leaders can be models of a potential future for students in addition to role modelling behaviours such as the effort, preparation or knowledge they apply to their work. Therefore, the conceptualisation of appropriate role model proposed

by Hardy et al. (2010) and Podsakoff et al. (1990) also applies to this context. Thus appropriate role modelling in higher education lecturing is viewed as behaviour by the leader that sets an example for others to follow which is consistent with the values that the leader/organization espouses.

Table 5: Appropriate Role Modelling Behaviour

Behaviour	Theme	Node	Quote
Appropriate Role Modelling		Self Modelling	“convey to students that you yourself are interested in the subject” “thank people when they have offered something, get people to try and role model respect”
		Effort	“they see me here very early to very late, I don’t have to be here but I am and that’s part of the modelling”
		Preparation	“its about keeping up with the latest research” “having the lecture well prepared”

Contingent reward

Contingent reward has been largely conceptualised as a transactional leader behaviour in research examining transformational leadership (e.g., Bass., 1985). Illustrating the importance of contingent reward, in a meta-analytical review of 39 studies using the MLQ, Lowe, Kroeck, and Sivasubramaniam (1996), found contingent reward was correlated positively with satisfaction and performance although the results were weaker and less consistent than for transformational behaviours. Contingent reward in the education context can be provided in the form of grades for appropriate student work, as such, this behaviour forms an inherent part of higher education. However, in the current study, the conceptualization of contingent reward is not solely

related to tangible rewards (see Table 6). Students and lecturers discussed contingent reward behaviour as including behaviours that are involved in interpersonal exchanges, for example recognition and praise. This is consistent with Yukl's (1998) proposition of contingent reward whereby providing praise and recognition is usually more personal and may involve transformational leadership rather than just transactional leadership. Interestingly, in their study with infantry rifle platoon leaders in the U.S. Army, Bass, et al. (2003) found that both transactional contingent reward and transformational leadership of the platoon leader equally predicted performance in combat simulation exercises. However, after partitioning of transactional leadership into higher and lower transactional leadership, employing a method advocated by Goodwin, Wofford, and Whittington (2001), the authors found that transformational leadership augmented transactional leadership when the transactional items were based on explicit contracts or quid pro quo exchanges (i.e. lower order transactional leadership). They suggested that higher order transactional leadership that deals more with intrinsic motivators and recognition may overlap more with transformational leadership and, as such, may be more closely aligned to transformational leadership, especially where recognition is more individualized. Thus in the current study contingent reward is viewed as behaviour by the leader that provides positive reinforcement including praise and recognition in return for appropriate follower behaviour.

Table 6: Contingent Reward Behaviour

Behaviour	Theme	Node	Quote
Contingent Reward	Reward	Praise	“reward is a word of praise or thanks or appreciation, like ‘I’m really proud of you for thinking that’”
		Recognition	“acknowledging the good behaviour” “I can shake their hand” “when people have done well or they answer a question well or correct my mistakes then I do give them recognition and respect during the lecture”

Sense of Humour

Sense of Humour emerged in the current context which has not previously been identified as transformational leader behaviour. Generally, researchers have proposed that humour may directly impact performance because the use of humour enhances the affective and motivational states of followers. To illustrate, in organizations, the use of humour has been associated with improving morale among workers (Gruner, 1997), creating a more positive organizational culture (Clouse & Spurgeon, 1995), enhancing group cohesiveness (Duncan, 1982), and increasing motivation (e.g., Crawford, 1994). The use of humour has also been positively related to individual and unit performance (Avolio, Howell, & Sosik, 1999) and associated with higher levels of productivity (e.g., Clouse & Spurgeon, 1995).

A sense of humour is a characteristic frequently associated with leadership (Bass, 1990; Clouse & Spurgeon, 1995; Shamir, 1995) and with a leader's ability to effect change in followers (Goldstein, 1976; Hogan, Curphy, & Hogan, 1994). Dubinsky, Yammarino, and Jolson (1995) proposed a number of outcomes of having

funny and witty leaders including: relieve tense situations; developing pleasant relationships; enhancing followers' attention; and making communications more memorable. Considering the importance of these outcomes (e.g., enhanced attention) for students and lectures, it is unsurprising that humour emerged as an important behaviour in the education context (see Table 7). However, caution needs to be applied as Dubinsky et al. (1995) noted leaders ought to be judicious in their use of humour, utilizing it when desirable and appropriate. As such, humour ought to be respectful of others (i.e., not at expense of others) and often have a willingness to make light of themselves. These aspects emerged in the current study as highlighted by one lecturer who stated:

If I can possibly do it, even if I have to make it up I think about something that has happened to me in my life that I can link and usually it is something that is quite detrimental to me, like me falling over or something that makes them laugh but then they remember that because they remember the story I told them.

Despite the fact that studying humour "has the potential of providing significant insights into management and organizational behaviour" (Duncan, Smeltzer, & Leap, 1990; p. 255) relatively little research has examined the relationship between humour and leadership style. Interestingly, previous empirical research has found humour to have its own individual impact in organisations (e.g., Dandridge, 1986; Duncan, 1983, 1984; Linstead, 1985). Furthermore, Bass (1990) suggests that the building and maintenance of relationships and groups can be accomplished through joking. While few papers have examined the interplay between humour and leadership, those that have, conceptualise its role differently. For example, Avolio et al. (1999) conceptualised

humour as a moderator reporting that the relationship between transformational leadership and unit performance was moderated by the use of humour, whereby high-use-of-humour was significantly more positive than low-use-of-humour in predicting unit performance. Conversely, they found low-use-of-humour to be significantly more positive in predicting individual performance. Dubinsky et al. (1995) examined humour as a leader characteristic suggesting that the more leaders can use humour on the job the greater their ability will be to inspire subordinates, intellectually stimulate employees, and provide individualized consideration to others. Although humour may be relevant to Bass' (1985) four transformational leadership behaviours, the present analysis suggests that a sense of humour can be viewed as a behaviour in its own right. Thus, in the context of education, sense of humour is defined as behaviour that is intended to invoke light-heartedness, comicality, and laughter. Similar to Bass' (1990) contention that sense of humour is a relevant for understanding leadership we suggest that more research is required to elucidate the exact role of humour within the framework of transformational leadership.

Table 7: Sense of Humour Behaviour

Behaviour	Theme	Node	Quote
Sense of humour	Fun	Humour	“every class, there was always a joke” “they used humorous examples”

Self Belief

Lecturers displaying self-belief and acting confidently was reported by both students and lecturers in the data. While this category was at an attributed level, its discussion by participants highlights it as relevant for lecturers' behaviour in higher education. Self-

belief behaviour is akin to self-efficacy. Traits such as efficacy are often included when theorists consider the issue of effective leadership (e.g., Chemers, 2001). Little investigation on leaders' self-efficacy has been conducted, and of the studies that have been undertaken important constructs, such as self-esteem and self-efficacy have been confounded (Bass, 1990; Chemers, 2001; Kipnis & Lane, 1962; Yukl, 1994). With renewed interest in the role of self-efficacy in leadership effectiveness (Chemers, Watson, & May, 2000; Murphy, 2002; Watson, Chemers, & Preiser, 1996), empirical literature on leadership and self-efficacy has predominantly focused on self-perceptions (i.e., leaders' perception of self-efficacy). A key finding from the current study relates to how followers perceive leaders' projected efficacy (i.e., how efficacious the leader behaves). For example, it was reported by both students and lecturers, that self belief was important for lecturers to espouse. Considering the self-presentation nature of giving lectures to students it is not surprising that it was viewed as important for lecturers to act confidently as reflected in the quotes presented in Table 8. To the best of the current author's knowledge, acting and behaving in a confident manner has not been researched in relation to transformational leadership. However, within sport leadership literature, Feltz, Chase, Moritz, and Sullivan (1999) propose that coaches efficacy influences not only coaching behaviour but the behaviour, performance and perceptions of followers (i.e., athletes and teams). Vargas-Tonsing, Meyers, and Feltz (2004) reported that athletes perceived the behaviour of coaches acting confidently increased their own perceptions of efficacy. Perhaps, this is not surprising given that Bandura (1977) posits vicarious experience/modelling, as an antecedent of self-efficacy beliefs. Considering that lecturer self belief emerged as a relevant from both the students and

lecturers, self-belief is deemed a contextually relevant behaviour in higher education and, as such, is viewed as behaviour by the leader that demonstrates their credibility and confidence to followers.

Table 8: Self Belief Attribute

Attribute	Theme	Node	Quote
Self-Belief		Confidence	<p>“lecturers are confident in their delivery”</p> <p>“lecturers need to have total credibility, be natural, that comes from confidence”</p> <p>“to be confident in their own knowledge”</p>

Interpersonal interactions

On the whole the interviews with the lecturers provided support for the transformational leadership behaviours that emerged from student focus groups. However there was one exception, interpersonal interactions, which emerged solely from the lecturer perspective. This attributed category was discussed by the lecturers as being important and, as such, interpersonal interactions was deemed as a method of communicating with followers to foster interpersonal relationships and by showing followers humility, that they are human and make mistakes (see Table 9).

Smoll and Smith (1989) state that “leader effectiveness resides in both the behaviours of the leader and the eyes of the beholder” (p. 1544) emphasising the importance of followers’ perception of leadership. In line with this a model of transformational leadership behaviours for the context of education ought to emanate from students primarily and be corroborated by lecturers. Given that students did not discuss this category, interpersonal interactions is an attribute that resides only in the

eyes of the leaders and not the followers and, as such, does not form part of the model of transformational leadership higher education lecturing. Despite this, the category does highlight some interesting considerations for future research. In particular, the role of mistakes by leaders. As illustrated by the quotes in Table 9, lecturers viewed mistakes as an important aspect for leaders in lecturing positions. Indeed, this is potentially a contextually relevant nuance of leadership. In the majority of contexts leaders must make the difficult decisions. For example, business leaders must decide whether to pursue a radically new product line, coaches have to pick the final play of the game, and military commanders choose where to position their troops. Thus, in such contexts leaders' mistakes could be viewed as unacceptable and detrimental to the organisation. However, in the education context mistakes could show followers that it is acceptable to make mistakes and that by doing so it demonstrates that lecturers are human and approachable. Furthermore, within an education related context, scientific discovery can sometimes be attributed to mistakes and unintended events (e.g., Nobel prize winner and current president of The Royal Society, Sir Paul Nurse, attributed his Nobel winning research to noticing cell mutants by mistake whilst searching for completely different mutants). As in the present study mistakes are often viewed as holding relevance to interpersonal interactions. For example, in a survey by Galea (2006), over 1400 leaders reported that their most common mistakes were interpersonal in nature, with 80% of the respondents reporting that they had failed to provide appropriate feedback, such as praise or redirection; which they attributed as their biggest failing as a leader. Interestingly, despite mistakes often being viewed as a failing, Ruvolo, Petersen, and LeBoeuf (2004) suggest that only through creating a culture in which leaders are

permitted to learn and grow from mistakes will organization members truly develop as leaders. Considering the value of certain mistakes (e.g. scientific discovery) in the education context it is perhaps likely that this context is one where such a culture of learning and growing from mistakes is fostered. Thus, as suggested by the quotes in Table 9, mistakes are perceived to be important in the education context as they provide opportunities for learning and a demonstration of humility. Clearly leaders view mistakes as influential although, depending on the context, they may be viewed as beneficial (e.g., education) or detrimental (e.g., military). Thus, the role of leader mistakes in varying contexts and its effect on performance may warrant further investigation.

Table 9: Interpersonal Interactions Attribute

Attribute	Theme	Node	Quote
Interpersonal Interactions	Communicating	Being Human	“the students see you as a human” “personal traits and attributes, making sure they know I am a real person”
		Mistakes	“the ability and the confidence to share or recognise when you have made a mistake” “you go it warts and all, the mistakes they made as well as the good things”
		Relationships	“it’s about building up that relationship” “it’s important to form that bridge or that bond with people”

Fostering Acceptance of Group Goals

The fostering acceptance of group goals behaviour that was included in both the TLI (Podsakoff et al, 1990) and the DTLI (Hardy et al., 2010) was considered by

lecturers and students not to be relevant to the education context. While developing and aiming to achieve goals is a contextually viable pursuit in the education context, this seems to be most appropriate as an individual pursuit rather than a group or team pursuit. Indeed, higher education's nature is that of an individual pursuit, in which each student has the majority say in the outcome they achieve depending on their own personal investment. This was reflected by quotes from students. For example, one student stated "education wise I think it's harder to work in a group because it's for your own degree it's for yourself", another suggested, "this whole thing with groups, your degree here is an individual degree and I think that is really what it is about". When trying to think about how lecturers could foster group goals one student proposed "you can have a mini goal like everyone take part, everyone be interactive in the lectures, but some people don't want to, some people went out the night before and are aren't really bothered" and another suggested "they try and say like your all in it together I suppose, you can all do well". Conversely, from a lecturer perspective, one lecturer felt it was relevant stating "I use group work, where I say I'd love to get your ideas, put your heads together it is always better when we work together". However, generally meaning units pertaining to foster acceptance of group goals were sparse with participants discussing in lecturer group work but not as specific lecturer behaviour. The pursuit of a degree in itself was an individual pursuit and not related to a group. Therefore, harnessing group work and teamwork was seen to be unrelated to individual achievement at a student level and not a transformational leadership behaviour identified by students.

Conclusion

The study presents a conceptualisation of transformational leadership in the context of lecturing in higher education. The differentiated transformational leadership framework for education includes eight behaviours: individual consideration, inspirational motivation, intellectual stimulation, high performance expectations, appropriate role modelling, contingent reward, sense of humour and self-belief.

There are a number of strengths associated with the current study. First, perspectives of transformational leadership were gained from both leaders and followers (i.e., lecturers and students). Previous research qualitatively examining the perception of leadership has tended to focus on one of these to the exclusion of the other (e.g., Alimo-Metcalfe & Alban-Metcalfe, 2001). Second, the employing of two qualitative data collection methods, focus groups and semi structured interviews, strengthened data collection. Focus groups allow for interactional discussion to generate details of participants' complex experiences. As such, they draw upon interaction to elicit divergent ideas and experiences rather than seek a consensus (Kitzinger, 1994). Due to the number of participants, focus groups may generate only surface information; limited in depth of experience, and as such, may be comparatively superficial. Similarly, doubts exist about the extent to which individual participation in a focus group discussion is influenced by the group or dominant group members (Morgan & Kreuger, 1998). Conversely, interviews allow for deeper experiences to be discussed but lack a wide range of experiences and interactional quality. By employing both methods, data collection was maximised to have both deep experiences and a broad range of experiences combined with interaction to facilitate divergent experiences.

To the best of our knowledge, this investigation is the first to qualitatively examine the transformational lecturing behaviours in higher education. However, it is not without its limitations. First, despite taking measures to minimise the mixing up of attributes, behaviours and outcomes, the transformational leadership framework in higher education contains leader self-belief, which only emerged as an attribute in the current study. Many researchers have criticised conceptualisations of transformational leadership for not clearly distinguishing between behaviours, attributes and outcomes (Yukl, 1999). While the aim of the present research was to develop a behavioural model of transformational leadership in the education context, it is notable that self-belief, despite emerging as an attribute, was retained for the leadership model in this study. There are four main reasons for this decision: (a) it emerged as being important; (b) it emerged from both student and lecturer perspectives; (c) self-belief can be behaviourally operationalized and observed; (d) it has been highlighted in other leadership contexts as relevant behaviour (e.g., Vargas-Tonsing et al., 2004).

A second limitation relates to the pervasive nature of mixing behaviours, attributes and outcomes in conceptualisations of previous transformational leadership research and the conceptualising of two new behaviours (i.e., self-belief and sense of humour). To illustrate, it could be argued that these two new behaviours are not leadership behaviours per se, but variables that may play a mediating or moderating role in the relationship between transformational leadership behaviours and follower outcomes. However, in the current study, students and lecturers discussed these as aspects that lecturers explicitly do, and thus are conceptualised as transformational leadership behaviours in this programme of research. Future research needs to fully

elucidate the placement of these as behaviours in a transformational leadership model. For example, it would be of benefit to assess if these new behaviours predict outcomes that form central components of theorising on transformational leadership. Certainly, future research, which develops a method of measuring the transformational leadership behaviours arising from the current study, is of use for the testing of such predictions. Equally, the current conceptualisation requires further examination through the use of multiple methods over time to replicate these findings.

In conclusion, the study offers support for the applicability of transformational leadership to the context of higher education. Six of the eight behaviours emanating from this study have been previously conceptualised by past transformational leadership researchers. A further two new behaviours, not previously conceptualised as part of transformational leadership emerged as relevant for the educational context. Future research is required to further examine this model of transformational leadership in higher education.

Chapter 3

The development of a Differentiated Transformational Leadership Inventory for Education: Structural, concurrent and predictive validity^{2,3,4}.

² Study 1 and 3 of this Chapter was funded by the Higher Education Academy pedagogic development fund of the Hospitality, Leisure, Sport, and Tourism.

³ Part of this Chapter was accepted for poster presentation as:
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⁴ Part of this chapter was accepted for a verbal presentation and has been published as an abstract as:
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Abstract

This chapter reports three studies detailing the development and validation of a differentiated transformational leadership inventory for higher education. Study 1 (N=349) uses confirmatory factor analysis to assess the structure of the differentiated inventory, resulting in a 30-item, eight factor model. In Study 2, using a different sample (N=241), the factor structure of the inventory was re-confirmed. Finally, Study 3 employed a longitudinal design to examine the concurrent and predictive validity of the eight-factor model of transformational leadership. Results revealed that the eight factors were correlated with established measures of learning climate and global transformational leadership. Further, results revealed the leadership behaviours predicted academic efficacy, student satisfaction, leader inspired extra effort, student engagement, academic performance, behavioural regulation and psychological need satisfaction. This set of studies is the first to apply transformational leadership to higher education to develop a reliable and valid measure of lecturing behaviours.

The development of a Differentiated Transformational Leadership Inventory for
Education: Structural, concurrent and predictive validity.

Transformational leadership (TL) is one of the most prevalent leadership theories in organisational psychology. Transformational leaders stimulate and inspire their followers to achieve extraordinary outcomes and, in the process, develop their followers' own leadership capacity. These leaders help followers to grow and develop by responding to followers' individual needs by empowering them and aligning the objectives and goals of the individual followers and the organisation (Bass & Riggio, 2006). TL has been examined extensively in a variety of contexts, for example, the military (Bass, Avolio, Jung, & Berson, 2003), the public sector (Rafferty & Griffin, 2004), business (Barling, Weber, & Kelloway, 1996), and sport (Charbonneau, Barling, & Kelloway, 2001). Despite the considerable volume of research on transformational leadership, only a few studies have applied the transformational framework to the context of higher education (e.g., Dussault, Valois, & Frenette, 2007; Harvey, Royal, & Stout, 2003; Tourish, Craig & Amernic, 2010; Wolf, Hayden, & Bradle, 2004). To this end the current study aims to develop a measure of differentiated transformational leadership for the higher education context.

Surprisingly, little research has focused on transformational leadership in education and those that do have predominantly focused on higher level leadership (i.e., Departmental/University), rather than examining the direct impact of transformational leadership behaviours on students. To illustrate, Letithwood and colleagues focused on transformational school leaders, reporting a significant influence of transformational practices on teacher collaboration, and a significant

relationship between aspects of transformational leadership and teachers' self-reported changes in their own attitudes towards school improvement (Leithwood, Jantzi & Dart, 1991; Leithwood & Jantzi, 1991; Leithwood & Poplin, 1992). Koh, Steers, and Terborg (1995) demonstrated that transformational leadership of departmental heads positively influenced staff and departmental functioning and, consequently, indirectly impacted students. Whilst this research demonstrated the indirect effect of transformational leadership behaviours by departmental heads on student outcomes, it did not examine the impact of lecturers' transformational leadership behaviours on students. Examining transformational leadership at the level of the lecturer contrasts to most of the educational transformational leadership literature, in that, it examines the impact of leaders on their immediate followers. Consequently, the current study will focus on the lecturer to student level relationship, thereby mapping the direct effect.

Indeed, within the education literature research examining the impact of lecturers on students there has been little or no attempt to ground links between lecturer behaviours and student outcomes in theory (Weimer & Lenze, 1997). With regard to teaching and learning, reports have highlighted the student experience as an area for concern within the HE sector. Both Ramsden (2003) and Laurillard (2002) argue that the main role of university lecturers is to make student learning possible. However, their reports have highlighted numerous issues in the HE environment. Primarily, the activity of lecturing at the university level has in the past been viewed as a function performed by experts in fields of research who were deemed qualified to pass on their knowledge. However, in a context of increasing massification, teaching has become a more complex activity directed at an increasingly diverse

body of students in more progressively 'flexible' learning environments (NUS Student Experience Report: Streeting 2008). As a consequence, innovative approaches to the learning environment are increasingly more difficult to implement thus emphasising that the need to attenuate issues of the changing learning environment and initiate solutions is of greater importance. Thus, employing the transformational leadership framework and in particular the differentiated model of transformational leadership to the education context, offers the potential to address limitations associated with; the lack of theoretical underpinning of previous research, and, the scarcity of research examining the impact of lecturing behaviours on student outcomes.

As outlined in Chapter 2, considering that behaviours emanating from previous educational literature which constitutes good and ideal lecturing can be closely aligned with transformational leadership behaviours, and the call by Antonakis, Avolio, and Sivasubramaniam (2003) for future research into the contextual influences of the transformational leadership behaviours, identification of how the transformational leadership behaviours may be relevant in an education context is a worthwhile endeavour. Chapter 2 assessed the perceptions of lecturing in HE through the use of focus groups with higher education students and semi structured interviews with higher education lecturers employing (Hardy, Arthur, Jones, Munnock, Isaacs and Allsopp's (2010) differentiated conceptualisation of transformational leadership. The findings from Chapter 2 offers support for the applicability of the differentiated transformational leadership model in the higher education context. Further, additional themes important to HE lecturing emerged. Specifically, six of the seven transformational leadership behaviours presented in

Hardy et al. (2010) were identified as relevant to higher education and were conceptualised to reflect this context including: individual consideration, behaviour by the leader that provides support and help for followers and showing consideration for followers' feelings and needs; inspirational motivation, behaviour by the leader that develops and articulates a positive vision of the future, inspires others to achieve that vision, expresses belief that the vision is achievable and infuses meaning into the work of followers; intellectual stimulation, behaviour by the leader that helps a follower think about their work, stimulates ideas, examine assumptions about work and re-think how it can be performed; high performance expectation, behaviour by the leader that demonstrates his/her expectations of followers including expectations for excellence and quality; appropriate role modelling, behaviour by the leader that sets an example for others to follow which is consistent with the values that the leader/organization espouses; and contingent reward, behaviour by the leader that provides positive reinforcement including praise and recognition in return for appropriate follower behaviour. The behaviour of fostering acceptance of group goals (Hardy et al., 2010) was not applicable to higher education. Two additional behaviours, not previously conceptualised as transformational leadership behaviours emerged: self belief, behaviour by the leader that demonstrates their credibility and confidence to followers; and sense of humour, behaviour that is intended to invoke light-heartedness, comicality, and laughter.

Although there are already validated inventories of TL (e.g., Bass & Avolio, 1995), the results of Chapter 2 highlight behaviours that are not captured by these inventories and also a behaviour (i.e., fosters acceptance of group goals) that are not relevant to the higher education context. Consequently, there is a need to develop an

inventory which operationalises these findings so that a tool for collecting transformational leadership data can be generated for higher education research (cf., Stone, 1995). Furthermore, the majority of measures of transformational leadership utilise a global transformational leadership conceptualisation. Building on Hardy et al.'s (2010) and Callow, Smith, Hardy Arthur, and Hardy 's (2009) rationale that employing a differentiated conceptualisation offers more utility for the examination of differential effects and allows for an examination of the which behaviors should be targeted in a specific applied context, the present Chapter reports three studies concerning the development and subsequent validation of the differentiated transformational leadership inventory for education (DTLI –E). The aim of Study 1 was to develop a measure reflecting the theoretical model presented in Chapter 2 by examining the initial content validity and factor validity of the DTLI-E. The aim of Study 2 was to confirm the findings from the initial development of the DTLI-E in a separate sample from different UK higher education institutes. Finally, the aim of Study 3 was to examine the concurrent and predictive validity of the DTLI-E.

Study 1

Development of Inventory and Content Validity

The findings from the focus group and interview study (Chapter 2) formed the basis for subsequent phases relating to item generation for the inventory. Specifically, in phase one, the meaning units (i.e., phrases or words derived through qualitative methods) were utilised in the development of inventory items. The lead investigator created an initial set of 127 items taking into consideration both the differentiated transformational leadership behaviours (Hardy et al., 2010) and the additional contextually relevant behaviours that emerged in Chapter 2. Content

validity of the 127 items were assessed by three researchers with expertise in transformational leadership theory and teaching and learning contexts based on three criteria: relevance to a higher education population, duplication/similarity of items, and clarity of item wording. Each investigator independently judged whether each item should be retained and provided comments or edits to items. Each item was discussed between the investigators until a consensus agreement was reached. This item trimming process resulted in a second version of the inventory containing 70 items.

In phase two, to further ensure that the items were representative of the eight transformational lecturing behaviours in higher education and comprehensible by respondents, six students including both undergraduates and postgraduates subsequently reviewed the 70 item-pool. The students received a copy and explanation of the conceptual model of transformational leadership in higher education and were asked to: (a) examine the items and their placement within the dimensions of the conceptual model; and (b) make suggestions as to the inclusion, modification, or deletion of any item. The resultant pool of items from this process consisted of 67 items across the eight behaviours of transformational lecturing, with the deletion of 3 items based on the students' descriptive reports that they were ambiguous and could fit with a number of the leadership dimensions.

In an attempt to accurately represent each theme within those factors from the qualitative analysis, the behaviours of individual consideration and inspirational motivation contained 19 and 14 items respectively. On reflection, this number of items was deemed too large to conduct single factor CFA analyses. Thus researchers reassessed the two scales to reduce items. Based on previous literature a theoretical

approach was used to explore the items. This process involved conducting a literature review of previously established transformational leadership questionnaires that contained these factors and retaining the items based on their similarity to previously established measures. To illustrate, historically, vision is one of the most common conceptualisations within inspirational motivation. In previous research this vision component of inspirational motivation is conceptualised as an exciting vision of the future (e.g. Hardy et al, 2010). In the set of items for inspirational motivation, the item '*tells me what I am going to learn*' while encapsulating a vision component, was deemed not to capture the exciting vision of the future as conceptualised previously and thus was removed from the item pool. This process of reassessment and item reduction resulted in 7 items for individual consideration and 9 items for inspirational motivation.

In phase three, the final 50 items were randomly ordered into an inventory format with the stem 'My lecturer' and were anchored on a 7-point likert scale where 1= *never*, 2= *rarely*, 3= *occasionally*, 4 = *sometimes*, 5= *fairly often*, 6=*very often*, and 7=*always*. The inventory had items measuring all eight transformational leadership in higher education behaviours: individual consideration (7 items), inspirational motivation (9 items), intellectual stimulation (6 items), high performance expectations (7 items), appropriate role modelling (8 items), contingent reward (5 items), sense of humour (5 items) and self belief (3 items). Next, the confirmatory factor analysis (CFA) on the 50-item version of the inventory to assess the fit of the final version of the inventory was carried out. CFA has been advocated the choice method to test the underlying factor structure of an instrument because CFA utilizes a theory-driven approach (Hardy et al., 2010)

Method

Participants

A sample of higher education undergraduate students ($N=349$, $M_{age}= 20.34$, $SD= 3.9$) from two academic departments, sport science and psychology in a UK University provided informed consent to participate in this study. Participants were sampled from six modules over three academic years levels and included 168 females and 129 males (52 did not specify their gender).

Procedure

Participants were approached in two ways depending on school procedures. In the psychology school, students on the selected modules received an email informing of the study being available on Sona, an online response system, inviting them to participate. Prior to responding participants were asked to read an information sheet and provided consent by continuing with responses to the inventory. In the sport science school lecturers on selected modules provided permission to collect data within their module. Specifically, at the beginning of the lecture, the lead investigator informed the students about the study requirements. Students were provided with an information sheet, a consent form and a questionnaire pack and were referred to the instruction set for information on how to complete the inventory. Mid-way through the semester, that is, between weeks five and six participants were asked to respond to the differentiated transformational leadership higher education inventory (DTLI-E)⁵ in order to: (a) ensure that students had sufficient information upon which to evaluate their lecturers' behaviours and (b) minimize any biases that may occur at the start of students' interaction with their

⁵ This data collection formed part of a larger study, the rest of which is outlined in Study 3 of this Chapter.

new lecturers at the beginning of a module (e.g., honeymoon bias: Boswell, Boudreau, & Tichy, 2005). All other questionnaires were collected at the beginning and end of the semester and the reader is referred to Study 3 for details of procedures related to the other measures.

Data Analysis

Missing data were analysed using SPSS. Data were inspected to determine if there were any systematic patterns of missing cases using Little's test for data missing completely at random (Little, 1988). Missing data were then replaced using an Expectation Maximization algorithm to find the maximum likelihood estimates of model parameters.

The factorial validity of the DTLI-E was examined via analysis of covariance structures using LISREL 8.54 (Joreskog & Sorbom, 2003). A sequential approach to model testing, advocated by Biddle, Markland, Gilbourne, Chatzisarantis, and Sparkes (2001) was employed. This approach first tested separate single factor models for each scale (behaviour) to assess the factorial validity of each scale. A selection of goodness-of-fit indices, including Chi-square (χ^2), NNFI, CFI, RMSEA, and SRMR, were used to evaluate the fit of the data to the hypothesized eight-factor model. Traditionally, NNFI and CFI values $> .90$, RMSEA $< .08$ and SRMR $< .08$ have been used as cut-off criteria. Items were considered for deletion if they produced scores that had factor loadings $< .40$ (Mullan, Markland, & Ingledew, 1997). If a scale was judged as unacceptable, items were considered for removal based on three criteria. First, given that low factor loadings demonstrate items that are poor indicators of their underlying factor, items that displayed low factor loadings were considered for removal. Second, modification indices were also

examined to locate potential cross-loading items. Third, when problem items were identified, they were then examined to assess if there was a viable theoretical rationale for their removal. This process was carried out on all eight transformational leadership scales.

Confirmatory factor analysis was then conducted on the full model to examine full model factorial validity. Model identification was achieved by fixing the variance of each factor to 1.0. Item scores were only allowed to load on their intended factor and factors were allowed to correlate. Once more “fit indices” (NNFI, CFI, RMSEA, and SRMR), factor loadings and modification indices were used to evaluate the structural integrity of the full hypothesised model.

Discriminant validity was assessed by examining correlations between the factors to calculate if 95% confidence intervals (CI) surrounding the point estimates encompassed 1.0. Composite reliability (CR) was employed to assess internal consistency (Fornell & Larcker, 1981). CR is considered superior to Chronbach’s alpha reliability coefficient as it is purported to provide a better estimate of scale reliability because it does not assume equal weighting of items, and is calculated by using the item loadings obtained from within the nomological network (Fornell & Larcker, 1981). Researchers have suggested that alpha levels of $\geq .6$ may be considered sufficient for research (Epitropaki & Martin, 2005) despite being low for practical application. However, other researchers have recommended a cut off value of .70 or higher to be acceptable for CR (Fornell & Larcker, 1981; Nunnally & Bernstein, 1994). For the purposes of the current study an alpha level cut off of .7 or greater was employed.

Results

Data Screening

The data were inspected for any systematic patterns of missing cases. The data met the assumption for missing completely at random (MCAR) with a non significant Little's MCAR test statistic: $\chi^2 = 959.44$, $df = 945$, $p = .36$. Missing data were therefore replaced using direct approach of the Expectation Maximization algorithm in LISREL 8.54.

Single Factor Models

The factor loadings and fit statistics for each of the leadership behaviours were examined. This process revealed that the initial fit statistics for six of the leadership factors were not ideal. Problem items were identified and removed for each factor. To illustrate, the initial fit statistics for the 7-item HPE factor were $\chi^2(14) = 308.28$, $p = .000$, $RMSEA = .24$, $SRMR = 0.13$, $NNFI = 0.50$ and $CFI = 0.66$. This factor contained 3 items (e.g., 'expects me to push myself in my work') that were reflective of high performance aspects from very challenging contexts such as the military (cf. Hardy et al., 2010). However, in the context of higher education, interpretation of the meaning units from the focus groups and semi-structured interviews revealed that high performance expectations' meaning units were of a less challenging nature than would be expected in contexts such as the military. Therefore, items that reflect this less challenging aspect of the higher education context (e.g. 'tells me they want me to do really well') are more theoretically aligned to this context. Indeed, removal of these high challenging items resulted in better subsequent fit with lower values for $\chi^2(2) = 2.50$, $p = .28$, $RMSEA = .02$, $SRMR = 0.01$, $NNFI = 0.99$ and $CFI = 0.99$. This process was also applied to the other five

factors resulting in an improved fit. Initial fit statistics, initial number of items, final solution and final number of items are fit statistics are presented in Table 10.

Full Model

Table 11 displays the means standard deviation and factor loadings for each of the factors in the measurement model. Using the 35 items retained from the single factor models the full eight-factor model was examined and the data showed approaching reasonable fit to the model according to the approximate fit indices: $\chi^2(566) = 1918.97, p = .00$ RMSEA = 0.08, SRMR = 0.07, NNFI = 0.97 and CFI = 0.97 with factor loadings ranging from .40 to .96. Modification indices were also inspected, and 6 items appeared to cross-load. Based on theoretical rationale and empirical grounds these 6 items were removed. To illustrate, similar to the high performance expectations behaviour above the intellectual stimulation item '*pushes me to be critical about my work*' was reflective of the less challenging and more supportive nature of higher education. Further, it could be argued that the contingent reward item '*acknowledges my effort when I try hard*' lacks a reward related component. While both of these are possible it is more likely that a lecturer fosters a student to be critical but are unlikely to 'push' them to be critical and lecturers are also more likely to praise students for work rather than just acknowledge work was effortful or completed.⁶ Following the removal of the cross loading items the model fit improved and the data showed a good fit to the model: $\chi^2(377) = 1054.48, p = .00$ RMSEA = 0.07, SRMR = 0.05, NNFI = 0.97 and CFI = 0.98. See appendix C for

⁶ Other items removed include: the appropriate role modelling item '*is always well prepared for his/her lectures*', which was removed based on the rationale that it is not always necessary for students to prepare for lectures, thus this modelling may not always be relevant to students; the individual consideration item '*listens to me*' based on the rationale that with massification in the current higher education sector, this is often not possible to listen to every student in the context of large lecturing cohorts; and the sense of humour item '*shows me they have a sense of humour*', which was removed based on the rationale that upon re-inspection of the item it tapped an attribute rather than a specific behaviour.

final DTLI-E inventory, subscales and items. Inter-factor correlations ranged from .28 to .95, however, none of the 95% confidence intervals (CI) surrounding the point estimates encompassed 1.0, thus supporting the discriminant validity of the factor scores. The composite reliability for the final eight factors 8 of the transformational leadership subscales were $>.7$, demonstrating acceptable internal consistency (Nunnally & Bernstein, 1994). Table 12 displays the composite reliability (CR) and between factor correlations.

Table 10: Initial and final fit statistics for the single factor models

<i>Factor</i>	<i>Initial Fit</i>								<i>Final Fit</i>							
	<i>No of Items</i>	χ^2	<i>df</i>	<i>p</i>	<i>RMSEA</i>	<i>SRMR</i>	<i>NNFI</i>	<i>CFI</i>	<i>No of Items</i>	χ^2	<i>df</i>	<i>p</i>	<i>RMSEA</i>	<i>SRMR</i>	<i>NNFI</i>	<i>CFI</i>
Inspirational Motivation	9	151.94	27	.00	.115	.04	.94	.95	5	5.41	5	.36	.01	.01	.99	.99
Individual Consideration	7	100.36	14	.00	.13	.04	.94	.96	4	.42	2	.81	.00	.00	1.00	1.00
Intellectual stimulation	6	107.35	9	.00	.17	.06	.88	.93	4	3.76	2	.15	.05	.01	.98	.99
High performance expectations	7	308.28	14	.00	.24	.13	.50	.66	4	2.50	2	.28	.02	.01	.99	.99
Appropriate role modelling	8	110.44	20	.00	.11	.04	.96	.97	6	6.25	9	.71	.00	.01	1.00	1.00
Contingent reward	5	26.67	5	.00	.11	.02	.97	.98	4	1.21	2	.54	.00	.00	1.00	1.00
Sense of humour	5	1.92	5	.86	.00	.00	1.00	1.00	5	1.92	5	.86	.00	.00	1.00	1.00
Self belief	3	29.67	2	.00	.19	.11	.91	.94	3	29.67	2	.00	.19	.11	.91	.94

Table 11: Factor loadings, means and standard deviations for factors in Study 1 and Study 2

<i>Factor and Items</i>	Mean (SD)		Factor Loadings	
	1	2	1	2
<i>Factor 1: Inspirational Motivation</i>				
5.shows me how my work relates to the real world			.73	.52
17.talks enthusiastically about what my future career could be like	5.04	4.73	.50	.72
21.tells me inspirational stories	(1.19)	(1.05)	.74	.75
24.explains why seemingly dull work is necessary			.58	.44
28.communicates an exciting vision of what I can achieve			.77	.68
<i>Factor 2: Individual Consideration</i>				
4.shows me that s/he cares about me	4.64	4.82	.79	.61
15.helps me if I have difficulties	(1.31)	(1.01)	.72	.61
25.is considerate towards me			.77	.67
<i>Factor 3: Intellectual Stimulation</i>				
10.breaks down complex ideas for me	5.30	5.44	.75	.69
19.challenges me to come up with new ideas	(1.13)	(.90)	.74	.67
29.asks me questions that make me think			.71	.52
<i>Factor 4: High Performance Expectations</i>				
9.tells me that they want me to do really well			.75	.74
14.tells me to do my best	4.24	3.84	.78	.55
20.tells me that a first is within my reach	(1.30)	(1.24)	.61	.70
30.tells me s/he expects me to achieve a first			.47	.61
<i>Factor 5: Appropriate Role Modelling</i>				
3.provides examples of people for me to learn from			.55	.51
6.sets an example for me to copy by working hard	5.38	5.36	.80	.71
22.role models what is possible for me	(1.12)	(.92)	.78	.69
23.gives me an example of somebody that I can learn from			.82	.61
27.set examples for me to follow			.83	.65
<i>Factor 6: Contingent Reward</i>				
12.gives me recognition when I do good work	3.81	4.50	.91	.90
13.gives me praise when I do something well	(1.46)	(1.23)	.94	.90
16.personally praises me when I do outstanding work			.65	.66
<i>Factor 7: Self Belief</i>				
2.actes confidently	6.29	6.38	.78	.73
18.lectures in a confident manner	(.85)	(.77)	.89	.84
26.demonstrates confidence in their subject			.82	.71
<i>Factor 8: Sense of Humor</i>				
1.uses humour in the lectures			.78	.89
7.makes jokes during lectures	5.20	4.51	.92	.92
8.integrates humour into the lectures	(1.43)	(1.37)	.95	.95
11.tries to make me laugh in lectures			.85	.88

Table 12: Composite reliability (CR) and correlations of factors in the measurement
model in Study 1

<i>Factor</i>	Composite reliability	Correlations							
		1	2	3	4	5	6	7	8
1. Inspirational Motivation	.80	-							
2. Individual Consideration	.80	.86	-						
3. Intellectual Stimulation	.77	.94	.91	-					
4. High Performance Expectations	.75	.87	.91	.86	-				
5. Appropriate Role Modelling	.88	.95	.83	.90	.75	-			
6. Contingent Reward	.87	.58	.76	.64	.74	.52	-		
7. Self Belief	.87	.74	.56	.75	.53	.79	.28	-	
8. Sense of Humor	.93	.74	.64	.71	.62	.64	.36	.63	-

Discussion

The aim of the present study was to examine initial development, content validity and factor analysis of the DTLI-E. The results offer preliminary evidence for the factor structure, discriminant validity, and internal consistency of the 30-item inventory indicating a valid and reliable assessment of eight transformational leadership factors: inspirational motivation, individual consideration, intellectual stimulation, high performance expectations, appropriate role modelling (ARM), sense of humour, self belief, and contingent reward. The theoretical and applied implications of the findings are discussed later in this chapter's General Discussion section.

The aim of study 2 was to confirm the findings from the initial development of the DTLI-E in a separate sample from different UK higher education institutions. More specifically the main objectives were: (a) to assess the reliability of the subscales of the DTLI-E in a second sample; and (b) to confirm that factor structure of the DTLI-E was applicable to a second sample at other UK higher education institutions, therefore replicating the factor structure.

Study 2

Method

Participants

Opportunistic samples of undergraduate students studying for degrees in sport science at two UK universities were recruited for this study (N=241). Ethical approval was gained and both lecturers from the relevant modules and participating

students provided informed consent to participate. The sample included students from higher education levels four to six.

Measures

Transformational Leadership. The 30-item eight-factor DTLI-E resulting from Study 1 was administered.

Data Analysis

The same analytical procedures for the full factorial model, internal consistency, and discriminant validity as outlined in Study 1 was conducted.

Results

Confirmatory Factor Analysis of the 30 item eight factor model demonstrated acceptable fit: $\chi^2(377) = 939.94$, RMSEA = 0.08, SRMR = 0.08, NNFI = 0.95 and CFI = 0.96. See Table 11 for factor loadings, means and standard deviations. The composite reliability for six of the eight transformational leadership subscales were $\geq .7$. Both the individual consideration and intellectual stimulation subscales demonstrated composite reliabilities of .66, below the recommended cut off of .7 (Nunnally and Bernstein 1994). Composite Reliability and factor correlations are presented in Table 13.

Table 13: Composite reliability (CR) and correlations of factors in the measurement model in Study 2

<i>Factor</i>	Composite reliability	Correlations							
		1	2	3	4	5	6	7	8
1. Inspirational Motivation	.76	-							
2. Individual Consideration	.66	.73	-						
3. Intellectual Stimulation	.66	.76	.83	-					
4. High Performance Expectations	.74	.87	.70	.65	-				
5. Appropriate Role Modelling	.77	.83	.88	.95	.67	-			
6. Contingent Reward	.86	.55	.86	.70	.64	.67	-		
7. Self Belief	.80	.38	.48	.70	.17	.56	.31	-	
8. Sense of Humour	.95	.68	.45	.45	.48	.50	.35	.35	-

Discussion

The aim of Study 2 was to confirm the DTLI-E in a different sample from different UK higher education institutes. The findings supported the factorial validity of the DTLI-E revealing that the eight-factor structure of the inventory is valid. In addition the findings revealed that six the subscales of the DTLI-E demonstrated acceptable internal consistency in a second sample providing support for the conceptual premise of these factors of the inventory. Two factors (i.e., individual consideration and intellectual stimulation) did not reach the .7 cut off. However, as argued by Epitropaki and Martin (2005) alpha levels of $\geq .6$ may be considered sufficient for research purposes despite being low for practical application. The theoretical and applied implications of the findings are discussed later in the General Discussion section.

Study 3

The objectives of Study 3 were two fold: (a) to evaluate the concurrent validity of the DTLI-E in relation with two sets of conceptually related measures; and (b) to examine the predictive validity of the 30-item, eight factor DTLI-E.

Concurrent Validity

Concurrent validity was examined using factor correlations with conceptually related measures of teaching, namely the transformational teaching questionnaire (TTQ: Beauchamp, Barling, Li, Morton, Keith, & Zumbo, 2010) and the learning climate questionnaire (LCQ: Williams & Deci, 1996). The TTQ is measure of transformational teaching that was

recently developed in the context of high school physical education. Based on Bass' conceptualisation of transformational leadership, Beauchamp et al. (2010) developed the four-factor TTQ questionnaire capturing idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. Three of the four factors are comparable to the factors of inspirational motivation, intellectual stimulation, and individual consideration from the DTLI-E. Although research using the TTQ has generally employed a global conceptualisation of transformational leadership, in order to be consistent with our conceptualisation and provide a more robust test of concurrent validity we analysed and formulated hypothesis around the separate sub-factors:

Hypothesis 1a. The three factors of individual consideration, intellectual stimulation, and inspirational motivation on the DTLI-E will positively correlate with their corresponding three factors of the TTQ.

Hypothesis 1b. All eight factors of the DTLI-E will positively correlate with the global factor of transformational leadership on the TTQ.

Self-determination theory proposes that situations influence the extent to which individuals feel autonomous or controlled. As a result autonomy supportive environments are purported to foster greater internalisation and autonomy in individuals. Deci and Ryan (1985) conceptualised autonomy support as when an individual in a position of authority (e.g., a lecturer) considers the perspective of the other (e.g., student), acknowledges their feelings and provides choice. Black and Deci (2000) provide the example that autonomy-supportive teachers might provide students with the necessary

information while encouraging them to use the information in solving a problem in their own way. This conceptualisation of autonomy support is closely aligned to the transformational leadership behaviours of intellectual stimulation (followers re-examine assumptions about how their work can be performed) and individual consideration (considering the feelings and needs of followers). In line with this rationale it is proposed that lecturers who display transformational leader behaviours are autonomy supportive.

Hypothesis 2. The DTLI-E subscales will correlate positively with autonomy support as measured by the Learning Climate Questionnaire.

Predictive Validity

Predictive validity was assessed by using theoretically relevant psychological constructs of need satisfaction and intrinsic motivation from a self-determination theory perspective (Deci & Ryan, 1985). Furthermore, some generic student outcomes that are deemed important for an enhanced university experience were also selected. Considering the differentiated nature of the DTLI-E, differential predictions ought to be proposed and analysed for each psychological construct. Indeed, the theoretical links for differential predictions are outlined for the psychological constructs of need satisfaction and intrinsic motivation; however, for analysis purposes rather than entering solely the hypothesised behaviours into a regression, all behaviours were entered into the prediction. The rationale for this approach concerns the exploratory nature of the current study in view of the following: (a) the main purpose of the study is measurement development and, as such, was designed to assess the overall predictive validity of the DTLI-E; (b) this

is the first instance where a differentiated approach has been applied to the education context; and c) the differentiation in the current context examines two 'new' behaviours that have not previously been conceptualised within transformational leadership.

Psychological need satisfaction. Self-determination theory posits that satisfaction of three basic psychological needs of autonomy, relatedness and competence is necessary for internalisation of behavioural regulation, psychological growth, and wellbeing (Deci & Ryan, 2000). Similarities between the theoretical basis of both transformational leadership and need satisfaction can be delineated. Autonomy is conceptualised as having a rationale, endorsement and volition with respect engaging in a behaviour (Deci & Ryan, 2000). From a transformational leadership perspective the behaviour of inspirational motivation is conceptualised to provide a meaning for the work of followers' thus providing a rationale for ones' work. The behaviour of intellectual stimulation is theorised to challenge followers to think about how best to perform their work and thus offers followers personal endorsement and volition in their work. Furthermore, the high performance expectations is likely to empower followers to take control of their goals providing them with personal autonomy as to how best to achieve these expectations, thus high performance expectations are expected to predict autonomy.

Competence is conceptualised as the need for effectiveness or mastery of the social and physical world (White, 1959). Transformational leaders can satisfy followers' needs for competence by instilling higher task-related self-

efficacy and general self-worth, enhancing followers' self-concept. To illustrate, intellectual stimulation is postulated to challenge followers to question the methods they use in order to improve on them, high performance has been demonstrated to be effective by Pygmalion effect (Rosenthal & Jacobson, 1968) whereby leaders' (i.e., instructors) high expectations increased followers' expectations of their performance and as such are more likely to perceive themselves as more effectual in their environment. Through the provision of emotional and tangible support to meet followers' goals, individual consideration is expected to satisfy followers' need for competence. Finally, inspirational motivation is expected to influence followers' feelings of mastery whereby leaders express their belief in followers' ability to achieve a vision.

Relatedness refers to the need to belong and have warm and caring interactions (Baumeister & Leary, 1995; Reis, 1994). In Chapter 2, individual consideration was conceptualised to contain themes relating to being on the same level as students, listening to student and being available. These behaviours by a lecturer would be considered to demonstrate warmth and caring and thus individual consideration is expected to predict relatedness. In addition, appropriate role modelling, where leaders lead by example, showing followers how to perform their work instead of telling them "how to" is expected to foster relationships and closeness, and satisfy the need for relatedness. In consideration of the theoretical rationale outlined, predictive validity in the current study will be examined through associations with satisfaction of these psychological needs. More specifically, it is

hypothesised that transformational lecturing behaviours are positively associated to psychological need satisfaction.

Hypothesis 3a. Transformational leadership will positively predict autonomy.

Hypothesis 3b. Transformational leadership will positively predict relatedness.

Hypothesis 3c. Transformational leadership will positively predict competence.

Intrinsic motivation. From a self-determination theory perspective researchers suggest that humans are intrinsically motivated to approach activities that are challenging, interesting and satisfying (Ryan & Deci, 2000). Intrinsic motivation has been proposed to consist of a tri-partite taxonomy identified as intrinsic motivation to know, intrinsic motivation to accomplish, and intrinsic motivation to experience stimulation (Vallerand, Blais, Brière, & Pelletier, 1989). Social contexts that support an individual's autonomy are hypothesised to facilitate internalised behavioural regulation and thus self-determined motivation, whereas contexts that are more controlling are purported to undermine self-determined motivation (Pelletier, Fortier, Vallerand, & Brière, 2001). Research examining behavioural regulation in relation to education have shown that more internalised forms of behavioural regulation are related to positive academic outcomes, such as higher academic achievement (Flink, Boggiano, Maim, Barrett, & Katz, 1992; Miserandino 1996), more positive emotions experienced in class (Ryan & Connell, 1989; Vallerand, Fortier, & Guay, 1997), greater self-worth (Ryan &

Grolnick, 1986), greater creativity (Amabile, 1985), greater retention (Vallerand & Bissonette, 1992; Vallerand, Fortier, & Guay, 1997) and higher perceived competence (Ryan & Grolnick, 1986) than students with more controlled forms of behavioural regulation. Transformational leadership is suggested to appeal to values and describe work in value based terms, thus increasing the likelihood that followers will identify with the values espoused. Indeed, transformational leaders are asserted to frame goals in terms of needs and values that are likely to be attractive to followers and facilitate internalisation (Sheldon, Turban, Brown, Barrick, & Judge, 2003). Research on self-determination theory suggests that providing a meaningful rationale, acknowledging the behavior's feelings, and conveying choice promotes initialisation (Deci, Eghrari, Patrick, & Leone, 1994). Similarly, transformational leaders are proposed to provide meaning to tasks promoting the inherent value of the task through inspirational motivation. Equally the behaviour of individual consideration contends that transformational leaders acknowledge the personal feelings and needs of followers. Further, the behaviours of intellectual stimulation and high performance expectations are likely to empower followers rather than control them (Kanungo & Mendonca, 1998) by encouraging followers' to think about their work and how best to achieve performance expectations.

As postulated above, transformational leadership can be aligned to the concept of internalisation in that certain behaviours are similar to those purported to increase internalised forms of regulation. For this reason, it is

proposed the leadership behaviours are likely to support increasing internalisation.

Hypothesis 4: Transformational leadership behaviours will positively predict intrinsic motivation (to know, to accomplish and to experience stimulation).

Student outcomes. Student outcomes in the current study include leader inspired extra effort, academic engagement, academic efficacy, satisfaction at university, and performance. These outcomes were selected based on their perceived importance for an enhanced student university experience.

A central tenant to transformational leadership is that it will enhance followers' extra effort (Bass, 1985). Indeed, Bass (1985) originally posited extra effort as a manifestation of follower motivation, claiming that followers' extra efforts show how highly a leader motivates them to perform beyond expectations. Transformational leaders are purported to use inspirational motivation to inspire followers to a positive vision of the future, express confidence in their followers and express expectations for excellence (high performance expectations). Moreover, Shamir, House and Arthur (1993) note that transformational leaders increase effort-accomplishment expectancies by expressing high-expectations and confidence in followers' ability to perform. Interestingly, although quality of leadership has been suggested as one of the single biggest factors contributing to engagement (Buckingham & Coffman, 1999), there has been a surprising lack of research examining transformational leadership and engagement. That said, one

previous study by Zhu, Avolio, and Walumbwa (2009) has examined the relationship between transformational leadership and follower work engagement reporting a positive relationship. Based on the finding of Zhu et al. (2009) and the rationale that engagement is likely to be a product of internalised motivation and effort, it is expected the transformational leadership behaviour will predict extra effort and student engagement.

Hypothesis 5. Transformational leadership behaviours will positively predict leader inspired extra effort.

Hypothesis 6. Transformational leadership behaviours will positively predict student engagement.

From a conceptual perspective, Bass (1998) posits that one of the major objectives of transformational leadership is to enhance followers' confidence by empowering them and instilling confidence in them by expressing a belief in followers. A substantial amount of correlational evidence supports this contention (e.g., Bass et al., 2003; Jung & Sosik, 2002; Rafferty & Griffin, 2006). Thus it is proposed that in the current study transformational leadership will be positively related to academic efficacy.

Hypothesis 7. Transformational Leadership behaviours will positively predict academic efficacy

Another central tenant of transformational leadership is that it will enhance follower satisfaction (Bass & Avolio, 1995). Indeed, strong evidence has accrued which consistently demonstrates strong positive links between transformational leadership and follower satisfaction (e.g., Lowe, Kroeck &

Sivasubramaniam, 1996; Podsakoff, MacKenzie, Moorman, & Fetter, 1990). Thus it is proposed that in the current study transformational leadership will be positively related to follower satisfaction.

Hypothesis 8. Transformational leadership behaviours will positively predict student satisfaction with university.

Finally, research examining transformational leadership has consistently demonstrated a positive relationship with performance (e.g., Hardy et al., 2010). Thus it is proposed that in the current study transformational leadership will be positively related to follower performance.

Hypothesis 9. Transformational leadership behaviours will positively predict student performance.

Method

Participants and Procedure

Participants were those who took part in Study 1 data collection consisting of a sample of Higher Education undergraduate students from two academic departments, sport science and psychology in a UK University. Specifically, the procedures and measurement of transformational lecturing are as outlined in Study 1. In addition to the DTLI-E in week 5-6, students also completed measures of transformational teaching (Beauchamp et al., 2010) and the learning climate questionnaire (Williams & Deci, 1996). At the beginning and the end of the semester (namely, week 1 and either week 9 or 10), students completed measures of satisfaction, academic efficacy and intrinsic motivation (See Appendix D for all questionnaires). Ideally, a more

stringent assessment of predictive validity would be obtained if all pre-test levels of all variables were controlled for, however, certain variables did not lend themselves to pre-test measurement because student experience of the module was required. Consequently, where applicable only post test measures were taken of these variables, thus at the end of the semester (week 9 or 10) students completed measures of need satisfaction, leader inspired extra effort, and engagement.

Measures

Transformational teaching. Students' perceptions of their lecturers' behaviours were assessed using the Transformational Teaching Questionnaire (TTQ; Beauchamp et al., 2010). The 16-item TTQ is based on Bass' conceptualisation of transformational leadership and measures four factors (idealized influence, inspirational motivation, intellectual stimulation, individualized consideration) with four items per factor. For this study items were prefixed with the stem 'My Lecturer...' Responses were anchored on a 5-point rating scale from 0 (*not at all*) to 4 (*frequently*). Beauchamp et al. provided support for the factorial validity and the reliability of the TTQ. In the current study, all the subscales of idealised influence, inspirational motivation, intellectual stimulation and individual consideration demonstrated high internal consistency ($\alpha = .73, .85, .80$ and $.74$, respectively).

Learning climate questionnaire. The Learning Climate Questionnaire (LCQ; Williams & Deci, 1996) was employed in this study to assess students' perceptions of their lecturer's autonomy support. The LCQ

contains 15 items assessing the degree to which students perceive their lecturer supports their autonomy (e.g., “My lecturer encourages me to ask questions” and “I feel understood by my lecturer”). Responses are indicated on a 5-point likert scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). The LCQ has a single underlying factor with the score for lecturer autonomy support as the mean of the 15 items. The LCQ demonstrated good reliability ($\alpha = .92$) in the current study.

Psychological need satisfaction. To measure student need satisfaction the Work-related Basic Need Satisfaction Scale (W-BNS; Van den Broeck, Vansteenkiste, Witte, Soenens, & Lens, 2010) was adapted to the education context. The W-BNS is a validated measure of autonomy, competence and relatedness consisting of 23-items. In this study items were adapted to reflect the lecturing environment for example ‘I feel free to express my ideas and opinions in my job’ became ‘I feel free to express my ideas and opinions in my lectures’. Five items were removed from the questionnaire because the context of a single lecture is too rigid with regard to lecture structure to accommodate these aspects of need satisfaction (e.g., ‘in lectures, people involve me in social activities’). In addition, there have been criticisms in the literature regarding the measurement of autonomy being heavily focused on perceived choice when the conceptualisation of autonomy includes individual perceived locus of causality (IPLOC) and volition (Ng, Lonsdale, & Hodge, 2011). Upon inspection of the autonomy items of the W-BNS it was thought that the items that tap IPLOC were not represented. Therefore, 3 items from the Basic Needs Satisfaction in Sport

Scale (BNSSS: Ng et al., 2011) were adapted to the education context and included in the measurement of autonomy. The final measure of need satisfaction consisted of 21-items measuring autonomy, competence and relatedness. Items were anchored on a 7-point likert scale ranging from 1(*Very Untrue of Me*) to 7(*Very True of Me*). The scales for autonomy, relatedness and competence demonstrated acceptable internal consistency ($\alpha=.70$, $.65$, and $.72$, respectively).

Intrinsic motivation. The Academic Motivation Scale (AMS: (Vallerand et al., 1992) is a psychometrically sound tool, which is commonly employed to measure behaviour regulation. The scale consists of 28 items, in which students respond to the question stem “Why are you going to college?” Three subscales (12 items) of the AMS measuring ‘intrinsic motivation to know’ (e.g., Because I experience pleasure and satisfaction while learning new things), ‘intrinsic motivation to accomplish’ (e.g., For the pleasure I experience while surpassing myself in my studies), and ‘intrinsic motivation to experience stimulation’ (e.g., For the intense feelings I experience when I am communicating my own ideas to others) were administered. The items are rated on a scale, ranging from 1 (*does not correspond at all*) to 7 (*corresponds exactly*). The scales demonstrated good internal consistency (Chronbach’s $\alpha = .85$, $.85$ and $.88$, respectively)

Leader inspired extra effort (LIEE). The 4-item LIEE scale was adapted from Arthur, Woodman, Ong, Hardy, and Ntoumanis (2011) for the higher education context (e.g. “My lecturer motivates me to work hard”). Items were anchored on a 7-point likert scale from 1 (*Strongly Disagree*) to 7

(*Strongly Agree*). Arthur et al. reported the scale to be valid and reliable . In the current study the scale demonstrated good internal consistency (Chronbach's $\alpha = .92$).

Academic engagement. A 4-item scale was developed for the current study. Items assessed students' perception of their engagement on the module over what they initially believed they would do at the beginning of the semester (e.g., I feel that I have understood the lecture material better than I thought I would at the start of the module; I have attended more lectures than I thought I would at the start of the module; I have completed more readings than I thought I would at the start of the module; I have contributed more to lectures than I thought I would at the start of the module). Items were anchored on a 7-point likert scale ranging from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*). Considering that this was a new scale CFA was conducted revealing that the scale had excellent factor structure $\chi^2 (2) = .39$, RMSEA = 0.00, SRMR = 0.08, NNFI = 1.0 and CFI = 1.0, with all standardized factor loadings of greater than .52. The scale also demonstrated acceptable internal consistency ($\alpha = .74$).

Academic efficacy. Academic self-efficacy refers to an individual's judgment of his or her ability to organize and execute actions with the intention of successfully attaining educational goals (Bandura, 1977). The measure adapted from Chemers, Hu, and Garcia (2001) asked participants to rate their agreement with statements reflecting their confidence in their ability to perform well academically on an 8-item questionnaire. The measure reflects a variety of specific skills pertinent to academic achievement,

including scheduling of tasks, note taking, test taking, and researching and writing papers, and included general statements regarding scholarly ability. Participants responded on a likert scale anchored 1 (*Very Untrue*) to 7 (*Very True*). One item was removed from the scale because in comparison to the other items on the scale it was anchored by the statement 'I usually' rather than 'I am' and 'I know'. Given the difference in the level of assertion, between this item in comparison to the others, it was removed. The scale demonstrated good internal consistency ($\alpha = .81$).

Satisfaction. Students satisfaction with university was measured using a single item taken from the National Student Satisfaction Survey (Richardson, Slater, & Wilson, 2007). The item 'Overall I feel satisfied with my university experience' was anchored on a 7-point likert scale ranging from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*).

Performance. Permission to collect performance data was provided by 202 participants. Module grades, assessed by a percentage mark, were collected from the school administrators for all students who provided permission.

Data Analysis

Concurrent validity. The concurrent validity of the DTLI-E was examined via bivariate correlations between its scales and those of the TTQ and LCQ.

Predictive validity. The predictive validity of the DTLI-E was examined by conducting regression analyses. On all variables for which start of semester data was collected, a hierarchical regression analysis was

conducted, with pre-test measures entered in step 1, all transformational leadership behaviours entered in step 2 and post-test measures as the dependent variable. For dependent variables where no pre-test data had been sampled forced entry regression analyses were conducted with all leadership behaviours entered into the model to predict the relevant dependent variables.

Due to the high correlations between the transformational leadership behaviours revealed in Study 1 and Study 2 and the use of regression analysis in the present study, the potential issue of suppressor variables arises. A suppressor variable is a variable that increases regression weights and, thus, increases the predictive validity of other variables in a regression equation (Conger, 1974, pp. 36-37). Suppressor variables have been classified into several categories. Conger (1974) identified three kinds of suppressor variables: traditional, negative, and reciprocal. Cohen and Cohen (1975, pp. 849-851) named the same categories classical, net, and cooperative. Employing Cohen and Cohen's definition: If the predictor variable has a zero correlation with the criterion variable, the situation is one of classical suppression. If its beta weight is of opposite sign from its correlation with the criterion, it is serving as a net suppressor. If its beta weight exceeds its correlation with the criterion and is of the same sign, cooperative suppression is occurring (Cohen & Cohen, 1975, p. 91). Within multiple regression flaws in interpreting only beta weights have been proposed. Consequently researchers have advocated a two-indicator approach to the interpretation of results. For example Dunlap and Landis (1998) suggested, "the size of a regression weight depends on the other predictor variables included in the equation and is, therefore, prone to

change across situations involving different combinations of predictors” (p. 389), consequently the interpretation of regression results using both beta weights and structure coefficients has been recommended (Courville & Thompson, 2001; Cooley & Lohnes, 1971; Darlington, 1968; Thompson, 1997). Within a general linear model, structure coefficients are bivariate correlation coefficients between a given measured/observer variable and a latent/synthetic variable. To account for the other predictor variables structure coefficients in multiple regression are computed by dividing a given r between the predictor variable and the outcome variable by the multiple correlation coefficient (Courville & Thompson, 2001). For example, where X_1 is the predictor variable and Y is the outcome variable:

$$r_s = r_{YX_1} / R.$$

As Courville and Thompson (2001) propose only the use of both coefficients presents the full dynamics of the data when predictors are correlated. These authors posit that:

a near-zero weight with a large squared structure coefficient indicates that a predictor might have been useful in a prediction, but that the shared predictive power of that predictor was arbitrarily (i.e., not wrongly, just arbitrarily) assigned to another predictor. Conversely, when a predictor has a large absolute beta weight but a near-zero structure coefficient, a suppressor effect is indicated (p.239).

To illustrate this aspect fully it is important to provide examples from previous research. Noteworthy, previous research within the leadership domain has failed to appropriately identify and acknowledge the presence of

suppressor variables; hence their effects have been largely unexamined resulting in a misinterpretation of results reported. To illustrate, initially Maslyn and Fedor (1998) examined the relevance of measuring different foci in politics. The authors reported that the leader-member exchange (LMX) and participant age were positively related to organizational commitment. In addition, group-focused politics were negatively associated with organizational commitment, and that turnover intentions were significantly predicted by the set of control variables, accounting for 33% of the variance. In this case, LMX and participant age were both negatively related to turnover intentions, whereas the group-focused perceptions of politics were not predictive of turnover intentions. When the data was interpreted using both beta weights and structure coefficients, Courville and Thompson (2001) reported that reanalysis of structure coefficients indicated that LMX was the best predictor of turnover intentions ($r_s = -.829$). Further, although group focus had the most near-zero beta weight in predicting turnover intentions (reported as $-.00$), the structure coefficients ($r_s = .542$) indicated that this variable had sizeable predictive ability. This example demonstrates how interpretation of beta coefficients alone can lead to misinterpretation and unacknowledged suppression.

Considering the important implications suppression has for the accurate interpretation of results in the leadership field, especially when predictors are likely to be highly correlated, both beta weights (β) and structure coefficients (r_s) were used to interpret regression results in this study. Pedhazur (1982) proposes that variables with structure coefficients

greater than .30 are used to define meaningful predictors to the criterion. Thus, interpretation of behaviours most relevant to each prediction is considered when both beta weights and structure coefficients are congruent. Suppression effects and incongruence between beta weights and structure coefficients are highlighted to aid demarcation of the most important transformational leadership behaviours in each prediction.

Results

Concurrent Validity

Hypothesis 1a and 1b examined the relationship between the eight factor DTLI-E and the TTQ. For hypothesis 1a, bivariate correlations revealed that inspirational motivation, individual consideration, and intellectual stimulation factors on the DTLI-E were significantly positively correlated with their equivalent factors on the TTQ ($r = .62, .51, .76, p < .001$, respectively). Analysis of Hypothesis 1b revealed that all eight factors of the DTLI-E were positively correlated with the global measure of leadership on the TTQ global score. See Table 14 for means standard deviations and correlations.

Hypothesis 2 examined the relationship between the eight factors of the DTLI-E and learning climate. Bivariate correlations revealed significant positive correlations for the DTLI-E factors with the LCQ, which are also presented in Table 14.

Predictive Validity

Mean, standard deviations and bivariate correlations of all study variables included in predictive validity analyses are presented in Table 15.

Hierarchical regression analyses are presented in Table 16, and forced entry regressions are presented in Table 17.

Table 14: Means, Standard Deviations, Zero Order Correlations between DTLI-E factors, LCQ, TTQ global and 3 factors of the TTQ

Scale	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Inspirational Motivation	5.05	1.19												
2. Individual Consideration	4.64	1.31	.67**											
3. Intellectual Stimulation	5.30	1.13	.72**	.72**										
4. High Performance Expectations	4.24	1.31	.68**	.65**	.59									
5. Appropriate Role Modelling	5.39	1.13	.78**	.69**	.74**	.57**								
6. Contingent Reward	3.82	1.47	.54**	.63**	.52**	.62**	.45**							
7. Self Belief	6.29	.86	.59**	.48**	.60**	.35**	.70**	.22**						
8. Sense of Humour	5.24	1.44	.63**	.57**	.61**	.48**	.60**	.34**	.581**					
9.LCQ	5.15	.87	.64**	.80**	.69**	.66**	.65**	.65*	.474**	.46**				
10.TTQ Global	2.75	.67	.67**	.79**	.72**	.66**	.69**	.60**	.464**	.56**	.75**			
11. TTQ-Inspirational Motivation	2.77	.83	.62**	.73**	.63**	.69**	.59**	.56**	.415**	.54**	.68**	.92**		
12. TTQ-Individual Consideration	2.31	.80	.51**	.73**	.55**	.56**	.52**	.60**	.286**	.36**	.69**	.89**	.77**	
13. TTQ-Intellectual Stimulation	3.00	.68	.60**	.62**	.75**	.48**	.64**	.44**	.503**	.54**	.59**	.84**	.68**	.63**

N= 349, ** $p < .001$ * $p < .05$. Note: On variables 1 to 9 the scale responses ranged from 1-7, on variables 10-13 the scale responses ranged from 0-4

Table 15: Means, standard deviation and zero order correlations for all predictive validity variables in Study3.

Scale	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1. Inspiration Motivation	5.05	1.19	-																					
2. Individual Consideration	4.64	1.31	.67*	-																				
3. Intellectual Stimulation	5.30	1.13	.72*	.72*	-																			
4. HPE	4.24	1.31	.68*	.65*	.59*	-																		
5. Role Modelling	5.39	1.13	.78*	.69*	.74*	.57*	-																	
6. Contingent Reward	3.82	1.47	.54*	.63*	.52*	.62*	.45*	-																
7. Self Belief	6.22	.86	.59*	.48*	.60*	.35*	.70*	.22*	-															
8. Sense of Humor	5.23	1.44	.63*	.57*	.61*	.48*	.60*	.34*	.58*	-														
9. Satisfaction	6.02	1.25	.31*	.36*	.34*	.28*	.31*	.11*	.26*	.21*	-													
10. Academic Efficacy	5.21	.89	.30*	.36*	.34*	.34*	.34*	.26*	.18*	.20*	.36*	-												
11. IM- to Know	5.22	1.01	.27*	.27*	.19*	.26*	.29*	.11*	.15*	.08	.27*	.31*	-											
12. IM- to Accomplish	4.68	1.17	.25*	.26*	.18*	.31*	.28*	.13*	.05	.13*	.17*	.41*	.73*	-										
13. IM- Stimulation	4.08	1.36	.30*	.23*	.19*	.29*	.26*	.20*	.07	.14*	.11*	.25*	.70*	.71*	-									
14. Identified Regulation	5.57	1.02	.07	.04	.00	.15*	.04	-.02	.00	-.08	.11*	.20*	.55*	.46*	.47*	-								
15. Introjected Regulation	5.01	1.33	.16*	.06	.07	.13*	.13*	-.05	.02	.02	.14*	.22*	.62*	.66*	.56*	.54*	-							
16. External Regulation	5.19	1.25	.06	-.01	-.00	.16*	-.00	-.02	.02	-.03	-.01	.04	.29*	.27*	.32*	.68*	.50*	-						
17. Amotivation	1.86	1.16	-.10*	-.15*	-.20*	-.09	-.17*	-.11*	-.18*	-.06	-.35*	-.34*	-.34*	-.25*	-.17*	-.44*	-.34*	-.24*	-					
18. Engagement	4.58	1.21	.28*	.23*	.27*	.25*	.30*	.03	.19*	.23*	.32*	.09	.21*	.08*	.42*	-.00	.11*	.02	-.06	-				
19. LIEE	5.36	1.12	.53*	.60*	.58*	.61*	.50*	.40*	.34*	.34*	.40*	.34*	.42*	.41*	.42*	.26*	.28*	.22*	-.26*	.40*	-			
20. Performance	59.18	13.54	.17*	.17*	.16*	.13	.17*	.10	.13	.10	.04	.21*	.07	.10	-.01	-.05	.07	-.12	-.12	.33	.01	-		
21. Autonomy	4.51	.84	.32*	.37*	.40*	.41*	.33*	.29*	.20*	.19*	.38*	.47*	.39*	.43*	.28*	.22*	.25*	.11*	-.40*	.19*	.54**	.17*	-	
22. Relatedness	4.51	.98	.14*	.13*	.14*	.16*	.18*	.05	.13*	.08	.12*	.13*	.20*	.23*	.16*	.14*	.24*	.11*	-.22*	.13*	.23**	.10	.51*	-
23. Competence	4.39	.91	.34*	.14*	.41*	.41*	.31*	.32*	.27*	.27*	.33*	.48*	.33*	.38*	.26*	.16*	.23*	.23*	-.35*	.27*	.56**	.10	.71*	.43*

Note: HPE= High Performance Expectations * $p < .05$.

Psychological need satisfaction. Hypothesis 3 examined the prediction of the DTLI-E on psychological need satisfaction. Table 17 summarises these results. Specifically, hypothesis 3a concerned the predictive validity in the DTLI-E on autonomy. Forced entry regression analysis revealed that the leadership behaviours predicted a significant proportion of the variance in autonomy ($R^2 = .22$; $F_{(8, 335)} = 11.55$; $p < .001$). The standardised beta coefficients indicated that intellectual stimulation ($\beta = .30$, $p < .01$), high performance expectations ($\beta = .26$, $p < .01$) and sense of humour ($\beta = -.16$, $p < .05$) made a significant contribution to the variance in autonomy. Further, the structural coefficients indicated that intellectual stimulation, high performance expectations, individual consideration, appropriate role modelling, inspirational motivation, contingent reward, self-belief and sense of humour ($r_s = .86$, $.83$, $.78$, $.72$, $.68$, $.57$, $.41$, and $.38$, respectively) meaningfully contributed to the prediction.

Hypothesis 3b concerned the predictive validity of the DTLI-E on relatedness. Forced entry regression analysis revealed that the leadership behaviours predicted a significant proportion of the variance in relatedness ($R^2 = .05$; $F_{(8, 335)} = 2.56$; $p < .01$). The standardised beta coefficients revealed that appropriate role modelling ($\beta = .25$, $p < .05$) made a significant contribution to the prediction for relatedness. Further, the structure coefficients revealed that appropriate role modelling, high performance expectations, intellectual stimulation, inspirational motivation, individual consideration, self-belief and sense of humour ($r_s = .83$, $.68$, $.64$, $.57$, $.55$, $.50$, and $.33$, respectively) meaningfully contributed to the prediction.

Hypothesis 3c concerned the predictive validity of the DTLI-E on competence. Forced entry regression analysis revealed that the leadership behaviours

predicted a significant proportion of the variance in competence ($R^2 = .23$; $F_{(8, 335)} = 12.69$; $p < .001$). The standardised beta coefficients revealed that high performance expectations ($\beta = .24$, $p < .01$) intellectual stimulation ($\beta = .23$, $p < .01$) made a significant contribution to the prediction of competence and there was a trend towards significance for individual consideration ($\beta = .16$, $p = .056$). Further, the structure coefficients revealed that intellectual stimulation, high performance expectations, individual consideration, inspirational motivation, appropriate role modelling, contingent reward, self-belief and sense of humour ($r_s = .87, .85, .85, .73, .69, .66, .59$, and $.59$, respectively) meaningfully contributed to the prediction.

Intrinsic motivation. Hypothesis 4 concerned the predictive validity of the DTLI-E on intrinsic motivation while controlling for ratings of intrinsic motivation at time 1. Table 16 summarises these results. Hierarchical regression analysis demonstrated that transformational leadership behaviours predicted a significant proportion of the variance in intrinsic motivation to know ($\Delta R^2 = 0.06$, $F_{(9, 334)} = 29.38$, $p < .001$). The standardised beta coefficients indicated that individual consideration ($\beta = .26$, $p < .001$) and contingent reward ($\beta = .19$, $p < .01$) made significant contributions to the prediction. This was not supported by the structural coefficients, which indicated that appropriate role modelling, inspirational motivation, individual consideration, high performance expectations and intellectual stimulation meaningfully contribute to the prediction ($r_s = .44, .39, .38, .35$, and $.33$, respectively). Contingent reward did not meaningfully contribute to the prediction indicating a suppressor effect.

Transformational leadership behaviours predicted a significant proportion of the variance in intrinsic motivation to accomplish ($\Delta R^2 = 0.08$, $F_{(9, 334)} = 26.20$, $p <$

.001). The standardised beta coefficients indicated that individual consideration ($\beta=.18, p<.001$), contingent reward ($\beta=-.24, p<.001$), self-belief ($\beta=-.21, p<.01$), high performance expectations ($\beta=.15, p<.05$) and appropriate role modelling ($\beta=.20, p<.05$) made significant contributions to the prediction. Further, the structural coefficients indicated that high performance expectations, appropriate role modelling, individual consideration, inspirational motivation and intellectual stimulation meaningfully contribute to the prediction ($r_s=.46, .43, .38, .37$, and $.31$, respectively). Contingent reward did not meaningfully contribute to the prediction, indicating a suppression effect.

Transformational leadership behaviours predicted a significant proportion of the variance in intrinsic motivation to experience stimulation ($\Delta R^2 = 0.05, F_{(9, 334)} = 33.61, p < .001$). The standardised beta coefficients indicated that inspirational motivation ($\beta=.24, p<.001$), and contingent reward ($\beta=-.13, p<.05$), made significant contributions to the prediction. Further, the structural coefficients reveal that inspirational motivation, high performance expectations, appropriate role modelling, individual consideration, and intellectual stimulation meaningfully contribute to the prediction ($r_s=.42, .41, .36, .32$, and $.30$, respectively) but contingent reward did not meaningfully contribute to the prediction indicating a suppressor effect.

Table 16: Hierarchical Regression Analysis on Student Outcomes: Intrinsic Motivation, Academic Efficacy and Satisfaction

Variable	Academic Efficacy		Satisfaction with University		Intrinsic Motivation to know		Intrinsic Motivation to accomplish		Intrinsic Motivation to experience stimulation	
Model 1										
R ²	.33		.05		.38		.33		.42	
Model 2										
ΔR ²	.06***		.18***		.06***		.08***		.05***	
F	23.91		11.32		29.38		26.20		33.61	
<i>df</i> (9,344)	<i>β</i>	<i>r_s</i>	<i>β</i>	<i>r_s</i>	<i>β</i>	<i>r_s</i>	<i>β</i>	<i>r_s</i>	<i>β</i>	<i>r_s</i>
Inspirational Motivation	-.03	.47	.12	.64	.14	.39	.09	.37	.24**	.42
Individual Consideration	.15*	.57	.31***	.76	.26***	.38	.18**	.38	.09	.32
Intellectual Stimulation	.09	.55	.16	.71	-.12	.33	-.09	.31	-.08	.30
High Performance Expectations	.06	.55	.12	.61	.05	.35	.15*	.46	.11	.41
Appropriate Role Modelling	.14	.53	.01	.68	.10	.44	.20*	.43	-.01	.36
Contingent Reward	-.03	.41	-.28***	.22	-.19**	.12	-.24***	.19	-.13*	.27
Self Belief	-.12	.29	.01	.51	-.09	.25	-.21**	.10	-.06	.10
Sense of Humour	-.08	.31	-.13	.42	-.09	.16	-.03	.23	-.03	.23

* p<.05, **p<.01, ***p<.001

Table 17: Multiple Regression Analysis on Student Outcomes; Effort, Engagement, and Performance

Variable	Autonomy		Relatedness		Competence		Effort		Performance		Engagement	
	β	r_s	β	r_s	β	r_s	β	r_s	β	r_s	β	r_s
Inspirational Motivation	-.06	.68	-.07	.57	-.04	.73	.09	.78	.08	.79	.09	.72
Individual Consideration	.11	.78	.00	.55	.16	.85	.30***	.85	.12	.82	.07	.60
Intellectual Stimulation	.30**	.86	.05	.64	.23**	.87	.27***	.84	.07	.74	.14	.71
High Performance Expectations	.26**	.83	.15	.68	.24**	.85	.37***	.86	.03	.61	.22**	.70
Appropriate Role Modelling	.08	.72	.25*	.83	-.15	.69	-.02	.74	.10	.79	.14	.73
Contingent Reward	-.05	.57	-.11	.19	.03	.66	-.16**	.54	-.13	.47	-.31***	.09
Self Belief	-.06	.41	-.04	.50	.12	.59	.00	.51	-.10	.40	-.11	.47
Sense of Humour	-.16*	.38	-.07	.33	-.02	.59	-.17**	.49	-.02	.47	.02	.58
R ²	.22***		.05**		.23***		.48***		.04		.16***	

* p<.05, **p<.01, ***p<.001

Student outcomes. Hypothesis 5 concerned the predictive validity of the DTLI-E on leader inspired extra effort. Forced entry regression analysis revealed that the leadership behaviours predicted a significant proportion of the variance in leader inspired extra effort ($R^2=.48$; $F_{(8, 335)} = 38.10$; $p<.001$). The standardised beta coefficients indicated that high performance expectations ($\beta=.37$, $p<.001$), individual consideration ($\beta=.30$, $p<.001$), intellectual stimulation ($\beta=.27$, $p<.001$), sense of humour ($\beta=-.17$, $p<.01$), and contingent reward ($\beta=-.16$, $p<.01$) made significant contributions to this prediction. Additionally, the structure coefficients indicated that high performance expectations ($r_s=.86$), individual consideration ($r_s=.85$), intellectual stimulation ($r_s=.84$), inspirational motivation ($r_s=.78$), appropriate role modelling ($r_s=.74$), contingent reward ($r_s=.54$), self-belief ($r_s=.51$) and sense of humour ($r_s=.49$) all contributed meaningfully to the prediction, see Table 17.

Hypothesis 6 concerned the predictive validity of the DTLI-E on student engagement. Forced entry regression analysis revealed that the leadership behaviours predicted a significant proportion of the variance in student engagement ($R^2=.16$; $F_{(8, 335)} = 7.86$; $p<.001$). The standardised beta coefficients that high performance expectations ($\beta=.22$, $p<.01$) and contingent reward ($\beta=-.31$, $p<.001$) made significant contributions to the prediction. However, the structural coefficients revealed that appropriate role modelling, inspirational motivation, intellectual stimulation, high performance expectations, individual consideration, sense of humour and self-belief all meaningfully contributed to the prediction ($r_s = .73, .72, .71, .70, .60, .58, \text{ and } .47$, respectively). Given that the predictor contingent reward has a large absolute beta weight but a near-zero structure coefficient ($r_s = .09$), a suppressor effect is indicated, see Table 17.

Hypothesis 7 concerned the predictive validity of the DTLI-E on academic efficacy. After controlling for time 1 academic efficacy, hierarchical regression analysis demonstrated that transformational leadership behaviours predicted a significant proportion of the variance in academic efficacy at time 2 ($\Delta R^2 = 0.06$, $F_{(9, 334)} = 23.91$, $p < .01$). The standardised beta coefficients indicated that individual consideration ($\beta = .15$, $p < .05$) made a significant contribution to the prediction. Further, the structural coefficients indicated that individual consideration, intellectual stimulation, high performance expectations, inspirational motivation, contingent reward, and sense of humour meaningfully contribute to the prediction ($r_s = .57, .55, .55, .53, .47, .41$ and $.31$, respectively), see Table 16.

Hypothesis 8 concerned the predictive validity of the DTLI-E on satisfaction with university. After controlling for time 1 satisfaction, hierarchical regression analysis demonstrated that transformational leadership behaviours predicted a significant proportion of the variance in satisfaction with university ($\Delta R^2 = .18$, $F_{(9, 334)} = 11.32$, $p < .01$). The standardised beta coefficients indicated that individual consideration ($\beta = .31$, $p < .001$) and contingent reward ($\beta = -.28$, $p < .001$) made significant contributions to the prediction. Further, the structural coefficients indicated that individual consideration (.76), intellectual stimulation (.71), appropriate role modelling (.68), inspirational motivation (.64), high performance expectations (.61), self belief (.51), and sense of humour (.42) meaningfully contribute to the prediction. Contingent reward did not meaningfully contribute to the prediction, see Table 16.

Hypothesis 9 concerned the predictive validity of the DTLI-E on performance. Forced entry regression analysis revealed that the leadership

behaviours did not predicted a significant proportion of the variance in performance ($R^2=.047$; $F_{(8, 190)} = 1.16$ $p=.32$). However, given that four of the leadership behaviours were significantly correlated with performance (see Table 15) and Tabachnick and Fidell's (2007) argument that when theory building a more exploratory approach is acceptable, a stepwise regression was performed to better understand the relationship between transformational leadership and performance in the present context. The analysis revealed that individual consideration predicted a significant proportion of the variance in performance ($R^2=.03$; $F_{(1, 197)} = 6.50$; $\beta=.18$; $p<.05$).

Discussion

Study 3 examined the concurrent and predictive validity of the proposed eight-factor DTLI-E. Factors on the DTLI-E showed moderate to strong correlations with measures of transformational teaching and learning climate demonstrating concurrent validity of the inventory. The longitudinal design allowed predictive validity of the DTLI-E to be examined. Results revealed that the transformational leadership behaviours as measured by the DTLI-E positively predicted psychological need satisfaction, intrinsic motivation, leader inspired extra effort, student engagement, academic efficacy, and student satisfaction. The theoretical and applied implications of these findings are discussed in the General Discussion that follows.

General Discussion

The present set of studies was designed to develop a reliable and valid measure of transformational leadership in the context of education. Taken together the results of the three studies provide support for the validity and reliability of the Differentiated Transformational Leadership Inventory for Education (DTLI-E).

Specifically, studies 1 and 2 demonstrated that the 30-item DTLI-E measuring: inspirational motivation (IM), individual consideration (IC), intellectual stimulation (IS), high performance expectations (HPE), appropriate role modelling (ARM), contingent reward (CR), self belief (SB) and sense of humour (SOH) had a conceptually meaningful and replicable factor structure with subscales demonstrating good internal consistency.

Study 3 demonstrated factors of the inventory to have moderate to strong correlations with measures of transformational teaching and learning climate demonstrating concurrent validity of the inventory. Furthermore, employing a longitudinal design enabled examination of the predictive validity of the DTLI-E. Specifically, in terms of most important predictors using both beta weights and structure coefficients for interpretation, results indicate that intellectual stimulation and high performance expectations are the most important positive predictors of autonomy and competence. Appropriate role modelling positively predicted relatedness. Inspirational motivation positively predicted intrinsic motivation to experience stimulation. Individual consideration, high performance expectations, and appropriate role modelling are the most important predictors of intrinsic motivation to accomplish. Individual consideration positively predicts variance in intrinsic motivation to know, academic efficacy, and satisfaction with university. High performance expectations, individual consideration, and intellectual stimulation are the most important positive predictors of leader inspired extra effort. Finally, high performance expectations positively predicted student engagement. For all of these outcomes, further transformational leadership behaviours demonstrated structure coefficients of greater than .3 suggesting that, while they were not the most

important predictor, they contributed meaningfully to the predictions, these can be seen in tables 16 and 17. Finally, Study 3 also revealed that individual consideration predicted students' academic performance.

Although much is known about transformational leadership generally, its extension to the education context has been somewhat limited. Previous research has consistently shown that transformational leadership is associated with positive follower outcomes in contexts as diverse as the military (Hardy et al., 2010; Bass et al., 2003), the public sector (Rafferty & Griffin, 2004), business (Barling et al., 1996), sport (Callow et al., 2009) and education (Beauchamp et al., 2010). Consistent with these studies, the results of the present set of studies demonstrate that: (a) transformational leadership is applicable to the education context at a lecturer level; and (b) within this context transformational leadership behaviours are associated with a variety of positive student outcomes.

A strength of the current set of studies pertains to the interpretation of the results in Study 3 relating to suppression effects. To illustrate, take the finding that transformational leadership behaviours predict leader inspired extra effort (LIEE). Interpretation based solely on beta coefficients would indicate that this prediction is a result of the behaviours of HPE, IC, IS CR, and SOH, with HPE, IC, IS positively predicting LIEE and, CR and SOH negatively predicting LIEE, despite CR and SOH being positively correlated with LIEE. Thus these results are suggesting that the more HPE, IC and IS a lecturer provides, the more students will invest extra effort and the more CR and SOH behaviours a lecturer provides the less extra effort students invest. However, when interpretation uses both beta weights and structure coefficients a different picture emerges. In this example, similar to the beta

coefficients, using the structure coefficients also tells us that HPE, IC and IS are meaningful contributors to the prediction. Furthermore, the structure coefficients suggest that IM, ARM, CR, SB and SOH all meaningfully and positively contribute to the prediction of LIEE. Thus when we consider both structure coefficients and beta weights the results suggest that HPE, IC and IS are the most important behaviours for student extra effort, that IM, ARM, IM, and SB are also meaningful for student extra effort and that CR and SOH are not negative predictors of LIEE but in fact meaningful positive predictors. Given that previous research using the differentiated approach offers support for the importance of contingent reward, for example Hardy et al. (2010) found that contingent reward has the strongest relationship with training outcome (pass/fail). Thus, the result that contingent reward does contribute to the prediction of extra effort, is not surprising.

This example highlights the importance of using both beta weights and structure coefficients for accurate interpretation of the data, which has implications for future research and applied recommendations. First, it highlights how vital it is to interpret both structure coefficients and beta coefficients because of the strong correlations between the transformational leadership behaviours. Second, if structure coefficients are not considered applied recommendations based on research findings could be misleading. The use of both structure coefficients and beta weights for analysis interpretation can be seen as a major strength of the current study as, to the best of the authors knowledge, no previous research in the transformational leadership domain has utilised this approach.

A second strength is that the present research may also help to reconcile previous research and the contentions of Antonakis, et al. (2003) and Hardy et al.

(2010) that the manifestation of transformational leadership behaviours differ depending on the context. For example, our results show that, in the context of higher education, items that fit the HPE factor would appear to be of a less challenging nature (e.g. 'tells me they want me to do really well') than items that measure the same factor in the military (e.g. 'insists only on the best performance'). Antonakis et al. (2003) posited that situational strength (i.e., the degree of conformity expected of individuals in certain situations) may determine individual behaviour. According to Mischel (1977), the military is an example of a 'strong' situation because individuals are restricted with respect to the ways in which they can behave. Higher education could be classed as 'weak' situation with weak behavioural norms, a great deal of personal choice and little restriction regarding how to behave. Therefore measuring leadership behaviours in these different contexts requires consideration of the different nature of that context. Indeed, education is generally a growth orientated, nurturing, and supportive context and this element is reflected in the softer approach to HPE as demonstrated by the higher education items.

Consistent with prior suggestions, the present research further strengthens the differential measurement approach to transformational leadership (Antonakis et al., 2003; Hardy et al., 2010; Rafferty & Griffin, 2004). It is evident from the results that different behaviours exert influences on different outcomes. To assess this using a single global measure, previously advocated by many researchers (e.g. Careless, 1998), would conceal these important individual effects. This is important from both a research and applied perspective. From a research perspective, the fact that the different leadership behaviours differentially predicted student outcomes allows for

more specific and stringent assessment of transformational leadership behaviours and their impact. From an applied perspective, as proposed by Callow et al. (2009), a differentiated approach to the measurement of transformational leadership allows for an examination of the behaviours in which a lecturer may be low, and thus allows for a more detailed, tailored and targeted approach to increasing those specific behaviours.

There are a number of potential limitations associated with the present study. First, the finding that individual consideration predicted performance in Study 3 requires cautious interpretation. While the transformational leader behaviours were correlated to performance, none of the transformational leadership behaviours predicted performance in the full regression model. However, because the behaviours were correlated with performance and research in the education context has not empirically examined the relationship between lecturing behaviours and student academic achievement a more theory building approach was employed to explore the data. From this exploratory stepwise regression analysis it was found that individual consideration significantly predicted variance in performance. Considering the tendency for stepwise regression to capitalise on chance and over fit the data (Tabachnick & Fidell 2007), this finding can only be interpreted with caution. As such, further examination of the role of individual consideration, or indeed any of the transformational leadership behaviours, in predicting performance is required.

Second, multilevel models should be employed with data that have been obtained by cluster or unequal probability sampling. In these instances, the data are said to have a hierarchical or nested structure. For example, in the present study the

student data have been collected based on ratings of different lecturers on different modules across the university (e.g., Study 1 and Study 3). Thus, data have a multi-level hierarchical structure, that is, students are nested within lecturers/modules. It is recommended that in data sets of this nature multilevel modelling be employed to avoid biases in parameter estimates and tests of model fit. Given the nested nature of data in the present study employing a multilevel analysis is likely to have given a more accurate representation of the data. However, whilst there is no universally agreed sample size for the group level sample (i.e., modules) in multilevel analyses a common recommendation is 30 cases (e.g., Hox, 2010). The current sample had a group level sample size of 6 and did not meet the sample size required for multilevel modeling analysis. Indeed, one of the reasons for the smaller group level sample size in the current study is similar to that acknowledged by Weimer and Lenze (1997). 'Researchers seldom have access to faculty subjects and even those who do quickly learn how difficult it is to "require" faculty to do anything.' Inter-departmental and inter-institutional collaboration would help to alleviate this weakness of this research (p.236). As Levinson-Rose and Menges (1981) identified; "Intercampus research networks are potentially powerful tools for dealing with several of these problems, particularly random assignment and small numbers" (p.419).

Third, when testing the predictive validity of the inventory, the same sample was used as that for examining factorial validity of the inventory. Ideally, the study would be strengthened if the predictive validity was assessed in an independent sample. Data collection on lecturing in higher education, for the most part, needs to run concurrent to the semester. Doing so inevitably limits the timeframe in which data could be collected. Thus to meet the constrained timeframe imposed on data

collection by semester dates it was not possible to conduct a separate data collection for the purposes of predictive validity alone. However, to alleviate this limitation certain measures were taken to strengthen the design. First, a longitudinal design was employed with outcome measures being collected at least 5 weeks after collecting data on transformational leadership. Fisher (1986) purports that problems of common method variance are somewhat ameliorated by the use of longitudinal research designs. Second, where possible, outcomes measured in the study (i.e., satisfaction, academic efficacy, and intrinsic motivation) were assessed at the beginning of the semester and controlled for to better reveal the influence of transformational leadership behaviours on outcomes.

Reviews of the research regarding the training of university teachers have highlighted that interventions designed to improve faculty instructional behaviours are used with virtually no empirical justification as to their effectiveness with little evidence regarding the impact of training on teaching and less on student learning (Gilbert & Gibbs, 1999; Weimer & Lenze, 1997). Five categories were used to assess the effectiveness of programmes they reviewed: (a) faculty attitude from self-report; (b) faculty knowledge from tests or observer; (c) faculty skill from observer; (d) student attitude from self-report, and; (e) student learning from tests or observer reports. From these categories, they found that the bulk of program assessment occurs at the level of faculty attitude as reported by them. Thus, in the opinion of faculty the programmes were useful, relevant or informative. However, no evidence was provided that prove that the interventions cause faculty to change any of their instructional behaviours. One of the major criticisms of research in this context is that the research to date examining teacher training and effectiveness is not

theoretically grounded or derived from a conceptual basis with virtually no attempt to connect interventions to theoretical rationale (Weimer & Lenze, 1997). The present study makes several noteworthy contributions to research in this area. First, the study uses the well-established transformational leadership theory as a guiding theoretical framework. Second, the study empirically demonstrates the relationship between lecturer behaviours and student outcomes. Third, the present studies answers the call of Levinson-Rose and Menges (1981) for the need of a different kind of enquiry. Research in this area has been heavily based on qualitative enquiries, whereas empirical studies, such as those presented, may serve as a base for future research to comprehensively develop an understanding of the theoretical and empirical dynamics of teaching and learning environments.

From an applied perspective a growing body of research on transformational leadership has shown interventions aimed at developing leadership behaviours to be successful (cf. Barling et al, 1996; Beauchamp, Barling & Mourtou 2011; Hardy et al., 2010;). Considering the importance of the leadership behaviours for outcomes that are of interest to both students and institutions alike (e.g., academic efficacy, student satisfaction), delivering training opportunities aimed developing lecturer transformational leadership may be of value. Indeed research designed to test the effectiveness of such interventions represents a theoretical base for the development of lecturers within higher education.

Beyond assessing the utility of interventions involving transformational leadership in education, future research is required to consolidate of the predictive nature of the DTLI-E, especially in relation to academic performance thus strengthening the utility of the DTLI-E. Furthermore, while this study represents the

first examination of the impact of transformational leadership at a direct level (i.e., lecturing) within higher education, the university experience is a dynamic environment offering a multitude of opportunities to positively influence students. Research examining transformational leadership would do well to examine its effect at all levels of the university environment. For example, with personal mentors, research supervisors, departmental management and other areas where academic staff have the opportunity to influence students

In conclusion, the DTLI-E allows for differentiated analysis of the transformational leadership behaviours perceived by students during lecturing in the higher education context. In general, results from these three studies demonstrated that the DTLI-E is a reliable and valid assessment of eight factors of transformational leadership in higher education. As such, analysis using the DTLI-E can be conducted with confidence in the factorial validity, concurrent validity, predictive validity and reliability of the inventory.

Chapter 4

Developing Transformational Leadership in Higher Education: A field study.

Abstract

An experimental design was employed to examine the effectiveness of a transformational leadership intervention. Participants consisted of 2 lecturers and 51 students in the experimental group and 3 lecturers and 76 students in the control group. Students of lecturers in each group completed questionnaires of transformational leadership, academic efficacy, student satisfaction and intrinsic motivation at weeks 2 and 12 of the semester. In addition, students completed measures of psychological need satisfaction, academic engagement and extra effort at week 12 of the semester. After controlling for baseline measures, students of lecturers in the intervention group rated their lecturers as displaying significantly higher levels of transformational leadership than the control group. In addition, students of lecturers in the intervention group reported significantly greater levels of intrinsic motivation, academic efficacy and student satisfaction than the control group as well as reporting significantly higher psychological need satisfaction and academic engagement. These results are discussed in relation to the application of transformational leadership to the context of education, and how lecturers' leadership behaviours may influence student and institutional outcomes.

Developing Transformational Lecturing in Higher Education: A field study.

Recent developments in higher education have implemented initial teacher training in every university within the UK, with it becoming increasingly popular in other countries (Gibbs & Coffey, 2004). Indeed, training programmes and interventions focused on developing lecturing has been a continual area of interest within the higher education sector. Despite this interest, research on the effectiveness of such training has reported that instructional interventions are being used with virtually no empirical justification as to their efficacy, a failure to derive interventions from a theoretical or conceptual perspective and with little evaluation regarding the impact of training on teaching and less on student outcomes (Weimer & Lenze, 1997). Thus, such interventions have become convention as oppose to an implementation of evidence-based practice. The present study uses a multi-method approach to address these criticisms of previous research by empirically examining the effectiveness of a behavioural intervention grounded in transformational leadership theory (Bass, 1985).

Transformational leadership is one of the most widely used leadership models in organizational psychology literature. In addition, transformational leadership has been shown to positively impact outcomes in a variety of contexts including the military (e.g., Hardy, Arthur, Jones, Munnock, Isaacs, & Allsopp, 2010), sport (e.g., Charbonneau, Barling, & Kelloway, 2001), business (e.g. Barling, Weber, & Kelloway, 1996), the public sector (e.g., Rafferty & Griffin, 2004), and education (e.g., Koh, Steers, & Terborg, 1995). This research has focused on its conceptualization, measurement as well as the efficacy of transformational leadership interventions. Despite the considerable volume of research examining transformational leadership the majority of this research has been correlational in

nature with only five published studies using field based experimental designs to examine transformational leadership and its effects on outcomes (Barling et al., 1996; Beauchamp, Barling, & Morton, 2011; Dvir, Eden, Avolio, & Shamir, 2002; Hardy et al., 2010; Mullen & Kelloway, 2009). Previous experimental studies focusing on transformational leadership have been conducted in military, organisational, and school contexts and, whilst, the literature offers evidence for the efficacy of interventions based on transformational leadership theory there is limited evidence supporting the efficacy of transformational leadership interventions in a higher education context.

For the most part transformational leadership research in the context of education has focused on higher-level leadership by examining the influence of principals and departmental heads' on teachers and lecturers (e.g., Koh et al., 1995; Wolf, Hayden, & Bradle, 2004). For example, Koh et al. (1995) found that principal transformational leadership had significant add-on effects to transactional leadership in the prediction of organizational commitment, organizational citizenship behavior, teacher satisfaction, and had indirect effects on student academic achievement. Recently efforts have been made to examine a more direct influence of transformational leadership on student outcomes, that is, the leadership teachers and lecturers. To date, there are three studies that have attempted to examine the direct relationship between teacher and lecturer transformational leadership and student outcomes. The first of these studies is that of Beauchamp, Barling, Li, Morton, Keith, and Zumbo (2010) who provided support for positive relationships between transformational teaching and adolescent self-determined motivation and positive affect in school-based physical education contexts. Subsequently, these researchers were the first to conduct an intervention study using transformational leadership in

an education setting (Beauchamp et al., 2011). The second is the series of studies reported in Chapter 3. While there are many similarities between both of these studies (e.g., education context) the most important distinction, is the conceptualization of transformational leadership. Beauchamp et al. employed a global conceptualization of transformational leadership while in Chapter 3 a differentiated conceptualization was employed. Although some researchers have argued that differentiation is futile because of the high inter-factor correlations (e.g., Carless, 1998; Judge & Bono, 2000) other researchers such as Antonakis, Avolio, and Sivasubramaniam, (2003) and Hardy et al. (2010) have called for research to adopt a differentiated approach to allow for a more detailed examination of the specific sub-components of transformational leadership. Indeed, research employing a differentiated approach has shown that different leader behaviours have different relationships with outcomes. To illustrate, Callow, Smith, Hardy, Arthur, and Hardy, (2009) found that high performance expectation significantly discriminated between high and low performance but contingent reward did not. Whereas, in Hardy et al. (2010), high performance expectation did not significantly discriminate between performance (i.e., training course pass and fail rates), but contingent reward did, offering support for the contention that different leadership behaviours are not only used differentially, but their relative influence might vary in different contexts. Furthermore, Antonakis et al. (2003) highlight that a differentiated approach is particularly useful when employing interventions as this approach allows for a better examination of effective methods for leadership development in which researchers and practitioners are better able to coach leaders on which specific behaviours they should focus on to develop their potential.

Employing a differentiated model of transformational leadership Hardy et al. (2010) examined the efficacy of an intervention with military recruits. The results revealed that the intervention positively enhanced recruits' perceptions of their leaders' transformational leadership behaviours and also enhanced attitudinal outcomes such as self-confidence, resilience and satisfaction. This research extended previous experimental research on transformational leadership and was the first study to use a differentiated approach to transformational leadership development in an experimental design adding to the growing body of literature demonstrating that transformational leadership can be developed by means of an intervention. Thus examining the differential impact of transformational leadership in education is warranted. Therefore, in the present study transformational leadership conceptualisation is based on the model developed and tested in Chapters 2 and 3 which comprises eight behaviours: inspirational motivation; individual consideration; intellectual stimulation; high performance expectations; contingent reward; self-belief; and sense of humour, found to be relevant to the education context. The intervention focused on four behaviours that emerged as the best predictors of a variety of student outcomes in Chapter 3 (e.g., psychological need satisfaction, intrinsic motivation, engagement, extra effort, academic efficacy and satisfaction with university) including inspirational motivation, intellectual stimulation, individual consideration and high performance expectations.

Considering that all five published transformational leadership intervention studies (Barling et al., 1996; Beauchamp et al., 2011; Dvir et al., 2002; Hardy et al., 2010; Mullen & Kelloway, 2009) have provided evidence that, in a variety of contexts (e.g., the military), training of transformational leadership behaviours can lead to an increased use of transformational leadership we expected a

transformational leadership intervention to be effective in the context of higher education. Thus, it is hypothesized that lecturers in the experimental group would be rated by their students as being more transformational than lecturers in the control group (Hypothesis 1).

Empirical research conducted in sport (Charbonneau et al., 2001) and education (Beauchamp et al., 2010) have provided support for the link between internalised forms of behaviour regulation (i.e., intrinsic motivation) and transformational leadership. Transformational leaders appeal to followers values and provide them with opportunities to make them feel autonomous (Beauchamp et al., 2011). From a self-determination theory perspective (SDT: Ryan & Deci, 2000) leaders who employ such practices and behaviours are likely to increase followers' psychological needs satisfaction (i.e., autonomy, competence, relatedness) and subsequent intrinsic motivation. To illustrate, stimulating followers intellectually to think about old problems in innovative ways (intellectual stimulation) and showing care and concern for each follower (individual consideration) is similar to Black and Deci (2000) conceptualization of autonomy support whereby people in position of authority provide followers with the necessary information while encouraging them to use information in solving a problem. Further behaviours such as espousing ideals, formulating a vision and expressing a belief in followers to achieve a vision (inspirational motivation) is likely to foster competence, whereby, individuals feel mastery of the social and physical world. Finally, acting as role models (appropriate role modelling) where leaders lead by example, showing followers how to perform their work instead of telling them how to is likely to foster relationships and closeness. While the research examining the relationship between transformational leadership and psychological need satisfaction is scarce, recently a study by Wilson,

Liu, Keith, Wilson, Kermer, Zumbo, and Beauchamp (2012) reported that psychological need satisfaction mediated the relationship between transformational teaching and engagement. Furthermore, Charbonneau et al. (2001) demonstrated that followers' self-determined motivation, which is theoretically proposed to be facilitated by psychological need satisfaction (Deci & Ryan, 2000), is associated with the use of transformational leadership. With the exception of Beauchamp et al. (2011), the studies examining self-determination theory and transformational leadership have been correlational in nature. Thus, based on theory and previous research it is hypothesized that students of transformational lecturers will have greater autonomy, competence and relatedness (psychological need satisfaction) and greater intrinsic motivation than students of lecturers in the control group (Hypothesis 2 and 3).

Although the relationship between leadership and follower attitudes such as satisfaction has been well documented in previous research (e.g., Lowe, Kroeck, & Sivasubramaniam, 1996), only one previous study by Zhu, Avolio, and Walumbwa, (2009) has examined the relationship between transformational leadership and follower work engagement. Considering that the quality of leadership has been suggested as one of the single biggest factors contributing to engagement (Buckingham & Coffman, 1999) this lack of research is surprising. In their study with industry supervisors and followers, Zhu et al. (2009) examined the the relationship between transformational leadership and work engagement reporting a positive relationship. Based on this research it is hypothesized that students of lecturers in the intervention group would display higher levels of academic engagement than students of lecturers in the control group (Hypothesis 4).

A central tenant to transformational leadership is that it will enhance

followers' extra effort (Bass, 1985). Indeed, Bass (1985) originally posited extra effort as a manifestation of follower motivation, claiming that extra effort from followers demonstrates that a leader motivates them to perform beyond expectations. Transformational leaders are purported to use inspirational motivation to inspire followers to adopt a positive vision of their future, express confidence in their followers and express expectations for excellence (high performance expectations). Shamir, House, and Arthur (1993) note that transformational leaders increase effort-accomplishment expectancies by expressing high-expectations and confidence in followers' ability to perform. Thus based on this research it is hypothesized that students of lecturers in an intervention group would display higher levels extra effort than students in the control group (Hypothesis 5).

Self-confidence and self-efficacy have been shown to be an important determinant of performance in a number of settings including business (e.g., Stajkovic & Luthans, 1998) and sport (e.g., Woodman & Hardy, 2003). Bass (1998) posits that one of the major objectives of transformational leadership is to enhance followers' confidence by empowering them and instilling confidence in them by expressing a belief in followers. A substantial amount of correlational evidence supports this contention (e.g., Bass, Avolio, Jung, & Berson, 2003; Jung & Sosik, 2002; Rafferty & Griffin, 2006). Further, using field based experimental approaches, research has also provided support for the enhancement of self-efficacy of followers in military settings (e.g., Dvir et al., 2002; Hardy et al., 2010). Thus based on this theoretical perspective and previous research it is hypothesized that students of lecturers in an intervention group would display higher levels of academic efficacy than students in the control group (Hypothesis 6).

Another central tenant of transformational leadership is that it will enhance

follower satisfaction (Bass & Avolio, 1993). Strong evidence has accrued which consistently demonstrates strong positive links between transformational leadership and follower satisfaction (e.g., Lowe et al., 1996; Podsakoff, MacKenzie, Moorman, & Fetter, 1990). Thus in the current study it is hypothesized that students of lecturers in the intervention group would report higher satisfaction than students of lecturers in the control group (Hypothesis 7).

In summary, the present research examined two main contentions: (a) transformational leadership intervention would increase followers' perceptions of their lecturers' transformational leadership behaviours, and; (b) the increase in followers' perception of their lecturers transformational leadership behaviours would be accompanied by an increase in student outcomes.

Methods

Participants

After obtaining ethical approval, five lecturers from four courses across two schools at a UK higher education institution were invited to participate in the study and were assigned to either an intervention or control group. Of the five lecturers two taught jointly on a course and three taught a course independently. For the purposes of this study, ratings of the two lecturers on the joint course were combined and mean data was used as a composite single course lecturer score. Students of all lecturers were then invited to take part in the study. At time 1 (lectures 2-3) a total of 211 students ($M_{age}=19.81 \pm 2.12$; Male = 132; Female = 79) participated in the study. At time 2 (lectures 10-12), only 127 (Control group $N=76$; Intervention Group $N= 51$) of these participants remained in the study.

Measures

Transformational leadership. Lecturers' transformational leadership behaviours were measured using the Differentiated Transformational Leadership Inventory for Education (DTLI-E) developed specifically for use with students in higher education contexts. The 30-item DTLI-E contains subscales assessing eight transformational lecturing behaviours; inspirational motivation, individual consideration, intellectual stimulation, high performance expectations, appropriate role modelling, self-belief, sense of humour, and contingent reward. Items are prefixed with the stem 'My lecturer...' followed by the item, for example, shows me that s/he cares about me (individual consideration). Responses are anchored on a 7-point likert scales from 1 (*Never*) to 7 (*Always*). Chapter 3 provides support for the factor structure, discriminant validity, and internal consistency of inventory demonstrating it to be valid and reliable. In the present study, the subscales demonstrated sound reliability at each time point with Cronbach $\alpha > .7$.

Psychological need satisfaction. To measure student need satisfaction the Work-related Basic Need Satisfaction Scale (W-BNS: Van den Broeck, Vansteenkiste, Witte, Soenens, & Lens, 2010) was adapted to the education context. The W-BNS is a validated measure of autonomy, competence and relatedness consisting of 23-items. In this study items were adapted to reflect the lecturing environment for example 'I feel free to express my ideas and opinions in my job' became 'I feel free to express my ideas and opinions in my lectures'. Five items were removed from the questionnaire because the items did not suit the context of a single lecture (e.g., 'In lectures, people involve me in social activities'). In addition, there have been criticisms in the literature regarding the measurement of autonomy being heavily focused on perceived choice when the conceptualization of autonomy includes individual perceived locus of causality (IPLOC) and volition (Ng, Lonsdale,

& Hodge, 2011). Indeed, upon inspection of the autonomy items of the W-BNS, IPLOC was not conceptualized as part of autonomy. Consequently, three items from the Basic Needs Satisfaction in Sport Scale (BNSSS: Ng et al., 2011) were adapted to the education context and included in the W-NBS measurement of autonomy. The final measure of need satisfaction consisted of 21-items measuring autonomy (e.g., In my lectures, I really have a sense of wanting to be there), competence (e.g., I really master tasks in my lectures), and relatedness (e.g., In lectures, there are people who really understand me). Items were anchored on a 7-point likert scale ranging from 1 (*Very Untrue of Me*) to 7 (*Very True of Me*). In the present study all three subscales of autonomy, competence and relatedness demonstrated acceptable reliability (Cronbach $\alpha = .76, .85, .77$, respectively).

Intrinsic motivation. Three subscales of the Academic Motivation Scale (AMS: Vallerand, Pelletier, Blais, Briere, Senecal, & Vallieres, 1992) were used to assess ‘intrinsic motivation to know’ (e.g., Because I experience pleasure and satisfaction while learning new things), ‘intrinsic motivation to accomplish’ (e.g., For the pleasure I experience while surpassing myself in my studies), and ‘intrinsic motivation to experience stimulation’ (e.g., For the intense feelings I experience when I am communicating my own ideas to others). Students respond to the question stem “Why are you going to university?” The items are rated on a scale, ranging from 1 (*does not correspond at all*) to 7 (*corresponds exactly*). In the present study all three subscales of intrinsic motivation demonstrated good reliability at time 1 (Cronbach $\alpha = .90, .86, .89$, respectively) and time 2 (Cronbach $\alpha = .95, .94, .92$, respectively)

Academic engagement. A four-item scale developed for Chapter 3 was employed in the current study to measure student engagement. Items assess student’s

perception of their engagement in the understanding of lecture content, attendance, completing readings and contribution to lectures over what they initially believed they would do at the beginning of the semester (e.g., I have attended more lectures than I thought I would at the start of the course). Items were anchored on a 7-point likert scale ranging from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*). In the present study academic engagement demonstrated good reliability (Cronbach $\alpha = .86$)

Leader inspired extra effort. The four-item scale was adapted from (Arthur, Woodman, Ong, Hardy, & Ntoumanis, 2011) for the higher education context (e.g. “My lecturer is able to get me to put in extra effort”). Items were anchored on a 7-point likert scale from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*). Arthur et al., 2011) reported the scale to possess good reliability. In the present study leader inspired extra effort demonstrated good reliability (Cronbach $\alpha = .97$).

Academic efficacy. Student academic efficacy was measured using the refined version of the Chemers, Hu, and Garcia's (2001) questionnaire emanating from Chapter 3. The 7-item questionnaire asks participants to rate their agreement with statements reflecting their confidence in their ability to perform well academically. The questionnaire reflects a variety of specific skills pertinent to academic achievement, including scheduling of tasks, note taking, test taking, and researching and writing papers, and includes general statements regarding scholarly ability. Participants respond on a likert scale anchored from 1 (*Very Untrue*) to 7 (*Very True*). In the present study, the academic efficacy questionnaire demonstrated good reliability at each time point (Cronbach α Time 1 = .85, Time 2 = .93).

Satisfaction. Students' satisfaction with university was measured using a one item response taken from the National Student Satisfaction Survey (Richardson, Slater, & Wilson, 2007). The item ‘Overall I feel satisfied with my university

experience' was anchored on a 7-point likert scale ranging from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*).

Manipulation check. With the exception of Beauchamp et al. (2011) few field studies have utilized manipulation checks to ensure the experimental manipulation worked. In the present study all lecturers were provided with a questionnaire pack at Week 1 and Week 12 to assess their knowledge of transformational leadership from pre to post test. The pack contained four parts. Part A was a free recall task, where lecturers were given five minutes and asked to write everything they knew about transformational leadership and its associated behaviours. A transformational leadership expert, who was not aware of the purposes of the study and was blind to which lecturers were in each group, independently marked responses. Part B consisted of six lecturing scenarios that were developed from the interviews and focus groups in Chapter 2. Each of the scenarios reflected two transformational leadership behaviours. Participants were given a multiple choice of six behaviours asked to identify which two behaviours were represented in the scenario. Part C consisted of four items developed to assess lecturers' confidence and awareness of using the transformational leadership behaviours (i.e., I am confident that I deliver my lectures in a transformational way; I am usually aware of transformational leadership when I lecture), their confidence in lecturing generally (i.e., I am generally confident in my ability to lecture), and their enjoyment of lecturing (i.e., I enjoy lecturing). Items were anchored on a 7-point likert scale ranging from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*). Finally, part D consisted of a matching task where lecturers were asked to match sixteen items from the DTLI-E with their respective behaviours.

Design and Procedure

A paired random block design was employed, whereby the first lecturer to agree and provide consent to participate was assigned to the intervention group, the second lecturer to agree was assigned to the control group, and so on. The study was carried out over the course of a 12-week semester with two hours of lecturing per week on each course. Time 1 data was collected at the end of four hours of lecturing (i.e., on courses with 1 hour lectures data was collected at the end of the fourth lecture, on courses with two hour lectures data was collected at the end of the second lecture) to allow sufficient time for students to develop a perception of their lecturers' transformational leadership behaviours. In addition to measures of transformational leadership, students completed measures of satisfaction, academic efficacy and intrinsic motivation.

Following Time 1 data collection lecturers in the intervention group were invited to attend 3 x 2 hour workshops as part of the intervention during weeks 3-5 of the semester. Control group lecturers were asked to continue lecturing delivery as normal. On week 6 of the semester all lecturers received a peer observation session. Peer observation feedback for lecturers in the intervention group was targeted towards transformational leadership behaviours and their transformational lecturing goals (see intervention below). Peer observation feedback for lecturers in the control group was targeted towards teaching and learning practicalities (e.g., PowerPoint slides).

During week 12 of the semester (i.e., 10 weeks post baseline and 6 weeks post intervention) Time 2 data were collected. Ideally, a more stringent assessment of intervention effectiveness would be obtained if pre-test levels of all variables were controlled for, however, certain variables did not lend themselves to pre-test

measurement because student experience of the course was required. Consequently, only post-test measures were taken of psychological need satisfaction, leader inspired extra effort, and academic engagement, thus at Time 2, students completed the same measures as Time 1 with these additional measures.

Intervention

The author conducted the intervention via a series of workshops and feedback sessions. In total three workshops were conducted lasting two hours each. Each workshop contained four main components: reflection on current practice, knowledge delivery, activities, and researcher modelling of transformational leadership behaviours. A model of equal expertise (Hardy & Parfitt, 1994) was employed whereby the lecturers' expert knowledge of their teaching environment was mapped on to the researchers' expertise of transformational leadership.

In the first workshop, lecturers were asked to reflect on their experience and identify the ideal behaviours for a lecturer to have. As part of knowledge delivery, lecturers were then provided with information on and a definition of each of the eight transformational leadership behaviours developed in Chapter 2. In conjunction with the researcher the behaviours identified by the lecturers were mapped on to the eight transformational leadership behaviour definitions. The activity component of this workshop was focused on personal construct theory (Kelly, 1991), whereby lecturers choose behaviours they felt they needed to development most. Ranking these behaviours in order of their importance, lecturers were asked to write down the personal meaning of each of the behaviours. Finally, lecturers were asked to indicate their current level of each behaviour on a scale of 1 (least ideal) to 10 (most ideal). This was followed by a discussion of the lecturers' individual profiles. Throughout the workshop the researcher modelled transformational leadership behaviours. For

example, intellectual stimulation was used when challenging lecturers to think about the ideal behaviours in lecturing, individual consideration was modelled by taking time with each lecturer individually to clarify their meanings and discuss their profile. Finally, lecturers were then provided with a pamphlet detailing the behaviours and examples of each of the behaviours that emanated from focus groups with students in Chapter 2 (See Appendix E).

One week later, the second workshop began with a summary of the previous session and, for knowledge delivery, a presentation of research carried out in Chapter 3 on transformational leadership and its relationship to student outcomes. The rest of the workshop focused on the behaviours of inspirational motivation and individual consideration. Lecturers were asked to reflect on a normal day of lecturing and brainstorm how both of these behaviours would work within the structure of their lecture. Considering an objective of the intervention was to enhance the use of the transformational leadership behaviours, a goal setting (Locke & Latham, 1984) activity was conducted and lecturers were asked to select two of the ideas generated in the brainstorming and set a goal for each behaviour. Once more, leadership behaviours were modelled throughout, with the researcher articulating high expectations of the lecturers in developing their goals, and expressing confidence in their ability to achieve their goals. Finally, an opportunity to discuss the goals and ask questions was provided.

In order to refresh content, at the beginning of workshop three, lecturers were shown two clips from Jamie's Dream School television series illustrating transformational (Winston, 2011) and transactional lecturing (Starkey, 2011), and asked to reflect on the two behaviours from the previous workshop. As part of the knowledge delivery, the researcher then identified explicit examples of the

behaviours from the video. Next, lecturers were asked to reflect on their own practice in relation to the behaviours of intellectual stimulation and high performance expectations and discuss ways that these behaviours could be incorporated into daily activities. As an activity, lecturers identified two strategies for each behaviour and identified goals regarding using them in their lecturing. The researcher provided individual consideration through opportunity to discuss lecturers concerns regarding their perception of barriers to implementing the goals. Finally, lecturers were asked to rate their confidence in their ability and their intention to incorporate each behaviour into their lectures during the semester.

One week after the final workshop, the author conducted a peer observation of lecturers from the intervention group focussing on the lecturer's use of transformational leadership behaviours in their lectures. Observations were made regarding: (a) examples of the lecturer's use of transformational leadership behaviour, and (b) examples of where the behaviours could be used more. In a one to one coaching session, feedback was provided on observations and goals. Lecturers were given an opportunity to discuss progress. In addition, adaptations to the goals were discussed, and the principles of the behaviours were reinforced.

Data Analysis: Intervention Evaluation

A mixed method approach combining qualitative and quantitative methods (Leech & Onwuegbuzie, 2007) was employed for evaluation of the intervention. Quantitative methods were employed to examine knowledge of transformational leadership, the effects of the transformational leadership intervention on lecturers' behaviours, and the effects of the intervention on student outcomes. A qualitative interview component was used to gain an understanding and evaluation of the intervention from the perspective of the lecturers in the intervention group. Six

weeks post intervention lecturers were invited to participate in a semi-structured interview. To promote openness and honesty interviews were conducted by a researcher who was not involved in the project. Interview questions were based on those utilized by Beauchamp et al. (2011), specifically lecturers were asked to: (a) recall the content of the workshops; (b) identify strengths and weaknesses of the intervention; (c) suggest ways in which the intervention could be improved; (d) identify how useful the intervention was to them; and (e) highlight future aspects of their lecturing that may change as a result of the intervention. Interviews lasted approximately 40 minutes and were transcribed verbatim. Meaning units (Tesch, 1990) were identified in relation to each of the main questions and are presented using quotes that reflect each of the questions.

Results

Manipulation Check

Due to the small sample size in the current study, there was not enough power to conduct conventional statistical analyses on the manipulation check data. Therefore, to assess the effect of the intervention on change in knowledge of transformational leadership, confidence to use transformational leadership and enjoyment from pretest to posttest Cohen's (1988) effect size was calculated: $((x_{1\text{post}} - x_{1\text{pre}}) - (x_{2\text{post}} - x_{2\text{pre}})) / SD_{\text{pre}}$ and were interpreted as small (0.3), medium (0.5) or large (0.8). Thus effect sizes presented represent a change in the intervention group from pretest to posttest after accounting for change in the control group from pretest to posttest. Means and standard deviations for each group at pretest and posttest are presented in Table 18. Results revealed a moderate positive effect size ($d = .53$) for the total score of knowledge of transformational leadership (i.e., sum of scores on

part A, B and D). In addition, results revealed a large positive effect for awareness of transformational leadership ($d = 1.53$) and a very large positive effect for awareness of transformational leadership during lectures ($d = 2.34$). For confidence to use transformational leadership in lecturing results indicated a large positive effect ($d = 1.79$) and for confidence to lecture generally, there was a small positive effect ($d = 0.33$). There was no difference between change in scores from pre-test to post-test on enjoyment of lecturing.

Table 18: Means and Standard Deviations for the Experimental and Control Groups on the Manipulation Check Variables

Variables	Control Group		Intervention Group	
	Time 1 Mean (SD)	Time 2 Mean (SD)	Time 1 Mean (SD)	Time 2 Mean (SD)
Knowledge of Transformational Leadership	35.00 (11.78)	36.66 (13.31)	21.00 (7.07)	29.50 (6.36)
Awareness of Transformational Leadership	6.00 (1.00)	5.33 (2.08)	4.50 (.70)	6.50 (.70)
Awareness of Transformational Leadership during Lectures	4.00 (1.73)	3.66 (1.52)	2.50 (2.12)	5.50 (.70)
Confidence to lecture	4.66 (1.52)	4.66 (.57)	6.00 (4.41)	6.50 (.70)
Confidence to use Transformational Leadership in Lecturing	4.33 (1.15)	4.33 (.57)	2.50 (2.12)	5.50 (.70)
Enjoyment of Lecturing	5.66 (1.15)	5.66 (1.15)	6.50 (.70)	6.50 (.70)

Leadership Behaviours.

To examine the effects of the intervention program separate ANCOVA's were conducted for each of the behaviours. Whilst it was expected that the transformational leadership behaviours that formed the focus of the intervention would be enhanced, it is important to note that the full model of transformational leadership behaviours were presented to participants in the first workshop.

Consequently, analyses were conducted on all behaviours as oppose to just the four that formed the main focus within the workshops. For each of the leadership behaviours its pre-test score represented the covariate; intervention group (treatment or control), as the independent variable; and post-test measures of leadership behaviours as the dependent variable. Conducting multiple ANCOVAs increases the chances of making a Type I error by capitalising on chance, which it could be argued should be controlled for by either Bonferroni correcting the significance level used or running preliminary MANOVAs. This course of action was not taken based on the rationale outlined by Hardy et al. (2010) whereby:

It is only appropriate to use MANOVA if genuinely multi-dimensional hypotheses have been formulated, i.e., hypotheses about the combined linear effects of transformational leadership behaviors ... The whole point of using a differentiated (as opposed to global) model of transformational leadership is that it is theoretically meaningless to consider linear combinations of the different leadership behaviors (p32).

The analysis revealed that two of the transformational behaviours, namely 'sense of humour' and 'self-belief' did not meet the criteria for the assumption of homogeneity of regression slopes and, therefore, were excluded from further analysis. The behaviour of *appropriate role modelling* violated the assumptions for homogeneity of variance, therefore a more stringent p-value of $p \leq .01$ was set for this behaviour (Tabachnick & Fidell, 2001). All other behaviours met the relevant assumptions. The results revealed that at post test, lecturers in the intervention group were perceived to display significantly higher levels of six transformational lecturing behaviours (inspirational motivation, individual consideration, intellectual

stimulation, high performance expectations, appropriate role modelling, contingent reward) than lecturers in the control group when controlling for pretest levels. The descriptives, F-values and effect size for all variables included in the analysis are presented in Table 19.

Student Outcomes.

Psychological need satisfaction. To examine the effects of the intervention on the satisfaction of basic psychological needs (autonomy, competence and relatedness), three one way ANOVAs were carried out. The assumption for homogeneity of variance was violated for each dependent variable, therefore test for equality of means was employed. Results revealed a significant difference between the intervention and control group on autonomy $F(1,123.72)=8.69, p=.004, \eta^2=.05$, competence $F(1,124.91)=5.12, p=.02, \eta^2=.03$, and relatedness $F(1,124.87)=21.41, p<.001, \eta^2=.12$, with the intervention group reporting greater autonomy, competence, and relatedness than the control group (see Table 19).

Intrinsic motivation. To examine the effects of the intervention on students' intrinsic motivation a series of one-way ANCOVAs were conducted. Pre-test measures of students' intrinsic motivation were used as the covariate, intervention group (treatment or control) as the independent variable and post-test measures of intrinsic motivation as the dependent variable. The analyses revealed a significant difference between the intervention and control group for intrinsic motivation to accomplish $F(1,124)=6.75, p=.01, \eta^2=.05$, and intrinsic motivation to experience stimulation $F(1,124)=8.42, p=.004, \eta^2=.06$. There was a trend towards significance between the intervention and control group on intrinsic motivation to know $F(1,124)=3.41, p=.06, \eta^2=.02$. The intervention group reported greater intrinsic motivation to

accomplish ($M=4.50$, $SE= .16$), intrinsic motivation to experience stimulation ($M=3.84$, $SE= .15$) and intrinsic motivation to know ($M=4.89$, $SE= .15$) than the control group ($M=3.96$, $SE= .13$ and $M=3.23$, $SE= .12$, $M=4.51$, $SE=.13$, respectively).

Table 19: Descriptives, F-values and Effect Sizes for the Analysis of Leadership Behaviours and Self Report Variables

	Control (n=76) Time 2 Mean (SD)	Intervention (n=51) Time 2 Mean (SD)	F-value for group	η^2
<i>Leadership Behaviours</i>				
Inspirational Motivation	3.80 (1.56)	3.95(1.26)	15.76***	.11
Individual Consideration	4.33 (1.59)	4.70(1.18)	11.26***	.08
Intellectual Stimulation	4.50(1.59)	4.82(1.25)	12.71***	.09
Appropriate Role Modelling ¹	4.31 (1.63)	4.43 (1.17)	14.06***	.10
High Performance Expectations	3.62(1.77)	3.79 (1.36)	7.02**	.05
Contingent Reward	3.73 (1.66)	4.00 (1.46)	7.72**	.06
<i>Student Outcomes</i>				
Autonomy	4.19(.97)	4.64(.71)	8.69**	.05
Relatedness	4.15(1.19)	4.96(.77)	21.41***	.12
Competence	4.12(1.28)	4.54(.83)	5.12*	.03
Intrinsic motivation to know	4.54(1.45)	4.84(1.41)	3.41	.02
Intrinsic motivation to accomplish	3.97(1.47)	4.49(1.51)	6.75*	.05
Intrinsic motivation to experience stimulation	3.26(1.35)	3.76(1.55)	8.42**	.06
Engagement	4.00(1.42)	4.61(1.52)	5.38*	.04
Effort	4.60(1.49)	4.52(1.20)	.11	.06
Academic Efficacy	4.46(1.33)	4.89(.91)	11.80***	.08
Satisfaction	4.92(1.59)	5.66(1.05)	8.76**	.06

¹Stringent p-value (p<.01) as homogeneity of variance assumption violated

*p<.05, **p<.01, ***p<.001

Engagement and Effort. To examine the effects of the intervention on students' perceptions of leader inspired extra effort, and student engagement, two one way ANOVA's were conducted. Results revealed a significant difference between the intervention and control group on student engagement $F(1,125) = 5.38$, $p = .02$, $\eta^2 = .04$, with the intervention group reporting greater student engagement than the control group (see Table 19). There was no significant difference between the intervention and control group on leader inspired extra effort $F(1,125) = .11$, $p = .73$, $\eta^2 = .06$.

Efficacy and Satisfaction. To examine the effects of the intervention on students' perceptions of academic efficacy and satisfaction with university, two ANCOVAs were carried out controlling for pre-test perceptions of academic efficacy and satisfaction. The assumption of homogeneity of variance was violated so a more stringent alpha level was employed ($p < .01$). Results revealed a significant difference between the intervention and control groups for both academic efficacy $F(1,125) = 11.65$, $p = .001$, $\eta^2 = .08$ and satisfaction $F(1,125) = 8.76$, $p = .004$, $\eta^2 = .06$, with the intervention group reporting greater academic efficacy ($M = 5.04$, $SE = .14$) and greater satisfaction ($M = 5.60$, $SE = .16$) than the control group ($M = 4.40$, $SE = .11$ and $M = 4.96$, $SE = .13$, respectively).

Intervention Evaluation

Data from the qualitative interviews were transcribed verbatim. Following this, the PhD candidate identified participant's quotes in response to each of the questions probed. Patton (1987) notes that quotations reveal the respondents' levels of emotion, how they organize the world, their thoughts about what is happening, their experiences, and perceptions of the program and as such is an appropriate method for evaluation research. Outlined below are the lecturers' evaluative quotes

regarding the intervention. Any disconfirming examples and incongruences of opinion between lecturers are presented to provide an accurate reflection of the program.

Strengths. Lecturers in the intervention highlighted a number of strengths associated with the intervention including, reassurance, perception change, theoretical perspective, benefits to lecturers, facilitator's transformational leadership and support and feedback.

Reassurance. Illustrated by one lecturer reporting, "it was nice to see that when we were trying to decide on what behaviours we do use, amongst other things, we both were actually doing things there. So it was nice to have a reassurance that we are doing things as teachers". The second lecturer said that "it made me realize that those little things really do help and if I could just do a little bit more or slight restructuring could really make a difference, so that was quite good"

Perception change. Relates to a change in perceptions over the course of the intervention and the use of transformational leadership. For example, a lecturer commented, "When I first came in I was very sceptical about it...because I'm a scientist and I was thinking is this going to be another of those courses. But the way the researcher was teaching it, the way the subject matter was actually done, that I thought was quite good. Towards the end of the course I actually didn't mind I changed my perceptions as I went along", another lecturer reported "I thought some of the specific leadership behaviours were quite helpful as I hadn't considered them. Probably the most novel to me was the high performance expectations, I hadn't considered using that. I would say that high performance was a new idea for me." Another example was "High expectations was one of the most helpful, I hadn't really considered it. It's also a lot more fun to have high expectations as a lecturer. I

do have high expectations but they plummet once you get into the lecture hall, it's so easy to get jaded. I have to say I hadn't considered the motivating factor of high expectations". Indeed lecturers emphasised that the intervention made them think about their lecturing, for example "It was good because it made me think about my teaching. As I said I did go into it with eyes shut and left with my eyes wide open" and the second lecturer commented "I feel more positive about teaching".

Theoretical perspective. One lecturer indicated, "I think a fundamental strength of the whole intervention is just the theoretical perspective to bring leadership techniques into teaching". Both lecturers commented on the already existing PG Cert HE programmes for training of lecturers in the UK and felt that it was "always housed within learning terms which I felt was slightly inappropriate and more appropriate for younger ages not university level. I think that a strength is bringing this idea of transformational leadership into it". Indeed the second lecturer supported this commenting, "everything was very informative, which is the way I like it. I've been on a few of the tHE (PG Cert HE) courses, where I hate to be there, but for this one I didn't feel like that at all".

Benefits to lecturer. Lecturers felt that employing transformational leadership behaviours would benefit them as well as the students. For example, "If we can motivate them to go out there and do more work for themselves, that would free our time to do other work. But it would also motivate them and hopefully their grades would improve. So it would help them and it would help us".

Facilitator's transformational leadership. There was agreement among lecturers that the use of the transformational leadership behaviours by the facilitator was evident and this was considered a strength. To illustrate, "I think the facilitator had an ideal balance of being enthusiastic and encouraging but kind of understated at

the same time, so there was a lot of space to sit back and think about things” it was also stated, “being encouraged without being too directive... it kept interest up but had plenty of time to reflect, so that was definitely a strength”. Finally it was stated, “she was a good role model, and role modelling was one of the behaviours, she was very good at that”.

Support and feedback. There was a consensus among lecturers that the support and feedback received was a strength of the programme. The benefit of the materials received was highlighted, “We got a little pamphlet of background information, which I thought was the perfect level of detail. The booklet (see Appendix E) really did well at making the case for why transformational leadership is applicable to education and some of the back ground research on that was motivating and intuitive”. Furthermore the lecturers felt that the observation of lecturing helped, “Another positive was the peer observation. The facilitator came in and done an observation and gave feedback, that was very helpful”. A lecturer suggested “having my lecture broken down into the different categories, it helps to reinforce all these different behaviours. This was particularly in a lecture that I delivered that I was not really intending to use the leadership because I was very pressed for time to get through the lab material before reading week, so even in that context where I wasn’t particularly trying that hard, the researcher pulled out things that would qualify.” Finally a lecturer stated, “Feedback was specifically tailored to the issues I was facing in my own lecture and that was very helpful”.

Areas for improvement. Lecturers in the intervention highlighted a number of areas for improvement associated with the intervention including time, applicability, intervention exercises and number of attendees.

Time. Lecturers highlight issues with time pertaining to two main aspects. First, they felt that they did not have enough time in the semester to implement some of the transformational leadership behaviours. This is illustrated by comments such as “I didn’t end up using some of the strategies because I didn’t have time”, “I think I had an extremely busy semester, really unusually busy, so I had virtually no time to implement these things” and “I didn’t have time to pull some things together so I think the effects will be over time rather than immediately looking from start to end of one course”. Second they felt that to implement the intervention fully they would need to strategically incorporate it. For example, one commented “Time. I’d have to get my organisation a bit more organised and then maybe I’d find it easier to implement”. Another stated “I will just have to plan ahead, whether that’s an hour ahead or a week to see what can I do for this lecture here, how can I bring it in. That’s a bit more work, but if it helps the students its better than nothing”.

Applicability. Lecturers seem to question the applicability of transformational leadership to all types of teaching. For example, one lecturer commented, “I suppose if I was teaching a practical class or small group tutorial it would be easier. In a large lecture of 80 people I’m not sure”. Indeed this is also illustrated in the comment “I’d have to look at the modules I teach, some of them are going to be easier to incorporate the transformational leadership into. Others are a bit harder.”

Intervention activities. Lecturers felt that more observable examples and activities may have benefited them as illustrated by “We were given an nice example of a TV show (of people teaching). The way that they were teaching you could see the differences between the good and bad lecturer. Maybe a few more examples of something like that, where we could see it being used”.

Number of attendees. There was a consensus among the lecturers that the intervention may have benefitted from having more people and from a variety of disciplines. One lecturer suggested, “Ideally I think there would be more people so in our particular intervention group there was me and one other person. I think it would be helpful to have a couple more people”, another comment which reflected this was “It would be nice to have more people in the group because it is an investment to spend 6 hours plus prep time just doing a workshop, so you might get more out of it if there were more people”. Relating to having a group of people from different disciplines one lecturer stated “if you get people from other disciplines, so they have different problems to solve and they come up with other solutions that you could use and aren’t obvious because your topic is different”. The second lecturer supported this saying “it was nice to have arts and science people mixed”.

Content covered. There was a discrepancy from the lecturers pertaining to the content covered, with one lecturer reporting “It would be nice to have another one or two weeks to do the other 4 behaviours that we skipped over. To do those in a bit more depth”. However, a second lecturer commented, “We only focused on four behaviours which I think is definitely a strength. It was probably still a little bit too much for me, I sometimes forgot the 8 actions I was to implement. It was good to come up with eight but for me I should have just cut back and said I was just going to do a few”.

Utility and relevance. Lecturers also discussed the utility and relevance of the intervention to them and others. One stated “I think this is kind of thing will develop and become quite a positive thing, so I was glad I did it”. The second lecturer commented “(If the course was being run again) I think I would get people from my department, I’d probably get others to attend the course on something like

that”. Both lecturers felt that this type of training would be useful on a lecturer training program, for example “I hope this kind of thing is brought into the tHE (PGCertHE) experience. If the tHE experience can be tweaked with even just a little bit of incorporating this kind of thing, that makes me more positive about the fact every year new people will do the program”. Indeed one lecturer felt that what was learned would apply to other aspects of life, it was reported “It’s really good to know the behaviours and to use them elsewhere and I probably will use them when dealing with my nieces and nephews”. Finally, one lecturer felt that even if the intervention was not successful it was worthwhile as demonstrated by the comment “I think there might be a drop (from start to finish), so I think the measures may not really tell the story. Certainly if that did happen, that doesn’t match my perception of how valuable and effective it is going to be for lecturing”

Future Intent. Lecturers in the intervention discussed their future use of transformational leadership. “I have the intention to address it next semester, I’ll have a break and re-think some of these things. A bit of a breather to think about the strategies” and the other lecturer commented that “I am going to try and do a bit more in the second semester, providing I get some time at Christmas to think about how I am going to teach”. One lecturer noted “I think the return on investment will actually probably take place over a full year and begin to form a routine part of my lectures”. Indeed, one of the lecturers discussed the importance of combining behaviours in the future as oppose to focusing on just one “in reality I think there can be these behaviours and really it’s just a matter of getting them (students) to want to do it. So I think that the interplay between high performance expectations, inspirational motivation and support and how they all interact is important”.

Discussion

The purpose of the current study was to apply a differentiated transformational leadership theory to the context of education and test the efficacy of an intervention aimed at enhancing lecturers' transformational behaviours and subsequent student outcomes. A combination of qualitative and quantitative methods assessed student and lecturer perspectives of the effectiveness of the intervention. The results of the current study provide strong evidence that the intervention enhanced lecturers' knowledge of transformational leadership, students perceptions of lecturers transformational leadership and a number of student outcomes. Specifically, the results revealed that lecturers in the intervention group were perceived as being higher on six of the transformational leadership behaviours (inspirational motivation, intellectual stimulation, high performance expectations, individual consideration, appropriate role modelling, and contingent reward) than the control group. This is particularly interesting considering that the intervention predominantly focused on only four of the transformational leadership behaviours. Evaluative comments of the intervention suggested a divergence of opinion regarding the behaviours covered. While one lecturer felt that it would have been better to cover more, the other lecturer thought that it was a lot to cover just four leadership behaviours. Considering that there was a significant difference in six of the transformational leadership behaviours, this suggests that targeting certain behaviours may actually lead to increases in the others and possibly adds to a 'less is more' argument allowing comprehensive targeting of selective relevant behaviours.

The results revealed that students of lecturers in the intervention group reported greater autonomy, relatedness and competence than students of lecturers in the control group. Furthermore, students of lecturers in the intervention group were

more intrinsically motivated to experience stimulation and to accomplish, than students in the control group. Recently, Sheldon, Turban, Brown, Barrick, and Judge, (2003) theorized that transformational leadership may be a predictor of self-determined motivation. These researchers posited that transformational leadership is a contextual factor that helps followers to develop more internalized work-motivation by satisfying their needs, which in turn leads to greater on-going need-satisfaction and job performance. Indeed, the results of the current study support previous research examining the relationship between transformational leadership behaviours and intrinsic motivation (e.g., Beauchamp et al., 2010; Charbonneau et al., 2001). Further, this research corroborates the findings of Wilson et al. (2012) demonstrating that transformational leadership behaviours are related to satisfaction of the psychological needs of autonomy, relatedness and competence. Considering that the experience of psychological need satisfaction is theorised to enhance internalisation (Deci & Ryan, 1985) it seems reasonable to suggest that a process model could explain the mechanisms by which transformational leadership may exert its influence. According to this model, the outcomes (e.g., performance) could be predicted by a set of sequential links from the lecturers' transformational leadership, through the students' need satisfaction, facilitating the internalization of behaviour and subsequently predicting performance.

In addition to increased need satisfaction and intrinsic motivation, students of lecturers in the intervention group reported greater engagement in the course, were more confident in their academic ability, and more satisfied with university than students of lecturers in the control group. These findings are consistent with previous research reporting positive relationships between transformational leadership and follower engagement (e.g., Zhu et al., 2009), efficacy (e.g., Pillai & Williams, 2004),

and satisfaction (e.g., Lowe et al., 1996) and highlight the important role of the lecturer in relation to the student experience both from an institutional perspective in terms of student satisfaction and engagement, and from a student perspective, in terms of an enhanced university experience.

Contrary to expectations, the present study did not find a significant difference between students of the intervention and control group on leader inspired extra effort. The relationship between transformational leadership and extra effort is one of the most robust findings of past transformational leadership research (cf. Lowe et al., 1996). Indeed, Bass (1985) asserts that transformational leadership behaviours are utilized to increase effort and accomplishes this by raising the level of intellectual awareness about the importance of valued outcomes, by raising or expanding individual needs, and by inducing a belief in transcending self-interest for the sake of the team or organization. To the best of the present authors' knowledge, only one experimental study examined the effects of transformational leadership with extra effort as a dependent variable (Dvir et al., 2002). These researchers conducted a longitudinal, randomised field experiment to test the impact of transformational leadership training on follower extra effort. Results indicated a significant treatment by time interaction whereby extra effort decreased sharply over time for the control group with no significant change for the experimental group, thus rather than enhancing extra effort, transformational leadership may actually work by buffering a decrease in effort over time. In the Dvir et al. (2002) study, post-test measures of extra effort were carried out six months after the leadership training. In the present study, post-test measures were collected six weeks after the leadership training. Thus, one possible explanation for the lack of between group differences for effort could be that post-test measures were collected too soon to see a drop in

effort investment by students in the control group.

A second potential explanation for the extra effort finding relates to the context this research was conducted in. Past research examining the transformational leadership extra effort relationship has mainly been carried out in the military (e.g., Dvir et al., 2002), business (e.g., Bass, 1985) and more recently in sport (Arthur et al., 2011). It could be argued that the benefit of investing extra effort in these contexts is more immediate. For example, in sport investment of effort may result in better performances on a weekly basis, in business performance benefits of extra effort are likely to be seen in productivity or profit. However in education, particularly at university, the tangible outcomes of effort investment may be less immediate. At the end of a three-year programme of study, a student receives one degree mark/classification. Considering all courses undertaken are contributors to this final degree classification, it is likely that effort has greater salience when considered more globally in education rather than specific to one course and as such may be less amenable to change. Furthermore, in education, investing a lot of effort in one course has the potential to undermine effort investment in other courses, thus jeopardizing the overall degree classification. Interestingly, in the current study, there was a significant difference between students in the control group and students in the intervention group on student engagement, which could be conceived as course specific effort.

This research is the first to: (a) test the application of differentiated transformational leadership to the context of higher education using an experimental design; and (b) utilize a theoretical framework to assess the effects of lecturing behaviours on student outcomes in the higher education intervention literature. As such the current research advances our understanding of transformational leadership

in two ways. First, the study extends research on transformational leadership and demonstrates its applicability to the context of higher education. Previous research has applied transformational leadership theory to higher-level leadership such as principal and departmental leadership (e.g., Koh et al., 1995; Wolf et al., 2004). However, this study demonstrates the importance and applicability of applying the theoretical framework at the level of lecturing, where it is likely to have a more direct impact on student outcomes. Second, the present study demonstrates the value of employing a multiple contact intervention in the development of transformational leadership. Many of the published experimental studies on transformational leadership report intervention methods employing a one-day workshop followed by 'booster sessions'. Indeed, Beauchamp et al. (2011) identified that research would benefit from examining interventions which provide greater support, and interventions over a series of workshops. In their study Beauchamp et al. (2011) employed a one-day workshop aimed at increasing the transformational leadership of school level physical activity teachers. Significant and positive results were found for both the increase of teachers' transformational leadership and students' motivation, efficacy and intention to exercise with effect sizes ranging between .01 and .02. Notable in the current study are larger effect sizes (η^2) ranging from .02 to .11. While these effect sizes would still be considered 'small' (Cohen, 1992), one potential explanation for the larger effect size from the Beauchamp et al. study is the employment of multiple contact workshops in the current intervention. In the present study lecturers attended 3 workshops, each a week apart, which was then followed by an individual feedback and support session. Indeed lecturer evaluation validated this approach, with lecturers reporting that having time to think and process information between workshops was of benefit, highlighting that multiple contact

interventions with support and feedback was a strength of the intervention.

Considering the larger effects, the results demonstrate that this multiple approach to intervention delivery is a successful way to develop transformational leader behaviours and subsequently enhance student outcomes. Interestingly, no experimental study in the transformational leadership field has assessed the effectiveness of multiple intervention workshops over longer periods of time (e.g., a year). Thus, a cost benefits analysis of employing long-term transformational leadership interventions for lecturer, institutional and student benefits may be of interest to educational institutions.

In respect to applied implications, this study demonstrates that transformational leadership is applicable to higher education lecturing. Developing the transformational leadership behaviours of lecturers is related to a host of positive institutional and student outcomes such as student satisfaction, engagement, and academic efficacy. As such, lecturing ought to go beyond simply the transfer of information to students, and should encompass transformational leadership behaviours. Second, transformational leadership can be effectively taught to lecturers impacting on how followers perceive their lecturing behaviour, and positively impacting follower outcomes. Thus, transformational leadership ought to be considered as part of lecturer training programmes or lecturing professional development.

While the present study demonstrated that transformational leadership behaviours and student outcomes can be positively influenced by a leadership intervention, a potential limitation is that this study did not assess behavioural outcomes of followers. This was not possible in the present study due to the reluctance of certain lecturers to release assessment marks. However, an important

consideration for future researchers examining transformational leadership and student course performance is to consider standardisation in assessment methods between different courses as often each course has different assessment methods. A second potential limitation is that the intervention workshop was offered only to the experimental group thus raises the possibility of a Hawthorne effect (Adair, 1984) as an explanation. In this study we were unable to identify training for the control group to match the time and interactive nature of the transformational leadership training that would justify the time investment needed from lecturers. However, precautions were taken to provide the control group with observation and feedback with the aim of minimizing Hawthorne effects. Thus future research that assesses students' behavioural outcomes and incorporates an attention or placebo control condition to control for potential Hawthorne effects may be of benefit.

A third limitation of the current study is the relatively small sample size at the lecturer level. In addition, the lecturers who partook in the study came from three disciplines, that of psychology, sport science and chemistry. For this reason, these findings cannot be generalised to the broader lecturing community based on this study alone. As such, future research is needed to examine the efficacy of transformational leadership interventions on larger groups of lecturers from a broader range of disciplines.

Another avenue for future research emanates from the lecturer quotes. One lecturer highlighted that the interplay between behaviours may be more effective than the use of single and isolated behaviours. Indeed it is unusual to use behaviours in isolation and it could be the interaction between certain behaviours that achieve best results. To illustrate, a lecturer who frequently employs high expectations with his/her students could cause students to experience stress and anxiety. However, if

this was offset with individual consideration, the support aspect of this behaviour may buffer such potential negative effects of high performance expectations resulting enhanced engagement and performance. Thus research that examines the interactions between behaviours in the context of education is warranted to build upon the recent work of Vecchio, Justin, and Pearce (2008) who examined the interaction between transactional and transformational leadership.

In conclusion, the study offers support for the differentiated approach to transformational leadership in education. The study suggests that lecturing behaviours can be understood within the differentiated framework that parallels the behaviours used by leaders within other settings such as the military (Hardy et al., 2010) and sport (Callow et al., 2009). Furthermore, the results suggest that lecturers' transformational leadership behaviours are malleable and can be enhanced through intervention. Finally, the results show that student outcomes can be enhanced through lecturer training initiatives embedded in transformational leadership theory.

Chapter 5

General Discussion

Thesis Summary

This chapter aims to summarise the research aims pursued. The results from the three empirical chapters are drawn together followed by a discussion of the theoretical issues arising from the thesis, applied implications, and strengths and limitations of the thesis. Finally, recommendations for future directions are presented.

Chapter 1 highlighted some of the issues that have become apparent in transformational leadership research to date. Of specific interest was the conceptualisation and measurement of transformational leadership, as well as the differentiation versus globalisation and contextual nature of transformational leadership. Further, Chapter 1 highlighted the potential applicability of transformational leadership theory to the context of higher education.

Chapter 2 provides a unique contribution to the literature as it is the first study to qualitatively assess students' and lecturers' perceptions of transformational leadership in higher education. The methods implemented in Chapter 2 are particularly valuable given that leadership was assessed from *both* a leader and follower perspective. Specifically, in Chapter 2 students' and lecturers' perceptions of transformational leadership in higher education lecturing were captured utilising focus group and semi-structured interviews. Thematic content analysis of the data revealed that eight behaviours emerged as being important from a student perspective. These consisted of: inspirational motivation, individual consideration, intellectual stimulation, high performance expectations, appropriate role modelling, contingent reward, self-belief, and sense of humour. Lecturers corroborated these behaviours and one additional behaviour, interpersonal interactions, emerged. Interestingly, the

behaviour of fosters acceptance of group goals, which has previously been conceptualised as part of transformational leadership (Hardy, Arthur, Jones, Munnock, Isaacs, & Allsopp, 2010; Podsakoff, Mackenzie, Moorman, & Fetter, 1990) did not emerge as a contextually relevant transformational leadership behaviour in higher education.

Chapter 3 utilised the eight-behaviour model developed in Chapter 2 to develop a contextually relevant differentiated measure of transformational leadership in education (DTLI-E). Study 1 used confirmatory factor analyses to assess the factorial validity of the eight behaviour model of transformational leadership. Results revealed that a 30-item measure demonstrated an adequate factor structure and reliability. Study 2 then assessed the factor validity of the measure in a different sample from UK institutions seeking to confirm the model. The findings supported the factorial validity of the DTLI-E. In addition, the findings revealed that the subscales of the DTLI-E demonstrated acceptable internal consistency in a second sample. Taken together these findings provide support for the conceptual premise of the eight factors of the inventory. Following this, Study 3 employed a longitudinal design to assess the concurrent and predictive validity of the measure. Results revealed that factors on the DTLI-E are strong independent correlates to measures of transformational teaching and the learning climate, providing support for the concurrent validity of the inventory. In addition, results revealed that the transformational leadership behaviours as measured by the DTLI-E positively predicted psychological need satisfaction, intrinsic motivation, leader inspired extra effort, student engagement, academic efficacy, student satisfaction, and student performance. Chapter 3 is the first study to develop a differentiated measure of transformational leadership for the context of education; as such, it represents a unique contribution to the literature.

Chapter 4, the final research chapter, used an experimental design to assess the effectiveness of an intervention underpinned by transformational leadership theory on both lecturing behaviours and student outcomes. A multi-method approach was used to evaluate the effectiveness of the intervention, which included students' ratings of their lecturers' behaviours, student ratings of outcomes and qualitative interviews with lecturers who took part in the intervention. The results of the study provide strong evidence that the intervention increased the use of transformational leadership by lecturers and impacted on a wide number of outcomes such as psychological need satisfaction, intrinsic motivation, student engagement, academic efficacy, and student satisfaction.

Theoretical and Conceptual Issues

Emergence of 'New' Transformational Leadership Behaviours

One finding from the current thesis is the emergence of new behaviours that have not previously been conceptualised as part of transformational leadership. Specifically, behaviours of leader self-belief and sense of humour emerged from both student and lecturer perspectives. Indeed, it is not surprising that new behaviours emerged considering that in Chapter 2 inductive thematic content analysis was employed for data that was not coded deductively under existing transformational leadership behaviours. Researchers have long since recognised the importance of qualitative methods in theory development and theory refinement (Strauss & Corbin, 1990). For example, a theory tries to make sense from the observable world by ordering relationships between elements that constitute the theorist's focus of attention (Dubin, 1978). Further, Mintzber (1979) suggests:

theory building seems to require rich description, the richness that comes from anecdote. We uncover all kinds of relationships in our ‘hard’ data, but it is only through the use of this ‘soft’ data that we are able to ‘explain’ them, and explanation is, of course, the purpose of research. I believe that the researcher who never goes near the water, who collects quantitative data from a distance without anecdote to support them, will always have difficulty explaining interesting relationships (p. 113).

Research generally, and more specifically within the transformational leadership literature, has predominantly focused on theory testing as oppose to development, and while theory testing is a cornerstone of the scientific method, it is only one aspect of the larger process of scientific inquiry; theory development and refinement are of equal importance (Shah & Corley, 2006).

Indeed, criticisms have been levelled at theory development generally, with researchers (e.g., Shah & Corley, 2006) reporting that theory development, while highly desired, is seldom practiced and when it is the approach is usually deductive, that is using prior theory as a foundation. In Chapter 2, the analysis was predominantly deductive employing previous conceptualisations of transformational leadership as a framework. However, in conjunction with this approach an inductive interpretive paradigm was employed to understand results that were not explained by previous transformational leadership theory. Important within this paradigm is that the results are representative of the interpretations of those experiencing the phenomenon. It is this aspect of the methodology that allowed for the emergence of additional behaviours representing aspects salient to lecturing by those experiencing and providing lecturing (i.e., self-belief and sense of humour). This conceptualisation of new behaviours is not without its problems. Theorists

might criticise these behaviours on the basis that they have not previously been conceptualised or recognised as valid core transformational behaviours. Nevertheless, in Chapter 2, the data was analysed to represent the phenomena as experienced by students and lecturers in the context of education and as such new phenomena was conceptualised as new transformational leadership behaviours. Considering that the participants were asked about the best and most ideal lecturing behaviours for lecturers to espouse, it is not surprising the new behaviours, not previously conceptualised in transformational leadership, evolved. Thus, it is possible that these new behaviours (i.e., self-belief and sense of humour) are relevant in the higher education context.

From a theoretical perspective a sense of humor is a characteristic frequently associated with leadership (Bass, 1990; Clouse & Spurgeon, 1995; Shamir, 1995) and a leader's ability to effect change in followers (Goldstein, 1976; Hogan, Curphy, & Hogan, 1994). Bass (1990) argues that sense of humor is a relevant aspect of leadership topic that "appears to warrant thorough investigation" (p.70). Despite the fact that understanding humor has the potential of providing significant insights relatively little leadership research has been conducted in this area. Indeed, our knowledge pertaining to humor and leadership is best summarised by Crawford; "Perhaps of all the communicative strategies that leaders utilize, the use of humor is most promising, but least understood" (1994; p 54).

While research on transformational leadership and leader self belief is scant, as outlined in Chapter 2, efficacy is often included when theorists consider the issue of effective leadership (e.g., Chemers, 2001). Within sport leadership literature, Feltz, Chase, Moritz and Sullivan (1999) propose that leader (i.e., coach) efficacy influences not only leader behaviour but the behaviour, performance and perceptions of followers. Vargas-Tonsing, Meyers and

Feltz (2004) reported that athletes who perceived the behaviour of leaders acting confidently increased their own perceptions of efficacy.

Although both sense of humor and self belief emerged in the current thesis as relevant lecturer behaviours from a student perspective; and while there exists research linking both these variables to effective leadership and enhanced follower outcomes, the exact role of these behaviours in regard to transformational leadership remains unclear. To illustrate, in Chapter 3 neither of these behaviours were demonstrated as the most important predictors of any of the student outcomes measured. As such they are not strongly related to outcomes previously theorised as core to transformational leadership (e.g., extra effort, satisfaction). Therefore, it remains unclear what function these behaviours serve. For example, it could be that these behaviours are important for the success of the other behaviours to exert their influence but are not necessarily pivotal core transformational leadership behaviours themselves. Thus like all theoretical developments, these behaviours require further scrutiny, refinement and tests of theory.

The Conceptualisation of Individual Consideration.

One criticism that has been widely recounted in transformational leadership literature is that certain leader behaviours contain more than one distinct behaviour (Yukl, 1999). Indeed, the behaviour that has received most attention in this respect is that of individual consideration. For example, the conceptualisation of individual support in the Transformational Leadership Inventory (TLI: Podsakoff et al., 1990) is relatively narrow and related mainly to showing consideration of individual's feelings and needs. Conversely, measurement of individual consideration in the MLQ 5-X (Bass & Avolio, 1995) and subsequently the Differentiated Transformational Leadership Inventory (DTLI: Hardy et al.,

2010) contains consideration of individual needs and behaviours that are focused on follower development. Indeed, Rafferty and Griffin (2006) provided evidence that individual consideration can be demarcated into two conceptually and empirically distinct behaviours (i.e., developing and supportive). Further, other researchers have argued that it is the developing aspect of individual consideration that is more of a 'core' transformational behaviour because it enhances follower skills and efficacy (Yukl, 1999).

Despite the debate in the literature pertaining to this dual conceptualisation of individual consideration, in the current study, a coaching and development aspect did not evolve from the data and as such was not measured in the DTLI-E. While this opens the conceptualisation of individual consideration to criticism, it could be argued that is a result of the context within which transformational leader behaviours are conceptualised and measured. To clarify, while there is no general consensus on what the purpose of education is, both 'traditionalist' and 'progressivist' views have been proposed, characteristically understood as 'knowledge-centered' and 'student-centered', respectively. Weimer (2003) suggests that traditional instructional approaches respond ineffectively to the learning needs and life situations of today's students, as such recently researches have suggested a move towards more progressivist approaches to teaching. The progressivist school of thought holds that education should nourish the students' natural interaction with a developing society or environment. Within this view, the educational aim is the eventual attainment of a higher level development in adulthood, and not merely just the healthy functioning at a present level (Kohlberg & Mayer, 1972). More recently in the adopted progressive view, this aim requires an educational environment that actively stimulates development. As such, development is

held as one of the purposes of education whereby development is a progression through invariant ordered sequential stages.

Considering the move towards student centred approaches in conjunction with student development being one of the aims of higher education, it is reasonable to suggest that development is implicit within higher education systems. Thus, due to its implicit nature students may not see it explicitly in lecturer behaviours because development is an inherent function of the context. To illustrate, a context such as business where follower development is not necessarily an inherent part of the context, it would be important for leaders to espouse development behaviours. Conversely, in education, a context that is fundamentally about development it is of less importance for lecturers to espouse these behaviours as student development is 'in built' in the context.

Contextual Nature of Leadership

The thesis offers support for the arguments of Antonakis, Avolio, and Sivasubramaniam (2003) that context plays an important role in transformational leadership. As outlined above the conceptualisation of the behaviours that make up transformational leadership in the higher education context differed from behaviours conceptualised by past researchers. For example, high performance expectation was not as challenging in the current education context (e.g., Tells me that they want me to do really well) context as it was conceptualised by Hardy et al. (2010) in the military context (e.g., Will not settle for second best). Thus, the current set of studies demonstrate that the conceptualisation of the behaviours making up different transformational leadership measurement instruments may vary across different contexts suggesting that leaders may operationalise or enact their behaviours differently depending on context. Some of the conflicting results that emerged in

prior research pertaining to the validity of instruments used to measure transformational leadership may be attributed in part to the use of non-homogeneous samples to test the construct validity of the instrument (cf. Antonakis et al., 2003). Accordingly, using non-homogenous samples (e.g., mixing organisational types, hierarchical levels, etc.) to test the multidimensionality of the leadership measures may result in inconsistent findings, especially when employing differentiated models. As recommended by House and Aditya (1997) leadership research may need to factor context into the theoretical models and measures of leadership as was done in the current thesis

Context has important implications for theory and empirical testing. As noted by Dubin (1976), researchers “often assume [they] can safely ignore the boundary conditions surrounding a given theoretical model, or even apply the model indiscriminately to all realms of human interaction” (pp. 28–29). Indeed, this has often been the case in transformational leadership research. For example, the MLQ has been utilised in contexts as varied as the military (e.g., Bass, Avolio, Jung, & Berson, 2003), business (e.g., Barling, Webber & Kelloway, 1996), and sport (e.g. Charbonneau, Barling, & Kelloway, 2001). Antonakis et al. (2003) suggested that context may constrain the variability that is observed. Thus, if a phenomenon is contextually sensitive, formulations of theories should consider contextual factors to determine if measurement is restricted by the context in which it is examined. The results in the current thesis suggest that context should be explicitly considered when formulating theories, and that the impact of contextual factors should be considered in the design stage of research (i.e., instrumentation, data gathering, data analysis, and interpretation). To elucidate, the instrument developed in the current thesis DTLI-E would be unlikely to be a suitable measure of transformational leadership in a more challenging

context (e.g., the military) as a result of the different behaviours measured and the differences within behaviours (e.g., high performance expectations is less challenging in the DTLI-E when compared with higher performance expectations in the DTLI).

Further evidence for contextual influences comes from recent research in the military and sport in relation to the predictive relations of transformational leadership behaviours. It is interesting to note that, in Chapter 3, individual consideration was the only leadership behaviour that predicted performance. Research in sport by Callow, Smith, Hardy, Arthur and Hardy (2009) found that high performance expectation and inspirational motivation significantly discriminated between high and low performance. More recently Hardy et al. (2010), found that fostering acceptance of group goals, inspirational motivation, appropriate role model, individual consideration, and contingent reward significantly discriminate between passing and failing a training course. Taken together these results highlight that predictive relations between transformational leadership behaviours and outcomes may be confined to the context within which they are measured. Thus, it is important for researchers to consider the context when developing and empirically testing transformational leadership theory.

Moreover, it may be important for researchers to examine situational variables within contexts. As suggested by Antonakis et al. (2003), it would be of benefit to understand how followers view the same leadership behaviours differently depending on the situation in which those behaviours are demonstrated. For example, inspirational motivation may be seen as a very positive leadership behaviour for student followers who are coping well with university demands, however, for students concerned about exams and their future who are not coping well with university demands, inspirational motivation could be more stress

inducing. From a developmental perspective, understanding these contextual distinctions allows for more efficient and effective leadership development programmes.

Differentiation and Globalisation

Chapter 3 empirically demonstrated that in the prediction of a variety of student outcomes, different transformational leadership behaviours were more salient in predicting each outcome. For example, appropriate role modelling was the most salient predictor of relatedness, while intellectual stimulation and high performance expectations were the most salient predictors of autonomy and competence. Adopting global measures in such instances would mean ignoring which behaviours are most important in predicting different outcomes and, from an applied perspective, hinders identification of individual behaviours in which lecturers are low. This information is likely to improve the efficacy and efficiency of transformational leadership interventions as oppose to adopting an all or nothing approach to transformational leadership training. As such the findings in this thesis that differentiation is fruitful in identifying effects on outcomes offers further evidence that corroborates the assertions of Antonakis et al. (2003), Hardy et al. (2010), and Rafferty and Griffin (2004), that differentiated conceptualisation of transformational leadership should be adopted. Moreover, in addition to the already existing empirical evidence for differentiation (e.g., Arthur, Woodman, Ong, Hardy, & Ntoumanis 2011; Antonakis et al., 2003; Callow et al., 2009; Hardy et al., 2010; Podsakoff et al., 1990), it is important to note that the arguments presented above regarding the value of examining contextual influences in transformational leadership and its effects would be difficult to achieve without employing a differentiated conceptualisation. However, there are some considerations that must be highlighted in respect to using a differentiated conceptualisation.

The most robust argument against differentiation of leadership behaviours relates to questionable discriminant validity of the behaviours (Careless, 1998). Generally, transformational leadership behaviours are highly correlated, for example, in Chapter 3, the correlations between the behaviours ranged from .28 to .95. Recently, however researchers have offered support for the discriminant validity of behaviours despite their high correlations (e.g., Arthur et al., 2011; Callow et al., 2009; Hardy et al., 2010; Podsakoff et al. 1990). In Chapter 3, all correlations were significantly less than 1.0 demonstrating them to be distinct behaviours. Nevertheless, of consideration for future research examining differentiated transformational leadership behaviours that are highly correlated are issues pertaining to suppression. As detailed in Chapter 3, suppression effects have potentially serious implications for the accurate interpretation of evidence from observational and self-report studies in the leadership domain.

Applied Implications

There are numerous applied implications that can be drawn from the current thesis, however this section focuses on five main areas for consideration which include: (a) lecturing behaviours; (b) lecturer training; (c) lecturing evaluation; (d) student engagement, and; (e) lecturer observations.

Lecturing Behaviours

As noted by Pintrich and Zusho (2002) the ways in which different instructional methods are implemented by lecturers can have dramatic effects on student motivation and student outcomes. Generally research within education has been subject to criticism for not establishing direct causal links between lecturer behaviours and student outcomes (Gibbs &

Coffey, 2004). In addition, education research has been criticised for the lack of application of theoretical frameworks to the exploration of best instructional practices and their impact on students (Weimer & Lenze, 1997). However, this thesis has taken the first steps to address these issues. The empirical studies conducted in this thesis have demonstrated that transformational leadership theory is a framework that is applicable to higher education lecturing. Transformational leadership by lecturers is related to a host of positive institutional and student outcomes such as student satisfaction, engagement, efficacy, effort, and performance. As such, it is proposed that to enhance student outcomes lecturers ought to go beyond simply the transfer of information to students and demonstrate transformational leadership behaviours such as inspirational motivation, individual consideration, intellectual stimulation, high performance expectations, appropriate role modelling, self-belief, sense of humour, and contingent reward.

Lecturer Training

Chapter 4 demonstrated that transformational leadership can be effectively taught to lecturers impacting on how followers perceive their lecturing behaviours, while positively impacting on follower outcomes also. Interestingly, in education research Gibbs and Coffey (2004) have highlighted that although initial training of university lecturers is now established in every university in the UK, which is often compulsory and is occasionally linked to probation or tenure, the confidence in the value and efficacy of such training has for the most part not been based on empirical evidence. Equally, reviews of research on the training of university lecturers have concluded that little evidence exists regarding the impact of such training on lecturing and even less evidence of impact on student outcomes (Gibbs & Coffey, 2004; Gilbert & Gibbs, 1999; Weimer & Lenze, 1997). According to Gibbs and

Coffey (2004) even when such evidence does exist it tends to emanate from lecturer self-reports of change, either through ad hoc program evaluation questionnaires or through group discussion and interview. As such studies within this area tend not to: (a) obtain evidence from theoretically or psychometrically based questionnaires; (b) obtain evidence from students; or (c) obtain evidence about impact on student outcomes. In contrast to this approach the Chapters outlined in the current thesis have begun to address all three of these criticisms by detailing the development and psychometric testing of a questionnaire to measure transformational leadership, obtaining students' perceptions of their lecturers' transformational leadership; and measuring important student outcomes. In doing so, the current set of studies have demonstrated that transformational leadership training of lecturers impacts on students perceptions of their lecturer and also on a variety of student outcomes. Accordingly, the evidence presented in the current thesis would suggest that transformational leadership training should be incorporated into lecturer training programmes. Considering the evidence that has accrued for its efficacy, training programmes that educate lecturers on transformational leadership behaviours are of value to students (e.g., increased academic efficacy), and also academic institutions (e.g., increased student satisfaction and academic engagement).

Lecturing Evaluation

Criticisms have been levied at evaluation of lecturing with lecturers being predominantly evaluated through the use student evaluations. According to Gibbs (2010) in the UK almost all such evaluation questionnaires are likely to be 'home-grown', of doubtful reliability and open to biases. Indeed, different questionnaires are used in different institutions meaning that there is no basis for comparison of the quality of lecturers between

institutions or subjects. While questionnaires evaluating educational quality do exist (e.g., the student evaluation of educational quality Marsh, 1982; Coffey and Gibbs, 2000). There exists no valid and reliable measure of lecturing behaviours. Considering that the transformational leadership behaviours are related to a variety of student outcomes, one potential application is to utilise the questionnaire in lecturing evaluation. There are a number of benefits to doing so. First, lecturers regularly evaluated by students using the DTLI-E can identify which behaviors they are low in and work to develop their transformational lecturing. Second, if adopted across academic departments and indeed across academic institutions, the DTLI-E can be used as an indicator or comparison of quality in lecturing across institutions.

Student Engagement

There is currently a high level of interest in measuring student engagement as a crucial indicator of educational quality (Gibbs, 2010). Indeed, large studies in the U.S. have identified a number of process variables that are most closely linked to educational gains (Pascarella & Terenzini, 2005), with student engagement being considered the most critical variable. Accordingly, a number of studies have shown clear links between student engagement and outcomes such as first-year success (e.g., LaNasa, Olsen, & Alleman, 2007). Pascarella and Terenzini (2005) suggest that processes such as the level of academic challenge, the extent of active and collaborative learning, and quality of student-faculty interaction are key to student engagement. Certain behaviours associated with transformational leadership could be viewed as fostering these processes. For example, using high performance expectations and intellectual stimulation is likely to foster academic challenge, and individual consideration is likely to foster perceptions of quality student-faculty interaction. Interestingly both high performance expectations and individual

consideration meaningfully contributed to the prediction of academic engagement in Chapter 3. Thus from an applied perspective academic institutions should promote the use of transformational leadership by their staff to promote student engagement and foster institutional success.

Lecturer Observation

Another applied implication pertaining to lecturers alone is the possibility of utilising transformational leadership as a tool for peer observation. Peer observation is viewed as a method of providing professional input based on experience and expertise into the lecturer development process (Bingham & Ottewill, 2001), providing academic staff with an opportunity to critically reflect on teaching with a view to improving performance (Blackwell & McLean, 1996). In Chapter 4, peer observation based on transformational leadership behaviours was employed as a feedback mechanism. Accordingly, this mechanism could be implemented in peer observation to develop lecturer transformational leadership. In addition, observers could be trained to look for and monitor use of transformational leadership behaviours, allowing for standardisation of peer observation feedback while aiding with the identification of areas for staff development.

Finally, for the most part this thesis has focused on student outcomes. However, in the qualitative evaluation of the intervention lecturers highlighted some benefits of using transformational leadership for lecturers including; a perceptual change in attitude and becoming more positive about teaching; experiencing lecturing as fun; the potential to free up more of their time to do research and applying the theory to everyday life with positive effects. While these lecturer outcomes were not measured in the current set of studies it could be postulated that such outcomes may be related to enhanced staff affect, functioning,

and productivity. While further research is needed to elucidate this issue, from an anecdotal perspective, the qualitative evaluation of the intervention suggests that attending transformational leadership training is likely to benefit staff in terms of their attitudes towards teaching and time for research.

Strengths and Limitations of the of the thesis

The main strengths and limitations related to each empirical chapter have been discussed in their respective chapters. Strengths have included aspects such as extending transformational leadership to the education context, utilising both regression and structure coefficients to assess predictive validity, and demonstrating utility of multiple contact interventions. Limitations have included aspects such as the lack of multilevel analysis in Chapters 3 and 4, and lack of student behavioural data in Chapter 4. Thus, the discussion here pertains for the most part to strengths and limitations of the research program as a whole.

One of the strengths of the research program is that it involved a variety of research methods and study designs. For example, both qualitative and quantitative research was conducted to inform the findings of this thesis. Moreover, designs included a phenomenological study, measurement development and correlational studies, and a field based intervention study. Each of these studies utilised a variety of research analysis techniques. In the phenomenological study, thematic content analysis was utilised. The measurement development studies used confirmatory factor analysis, and the correlational study used forced entry and hierarchical regression to examine predictive validity. In these latter two studies it was also necessary to gain knowledge and experience of missing data

techniques and techniques for dealing effectively with suppression effects. Finally, the field study used ANOVA, ANCOVA and MANOVA. However, there are certain aspects that ought to be noted.

First, it is acknowledged that a mixture of quantitative and qualitative approaches could, at times, be contradictory rather than complimentary. For example, purists would argue that these different methods, which are based on paradigms with different assumptions about what constitutes valid research, are incompatible (Guba, 1978), which could be viewed as a limitation. Indeed, employing unfamiliar qualitative methods in short time periods could result in a lack of understanding regarding the philosophy in which they are embedded, and as such they are not employed to their true capacity. However, recent research has advocated for a combination of both approaches that is driven by the research question (Morgan, 2007). Interestingly, in relation to theory building (e.g., Chapter 2), Gioia and Pitre (1990) describe a multiparadigm approach that ‘bridges’ the philosophical boundaries often separating methodologies suggesting that by taking a metaparadigm view where ‘the intent is to understand, to accommodate and, if possible, to link views generated from different starting assumptions’ (p. 596), research can be strengthened. Furthermore, Van Maanen (1979) and Jick (1979) described the utility of combining multiple methods as a way to ‘triangulate’ findings, an approach which was applied in Chapter 4 by interviewing lecturers who participated in the intervention. As evidenced in the current thesis qualitative and quantitative methodologies are not mutually exclusive, and integrating a systematic approach to qualitative work with a more observational approach to survey-research provides a more complete picture of a phenomenon than either methodology could accomplish alone (Jick, 1979; Shah & Corley, 2006).

Second, confirmatory factor analysis with maximum likelihood estimation was used to examine the factor structure of the scales (e.g., Biddle, Markland, Gilbourne, Chatzisarantis, & Sparkes, 2001). Scales were refined using the fit indices for the different models, the standardized factor loadings, the standardized residuals, and the modification indices for the covariances of measurement error in combination with theoretically driven rationale. However, debate exists in the literature with regard to the examination of model fit and as a result certain authors would view the approach used as a limitation. To illustrate, Joreskog and Sorbom (1989) recommend that the χ^2 is used as an indication of fit where large χ^2 values relative to degrees of freedom indicate poor fit and small values good fit. In assessment χ^2/df ratio some authors have argued that values greater than 2.00 indicated inadequate fit (Byrne, 1989), and others have suggested more liberally that values of greater than 5.00 indicate inadequacy (Schumacker & Loman, 1996). Some authors would argue that the only criterion that adequately test model fit is the significance of the χ^2 test (e.g., Barrett, 2007; Hayduk & Glaser, 2000). Conversely, other authors argue that prudent employment of fit statistics is warranted (e.g., Markland, 2007). Such statistics to assess model fit include non-normed fit index (NNFI: Tucker & Lewis, 1973); the comparative fit index (CFI: Bentler, 1990); the standardised root mean square residual (SRMR) and root means square error of approximation (RMSEA: Hu & Bentler, 1999).

Each of these criteria have varied and important implications for the current thesis. To illustrate, employing χ^2/df , assessment of the eight behaviour transformational leadership model would be just outside Byrne's (1989) adequate fit cut-off of 2.0 for both samples used in the confirmation ($\chi^2/df = 2.47$) and the reconfirmation ($\chi^2/df = 2.49$), however both would meet the more liberal 5.0 criteria (Schumacker & Lomax, 1996). Employing solely the χ^2 test,

both the confirmation sample and the reconfirmation sample would be deemed unacceptable with p values $\leq .75$ as suggested as a cut off by Hayduk (1996, p.77). Employing the variety of fit statistics such as NNFI, CFI, SRMR, and RMSEA, as the approach that this thesis adopted, resulted in model fit for the eight-behaviour model in both the confirmation and reconfirmation sample being judged as acceptable. Thus, on one hand researchers would argue that the model fit presented in Chapter 3 is unacceptable, while on the other hand, certain researchers would argue that it is acceptable.

In determining which to advocate it was necessary to examine two caveats, sample size and multidimensionality, which have been the subject of debate between researchers (cf. Barrett, 2007; Markland, 2007). First, in relation to sample size, CFA researchers acknowledge that as the sample size increases the sensitivity of the tests increases, as such, with large samples, small discrepancies between the observed test statistic and its expected value are likely to be adjudged as evidence of “misfit” (Barrett, 2007). As Barrett notes ‘invariably (but not always), given a sample size above 200 cases, no models fit via the χ^2 test’ (p. 820). In this thesis sample size was above this in both the confirmation sample and the reconfirmation sample. Second, as noted by Markland (2007) CFA’s on multidimensional measurement models can be potentially problematic. The more dimensions that are measured in a model the more difficult it is to obtain even lenient cut off conventions and maintain a sufficient number of items to achieve good construct validity (Marsh, Hau & Wen, 2004). Both researchers propose that important within assessing the fit of any model is the application of theory. Indeed, a comprehensive approach to the assessment of model fit is determining whether the model is replicable and demonstrates predictive accuracy in accounting for the variance in theoretically relevant outcomes because models invariably rely

upon theory in their construction. Thus while the DTLI-E measure does not meet the criteria of ardent CFA researchers (i.e., χ^2 test), it does meet the criteria based on fit statistics. To overcome the shortcoming of the measure in relation to these perspectives, replication and predictive assessments of the measure were conducted. As such the measure can be used to advance knowledge and theory in transformational leadership research, which in doing so it is likely to accrue further evidence for its validity (i.e., its ability to predict theoretically meaningful outcomes). Indeed, it is a strength of the thesis that: (a) consideration of these differing perspectives were adopted for the interpretation of the CFA in an effort to maintain a balanced view, and; (b) further reconfirmation of initial CFA and predictive validity was examined.

Third, as previously outlined multi-level analysis was not employed in the current studies, which could be viewed as a limitation. Multi-level analysis has been used to describe an analytical approach that allows for the simultaneous examination of group-level and individual-level variables on individual level outcomes (Diez-Roux, 2000). Interest in multi-level modelling has grown as a result of the interest in potential ecological-, macro-, or group-level determinants of behaviour and the notion that variables referring to groups or to how individuals are interrelated within groups are relevant to understanding the distribution of outcomes (Duncan, Jones, & Moon, 1996; Schwartz, 1994). The idea that social contexts influence individuals has led to much debate and empirical research on the interactions between attributes of groups and attributes of individuals (Blalock, 1984; Hox & Kreft, 1994). Despite the fact that leadership occurs in social contexts, research into leadership has often been characterised as explaining outcomes exclusively in terms of individual level variables. Generally, groups are thought of as collections of independent individuals, rather

than entities with properties that may affect the individuals within them (Diez-Roux, 2000). Until recently, there has been relatively little discussion of the problem of ignoring potentially important variables that are best conceptualised and measured at the group level (e.g., Wang & Howell, 2012). Leadership is inherently multilevel (Yammarino & Dansereau, 2008), thus understanding of effective leadership will be limited if we fail to integrate individual-level processes with group-level processes (Kozlowski & Bell, 2003). Indeed, multi-level analysis can be used to explain variation in the dependent variable at one level as a function of variables defined at various levels, plus interactions between and within the levels (Diez-Roux, 2000). For example, in the current set of studies that would be students nested within lecturer groups. While one of the benefits of multi-level analysis is that it allows an examination of variables that better reflect reality, one of the limitations of it is that testing model fit and examination of model assumptions is more difficult (Morris, 1995). As such, the complex nature of the model in multi-level analysis requires large sample sizes. At the outset of the data collection in the thesis, the aim was to recruit sample sizes sufficiently large for multi-level analysis. This was not achieved in the current study, whereby difficulty was experienced in recruiting lecturers from multiple university departments. Interestingly, pertaining university environments, this issue has been discussed previously, ‘researchers seldom have access to faculty subjects and even those who do quickly learn how difficult it is to “require” faculty to do anything’ (Weimer & Lenze, 1997; p 236).

A final strength of the research program was that the author gained experience of doing applied or consultancy work as part of the study described in Chapter 4. This helped the author to develop consultancy experience and an understanding of how research and applied work can be carried out to complement each other. Equally, a strength of the thesis is

the move from theoretical research in Chapter 2, to measurement research in Chapter 3, to applied research in Chapter 4.

Future Directions

This section is divided into a summary of specific future research questions emanating from the thesis, and other future research questions of interest.

Future Research from the Thesis

In the studies presented, transformational leadership behaviours were positively related to both psychological need satisfaction and to intrinsic motivation, the most internalised form of behavioural regulation. Charbonneau et al. (2001) found that intrinsic motivation was a mediator between transformational leadership and sport performance. However, Wilson, Liu, Keith, Wilson, Kermer, Zumbo, and Beauchamp (2012) reported that self-determined motivation (i.e., internalization) mediate the effects of transformational leadership on engagement. Recently, Mawn, Arthur and Roberts (2012), reported that the psychological need of relatedness mediated the relationship between transformational leadership and exercise class attendance. Further, Wilson et al. (2012) found that psychological needs satisfaction (partially) mediated the relationship between transformational teaching and engagement. More over, the researchers reported that psychological needs for autonomy, competence, and relatedness mediated the relations between transformational teaching and self-determined motivation. Considering that psychological need satisfaction is reported to enhance internalisation (Deci & Ryan, 1985) it seems reasonable to suggest that a process model could explain the mechanisms by which transformational leadership may exert its influence. According to this process model, the outcomes such as satisfaction and

performance should be predicted by a set of sequential links from the lecturers' transformational leadership, to the students' need satisfaction, to the internalisation of behaviour. Indeed, Sheldon Turban, Brown, Barrick, and Judge (2003) have theorised about the potential of such processes, which can be encapsulated in this model framework. According to Yukl (1999) the theory would be stronger if such essential influence processes were identified more clearly and used to explain how each type of behaviour affects each type of mediating variable and outcome. Based on these lines of reasoning a future research question could be:

1. Are psychological needs satisfaction and internalisation process mechanisms by which transformational leadership behaviours exert their influence on outcomes?

In Chapter 4 one of the lecturers discussed the importance of combining behaviours in the future as oppose to focusing on just one "in reality I think there can be these behaviours and really it's just a matter of getting them (students) to want to do it. So I think that the interplay between high performance expectations, inspirational motivation and support and how they all interact is important". Recent research by Vecchio, Justin, and Pearce (2008) demonstrated the potential for behaviours to interact. For example, in their study they found that both the transactional and transformational behaviours had interactive relationships for predicting performance, such that leader vision and leader intellectual stimulation were more positively correlated with employee performance when leader use of contingent reward was low. As such it could be reasonable to hypothesize that interactions between the behaviours may in fact buffer the negative effects of certain behaviours as outlined above. For example, if a leader provides a lot of high performance expectations, the stress or anxiety this may induce would be reduced as a result of the leader also providing a

lot of individual consideration behaviour and thus moderating its effects. Based on these lines of reasoning future research questions could be:

2. *Do leader behaviours interact to effect outcomes?*
3. *Do challenging behaviours interact with supportive behaviours to influence outcomes?*

In Chapter 2, certain students spoke about inspirational motivation as providing real life examples and telling stories. Such behaviours could be more likely to be demonstrated by experienced lecturers who have a wealth of real life experiences. Equally, lecturers early in their career and still at a stage of growing comfortable with lecturing are less likely to deviate from the material to tell stories. Considering the variety of roles in lecturing (e.g., technical assistants, lecturers) combined with the various forms of teaching students (e.g., lectures, seminars, tutorials), it is possible that certain behaviours are more malleable to certain roles and forms of lecturing. For example, more experienced lecturers may be better placed to utilise inspirational motivation behaviour than their graduate counterparts. Interestingly, from the field of athlete leadership Loughead and Hardy (2005) found support for a compensation approach between coach and athlete leaders. Using the leadership scale for sport (Loughead & Hardy, 2005), they found that coaches provided more training and instruction and autocratic leadership behaviour but athlete leaders exhibited more social support, positive feedback, and democratic behaviours. Aligning this to the education context, where students are likely to have multiple leaders during a semester with varying degrees of experience, it would be of benefit to investigate further the best approach to espousing leadership behaviours. Based on these lines of reasoning a future research question could be:

4. *Is it more advantageous for all lecturers to espouse all transformational leader behaviours or is it more advantageous for followers to receive certain behaviours from some lecturers and different behaviours from other lecturers to encompass all behaviours with in the model?*

Similar to the studies in the current thesis, the majority of transformational leadership research, has focused predominantly on a dyadic level. However, the focus of research on this level alone limits the utility of the theory for explaining leadership effectiveness at the group or organizational level (Yulk, 1999). Considering the number of levels in a context such as higher education, it is likely that the dyadic perspective should be replaced by a systems perspective that describes leadership in terms of several distinct but inter-related influence processes at the dyadic, group, and organizational level. Indeed knowledge, understanding and employing multilevel analysis techniques will aid a more comprehensive approach to leadership research likely to reflect the reality of leadership with greater accuracy. Based on these lines of reasoning a future research question could be:

5. *To what extent does adopting a systems perspective of transformational leadership at all levels within the university relate to increased institutional and student outcomes?*

A stronger test of transformational leadership theory in the educational context would be to ascertain the extent to which transformational training affects the actual behaviours of lecturers and the subsequent behaviours of students. The results in Chapter 4 provide evidence to suggest that students perceive their lecturers as more transformational following the intervention, however there was not explicit behavioural measure of lecturers behaviours. In addition, from a theoretical perspective, one of the core predictions of transformational

leadership is that leaders who are transformational are postulated to raise followers to go above and beyond what followers' intended and thought possible (Bass, 1985). The education context offers a unique opportunity to examine such a core prediction. For example, utilising a measure of actual student behaviours (e.g., time spent studying, lecture attendance, completing more reading) would provide a more persuasive test of transformational leadership theory. Based on these lines of reasoning a future research question could be:

6. *To what extent does transformational leadership training interventions positively influence behaviours of lecturers and subsequent student behaviours?*

In Chapter 4, the intervention took place over the course of a 12-week semester.

Lecturers in the intervention condition spoke of the intention to incorporate the transformational leadership behaviour in the next semester. Given the critical role that intention plays in influencing subsequent behaviour (Rhodes, MacDonald & McKay, 2006), it would be of interest to transformational leadership researchers and practitioners to examine whether behaviour changes remain as a result of intervention remain in the long term. Interestingly, no experimental study on transformational leadership has examined the effects of an intervention for longer time periods (e.g., over a year). Ascertaining this information is of value for weighing up the cost-benefit implications of advocating training lecturers in transformational leadership. Based on these lines of reasoning a future research question could be:

7. *To what extent does transformational leadership training interventions have a longitudinal impact on lecturer behaviours and student outcomes?*

Lecturers in the intervention condition highlighted some personal benefits from the learning and implementation of transformational leadership. Benefits included aspects such as; (a) developing a change in their perception of teaching and becoming more positive about teaching; (b) experiencing lecturing as fun; (c) the freeing up their time to do research by inspiring students to go out and do more; and (d) applying the theory to their everyday life (e.g., using transformational leadership with nieces and nephews). Future research could examine the benefits of transformational leadership in terms of lecturer productivity and whether positive attitudes towards teaching as a result of transformational leadership training are related to their own job satisfaction. Indeed, such research is likely to be of value to educational institutions with regard to staff development and satisfaction. Based on these lines of reasoning a future research question could be:

8. *To what extent does transformational leadership training result in increased positive attitudes of lecturers towards teaching, productivity and job satisfaction?*

Other Future Research

Transformational leadership theory does not explicitly identify any situation where transformational leadership could be detrimental. However, several authors have noted the possibility of negative outcomes for followers as a result of transformational leadership. For example, Harrison (1987) proposed that followers can be transformed to such a high degree of emotional involvement in the work that over time they become “burnt out” by the prolonged stress. Certain leadership behaviours lend themselves more to the potential of negative follower outcomes than others. For example, the behaviour high performance expectations if over emphasised could be hypothesised to lead to stress and anxiety in followers. Indeed, aspects of inspirational motivation could be stress inducing for students

depending on whether they are failing a module or coping well with the demands of university as outlined earlier. Another way in which transformational leadership by lecturers could have negative effects on students is similar to that proposed by Porter and Bigley (1997). Within higher education, students are likely to have numerous lecturers throughout their degree and sometimes different lecturers during a single module. If followers are influenced by different lecturers with competing visions, it could result in stress, anxiety, task conflict and ambiguity with regard to where best invest their efforts.

9. Are there any situations in which transformational leadership may negatively impact upon follower outcomes?

10. Does multiple leaders with incompatible visions have a negative impact on followers?

Another avenue for examination within education conceptualises follower characteristics as moderators of the transformational leadership to outcome relationships. Indeed, Grint (2000) has argued that, because it has failed to consider the impact of the follower, leadership research has been flawed from the start. Further as highlighted by Arthur et al. (2011) leadership research that examines follower characteristics as a potential moderator of leadership effectiveness is lacking. Recent empirical research by Arthur et al. (2011) has shown support for follower characteristics moderating the transformational leadership-outcome relationship. Specifically, they found that athlete narcissism moderated the relationship between coaches' transformational leader behaviours and athlete effort. In the context of education, there are many follower characteristics that could potentially moderate the relationship between lecturer leadership and student outcomes. For example, perfectionism has been conceptualised as a multidimensional construct, with both adaptive

and maladaptive aspects (Flett & Hewitt, 2002). People with adaptive perfectionism set high (but achievable) personal standards, have a preference for order and organization, have a sense of self-satisfaction, a desire to excel, and a motivation to achieve positive rewards (Enns & Cox, 2002). Maladaptive perfectionism involves unrealistically high standards, intense ruminative concern over mistakes, perceived pressure from others to be perfect, a perceived large discrepancy between one's performance and personal standards, compulsive doubting of one's actions, and motivation to avoid negative consequences (Enns & Cox, 2002). Several studies have found that specific dimensions of perfectionism (e.g., pressure from others to be perfect) interacted with stress to predict increased negative affect (e.g., Chang & Rand, 2000; Chang, 2000). Adaptive perfectionists would be hypothesised to be more likely to approach and be realistic about aspects of leadership behaviours such as high performance expectations or an ambitious future vision and therefore more likely to experience the positive affect associated with transformational leadership. Conversely, maladaptive perfectionists due to concern over mistakes, doubts about one's ability to accomplish tasks, perceived pressure from others, and failure to meet high standards are more likely to feel negative affect about a high expectations or ambitious vision which is likely to be stressful. Indeed, as highlighted by Yukl (1999) the search for situational moderator variables may be more successful if directed at specific transformational leadership behaviours as not every type of transformational behaviour will be relevant in every situation. As such the differentiated approaches developed more recently and in the current study lend themselves to this search of situational moderators.

11. Do follower characteristics moderate the relationship between leader behaviours and follower outcomes?

Research on transformational leadership has relied heavily on self-report assuming that self-report provides valid and meaningful data. Such methods of data collection have been the subject of some debate, with researchers continuing to argue whether or not self-report data can be considered reliable (e.g., Chan, 2009). While there are both advantages (e.g., straight forward scoring, quick, cheap) and disadvantages to self-report (e.g., response biases, social desirability, self enhancement predisposition) a more robust test of theory is to utilise more than one method. For example, behavioural measures outlined in question 6. Such methods would be further enhanced with respect to strengthen the literature regarding the effects of transformational leadership if biological measures were also included. One example of such biological measures could be the role of neuroendocrine responses pertaining to transformational leadership and trust. Trust pervades in human cultures and plays a key role in leadership. Indeed, recent research has found trust to fully mediate the relationship between perceptions of managers' transformational leadership and employee psychological well-being (Kelloway, Turner, Barling, & Loughlin, 2012). Recent behavioural evidence shows that the neuropeptide oxytocin, a hormone recognised for its role in social attachment and facilitation of social interactions, has been hypothesized as important in the formation of trust. Research by Kosfeld, Heinrichs, Zak, Fischbacher, and Fehr (2005) has shown that intranasal administration of oxytocin causes substantial increase in trust among humans. Further the authors demonstrated that oxytocin specifically affects individuals' willingness to accept social risks arising from interpersonal interactions as oppose to a general increase in readiness to take risks. Thus in view of the findings that transformational leadership positively influences trust, in combination with recent advances in the understanding of the role of oxytocin on trust, future research on transformational

leadership could examine the biological basis for its effects. Furthermore, using a differentiated behaviour approach Podsakoff et al. (1990) found individualised support to be positively related to trust and intellectual stimulation to be negatively related to trust. Perhaps the reason for this could be elucidated through the measurement of oxytocin whereby it would be reasonable to suggest that individual consideration may be more related to oxytocin as it is a behaviour that is likely to have increased social interaction where feelings and needs are taken into consideration.

12. Are transformational leadership behaviours related to increased oxytocin?

13. Do certain transformational leadership behaviours (e.g., individual consideration) operate through the release of oxytocin in followers?

A second example of such biological measures comes from recent research using functional magnetic resonance imaging (fMRI) to examine the neural basis of motivation, whereby researchers scanned participants' neural activity when they decided to act for intrinsic reasons versus when they decided to act for extrinsic reasons (Lee, Reeve, Xue, & Xiong, 2012). Results revealed that intrinsic reasons for acting recruited more insular cortex activity while extrinsic reasons for acting more recruited posterior cingulate cortex (PCC) activity. Considering that the studies in this thesis have demonstrated a relationship between transformational leadership behaviours and intrinsic motivation, one could postulate that transformational leadership behaviours may be more likely to activate similar cortex activity as intrinsic motivation, and transactional leadership behaviours may be more aligned to the cortex associated with extrinsic motivation. Indeed, scanning participants neural activity while they are shown videos of leaders espousing transformational or transactional

behaviours may elucidate more fully the biological basis for transformational leadership effects.

14. Does transformational leadership behaviours activate the insular cortex and transactional leadership activate the posterior cingulate cortex?

The last three research questions presented are broader research questions designed to challenge current thinking on transformational leadership research methodology. The suggested research questions are initial attempts to respond to calls by funders for researchers to diversify their methods of enquiry and to utilise interdisciplinary approaches to problem solving. Conducting such interdisciplinary research may lead us to new ideas, discoveries and interpretations of what constitutes good, ideal and effective leadership for the transformation of followers.

Conclusion

To conclude, the thesis applied the well-established theory of transformational leadership to the new context of higher education lecturing. The thesis findings offer support for the conceptualisation and measurement of transformational leadership in higher education. Furthermore the thesis provides support for the applicability of this framework to this context, offering exciting new prospects for future research on transformational leadership in higher education.

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Appendices

Appendix A

Table 1: Demographics of sample (N=29)

Variable	Frequency
Gender	
Males	12
Females	17
Student Type	
Standard	19
Mature (>21 on commencement) of course	10
Nationality	
United Kingdom	21
Chinese	2
Vietnamese	1
Irish	1
German	1
South Africa	1
Zimbabwean	1
Not Specified	1
Discipline	
Sport science	12
Zoology	3
Chemistry	2
Engineering	1
Psychology	1
Geography	1
Biology	1
Law	2
History & Archaeology	1
Journalism	1
Finance & Banking	2
Public Health	1
Childhood Studies	1
Year of study	
Level 4	2
Level 5	10
Level 6	3
Level 7	10
Not Specified	4
Socio Economic Status	
Low	3
Medium	12
High	10
Not Specified	4

Appendix B

Table 1: Attributed Individual Consideration and Inspirational Motivation

Attribute	Theme	Node	Quote
Individual Consideration	Help and Support	Support	“offering support but not providing so much that students are not able to find their own way”
		Helpful	“if people are in distress I will help them”
		Available	“I put myself in the field with the students”
		Listening	“its about listening and thinking about what the student had said”
		Respect	“I think you have to demonstrate respect”
		Encouraging	“the goal is to encourage independent and life long learning”
	Showing Concern	“you need that concern for people around you”	
	Understanding and aware of individual differences	Being on the same level	“it is evident in the lecture that when you are talking you can actually afford to go a little way to lower your own positing and be on more a level with students”
		Accounting for differences	“an understanding that people learn in different ways, so knowing that people have different learning styles” “ to accept that people come to knowledge from different directions and back grounds” “realising that you need a different technique to get the best out of each of them”
		Knows Students	“its just getting to know students and eventually they open up as well” “its about getting to know and connect with people”
Inspiration		“I think we need less information transmission and more inspiration”	
Inspirational Motivation	Expresses Belief		“we push them by demonstrating confidence in them, its about giving them a belief”
		Telling Stories	“it was by sharing, you could call it anecdotal stories”
	Meaningful Context	Real World Relevance	“he could turn something that seemed to be quite specialised into a general thing that was quite important and realising that it was important and that what you were doing wasn’t just a sterile exercise”
		Vision	Future Vision
	Engaging	Enthusiasm	“you have to be very enthusiastic about what you are teaching” “ he was enthusiastic enough to make you think you had actually found something novel”
		Interaction	“I’m interacting with the class and I get them to interact”

Table 2: Attributed Intellectual Stimulation, High Performance Expectations, Appropriate Role Modelling and Contingent Reward

Attribute	Theme	Node	Quote
Intellectual Stimulation	Thinking	Challenges them	“we challenge them to think a little further about things, we’ve got to be challenging them not giving them can fodder”
		Breaks it down	“he showed us how law did not appear from on high, it was made up from different influences”
		Thought stimulation	“get people to re-examine their assumptions, to refine their ideas and reflect upon their ideas” and “possibly even reject some of their initial assumptions”
High Performance Expectations		High Expectations	“I expect them to be a graduate student at undergraduate level” “expect absolutely flat out the students perform to the best of their abilities”
		Expectations	“communicate with students that if they came to the lecture expecting to find all the knowledge they won’t, they have to do more” “I expect them to work to my timetable”
Appropriate Role Modelling		Self Modelling	“I demonstrate what one would be if they followed a path of knowledge, study and dedication” “you try to model the passion and interest in the subject”
		Knowledge	“higher education lecturers should always be researchers because they should be experts in their area driving knowledge” “having knowledge of so many things”
Contingent Reward	Reward	Praise	“always looking to praise”
		Recognition	“recognition is a reward in itself”

Table 3: Attributed Sense of Humour

Attribute	Theme	Node	
Sense of humour	Fun	Humour	“does something that brings that little bit of humour into it” “makes students laugh” “he was hilarious”

Appendix C
Differentiated Transformational Leadership Scale - Education

Your Name: _____ Age: _____

Module: _____

Lecturer: _____

Year of Study: _____ Gender: _____

Please answer the following questions in relation to your lecturer on this module. Please answer all the questions indicating how often your lecturer does these things. *Your responses to the questions will be kept confidential, only the research team will have access to this information. We ask for your name so that we can match your responses to the other questionnaires.*

Please judge how frequently each statement fits your lecturer's normal behaviour.

My Lecturer	Never	Rarely	Occasionally	Some- times	Fairly Often	Very Often	Always
1. Uses humour in the lectures	1	2	3	4	5	6	7
2. Acts confidently	1	2	3	4	5	6	7
3. Provides examples of people for me to learn from	1	2	3	4	5	6	7
4. Shows me that s/he cares about me	1	2	3	4	5	6	7
5. Shows me how my work relates to the real world	1	2	3	4	5	6	7

My Lecturer	Never	Rarely	Occasionally	Some- times	Fairly Often	Very Often	Always
6. Tells me that they want me to do really well	1	2	3	4	5	6	7
7. Breaks down complex ideas for me	1	2	3	4	5	6	7
8. Gives me recognition when I do good work	1	2	3	4	5	6	7
9. Sets an example for me to copy by working hard	1	2	3	4	5	6	7
10. Makes jokes during lectures	1	2	3	4	5	6	7
11. Helps me if I have difficulties	1	2	3	4	5	6	7
12. Tells me to do my best	1	2	3	4	5	6	7
13. Gives me praise when I do something well	1	2	3	4	5	6	7
14. Talks enthusiastically about what my future career could be like	1	2	3	4	5	6	7
15. Lectures in a confident manner	1	2	3	4	5	6	7
16. Gives me an example of somebody that I can learn from	1	2	3	4	5	6	7
17. Challenges me to come up with new ideas	1	2	3	4	5	6	7
18. Personally praises me when I do outstanding work	1	2	3	4	5	6	7
19. Role models what is possible for me	1	2	3	4	5	6	7

My Lecturer	Never	Rarely	Occasionally	Some- times	Fairly Often	Very Often	Always
20. Explains why seemingly dull work is necessary	1	2	3	4	5	6	7
21. Is considerate towards me	1	2	3	4	5	6	7
22. Integrates humour into lectures	1	2	3	4	5	6	7
23. Tells me that a first is within my reach	1	2	3	4	5	6	7
24. Demonstrates confidence in their subject	1	2	3	4	5	6	7
25. Tells me inspirational stories	1	2	3	4	5	6	7
26. Tries to make me laugh in lectures	1	2	3	4	5	6	7
27. Sets an example for me to follow	1	2	3	4	5	6	7
28. Communicates an exciting vision that I can achieve	1	2	3	4	5	6	7
29. Asks me questions that make me think	1	2	3	4	5	6	7
30. Tells me that s/he expects me to achieve a first	1	2	3	4	5	6	7

END

Scoring Key

INDIVIDUAL CONSIDERATION		INSPIRATIONAL MOTIVATION	
4.	Shows me that s/he cares about me	5.	Shows me how my work relates to the real world
11.	Helps me if I have difficulties	14.	Talks enthusiastically about what my future career could be like
21.	Is considerate towards me	20.	Explains why seemingly dull work is necessary
		25.	Tells me inspirational stories
		28.	Communicates an exciting vision that I can achieve
INTELLECTUAL STIMULATION		APPROPRIATE ROLE MODELLING	
7.	Breaks down complex ideas for me	3.	Provides examples of people for me to learn from
17.	Challenges me to come up with new ideas	9.	Sets an example for me to copy by working hard
29.	Asks me questions that make me think	16.	Gives me an example of somebody that I can learn from
		19.	Role models what is possible for me
		27.	Sets an example for me to follow
HIGH PERFORMANCE EXPECTATIONS		CONTINGENT REWARD	
6.	Tells me that they want me to do really well	8.	Gives me recognition when I do good work
12.	Tells me to do my best	13.	Gives me praise when I do something well
23.	Tells me that a first is within my reach	18.	Personally praises me when I do outstanding work
30.	Tells me that s/he expects me to achieve a first		
SENSE OF HUMOUR		SELF BELIEF	
1.	Uses humour in the lectures	2.	Acts confidently
10.	Makes jokes during lectures	15.	Lectures in a confident manner
22.	Integrates humour into lectures	24.	Demonstrates confidence in their subject
26.	Tries to make me laugh in lectures		

Appendix D

Demographic Questionnaire

Note: Your responses to all the questions will be kept confidential, only the research team will have access to this information. We ask for your name so that we can match your responses to the other questionnaires.

Name:		
Age:		
University Email Address:		
Date of Birth:		
Gender (please circle)	Male	Female
What degree are you studying?		
What year or study are you currently in? (please circle)	BSc level 1	MSc level 4
	BSc level 2	MPhil (level 5)
	BSc level 3	PhD (level 6)
What is the highest level of education you have completed? (please circle)	Grammar school	Bachelors Degree
	High School or equivalent	Masters Degree
	Vocational/technical school	Doctoral Degree
	College	Professional Degree (MD, JD etc)
What type of student are you? (please circle)	Full-time home student (UK)	Full-time overseas student (EU/International)
	Part-time home student (UK)	Part-time overseas student (EU/International)
		Distance learning Student
How would you describe your socioeconomic background (SES): (please circle)	Lower SES: parents did not attend school, attended only primary school, or attended some secondary school	
	Medium SES: parents completed secondary school and /or vocational qualification, diploma or associate diploma	
	Higher SES: parents completed a university degree	

Transformational Teaching Questionnaire

Please respond to the following statements in relation to how often they are demonstrated by your lecturer on this module

My Lecturer.....	Not at all	Once in a while	Sometimes	Fairly often	Frequently
1. Shows that s/he cares about me	0	1	2	3	4
2. Acts as a person that I look up to	0	1	2	3	4
3. Creates lessons that really encourage me to think	0	1	2	3	4
4. Demonstrates that s/he believes in me	0	1	2	3	4
5. Treats me in ways that build my respect	0	1	2	3	4
6. Is enthusiastic about what I am capable of achieving	0	1	2	3	4
7. Provides me with tasks and challenges that get me to think in different ways	0	1	2	3	4
8. Motivates me to try my hardest	0	1	2	3	4
9. Tries to know every student in the class	0	1	2	3	4

10. Gets me to question my own and others' ideas	0	1	2	3	4
11. Tries to help students who might be struggling	0	1	2	3	4
12. Talks about his/her personal values	0	1	2	3	4
13. Encourages me to look at issues from different sides	0	1	2	3	4
14. Recognizes the needs and abilities of each student in the class	0	1	2	3	4
15. Is optimistic about what I can accomplish	0	1	2	3	4
16. Behaves as someone I can trust	0	1	2	3	4

Learning Climate Questionnaire

This questionnaire contains items that are related to your experience with **your lecturer** in this module. Lecturers have different styles in dealing with students, and we would like to know more about how you have felt about your encounters with your lecturer.

	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly agree
1. I feel that my lecturer provides me with choices and options.	1	2	3	4	5	6	7
2. I feel understood by my lecturer.	1	2	3	4	5	6	7
3. I am able to be open with my lecturer during class	1	2	3	4	5	6	7
4. My lecturer conveyed confidence in my ability to do well in the course	1	2	3	4	5	6	7
5. I feel that my lecturer accepts me	1	2	3	4	5	6	7
6. My lecturer encouraged me to ask questions	1	2	3	4	5	6	7
7. I feel a lot of trust in my lecturer	1	2	3	4	5	6	7

	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly agree
8. My lecturer answers my questions fully and carefully.	1	2	3	4	5	6	7
9. My lecturer made sure I really understood the goals of the course and what I need to do	1	2	3	4	5	6	7
10. My lecturer listens to how I would like to do things.	1	2	3	4	5	6	7
11. My lecturer handles people's emotions very well.	1	2	3	4	5	6	7
12. I feel that my lecturer cares about me as a person.	1	2	3	4	5	6	7
13. I don't feel very good about the way my lecturer talks to me	1	2	3	4	5	6	7
14. My lecturer tries to understand how I see things before suggesting a new way to do things	1	2	3	4	5	6	7
15. I feel able to share my feelings with my lecturer	1	2	3	4	5	6	7

Academic Efficacy

Please respond with the extent to which you feel the following statements are true of you.

	Very Untrue of me	Untrue of me	Somewhat Untrue of me	Neutral	Somewhat True	True of me	Very true of me
1. I know how to schedule my time to accomplish my tasks.	1	2	3	4	5	6	7
2. I know how to take notes	1	2	3	4	5	6	7
3. I know how to study to perform well on tests.	1	2	3	4	5	6	7
4. I am good at research and writing papers.	1	2	3	4	5	6	7
5. I am a very good student	1	2	3	4	5	6	7
6. I find my university academic work interesting and absorbing.	1	2	3	4	5	6	7
7. I am very capable of succeeding at university.	1	2	3	4	5	6	7

Academic Motivation Scale

Using the scale below, indicate to what extent each of the following items presently corresponds to each of the reasons why you go to University.

Why do you go to university ?	Does not correspond at all	Corresponds a little	Corresponds Moderately	Corresponds a lot	Corresponds Exactly		
1. Because with only an A-level type qualification I would not find a high-paying job later on.	1	2	3	4	5	6	7
2. Because I experience pleasure and satisfaction while learning new things.	1	2	3	4	5	6	7
3. Because I think that a University education will help me better prepare for the career I have chosen.	1	2	3	4	5	6	7
4. For the intense feelings I experience when I am communicating my own ideas to others.	1	2	3	4	5	6	7
5. Honestly, I don't know; I really feel that I am wasting my time in University.	1	2	3	4	5	6	7
6. For the pleasure I experience while surpassing myself in my studies	1	2	3	4	5	6	7
7. To prove to myself that I am capable of completing my University degree.	1	2	3	4	5	6	7

Why do you go to university ?	Does not correspond at all	Corresponds a little	Corresponds Moderately	Corresponds a lot	Corresponds Exactly		
8. In order to obtain a more prestigious job later on.	1	2	3	4	5	6	7
9. For the pleasure I experience when I discover new things never seen before.	1	2	3	4	5	6	7
10. Because eventually it will enable me to enter the job market in a field that I like.	1	2	3	4	5	6	7
11. For the pleasure that I experience when I read interesting authors	1	2	3	4	5	6	7
12. I once had good reasons for going to University however, now I wonder whether I should continue.	1	2	3	4	5	6	7
13. For the pleasure that I experience while I am surpassing myself in one of my personal accomplishments.	1	2	3	4	5	6	7
14. Because of the fact that when I succeed in University I feel important.	1	2	3	4	5	6	7
15. Because I want to have "the good life" later on.	1	2	3	4	5	6	7

Why do you go to university ?	Does not correspond at all	Corresponds a little	Corresponds Moderately	Corresponds a lot	Corresponds Exactly		
16. For the pleasure that I experience in broadening my knowledge about subjects which appeal to me	1	2	3	4	5	6	7
17. Because this will help me make a better choice regarding my career orientation.	1	2	3	4	5	6	7
18. For the pleasure that I experience when I feel completely absorbed by what certain authors have written.	1	2	3	4	5	6	7
19. I can't see why I go to University and frankly, I couldn't care less.	1	2	3	4	5	6	7
20. For the satisfaction I feel when I am in the process of accomplishing difficult academic activities.	1	2	3	4	5	6	7
21. To show myself that I am an intelligent person.	1	2	3	4	5	6	7
22. In order to have a better salary later on.	1	2	3	4	5	6	7
23. Because my studies allow me to continue to learn about many things that interest me.	1	2	3	4	5	6	7

Why do you go to university ?	Does not correspond at all	Corresponds a little	Corresponds Moderately	Corresponds a lot	Corresponds Exactly		
24. Because I believe that a few additional years of education will improve my competence as a worker.	1	2	3	4	5	6	7
25. For the "high" feeling that I experience while reading about various interesting subjects.	1	2	3	4	5	6	7
26. I don't know; I can't understand what I am doing in university	1	2	3	4	5	6	7
27. Because University allows me to experience a personal satisfaction in my quest for excellence in my studies.	1	2	3	4	5	6	7
28. Because I want to show myself that I can succeed in my studies.	1	2	3	4	5	6	7

Student Satisfaction

Please rate the how accurate the following statement is regarding your current levels of satisfaction

	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly agree
1. Overall, I feel satisfied with my university experience	1	2	3	4	5	6	7

Leader Inspired Extra Effort

Using the scale below, indicate to what extent you agree with the following items.

My lecturer.....	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly agree
1. Helps me to do more than I expect to do	1	2	3	4	5	6	7
2. Makes me more determined to achieve my goals	1	2	3	4	5	6	7
3. Motivates me to work hard	1	2	3	4	5	6	7
4. Is able to get me to put in extra effort	1	2	3	4	5	6	7

Academic Engagement

Using the scale below, indicate to what extent to which you agree with the following items

	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly agree
1. I feel that I have understood the lecture material better than I thought I would at the start	1	2	3	4	5	6	7
2. I have attended more lectures than I thought I would at the start of the module	1	2	3	4	5	6	7
3. I have completed more readings than I thought I would at the start of the module	1	2	3	4	5	6	7
4. I have contributed more to lectures than I thought I would at the start of the module	1	2	3	4	5	6	7

Psychological Need Satisfaction

Please respond to the following questions using the scale below

	Very Untrue of me	Untrue of me	Somewhat Untrue of me	Neutral	Somewhat True	True of me	Very true of me
1. I feel free to express my ideas and opinions in my lectures	1	2	3	4	5	6	7
2. In my lectures, I feel I am pursuing goals that are my own	1	2	3	4	5	6	7
3. I don't really feel connected with other people in my lectures	1	2	3	4	5	6	7
4. I don't really feel competent in my lectures	1	2	3	4	5	6	7
5. I feel like I can be myself in my lectures	1	2	3	4	5	6	7
6. In lectures, there are people who really understand me	1	2	3	4	5	6	7
7. I really master tasks in my lectures	1	2	3	4	5	6	7

	Very Untrue of me	Untrue of me	Somewhat Untrue of me	Neutral	Somewhat True	True of me	Very true of me
8. In lectures, I feel part of a group	1	2	3	4	5	6	7
9. If I could choose, I would do things differently in lectures	1	2	3	4	5	6	7
10. I feel competent in my lectures	1	2	3	4	5	6	7
11. I don't really mix with other people in my lectures	1	2	3	4	5	6	7
12. In my lectures, I really have a sense of wanting to be there	1	2	3	4	5	6	7
13. The tasks I have to do in lectures are in line with what I really want to do	1	2	3	4	5	6	7
14. I am good at the things I do in my lectures	1	2	3	4	5	6	7
15. In lectures, no one cares about me	1	2	3	4	5	6	7

	Very Untrue of me	Untrue of me	Somewhat Untrue of me	Neutral	Somewhat True	True of me	Very true of me
16. In my lectures, I feel forced to do things I do not want to do	1	2	3	4	5	6	7
17. I have the feeling that I can even accomplish the most difficult tasks in lectures	1	2	3	4	5	6	7
18. I often feel alone when I am with my peers	1	2	3	4	5	6	7
19. In my lectures, I feel I am doing what I want to be doing	1	2	3	4	5	6	7
20. Some people in my lectures are close friends of mine	1	2	3	4	5	6	7
21. There is nobody, in this lecture, I can share my thoughts with if I would want to do so	1	2	3	4	5	6	7

_____END_____

Appendix E



Bangor University

**Transformational
Leadership In Higher
Education Resource Guide**

What is Transformational Leadership?

Transformational leadership (TL) is one of the most prevalent leadership theories in organisational psychology. Transformational leaders stimulate and inspire their followers to achieve extraordinary outcomes and, in the process, develop their followers' own leadership capacity. These leaders help followers to grow and develop by responding to followers' individual needs by empowering them and aligning the objectives and goals of the individual followers, the leader, the group, and the larger organisation (Bass & Riggio, 2006).

TL has been examined extensively in a variety of contexts, for example, the military (Bass, Avolio, Jung, & Berson, 2003), the public sector (Rafferty & Griffin, 2004), business (Barling, Weber, & Kelloway, 1996), and sport (Callow, Smith, Hardy, Arthur, & Hardy, 2009). Subsequent conceptualisation has led to a differentiated assessment of TL (Hardy *et al* 2010). This differentiated model of TL includes six transformational behaviours consisting of: *individual consideration, intellectual stimulation, inspirational motivation, fostering acceptance of group goals, high performance expectations, appropriate role modelling* and one transactional behaviour; *contingent reward* (see Table 1 for the definitions of these behaviours).

In the higher education teaching and learning context, Mawn, Callow, Hardy and Arthur (*in prep*) assessed the perceptions of lecturing through the use of focus groups with higher education (HE) students and semi structured interview with HE lecturers. Employing Hardy *et al*'s (2010) differentiated conceptualisation as a TL frame work, the findings from this study offers support for the applicability of the differentiated TL model in the HE context. Further, additional themes important to HE lecturing emerged. Specifically, six of the seven TL behaviours specified in Hardy *et al.*, (2010) were identified with *individual consideration* being particularly relevant for students; however, *fostering acceptance of group goals* was considered not to be relevant to the HE lecturing context. Moreover, additional themes emerged pertaining to lecturers; *self belief, sense of humour* and *interpersonal interaction* (see Table 1 for definitions of these behaviours).

How does transformational leadership relate to student dimensions?

A recent government white paper ‘*Students at the heart of the system*’ (2011) stated that the primary goal of upcoming education reforms is to improve the quality of students’ academic experience and to increase their educational gain. In his recent report for the Higher Education Academy, ‘*Dimensions of Quality*’, Gibbs (2010) identified student effort and engagement as two of the dimensions of a high quality learning experience. Related to these types of dimensions, a recent study funded by the HLST, (Mawn *et al.*, *in prep*) assessed the extent to which the TL behaviours would predict certain student dimensions. Employing the eight behaviour model for HE, Mawn *et al.*, developed a measure of transformational leadership. Using this questionnaire of TL and a sample of 349 university students, the authors found that the leadership behaviours positively predicted student related dimensions. Specifically, individual consideration predicted student satisfaction and academic efficacy. Six of the transformational leadership behaviours positively predicted different types of intrinsic motivation. For example, individual consideration, inspirational motivation and intellectual stimulation positively predicted intrinsic motivation-to-know. Inspirational motivation, high performance expectations and contingent reward positively predicted intrinsic motivation-to-experience-stimulation and individual consideration, high performance expectations, self belief and contingent reward positively predicted intrinsic motivation-to-accomplish. Most interestingly, the TL behaviours also positively predicted students’ module performance, that is, students who perceive lecturers to exhibit these behaviours more frequently also perform better than those who do not perceive these behaviours from their lecturer

What are the key behaviours and examples of how to integrate them into lecturing?

The guidelines on the next page for acting in a transformational way when lecturing were developed from a qualitative study which examined ‘Students perceptions of Transformational Lecturing’ (Mawn, Callow, Hardy & Arthur, *in prep*)

Table 1: Transformational leadership behaviours, definitions and examples of how to provide them.

Behaviour	Definition	Example
Individual Consideration	Behaviour by leaders where they show their respect for followers and concern for their personal feelings and needs.	<ul style="list-style-type: none"> ➤ provide followers with physical support in the form of feedback, information, materials and understanding ➤ provide support for followers self esteem by valuing followers, appreciate their contributions, and ensure they are progressing well ➤ encourage ➤ the follower ➤ demonstrate care for followers and take interest in them and their work ➤ show respect, attention, and consideration towards followers ➤ listen to followers ➤ demonstrate that you are approachable and available to followers ➤ show equality between self and the followers e.g. first names ➤ consider differences between followers levels of abilities, ways of learning, and approaches to work ➤ demonstrate understanding of the followers personal situations
Inspirational Motivation	Behaviour by leaders where they develop, articulate and inspire others to follow a vision	<ul style="list-style-type: none"> ➤ get followers engaged and interacting ➤ provide followers with of a vision of the future that is achievable ➤ state what followers will achieve in the lecture ➤ provide meaning for the followers work ➤ show followers how their work applies to real world ➤ use analogies to help to explain ➤ inspire followers ➤ behave in an enthusiastic, passionate and energetic way ➤ show the follower that you believe in them

Intellectual Stimulation	Behaviour by leaders where they challenge followers to re-examine their assumptions about their work and re-think how it can be performed	<ul style="list-style-type: none"> ➤ make the follower think about their work in a critical way ➤ break information down for the follower to understand ➤ explain information clearly ➤ challenge followers to come up with new ideas ➤ ask questions that make the followers think
Appropriate Role Modelling	Behaviour by leaders where they set examples for followers to copy that are consistent with the values	<ul style="list-style-type: none"> ➤ set an example for the follower to copy ➤ demonstrate how much effort you invest ➤ model being prepared to the followers ➤ show breadth and depth of knowledge to the follower
High Performance Expectations	Behaviour by leaders where they express expectations for excellence, quality, and/or high performance on the part of followers	<ul style="list-style-type: none"> ➤ tell followers you want them to do well and succeed ➤ challenge followers to perform well ➤ tell followers that you expect them to achieve high grades
Self Belief	Behaviour by leaders that show they are confident in themselves, their knowledge and their material	<ul style="list-style-type: none"> ➤ lecture in a confident manner ➤ show confidence in your knowledge
Sense of Humour	Behaviour by the leader that elicits follower amusement and laughter	<ul style="list-style-type: none"> ➤ use humour in lectures ➤ make relevant jokes

Contingent Reward	Behaviour by the leader that provides reward in return for appropriate behaviour on the followers' behalf	<ul style="list-style-type: none">➤ express approval or admiration for followers➤ identifying the follower in a positive manner on the basis of their work➤ gives/ provides something desirable to followers in return for what they have done➤ Praise, recognise and reward followers for appropriate behaviour
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Key Texts

General

Burns, J. M. (1978). *Leadership*. New York: Harper & Row

Bass, B. M. (1985). *Leadership and performance beyond expectation*. New York: Free Press.

Yukl, G.A. (1999). An evaluation of conceptual weaknesses in transformational and charismatic leadership theories. *Leadership Quarterly*, 10(2), 285-305.

Organisational Psychology

Bass, B.M. & Avolio, B.J. (Eds.). (1994). *Improving organizational effectiveness through transformational leadership*. Thousand Oaks, CA: Sage Publications.

Bass, B. M. (1990). From transactional to transformational leadership: Learning to share the vision. *Organizational Dynamics*, (Winter): 19-31.

Sport Psychology

Callow, N., Smith, M. J., Hardy, L., Arthur, C. A., & Hardy, J. (2009). Measurement of transformational leadership and its relationship with team cohesion and performance level. *Journal of Applied Sport Psychology*, 21, 395-412.

Education

Bass, B. M. (1998). *Transformational leadership: Industrial, military, and educational impact*. Mahwah, NJ: Erlbaum

Beauchamp, M. R., Barling, J., & Morton, K. L. (2011). Transformational Teaching and Adolescent Self-Determined Motivation, Self-Efficacy, and Intentions to Engage in Leisure Time Physical Activity: A Randomised Controlled Pilot Trial. *Applied Psychology: Health and Well-Being*, 3, 127-150. doi:10.1111/j.1758-0854.2011.01048.x

Building Transformational Leadership

Hardy, L., Arthur, C. A., Jones, G., Shariff, A., Munnoch, K., Isaacs, I., et al. (2010). The relationship between transformational leadership behaviours, psychological, and training outcomes in elite military recruits. *Leadership Quarterly*, 21, 20-32.

Barling, J., Weber, T., & Kelloway, E. K. (1996). Effects of transformational leadership training on attitudinal and financial outcomes: A field experiment. *Journal of Applied Psychology*, 81, 827-832.

Key Online resources

<http://ipep.bangor.ac.uk/leadership.php>